



GOBIERNO
DE ESPAÑA

MINISTERIO
PARA LA TRANSICIÓN ECOLÓGICA
Y EL RETO DEMOGRÁFICO



Gobierno
de Navarra



Canal de
Navarra, s.a.

REF. CRONOLÓGICA:
03/22

Clave DGA:
09.284-0016/2111

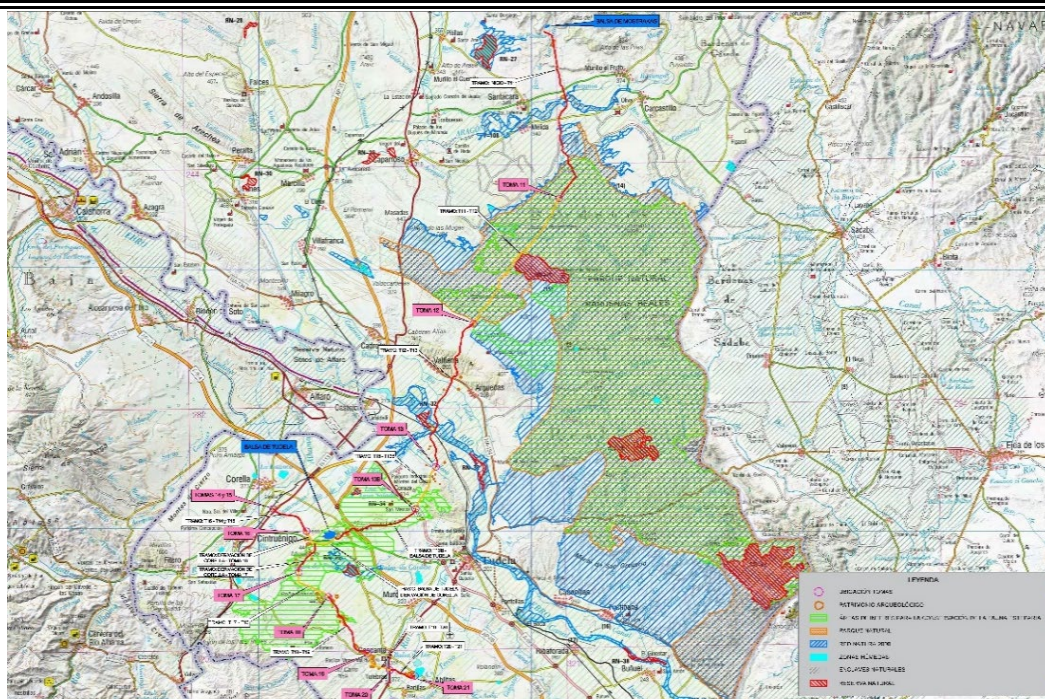
Clave CANASA:
CAN/P-CN-24

ACTUACIÓN:

CANAL DE NAVARRA

PROYECTO:

PROYECTO DE CONSTRUCCIÓN DE LA SEGUNDA FASE DEL CANAL DE NAVARRA



DOCUMENTO Nº 4

PRESUPUESTO

PROVINCIA: NAVARRA

PRESUPUESTO: 291.883.946,82 €

DIRECCIÓN DEL PROYECTO:

D. José María Serra Llena, ICCP.

EMPRESA CONSULTORA:

eptisa

INGIOPSA

INGENIEROS AUTORES
DEL PROYECTO:

D. Rafael Fernández-Ordóñez Cervera, ICCP.
D. Juan Ortas González, ICCP.

DOCUMENTO N° 4

PRESUPUESTO

MEDICIONES AUXILIARES

MEDICIONES AUXILIARES. CONDUCCIONES

SECCIONES TIPO

RESUMEN MOVIMIENTO DE TIERRAS

RESUMEN MOVIMIENTO DE TIERRAS CONDUCCIONES

Valores	Etiquetas de columna														Total		Total general	
	CN-T12														DC-T21/T14		Total T12-DC	
	CN-T11	Conex	T11-T12	DC-T16	DC-T17	T16-T14	T12-T18	T18-T19	T19-T20	T20-T21	Total DC-T21/T14	T12-DC	T12-T13	T13B-BT	T13-T13B	Total T12-DC	Total general	
Suma de Total excavable ripable con empleo de martillo	90.970,42	3.103,62	321.841,14	415.915,18	33.749,51	88.012,82	50.542,68	91.502,30	100.010,48	55.297,02	26.318,88	445.433,68	46.025,05	229.879,51	192.861,12	98.311,40	567.079,08	1.428.427,95
Suma de Total excavable con empleo puntual de martillo	470.327,72	1.330,12	13.375,48	485.033,32	0,00	0,00	5.379,93	1.471,92	14.064,06	19.592,76	15.306,31	55.814,98	8.413,36	281.260,71	11.960,33	104.514,88	406.149,28	946.997,58
Suma de Cama apoyo granular (m3)	44.278,11	446,03	33.226,83	77.950,97	1.665,97	7.453,59	4.244,75	7.533,61	8.582,87	2.873,55	2.365,82	34.700,16	4.872,25	32.508,96	16.486,12	8.102,65	61.970,09	174.621,22
Suma de Cama apoyo HM-20(m3)	2.085,79	0,00	1.100,30	3.186,09	183,15	436,94	173,92	501,14	360,08	390,37	94,31	2.139,90	228,45	1.363,72	1.321,43	2.405,56	5.319,16	10.645,15
Suma de Relleno rifonera suelo seleccionado (m3)	124.466,55	1.100,53	82.213,90	207.780,98	4.700,40	18.282,84	12.116,11	18.531,73	25.653,95	9.215,08	7.256,50	95.756,62	12.535,76	97.322,06	40.629,24	20.470,45	170.957,51	474.495,11
Suma de Relleno rifonera garbancillo (m3)	4.759,96	0,00	2.481,15	7.241,11	100,93	984,49	945,04	897,55	881,04	252,51	196,15	4.257,71	343,75	6.161,95	2.118,58	630,77	9.465,06	20.961,89
Suma de Relleno cobertura: c= Suelo seleccionado C/ 95% PH, <= 30 mm	987,32	0,00	0,00	987,32	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	3.333,97	4.321,29
Suma de Relleno cama+rifonera HM-20(m3)	6.097,55	0,00	899,65	6.997,20	412,48	1.061,75	213,62	1.037,31	520,61	1.409,11	157,57	4.812,45	170,44	10.262,65	982,25	7.706,93	19.122,28	30.931,52
Suma de Relleno cobertura: e= HM-20,	316,52	0,00	0,00	316,52	0,00	0,00	0,00	0,00	0,00	0,00	284,57	284,57	0,00	1.404,74	4.136,44	249,31	5.790,49	6.991,88
Suma de Relleno cobertura: f= Suelo adecuado procedente excavación (<=150mm) c/95% PH	210.214,81	2.027,93	150.272,71	432.515,46	23.543,55	43.642,55	30.573,04	49.343,84	61.521,73	54.336,14	27.748,07	290.699,52	25.521,95	292.050,35	106.423,50	140.021,75	564.037,54	1.287.232,52
Suma de Relleno cobertura: d=Garbancillo 1/15	9.543,73	0,00	4.794,36	14.338,10	238,12	2.472,26	1.242,86	2.147,00	2.285,78	1.485,86	795,33	10.667,22	1.245,31	10.567,38	5.336,11	1.390,93	18.539,73	43.545,05
Suma de Relleno cobertura: g= Lecho móvil (m3)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	627,51	627,51	0,00	0,00	0,00	0,00	627,51	627,51
Suma de Excedente de tierras (m3) [esponjamiento aluvial 0%, esponjamiento terciario 5%]	89.290,97	889,12	63.152,62	153.332,91	3.071,16	14.362,33	6.721,44	13.624,89	14.922,51	4.475,59	2.824,44	60.002,35	8.726,90	61.280,06	28.600,81	19.377,09	118.958,85	332.284,12
Suma de Manto escollera e=0,5m, ancho=30m (m3)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	240,00	0,00	240,00	0,00	0,00	0,00	0,00	240,00	240,00
Suma de Long (m)	14.290,00	136,82	11.840,00	26.266,82	1.150,00	2.730,00	3.241,37	3.230,00	5.610,00	2.440,00	2.055,00	20.456,37	1.444,48	12.500,00	6.927,73	3.640,00	24.712,21	71.435,40
Suma de Cinta tuberías (m)	28.200,00	273,65	23.680,00	52.153,65	1.150,00	5.370,00	3.151,32	6.460,00	5.630,00	2.440,00	2.055,00	26.284,32	3.288,95	23.393,26	13.623,50	7.280,00	47.585,70	126.023,67

MOVIMIENTO DE TIERRAS

[illegible]

Agrupación	Tamaño	P.K. Inicio	P.K. Fin	Cálculo de Volumen	Estructura	Materiales	Diseño	Observaciones	Nº de Obras	Detalle de Obra	Detalles de Obra	Tipología de Obra	Formas y Medidas	Conexión DN 80 mm con tubería	Conexión DN 80 mm para bombeo / Acero inoxidable tuberías	Alturas de excavación a TN (m)	Total HW	Anchura total del tubo	Séparacion entre tuberías	B-Área interior (m²)	B-Tubo exterior (m²)	Bermas X1	Bermas X2	H1 - altura de la bota desde fondo	Cama de apoyo ac-cam material granular arena B-Cama de hormigón H=20 cm	Relleno inferior c-Suelo seleccionado C 95% PN < 30 mm d-Gabarrillo S15 - c-hormigón H=20 cm	Relleno superior c-Suelo seleccionado C 70% PN < 30 mm e-HM20 d-Gabarrillo S15 f-Suelo adecuado procedente excavación C 15mm 0.6% PN g-Lotio modif.	% Excavable con empleo puntual de martillo	% Escarvable ripable con empleo de martillo	H1 Lang(m)	H1-DN+H2(m)	Long(m)	Excavación lateralizada (m³)	Excavación central (m³)	Total excavado con empleo puntual de martillo	Total excavado ripable con empleo de martillo	Relleno cama +riñonera (m³)	Relleno cama (m³)	Relleno riñoner(m³)	Relleno cobertura (m³)	Cama soporte granular (m³)	Cama soporte HM-20(m³)	Relleno riñonera suelo seleccionado (m³)	Relleno riñonera grabado (m³)	Relleno cama+riñonera HM-20(m³)	Relleno cobertura c-Suelo seleccionada C 95% PN < 30 mm	Relleno cobertura d-Gabarrillo S15	Relleno cobertura e-HM20:	Relleno cobertura f-Suelo adecuado procedente excavación (<15mm 0.6% PN)	Relleno cobertura g-Lotio modifi (m³)	Excedente de tierras (m³) (superaporte nivel 0%, superaporte local 5%)	Obras laterales (m)	Manto escalera a ±0.5m ancho 20m (m³)
CN112	CN111	379.00	515.82	2	2.032	275	15.00	16	5.22	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	41.4	41.4	12.4	29.0	11.3	3.3	8.0	23.9	3.3	8.0							23.9	6.5	2.0								
CN112	CN111	380.00	516.82	2	2.032	275	15.00	16	5.26	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	41.8	41.8	12.5	29.3	11.3	3.3	8.0	24.2	3.3	8.0							24.2	6.5	2.0								
CN112	CN111	381.00	517.82	2	2.032	275	15.00	16	5.30	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	42.2	42.2	12.7	29.5	11.3	3.3	8.0	24.6	3.3	8.0							24.6	6.5	2.0								
CN112	CN111	382.00	518.82	2	2.032	275	15.00	16	5.34	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	42.6	42.6	12.8	29.8	11.3	3.3	8.0	25.0	3.3	8.0							25.0	6.5	2.0								
CN112	CN111	383.00	519.82	2	2.032	275	15.00	16	5.37	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	42.9	42.9	13.0	30.1	11.3	3.3	8.0	25.3	3.3	8.0							25.3	6.5	2.0								
CN112	CN111	384.00	520.82	2	2.032	275	15.00	16	5.41	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	43.3	43.3	13.0	30.3	11.3	3.3	8.0	25.8	3.3	8.0							25.8	6.5	2.0								
CN112	CN111	385.00	521.82	2	2.032	275	15.00	16	5.45	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	43.7	43.7	13.1	30.6	11.3	3.3	8.0	26.1	3.3	8.0							26.1	6.5	2.0								
CN112	CN111	386.00	522.82	2	2.032	275	15.00	16	5.49	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	44.1	44.1	13.2	30.9	11.3	3.3	8.0	26.5	3.3	8.0							26.5	6.5	2.0								
CN112	CN111	387.00	523.82	2	2.032	275	15.00	16	5.53	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	44.5	44.5	13.3	31.2	11.3	3.3	8.0	26.9	3.3	8.0							26.9	6.5	2.0								
CN112	CN111	388.00	524.82	2	2.032	275	15.00	16	5.57	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	44.9	44.9	13.5	31.4	11.3	3.3	8.0	27.3	3.3	8.0							27.3	6.5	2.0								
CN112	CN111	389.00	525.82	2	2.032	275	15.00	16	5.61	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	45.3	45.3	13.6	31.7	11.3	3.3	8.0	27.7	3.3	8.0							27.7	6.5	2.0								
CN112	CN111	390.00	526.82	2	2.032	275	15.00	16	5.65	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	45.6	45.6	13.7	31.9	11.3	3.3	8.0	28.1	3.3	8.0							28.1	6.5	2.0								
CN112	CN111	391.00	527.82	2	2.032	275	15.00	16	5.69	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	46.0	46.0	13.8	32.2	11.3	3.3	8.0	28.5	3.3	8.0							28.5	6.5	2.0								
CN112	CN111	392.00	528.82	2	2.032	275	15.00	16	5.72	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	46.4	46.4	13.9	32.5	11.3	3.3	8.0	28.9	3.3	8.0							28.9	6.5	2.0								
CN112	CN111	393.00	529.82	2	2.032	275	15.00	16	5.76	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	46.7	46.7	14.0	32.7	11.3	3.3	8.0	29.1	3.3	8.0							29.1	6.5	2.0								
CN112	CN111	394.00	530.82	2	2.032	275	15.00	16	5.77	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	46.8	46.8	14.1	32.8	11.3	3.3	8.0	29.3	3.3	8.0							29.3	6.5	2.0								
CN112	CN111	395.00	531.82	2	2.032	275	15.00	16	5.78	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	47.0	47.0	14.1	32.9	11.3	3.3	8.0	29.4	3.3	8.0							29.4	6.5	2.0								
CN112	CN111	396.00	532.82	2	2.032	275	15.00	16	5.80	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	47.1	47.1	14.1	33.0	11.3	3.3	8.0	29.6	3.3	8.0							29.6	6.5	2.0								
CN112	CN111	397.00	533.82	2	2.032	275	15.00	16	5.81	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	47.3	47.3	14.2	33.1	11.3	3.3	8.0	29.7	3.3	8.0							29.7	6.5	2.0								
CN112	CN111	398.00	534.82	2	2.032	275	15.00	16	5.82	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	47.4	47.4	14.2	33.2	11.3	3.3	8.0	29.8	3.3	8.0							29.8	6.5	2.0								
CN112	CN111	399.00	535.82	2	2.032	275	15.00	16	5.84	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	47.6	47.6	14.3	33.3	11.3	3.3	8.0	30.0	3.3	8.0							30.0	6.5	2.0								
CN112	CN111	400.00	536.82	2	2.032	275	15.00	16	5.91	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	48.3	48.3	14.5	33.8	11.3	3.3	8.0	30.7	3.3	8.0							30.7	6.5	2.0								
CN112	CN111	401.00	537.82	2	2.032	275	15.00	16	5.98	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	49.0	49.0	14.7	34.3	11.3	3.3	8.0	31.4	3.3	8.0							31.4	6.5	2.0								
CN112	CN111	402.00	538.82	2	2.032	275	15.00	16	6.04	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	49.6	49.6	14.9	34.7	11.3	3.3	8.0	32.0	3.3	8.0							32.0	6.5	2.0								
CN112	CN111	403.00	539.82	2	2.032	275	15.00	16	6.10	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	50.3	50.3	15.1	35.2	11.3	3.3	8.0	32.7	3.3	8.0							32.7	6.5	2.0								
CN112	CN111	404.00	540.82	2	2.032	275	15.00	16	6.02	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	49.4	49.4	14.8	34.6	11.3	3.3	8.0	32.4	3.3	8.0							32.4	6.5	2.0								
CN112	CN111	405.00	541.82	2	2.032	275	15.00	16	5.92	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	48.4	48.4	14.5	33.9	11.3	3.3	8.0	30.8	3.3	8.0							30.8	6.5	2.0								
CN112	CN111	406.00	542.82	2	2.032	275	15.00	16	5.80	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	47.1	47.1	14.1	33.0	11.3	3.3	8.0	29.5	3.3	8.0							29.5	6.5	2.0								
CN112	CN111	407.00	543.82	2	2.032	275	15.00	16	5.23	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	47.5	47.5	14.2	33.1	11.3	3.3	8.0	29.7	3.3	8.0							29.7	6.5	2.0								
CN112	CN111	408.00	544.82	2	2.032	275	15.00	16	4.79	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	47.2	47.2	14.2	33.2	11.3	3.3	8.0	29.8	3.3	8.0							29.8	6.5	2.0								
CN112	CN111	409.00	545.82	2	2.032	275	15.00	16	4.31	0.33	212-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	30%	70%	0.7	2.5	1.0	42.9	42.9	13.2	28.1	11.3	3.3	8.0	25.7	3.3	8.0							25.7	6.5	2.0								
CN112	CN111	410.00	546.82	2	2.032	275	15.00	16	3.75	0.33	26-2-2000	0.60	1.00	6.20	0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	37.3	37.3	3.3	</																							

Agrupación		Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Acueta	Observación	N° tuberías	DN ext (mm)	Acero tipo S	espesor asignado (mm)	PN Tubería valvulera (atm)	N° verticales por tubería	DN vertical (mm)	N° válvulas de agua	DN Descarga	Tipo de válvula	Agueta miera tipo	Conex. DN 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero-espesor lámina (mm)	Altura de excavación a TN (m)	Talud HV	concreto armado zapila	A- separación tubo-bald	S ₁ -Separación entre tuberías	B-Achro interior (m)	Borra X1	Borra X2	H1-Cama apoyo (m)	ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima y clave (m)	H4- altura de la bermá desde fondo	Cama de apoyo a-cana material granular arena b-cama de tamango HM-20	Releño interiores c- Suelo seleccionado C 95% PN, <= 30 mm. d-Garbanillo S/15 +barrigón HM-20	Releño cobertura c- Suelo seleccionado C 95% PN, <= 30 mm. e- HM-20. f-Garbanillo S/15. f-Suelo adecuado procedente excavación (c=150mm)(e=6% PN, g- Lecho muelle)	Espesor min. escoblen (m)	% Escarable con empleo puntual de martillo	% Escarable ripable con empleo de martillo	H1 tang (m)	H1-DN+12 (m)	Long (m)	Excavación Imposible (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Releño cama+riñonera (m3)	Releño cama (m3)	Releño riñonera (m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera garbanillo (m3)	Releño cama riñonera HM-20(m3)	Releño cobertura c- Suelo seleccionado C 95% PN, <= 30 mm	Releño cobertura d-Garbanillo S/15	Releño cobertura e- HM-20:	Releño cobertura f-Suelo adecuado procedente excavación (c=150mm)(e=6% PN)	Releño cobertura g- Lecho muelle (m3)	Excedente de tierra (m3) (esp. mínimo anual 0%, explotación lectura 5%)	Costa tuberías (m)	Monto escoleto a d.5m. ancho-30m (m3)
CN-T12	CN-T11	761.00	897.82	2	2.032	275	15.00	16	4.01	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.2					20%	80%	0.7	25	1.0	30.2	6.0	24.2	11.3	3.3	8.0	12.7	3.3	8.0				12.7		6.5	2.0							
CN-T12	CN-T11	762.00	898.82	2	2.032	275	15.00	16	4.04	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.5					20%	80%	0.7	25	1.0	30.5	6.1	24.4	11.3	3.3	8.0	12.9	3.3	8.0				12.9		6.5	2.0							
CN-T12	CN-T11	763.00	899.82	2	2.032	275	15.00	16	4.06	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.7					20%	80%	0.7	25	1.0	30.7	6.1	24.6	11.3	3.3	8.0	13.1	3.3	8.0				13.1		6.5	2.0							
CN-T12	CN-T11	764.00	900.82	2	2.032	275	15.00	16	4.09	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.9					20%	80%	0.7	25	1.0	30.9	6.2	24.8	11.3	3.3	8.0	13.4	3.3	8.0				13.4		6.5	2.0							
CN-T12	CN-T11	765.00	901.82	2	2.032	275	15.00	16	4.10	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.0					20%	80%	0.7	25	1.0	31.0	6.2	24.9	11.3	3.3	8.0	13.5	3.3	8.0				13.5		6.5	2.0							
CN-T12	CN-T11	766.00	902.82	2	2.032	275	15.00	16	4.11	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.1					20%	80%	0.7	25	1.0	31.1	6.2	24.9	11.3	3.3	8.0	13.5	3.3	8.0				13.5		6.5	2.0							
CN-T12	CN-T11	767.00	903.82	2	2.032	275	15.00	16	4.12	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.2					20%	80%	0.7	25	1.0	31.2	6.2	24.9	11.3	3.3	8.0	13.6	3.3	8.0				13.6		6.5	2.0							
CN-T12	CN-T11	768.00	904.82	2	2.032	275	15.00	16	4.13	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.3					20%	80%	0.7	25	1.0	31.3	6.3	25.1	11.3	3.3	8.0	13.7	3.3	8.0				13.7		6.5	2.0							
CN-T12	CN-T11	769.00	905.82	2	2.032	275	15.00	16	4.14	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.4					20%	80%	0.7	25	1.0	31.4	6.3	25.1	11.3	3.3	8.0	13.8	3.3	8.0				13.8		6.5	2.0							
CN-T12	CN-T11	770.00	906.82	2	2.032	275	15.00	16	4.13	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.3					20%	80%	0.7	25	1.0	31.3	6.3	25.1	11.3	3.3	8.0	13.7	3.3	8.0				13.7		6.5	2.0							
CN-T12	CN-T11	771.00	907.82	2	2.032	275	15.00	16	4.13	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.3					20%	80%	0.7	25	1.0	31.3	6.3	25.0	11.3	3.3	8.0	13.7	3.3	8.0				13.7		6.5	2.0							
CN-T12	CN-T11	772.00	908.82	2	2.032	275	15.00	16	4.15	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.4					20%	80%	0.7	25	1.0	31.4	6.3	25.1	11.3	3.3	8.0	13.8	3.3	8.0				13.8		6.5	2.0							
CN-T12	CN-T11	773.00	909.82	2	2.032	275	15.00	16	4.13	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.4					20%	80%	0.7	25	1.0	31.4	6.3	25.1	11.3	3.3	8.0	13.8	3.3	8.0				13.8		6.5	2.0							
CN-T12	CN-T11	774.00	910.82	2	2.032	275	15.00	16	4.10	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.1					20%	80%	0.7	25	1.0	31.1	6.2	24.8	11.3	3.3	8.0	13.5	3.3	8.0				13.5		6.5	2.0							
CN-T12	CN-T11	775.00	911.82	2	2.032	275	15.00	16	4.11	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.1					20%	80%	0.7	25	1.0	31.1	6.1	24.9	11.3	3.3	8.0	13.5	3.3	8.0				13.5		6.5	2.0							
CN-T12	CN-T11	776.00	912.82	2	2.032	275	15.00	16	4.10	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.1					20%	80%	0.7	25	1.0	31.1	6.1	24.8	11.3	3.3	8.0	13.5	3.3	8.0				13.5		6.5	2.0							
CN-T12	CN-T11	777.00	913.82	2	2.032	275	15.00	16	4.10	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.0					20%	80%	0.7	25	1.0	31.0	6.2	24.8	11.3	3.3	8.0	13.4	3.3	8.0				13.4		6.5	2.0							
CN-T12	CN-T11	778.00	914.82	2	2.032	275	15.00	16	4.10	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	31.0					20%	80%	0.7	25	1.0	31.0	6.2	24.8	11.3	3.3	8.0	13.4	3.3	8.0				13.4		6.5	2.0							
CN-T12	CN-T11	779.00	915.82	2	2.032	275	15.00	16	4.09	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.9					20%	80%	0.7	25	1.0	30.9	6.2	24.7	11.3	3.3	8.0	13.3	3.3	8.0				13.3		6.5	2.0							
CN-T12	CN-T11	780.00	916.82	2	2.032	275	15.00	16	4.08	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.9					20%	80%	0.7	25	1.0	30.9	6.2	24.7	11.3	3.3	8.0	13.3	3.3	8.0				13.3		6.5	2.0							
CN-T12	CN-T11	781.00	917.82	2	2.032	275	15.00	16	4.08	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.8					20%	80%	0.7	25	1.0	30.8	6.2	24.7	11.3	3.3	8.0	13.2	3.3	8.0				13.2		6.5	2.0							
CN-T12	CN-T11	782.00	918.82	2	2.032	275	15.00	16	4.08	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.8					20%	80%	0.7	25	1.0	30.8	6.2	24.7	11.3	3.3	8.0	13.2	3.3	8.0				13.2		6.5	2.0							
CN-T12	CN-T11	783.00	919.82	2	2.032	275	15.00	16	4.07	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.7					20%	80%	0.7	25	1.0	30.7	6.1	24.6	11.3	3.3	8.0	13.2	3.3	8.0				13.2		6.5	2.0							
CN-T12	CN-T11	784.00	920.82	2	2.032	275	15.00	16	4.07	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.7					20%	80%	0.7	25	1.0	30.7	6.1	24.6	11.3	3.3	8.0	13.1	3.3	8.0				13.1		6.5	2.0							
CN-T12	CN-T11	785.00	921.82	2	2.032	275	15.00	16	4.06	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.7					20%	80%	0.7	25	1.0	30.7	6.1	24.6	11.3	3.3	8.0	13.1	3.3	8.0				13.1		6.5	2.0							
CN-T12	CN-T11	786.00	922.82	2	2.032	275	15.00	16	4.06	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7	25	1.0	30.7					20%	80%	0.7	25	1.0	30.7	6.1	24.5	11.3	3.3	8.0	13.1	3.3	8.0				13.1		6.5	2.0							
CN-T12	CN-T11	787.00	923.82	2	2.032	275	15.00	16	4.06	0.33	21-2-2000	0.60	1.00	6.20					0.20	120	0.30	1.50	a	c	f		20%	80%	0.7																																			

[illegible]

[illegible]

Agrupación		Tramo	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN vel (mm)	Acero tipo S-	espesor asignado (mm)	PM (Time de valvula (mm)	Nº ventosas por tubería	DN ventosa (mm)	Nº válvulas de-sague	DN Descarga	Tipo de válvula	Apoyos mura tipo	Conex. DN 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre - Acero-susapar fabrica (mm)	Altura de excavación a TH (m)	Talud HW	concatenado zapia	A= separación tubo-alcid	S= Separación entre tuberías	B=Ancho interior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	ing. Apoyo	H2-Absorción cobertura minimo (m)	H3-Profundidad mínima s/ cave (m)	H4- altura de la b. borma desde fondo	Cama de apoyo a-cama natural granular o arena b-cama de hormón H=20	Relevo rñonera c- Suelo seleccionado Q 95% PN, = 30 mm. d-Garantado S/15 - chomington H=20	Relevo cobertura c- Suelo seleccionado Q 95% PN, = 30 mm. e- H=20. d-Garantado S/15 - f-Suelo adecuado precedente excavación (-150mm) 0.6% PN. g- Lono móg.	Espesor min. cobertera (m)	% Escarable con empleo puntual de martillo	% Escarable (ripable con empleo de martillo	H1 tang (m)	H1-DN=H2 (m)	Long (m)	Excavación Inaproximal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable (ripable con empleo de martillo	Relevo cama-rñonera (m3)	Relevo c-cama (m3)	Relevo rñonera c(m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo H=20(m3)	Relevo rñonera suelo seleccionado (m3)	Relevo rñonera giratorio (m3)	Relevo cama-rñonera H=20(m3)	Relevo cobertura c- Suelo seleccionado Q 95% PN, = 30 mm	Relevo cobertura d-Garantado S/15	Relevo cobertura e- H=20;	Relevo cobertura f-Suelo adecuado precedente excavación (-150mm) 0.6% PN	Relevo cobertura g- Lecho móvil (m3)	Excedente de bermas (m3) (superaporte a nivel 0%, superaporte local a 2%)	Cota tuberías (m)	Manto escalera a=45m, ancho=30m (m3)
CN-T12	CN-T11	3345.00	3481.82		2	2.032	275	14.00	16												4.51	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	34.8	34.8	34.8	11.3	3.3	8.0	17.2	3.3	8.0		17.2	6.3	2.0													
CN-T12	CN-T11	3346.00	3482.82		2	2.032	275	14.00	16												4.50	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	34.6	34.6	34.6	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0													
CN-T12	CN-T11	3347.00	3483.82		2	2.032	275	14.00	16												4.49	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	34.6	34.6	34.6	11.3	3.3	8.0	17.0	3.3	8.0		17.0	6.3	2.0													
CN-T12	CN-T11	3348.00	3484.82		2	2.032	275	14.00	16												4.50	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	34.6	34.6	34.6	11.3	3.3	8.0	17.0	3.3	8.0		17.0	6.3	2.0													
CN-T12	CN-T11	3349.00	3485.82		2	2.032	275	14.00	16												4.50	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0													
CN-T12	CN-T11	3350.00	3486.82		2	2.032	275	14.00	16												4.50	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0													
CN-T12	CN-T11	3351.00	3487.82		2	2.032	275	14.00	16												4.51	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0													
CN-T12	CN-T11	3352.00	3488.82		2	2.032	275	14.00	16												4.52	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	34.8	34.8	34.8	11.3	3.3	8.0	17.2	3.3	8.0		17.2	6.3	2.0													
CN-T12	CN-T11																																																															

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observacion	Nº tuberías s	DN ext (mm)	Acero tipo S-	espesor asignado (mm)	PN Tiempo valvula (atm)	Nº ventosas por tuberia	DN ventosa (mm)	Nº válvulas de suage	DN Descarga	Tipo de valvula	Agueta rotura tipo	Conex. DN 800 mm paso hombre (m)	Conex. DN 800 imp/paso hombre - Acero-espesor lámina (mm)	Altura de excavación ± Ht (m)	Talud HW	concreto/módulo zapla	H1-Profundidad mínima s' (cave) (m)	S _p -Separación entre tuberías	B-Achúo interior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	Ang Apoyo	Iq- Alcantarillado cobertura inferior (m)	H3-Profundidad mínima s' (cave) (m)	H4- altura de la b.orna desde fondo	Cama de apoyo acana material granular o arena b-cama de hormón H=20	Relinoflonares c-Suelo seleccionado Q 95% PN, <= 30 mm. d-Garbanillo 5/15. e-hormigón H=20	Relinoflon coberturas c-Suolo seleccionado Q 95% PN, <= 30 mm. d-Garbanillo 5/15. f-Suelo adecuado para el tráfico g-Losetas de cerámica h-Pavimento de cemento i-Módulo	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1 tang (m)	H1-DN+H2 (m)	Long (m)	Excavación irregular (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relineno cama+riñonera (m²)	Relineno cama (m²)	Relineno riñoner (m²)	Relineno cobertura (m²)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relineno riñonera suelo seleccionado (m³)	Relineno riñonera garbanillo (m³)	Relineno cama+riñonera HM-20(m³)	Relineno cobertura c-Suolo seleccionado Q 95% PN, <= 30 mm	Relineno cobertura c-Garbanillo 5/15	Relineno cobertura c-HM-20;	Relineno cobertura s-Suolo adecuado para el tráfico excavación (<-150mm Q 65% PN	Relineno cobertura g-Lecho model (m²)	Excedente de tierras (m³) (exposición aluvial 0%, exponamiento licuable 5%)	Cinta labores (m)	Mantiexcavación ±5mm ancho=30m (m²)
CN-T12	CN-T11	3.862.00	3.998.82	2	2.032	275	14.00	16	4.37	1.00	21.2-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.1	46.1	46.1	15.5	3.6	11.9	24.4	3.6	11.9	24.4	6.3	2.0																									
CN-T12	CN-T11	3.863.00	3.999.82	2	2.032	275	14.00	16	4.37	1.00	21.2-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.1	46.1	46.1	15.5	3.6	11.9	24.4	3.6	11.9	24.4	6.3	2.0																									
CN-T12	CN-T11	3.864.00	4.000.82	2	2.032	275	14.00	16	4.35	1.00	21.2-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	45.9	45.9	45.9	15.5	3.6	11.9	24.2	3.6	11.9	24.2	6.3	2.0																									
CN-T12	CN-T11	3.865.00	4.001.82	2	2.032	275	14.00	16	4.35	1.00	21.2-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.0	46.0	46.0	15.5	3.6	11.9	24.2	3.6	11.9	24.2	6.3	2.0																									
CN-T12	CN-T11	3.866.00	4.002.82	2	2.032	275	14.00	16	4.36	1.00	21.2-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.0	46.0	46.0	15.5	3.6	11.9	24.3	3.6	11.9	24.3	6.3	2.0																									
CN-T12	CN-T11	3.867.00	4.003.82	2	2.032	275	14.00	16	4.36	1.00	21.2-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.1	46.1	46.1	15.5	3.6	11.9	24.3	3.6	11.9	24.3	6.3	2.0																									
CN-T12	CN-T11	3.868.00	4.004.82	2	2.032	275	14.00	16	4.37	1.00	21.2-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.1	46.1	46.1	15.5	3.6	11.9	24.4	3.6	11.9	24.4	6.3	2.0																									
CN-T12	CN-T11	3.869.00	4.005.82	2	2.032	275	14.00	16	4.38	1.00	21.2-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.3	46.3	46.3	15.5	3.6	11.9	24.5	3.6	11.9	24.5	6.3	2.0																									
CN-T12	CN-T11	3.870.00	4.006.82	2	2.032	275	14.00	16	4.39	1.00	21.2-2000	0.60	1.00	6.20	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.5	46.5	46.5	15.5	3.6	11.9	24.7	3.6	11.9	24.7	6.3	2.0																									
CN-T12	CN-T11	3.871.00	4.007.82	2	2.032	275	14.00	16	4.40	1.00	21.2-2000	0.60	1.																																																	

Agrupación		Tramo	P.K. Tramo	P.K. Acumulado	Observación	Nº tuberías	DN ext (mm)	Acero tipo S	espesor asignado (mm)	PM Time (g) valvula (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº valvulas de suape	DN Descarga	Tipo de valvula	Agueta rotura tipo	Conex. DN 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre - Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= separación tubo-lad	S _y = Separación entre tuberías	B=Ancho interior (m)	Berna X1	Berna X2	H1=Canal apoya (m)	áng. Apoyo	Iq= Recubrimiento cobertura inferior (m)	H3=Profundidad mínima S' cave (m)	H4= altura de la b. boma desde fondo	Cama de apoyo a-cama material granular a arena b-cama de hormón H=20	Relinomorreas c= Suelo seleccionado Q 95% PH <= 30 mm. d-Garbanillo S'15. e-hormigón H=20	Relinomorreas c= Suelo seleccionado Q 95% PH <= 30 mm. d-Garbanillo S'15. e-hormigón H=20	Relinomorreas c= Suelo seleccionado Q 95% PH <= 30 mm. d-Garbanillo S'15. f-Suelo adecuado precedente excavación (<=150mm Q5% PH. g- Lecho molé	% Excavable con empleo puntual de martillo	% Excavable (apilable con empleo de martillo	H1 tang (m)	HH-DH=42 (m)	Long (m)	Excavación irregular (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable (apilable con empleo de martillo	Relineno cama+riñonera (m3)	Relineno cama (m3)	Relineno riñonera (m3)	Relineno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HH-20(m3)	Relineno riñonera suelo seleccionado (m3)	Relineno riñonera garbanillo (m3)	Relineno cama+riñonera HH-20(m3)	Relineno cobertura c= S'ulo seleccionado Q 95% PH <= 30 mm	Relineno cobertura d-Garbanillo S'15	Relineno cobertura e= HH-20	Relineno cobertura f-S'ulo adecuado precedente excavación (<=150mm Q5% PH	Relineno cobertura g= Lecho molé (m3)	Excedente de tierras (m) (esposamiento actual 0%, esposamiento licuado 5%)	Cinta labores (m)	Manto escollera e=45cm. ancho=30m (m3)
CN-T12	CN-T11	4500.00	4.636.82			2	2.032	275	14.00	16									4.16	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c			100%	0.7	25	10	31.6	31.6	31.6		11.3	3.3	8.0	14.0	3.3	8.0		14.0		6.3	2.0								
CN-T12	CN-T11	4501.00	4.637.82			2	2.032	275	14.00	16									4.15	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f		100%	0.7	25	10	31.5	31.5	31.5		11.3	3.3	8.0	13.9	3.3	8.0		13.9		6.3	2.0								
CN-T12	CN-T11	4502.00	4.638.82			2	2.032	275	14.00	16									4.14	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f		100%	0.7	25	10	31.4	31.4	31.4		11.3	3.3	8.0	13.8	3.3	8.0		13.8		6.3	2.0								
CN-T12	CN-T11	4503.00	4.639.82			2	2.032	275	14.00	16									4.14	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f		100%	0.7	25	10	31.3	31.3	31.3		11.3	3.3	8.0	13.8	3.3	8.0		13.8		6.3	2.0								
CN-T12	CN-T11	4504.00	4.640.82			2	2.032	275	14.00	16									4.13	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f		100%	0.7	25	10	31.2	31.2	31.2		11.3	3.3	8.0	13.7	3.3	8.0		13.7		6.3	2.0								
CN-T12	CN-T11	4505.00	4.641.82			2	2.032	275	14.00	16									4.12	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f		100%	0.7	25	10	31.2	31.2	31.2		11.3	3.3	8.0	13.6	3.3	8.0		13.6		6.3	2.0								
CN-T12	CN-T11	4506.00	4.642.82			2	2.032	275	14.00	16									4.14	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f		100%	0.7	25	10	31.3	31.3	31.3		11.3	3.3	8.0	13.8	3.3	8.0		13.8		6.3	2.0								
CN-T12	CN-T11	4507.00	4.643.82			2	2.032	275	14.00	16									4.15	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f		100%	0.7	25	10	31.5	31.5	31.5		11.3	3.3	8.0	13.9	3.3	8.0		13.											

[illegible]

[illegible]

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adaptado (mm)	PN (límite valedad (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto/adoquillo	A=separación tubo salud	S=separación entre tuberías	B=Archo interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recurvimiento cobertura mínimo (m)	H3-Profundidad mínima 4' cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Rebavaciones a-c: Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15, e-borrompió (M20)	Rebavaciones b-c: Suela seleccionada C/95% PN, < 30 mm. e-M20. d-Gabarrillo S15, f-suelo adecuado procedente excavación (<150mm) c/95% PN, g- Lecho mod.	Exposici. (m, escalón (n))	% Escavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	H1-DHxH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cama-riflorera (m2)	Rebello c-ama (m2)	Rebello riflorera (m2)	Rebello excavación (m2)	Cama apoyo granular (m2)	Cama apoyo (M20)(m2)	Rebello riflorera suelo seleccionado (m2)	Rebello riflorera grabado (m2)	Rebello cama-riflorera (M20)(m2)	Rebello cobertura c- Suela seleccionada C/95% PN, < 30 mm	Rebello cobertura d-Gabarrillo S15	Rebello cobertura e- H4/20	Rebello cobertura f-Suela adecuado excavación (<150mm) c/95% PN	Rebello cobertura g- Lecho mod (m2)	Excedente de tierra (m2) (consumo actual 0%, e-spojaniento vertical 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m2)
CN-T12	CN-T11	6.497.00	6.433.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.78	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	63.9	63.9	63.9	18.6	3.8	14.8	29.0	3.8		14.8		39.0	6.3	2.0											
CN-T12	CN-T11	6.498.00	6.434.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.75	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	63.4	63.4	63.4	18.6	3.8	14.8	28.5	3.8		14.8		38.5	6.3	2.0											
CN-T12	CN-T11	6.499.00	6.435.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.73	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	62.9	62.9	62.9	18.6	3.8	14.8	28.0	3.8		14.8		38.0	6.3	2.0											
CN-T12	CN-T11	6.500.00	6.436.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.69	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	62.0	62.0	62.0	18.6	3.8	14.8	27.2	3.8		14.8		37.2	6.3	2.0											
CN-T12	CN-T11	6.501.00	6.437.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.65	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	61.3	61.3	61.3	18.6	3.8	14.8	26.4	3.8		14.8		36.4	6.3	2.0											
CN-T12	CN-T11	6.502.00	6.438.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.61	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	60.5	60.5	60.5	18.6	3.8	14.8	25.6	3.8		14.8		35.6	6.3	2.0											
CN-T12	CN-T11	6.503.00	6.439.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.61	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	60.4	60.4	60.4	18.6	3.8	14.8	25.5	3.8		14.8		35.5	6.3	2.0											
CN-T12	CN-T11	6.504.00	6.440.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.60	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	60.2	60.2	60.2	18.6	3.8	14.8	25.3	3.8		14.8		35.3	6.3	2.0											
CN-T12	CN-T11	6.505.00	6.441.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.58	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	59.9	59.9	59.9	18.6	3.8	14.8	25.0	3.8		14.8		35.0	6.3	2.0											
CN-T12	CN-T11	6.506.00	6.442.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.57	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	59.6	59.6	59.6	18.6	3.8	14.8	24.9	3.8		14.8		34.9	6.3	2.0											
CN-T12	CN-T11	6.507.00	6.443.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.56	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	59.4	59.4	59.4	18.6	3.8	14.8	24.5	3.8		14.8		34.5	6.3	2.0											
CN-T12	CN-T11	6.508.00	6.444.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.54	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	59.1	59.1	59.1	18.6	3.8	14.8	24.3	3.8		14.8		34.3	6.3	2.0											
CN-T12	CN-T11	6.509.00	6.445.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.53	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	58.9	58.9	58.9	18.6	3.8	14.8	24.0	3.8		14.8		34.0	6.3	2.0											
CN-T12	CN-T11	6.510.00	6.446.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.52	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	58.6	58.6	58.6	18.6	3.8	14.8	23.8	3.8		14.8		33.8	6.3	2.0											
CN-T12	CN-T11	6.511.00	6.447.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.51	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	58.4	58.4	58.4	18.6	3.8	14.8	23.7	3.8		14.8		33.7	6.3	2.0											
CN-T12	CN-T11	6.512.00	6.448.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.49	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	58.1	58.1	58.1	18.6	3.8	14.8	23.2	3.8		14.8		33.2	6.3	2.0											
CN-T12	CN-T11	6.513.00	6.449.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.48	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	57.9	57.9	57.9	18.6	3.8	14.8	23.0	3.8		14.8		33.0	6.3	2.0											
CN-T12	CN-T11	6.514.00	6.450.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.47	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	57.6	57.6	57.6	18.6	3.8	14.8	22.7	3.8		14.8		32.7	6.3	2.0											
CN-T12	CN-T11	6.515.00	6.451.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.45	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	57.3	57.3	57.3	18.6	3.8	14.8	22.4	3.8		14.8		32.4	6.3	2.0											
CN-T12	CN-T11	6.516.00	6.452.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.44	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	57.1	57.1	57.1	18.6	3.8	14.8	22.2	3.8		14.8		32.2	6.3	2.0											
CN-T12	CN-T11	6.517.00	6.453.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.42	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	56.8	56.8	56.8	18.6	3.8	14.8	21.9	3.8		14.8		31.9	6.3	2.0											
CN-T12	CN-T11	6.518.00	6.454.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.41	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	56.5	56.5	56.5	18.6	3.8	14.8	21.6	3.8		14.8		31.6	6.3	2.0											
CN-T12	CN-T11	6.519.00	6.455.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.40	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	56.2	56.2	56.2	18.6	3.8	14.8	21.4	3.8		14.8		31.4	6.3	2.0											
CN-T12	CN-T11	6.520.00	6.456.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.38	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	56.0	56.0	56.0	18.6	3.8	14.8	21.1	3.8		14.8		31.1	6.3	2.0											
CN-T12	CN-T11	6.521.00	6.457.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.37	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	55.7	55.7	55.7	18.6	3.8	14.8	20.8	3.8		14.8		30.8	6.3	2.0											
CN-T12	CN-T11	6.522.00	6.458.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.35	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	55.4	55.4	55.4	18.6	3.8	14.8	20.5	3.8		14.8		30.5	6.3	2.0											
CN-T12	CN-T11	6.523.00	6.459.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.33	1.50	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	55.0	55.0	55.0	18.6	3.8	14.8	20.2	3.8		14.8		30.2	6.3	2.0											
CN-T12	CN-T11	6.524.00	6.460.82				2	2.032	355	14.00	25		2	2.032	355	14.00			4.31	1.50																																											

Agrupación	Tramo	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S-	espesor adoptado (mm)	PN limitaje valvuleta (dm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= separación tubo salud	S ₂ = Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang. Apoyo	H2=Recubrimiento cobertura mínimo (m)	H3=Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Carra de apoyo: a=carra material granular o arena; b=carra de hormigón HM20	Rebavaciones: c= Suela seleccionada C/95% PN, <= 30 mm; d=Garbancillo 5/15; e=bornapié HM20; f=Rebavaciones; g= Suela seleccionada C/95% PN, <= 30 mm; h= HM20; i=Garbancillo 5/15; j= Suela adecuada f/ procedimiento excavación (<=150mm) C/6% PN; q= Luchero modif.	Exposici (m, escalón (m))	% Excavable con empleo puntal de martillo	% Escavable ripable con empleo de martillo	H1=ang (m)	HH-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntal de martillo	Total excavable ripable con empleo de martillo	Relleño carra+riñonera (m3)	Relleño carra (m3)	Relleño riñonera(s)m3)	Relleño cobertura (m3)	Carra apoyo granular (m3)	Carra apoyo HM 20(m3)	Relleño riñonera suelo seleccionado (m3)	Relleño riñonera grabaciado (m3)	Relleño carra+riñonera HM-20(m3)	Relleño cobertura c= Suelo seleccionado C/95% PN, <= 30 mm	Relleño cobertura: d=Garbancillo 5/15	Relleño cobertura: e= HM20	Relleño cobertura: f= Suelo adecuado excavación (<=150mm) C/6% PN	Relleño cobertura: g= Lecho modif (m3)	Excedente de bermas (m3) (complemento a nivel 0%, e=apojamiento lateral 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho 30m (m3)
CN-T12	CN-T11	7.403,00	7.539,82				2	2.032	355	15,00	25									7,08	1,50														100%			0,7	2,5	1,0	118,9	9,5	128,4	128,4		18,6	3,8	14,8	103,5	3,8		14,8				103,5		4,3	2,0		
CN-T12	CN-T11	7.404,00	7.540,82				2	2.032	355	15,00	25									7,21	1,50															100%			0,7	2,5	1,0	122,7	10,3	133,0	133,0		18,6	3,8	14,8	108,1	3,8		14,8				108,1		4,3	2,0	
CN-T12	CN-T11	7.405,00	7.541,82			Apoyo arqueta	2	2.032	355	15,00	25									7,34	1,50															100%			0,8	2,6	1,0	126,3	126,3		19,3	4,3	15,0	100,7		4,3	15,0				100,7		4,3	2,0			
CN-T12	CN-T11	7.406,00	7.542,82			Apoyo arqueta	2	2.032	355	15,00	25									7,45	1,50															100%			0,8	2,6	1,0	129,5	129,5		19,3	4,3	15,0	104,0		4,3	15,0				104,0		4,3	2,0			
CN-T12	CN-T11	7.407,00	7.543,82			Apoyo arqueta	2	2.032	355	15,00	25									7,56	1,50															100%			0,8	2,6	1,0	132,5	132,5		19,3	4,3	15,0	107,0		4,3	15,0				107,0		4,3	2,0			
CN-T12	CN-T11	7.408,00	7.544,82			Apoyo arqueta	2	2.032	355	15,00	25									7,65	1,50															100%			0,8	2,6	1,0	135,2	135,2		19,3	4,3	15,0	109,7		4,3	15,0				109,7		4,3	2,0			
CN-T12	CN-T11	7.409,00	7.545,82			Apoyo arqueta	2	2.032	355	15,00	25									7,73	1,50															100%			0,8	2,6	1,0	137,6	137,6		19,3	4,3	15,0	112,1		4,3	15,0				112,1		4,3	2,0			
CN-T12	CN-T11	7.410,00	7.546,82	Desagüe	D20	Apoyo arqueta	2	2.032	355	15,00	25			2	100	Compuerta	N/A	3,80	5355-12,5	7,80	1,50															100%			0,8	2,6	1,0	139,7	139,7		19,3	4,3	15,0	114,2		4,3	15,0				114,2		4,3	2,0			
CN-T12	CN-T11	7.411,00	7.547,82			Apoyo arqueta	2	2.032	355	15,00	25									7,87	1,50															100%			0,8	2,6	1,0	141,6	141,6		19,3	4,3	15,0	116,0		4,3	15,0				116,0		4,3	2,0			
CN-T12	CN-T11	7.412,00	7.548,82			Apoyo arqueta	2	2.032	355	15,00	25									7,91	1,50															100%			0,8	2,6	1,0	143,0	143,0		19,3	4,3	15,0	117,5		4,3	15,0				117,5		4,3	2,0			
CN-T12	CN-T11	7.413,00	7.549,82			Apoyo arqueta	2	2.032	355	15,00	25									7,95	1,50															100%			0,8	2,6	1,0	144,2	144,2		19,3	4,3	15,0	118,6		4,3	15,0				118,6		4,3	2,0			
CN-T12	CN-T11	7.414,00	7.550,82			Apoyo arqueta	2	2.032	355	15,00	25									7,98	1,50															100%			0,8	2,6	1,0	159,4	159,4		23,9	5,6	18,3	129,2		5,6	18,3				129,2		5,6	2,0			
CN-T12	CN-T11	7.415,00	7.551,82			Apoyo arqueta	2	2.032	355	15,00	25									8,00	1,50															100%			0,8	2,6	1,0	167,9	167,9		26,4	6,4	20,1	135,2		6,4	20,1				135,2		6,4	2,0			
CN-T12	CN-T11	7.416,00	7.552,82			Transición	2	2.032	355	15,00	25									8,00	1,50						1,00	3,00	0,20	120	0,30	1,50	5,50				100%			0,7	2,5	1,0	176,1	150	191,1	191,1		28,1	6,5	21,6	156,7		6,5	21,6				156,7		6,5	2,0
CN-T12	CN-T11	7.417,00	7.553,82			Transición	2	2.032	355	15,00	25									8,00	1,50						1,00	3,00	0,20	120	0,30	1,50	5,50				100%			0,7	2,5	1,0	183,9	150	198,9	198,9		30,6	7,2	23,4	162,0		7,2	23,4				162,0		7,2	2,0
CN-T12	CN-T11	7.418,00	7.554,82			Transición	2	2.032	355	15,00	25									7,99	1,50						1,00	3,00	0,20	120	0,30	1,50	5,50				100%			0,7	2,5	1,0	191,7	150	206,7	206,7		33,1	7,9	25,2	167,3		7,9	25,2				167,3		7,9	2,0
CN-T12	CN-T11	7.419,00	7.555,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,09	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		37,8		37,8	59,8				59,8			6,3	2,0					
CN-T12	CN-T11	7.420,00	7.556,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,10	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		37,9		37,9	59,7				59,7			6,3	2,0					
CN-T12	CN-T11	7.421,00	7.557,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,10	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		37,9		37,9	59,7				59,7			6,3	2,0					
CN-T12	CN-T11	7.422,00	7.558,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,11	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		38,0		38,0	59,6				59,6			6,3	2,0					
CN-T12	CN-T11	7.423,00	7.559,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,11	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		38,1		38,1	59,6				59,6			6,3	2,0					
CN-T12	CN-T11	7.424,00	7.560,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,12	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		38,1		38,1	59,5				59,5			6,3	2,0					
CN-T12	CN-T11	7.425,00	7.561,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,12	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		38,2		38,2	59,4				59,4			6,3	2,0					
CN-T12	CN-T11	7.426,00	7.562,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,13	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		38,3		38,3	59,4				59,4			6,3	2,0					
CN-T12	CN-T11	7.427,00	7.563,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,13	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		38,3		38,3	59,3				59,3			6,3	2,0					
CN-T12	CN-T11	7.428,00	7.564,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									7,99									1,14	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		38,4		38,4	59,2				59,2			6,3	2,0					
CN-T12	CN-T11	7.429,00	7.565,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									8,00									1,14	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		38,5		38,5	59,2				59,2			6,3	2,0					
CN-T12	CN-T11	7.430,00	7.566,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									8,00									1,15	360	0,30	2,00				100%			3,4	1,0	103,9	103,9	103,9		38,5		38,5	59,1				59,1			6,3	2,0					
CN-T12	CN-T11	7.431,00	7.567,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									8,00									1,15	360	0,30	2,00				100%			3,5	1,0	103,9	103,9	103,9		38,6		38,6	59,1				59,1			6,3	2,0					
CN-T12	CN-T11	7.432,00	7.568,82	Pozo ataque		Pantalla continua en pozo	2	2.032	355	15,00	25									8,00									1,16	360	0,30	2,00				100%			3,5	1,0	103,9	103,9	103,9		38,7</																

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adaptado (mm)	PN (límite valvulera (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto/adozo	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón (M20	Rehabilitación c- Suela seleccionada C/95% PN, <= 30 mm. d- Gabardilla S15, e- boronipon (M20	Rehabilitación f- Suela seleccionada C/95% PN, <= 30 mm. e- M20. d- Gabardilla S15, f- Suela seleccionada procedente excavación (<=150mm) C/95% PN, g- Lecho mod.	Exposici (m, escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1- ang (m)	HI-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama- rñonera (m3)	Relevo cama (m3)	Relevo rñonera (m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo (M20(m3)	Relevo rñonera suelo seleccionado (m3)	Relevo rñonera grabado (m3)	Relevo cama+ rñonera (M20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d- Gabardilla S15	Relevo cobertura e- H4/20	Relevo cobertura f- Suelo seleccionado C/95% PN, <=150mm) C/95% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0%, e- porcentaje teórico 5%)	Cinta liberada (m)	Manto escollera a- 0.5m, ancho-30m (m3)
CN112	CN111	74290.00	7765.82				2	2032	355	14.00	25		2	2032	355	14.00				4.02	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	49.1	49.1	49.1	18.6	3.8	14.8	24.2	3.8			14.8			24.2	6.3	2.0									
CN112	CN111	7630.00	7766.82				2	2032	355	14.00	25		2	2032	355	14.00				3.98	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	48.4	48.4	48.4	18.6	3.8	14.8	23.5	3.8			14.8			23.5	6.3	2.0									
CN112	CN111	7631.00	7767.82				2	2032	355	14.00	25		2	2032	355	14.00				3.94	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	47.7	47.7	47.7	18.6	3.8	14.8	22.9	3.8			14.8			22.9	6.3	2.0									
CN112	CN111	7632.00	7768.82				2	2032	355	14.00	25		2	2032	355	14.00				3.91	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	47.2	47.2	47.2	18.6	3.8	14.8	22.3	3.8			14.8			22.3	6.3	2.0									
CN112	CN111	7633.00	7769.82				2	2032	355	14.00	25		2	2032	355	14.00				3.89	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.8	46.8	46.8	18.6	3.8	14.8	21.9	3.8			14.8			21.9	6.3	2.0									
CN112	CN111	7634.00	7770.82				2	2032	355	14.00	25		2	2032	355	14.00				3.87	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.4	46.4	46.4	18.6	3.8	14.8	21.6	3.8			14.8			21.6	6.3	2.0									
CN112	CN111	7635.00	7771.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.85	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	46.1	46.1	46.1	18.6	3.8	14.8	21.2			18.6			21.2	6.3	2.0										
CN112	CN111	7636.00	7772.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.83	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	45.7	45.7	45.7	18.6	3.8	14.8	20.8			18.6			20.8	6.3	2.0										
CN112	CN111	7637.00	7773.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.81	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	45.3	45.3	45.3	18.6	3.8	14.8	20.5			18.6			20.5	6.3	2.0										
CN112	CN111	7638.00	7774.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.79	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	45.0	45.0	45.0	18.6	3.8	14.8	20.1			18.6			20.1	6.3	2.0										
CN112	CN111	7639.00	7775.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.76	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	44.6	44.6	44.6	18.6	3.8	14.8	19.7			18.6			19.7	6.3	2.0										
CN112	CN111	7640.00	7776.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.74	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	44.2	44.2	44.2	18.6	3.8	14.8	19.3			18.6			19.3	6.3	2.0										
CN112	CN111	7641.00	7777.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.71	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	43.6	43.6	43.6	18.6	3.8	14.8	18.7			18.6			18.7	6.3	2.0										
CN112	CN111	7642.00	7778.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.73	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	44.0	44.0	44.0	18.6	3.8	14.8	19.1			18.6			19.1	6.3	2.0										
CN112	CN111	7643.00	7779.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.75	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	44.3	44.3	44.3	18.6	3.8	14.8	19.4			18.6			19.4	6.3	2.0										
CN112	CN111	7644.00	7780.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.78	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	44.9	44.9	44.9	18.6	3.8	14.8	20.0			18.6			20.0	6.3	2.0										
CN112	CN111	7645.00	7781.82			Acople Tierras	2	2032	355	14.00	25		2	2032	355	14.00				3.82	1.50	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	45.5	45.5	45.5	18.6	3.8	14.8	20.7			18.6			20.7	6.3	2.0										
CN112	CN111	7646.00	7782.82				2	2032	355	14.00	25		2	2032	355	14.00				3.85	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.2	46.2	46.2	18.6	3.8	14.8	21.3	3.8			14.8			21.3	6.3	2.0									
CN112	CN111	7647.00	7783.82				2	2032	355	14.00	25		2	2032	355	14.00				3.89	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	46.7	46.7	46.7	18.6	3.8	14.8	21.9	3.8			14.8			21.9	6.3	2.0									
CN112	CN111	7648.00	7784.82				2	2032	355	14.00	25		2	2032	355	14.00				3.92	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	47.4	47.4	47.4	18.6	3.8	14.8	22.5	3.8			14.8			22.5	6.3	2.0									
CN112	CN111	7649.00	7785.82				2	2032	355	14.00	25		2	2032	355	14.00				3.96	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	48.0	48.0	48.0	18.6	3.8	14.8	23.2	3.8			14.8			23.2	6.3	2.0									
CN112	CN111	7650.00	7786.82				2	2032	355	14.00	25		2	2032	355	14.00				3.99	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	48.7	48.7	48.7	18.6	3.8	14.8	23.8	3.8			14.8			23.8	6.3	2.0									
CN112	CN111	7651.00	7787.82				2	2032	355	14.00	25		2	2032	355	14.00				4.03	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	49.3	49.3	49.3	18.6	3.8	14.8	24.4	3.8			14.8			24.4	6.3	2.0									
CN112	CN111	7652.00	7788.82				2	2032	355	14.00	25		2	2032	355	14.00				4.06	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	49.9	49.9	49.9	18.6	3.8	14.8	25.1	3.8			14.8			25.1	6.3	2.0									
CN112	CN111	7653.00	7789.82				2	2032	355	14.00	25		2	2032	355	14.00				4.08	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	50.3	50.3	50.3	18.6	3.8	14.8	25.4	3.8			14.8			25.4	6.3	2.0									
CN112	CN111	7654.00	7790.82				2	2032	355	14.00	25		2	2032	355	14.00				4.07	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	50.0	50.0	50.0	18.6	3.8	14.8	25.2	3.8			14.8			25.2	6.3	2.0									
CN112	CN111	7655.00	7791.82				2	2032	355	14.00	25		2	2032	355	14.00				4.06	1.50	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	49.8	49.8	49.8	18.6	3.8	14.8	24.9	3.8			14.8			24.9	6.3	2.0									
CN112	CN111	7656.00	7792.82				2	2032	3																																																						

Agregación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adaptado (mm)	PN (limbaje valvuleta (dm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Apetura rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	HT= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	HT= altura de la boma desde fondo	Cama de apoyo: a- cama material granular o arena; b- cama de hormigón HM20	Reforzamiento: c- Suela seleccionada C/95% PN, <= 30 mm; d- Garbanillo S/15; e- hormigón HM20; f- Suela seleccionada C/95% PN, <= 30 mm; e- HM20; d- Garbanillo S/15; f- Suela seleccionada precedente excavación (<=150mm) C/95% PN; g- Luchero modif.	Exposici. m. escalón (m)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT= ang (m)	HT=DN/HT (m)	Long (m)	Excavación tapizada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama rñonera (m3)	Releño cama (m3)	Releño rñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM 20(m3)	Releño rñonera s/ suelo seleccionado (m3)	Releño rñonera grabaciolo (m3)	Releño cama+ rñonera HM-20(m3)	Releño cobertura c- S/ suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura: d-Garbanillo S/15	Releño cobertura: e- HM20	Releño cobertura: f- S/ suelo adecuado excavación (<=150mm) C/95% PN	Releño cobertura: g- Luchero modif (m3)	Excedente de tierra (m3) (consumo nivel 0%, e- porcentaje terciario 5%)	Cinta liberata (m)	Manto escollera a 0.5m, ancho 30m (m3)
CN-T12	CN-T11	8.008.00	8.144.82			Barranco	2	2.032	275	14.00	16									4.41	0.33	21.2-2000	0.60	1.00	6.20			0.20	1.20	0.30	1.50	b	e	f	100%		0.7	2.5	1.0	33.9	33.9	33.9		11.3	3.3	8.0	16.3	3.3		8.0						16.3	6.3	2.0			
CN-T12	CN-T11	8.009.00	8.145.82			Barranco	2	2.032	275	14.00	16									4.42	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	33.9	33.9	33.9		11.3	11.3	16.3	3.3		8.0				16.3	6.3	2.0						
CN-T12	CN-T11	8.010.00	8.146.82			Barranco	2	2.032	275	14.00	16									4.39	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	33.6	33.6	33.6		11.3	11.3	16.0			15.6			16.0	6.3	2.0							
CN-T12	CN-T11	8.011.00	8.147.82			Barranco	2	2.032	275	14.00	16									4.34	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	33.2	33.2	33.2		11.3	11.3	15.6			15.9			15.6	6.3	2.0							
CN-T12	CN-T11	8.012.00	8.148.82			Barranco	2	2.032	275	14.00	16									4.37	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	33.5	33.5	33.5		11.3	11.3	15.9			15.9			15.9	6.3	2.0							
CN-T12	CN-T11	8.013.00	8.149.82			Barranco	2	2.032	275	14.00	16									4.35	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	33.2	33.2	33.2		11.3	11.3	15.6			15.6			15.6	6.3	2.0							
CN-T12	CN-T11	8.014.00	8.150.82			Barranco	2	2.032	275	14.00	16									4.34	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	33.2	33.2	33.2		11.3	11.3	15.6			15.6			15.6	6.3	2.0							
CN-T12	CN-T11	8.015.00	8.151.82			Barranco	2	2.032	275	14.00	16									4.30	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	32.9	32.9	32.9		11.3	11.3	15.3			15.3			15.3	6.3	2.0							
CN-T12	CN-T11	8.016.00	8.152.82			Barranco	2	2.032	275	14.00	16									4.17	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	31.6	31.6	31.6		11.3	11.3	14.0			14.0			14.0	6.3	2.0							
CN-T12	CN-T11	8.017.00	8.153.82			Barranco	2	2.032	275	14.00	16									4.07	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	30.8	30.8	30.8		11.3	11.3	13.2			13.2			13.2	6.3	2.0							
CN-T12	CN-T11	8.018.00	8.154.82			Barranco	2	2.032	275	14.00	16									4.02	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	30.3	30.3	30.3		11.3	11.3	12.7			12.7			12.7	6.3	2.0							
CN-T12	CN-T11	8.019.00	8.155.82			Barranco	2	2.032	275	14.00	16									3.91	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.3	29.3	29.3		11.3	11.3	11.8			11.8			11.8	6.3	2.0							
CN-T12	CN-T11	8.020.00	8.156.82			Barranco	2	2.032	275	14.00	16									3.83	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	28.7	28.7	28.7		11.3	11.3	11.1			11.1			11.1	6.3	2.0							
CN-T12	CN-T11	8.021.00	8.157.82			Barranco	2	2.032	275	14.00	16									3.70	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	27.5	27.5	27.5		11.3	11.3	9.9			9.9			9.9	6.3	2.0							
CN-T12	CN-T11	8.022.00	8.158.82			Barranco	2	2.032	275	14.00	16									4.02	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	30.1	30.1	30.1		11.3	11.3	12.8			12.8			12.8	6.3	2.0							
CN-T12	CN-T11	8.023.00	8.159.82			Barranco	2	2.032	275	14.00	16									3.97	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.8	29.8	29.8		11.3	11.3	12.2			12.2			12.2	6.3	2.0							
CN-T12	CN-T11	8.024.00	8.160.82			Barranco	2	2.032	275	14.00	16									3.91	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.3	29.3	29.3		11.3	11.3	11.7			11.7			11.7	6.3	2.0							
CN-T12	CN-T11	8.025.00	8.161.82			Barranco	2	2.032	275	14.00	16									3.85	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	28.8	28.8	28.8		11.3	11.3	11.2			11.2			11.2	6.3	2.0							
CN-T12	CN-T11	8.026.00	8.162.82			Barranco	2	2.032	275	14.00	16									3.85	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	28.8	28.8	28.8		11.3	11.3	11.2			11.2			11.2	6.3	2.0							
CN-T12	CN-T11	8.027.00	8.163.82			Barranco	2	2.032	275	14.00	16									3.87	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	28.9	28.9	28.9		11.3	11.3	11.4			11.4			11.4	6.3	2.0							
CN-T12	CN-T11	8.028.00	8.164.82			Barranco	2	2.032	275	14.00	16									3.89	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.2	29.2	29.2		11.3	11.3	11.6			11.6			11.6	6.3	2.0							
CN-T12	CN-T11	8.029.00	8.165.82			Barranco	2	2.032	275	14.00	16									3.93	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.5	29.5	29.5		11.3	11.3	11.9			11.9			11.9	6.3	2.0							
CN-T12	CN-T11	8.030.00	8.166.82			Barranco	2	2.032	275	14.00	16									3.94	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.6	29.6	29.6		11.3	11.3	12.0			12.0			12.0	6.3	2.0							
CN-T12	CN-T11	8.031.00	8.167.82			Barranco	2	2.032	275	14.00	16									3.93	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.5	29.5	29.5		11.3	11.3	11.9			11.9			11.9	6.3	2.0							
CN-T12	CN-T11	8.032.00	8.168.82			Barranco	2	2.032	275	14.00	16									3.92	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.4	29.4	29.4		11.3	11.3	11.8			11.8			11.8	6.3	2.0							
CN-T12	CN-T11	8.033.00	8.169.82			Barranco	2	2.032	275	14.00	16									3.91	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.3	29.3	29.3		11.3	11.3	11.8			11.8			11.8	6.3	2.0							
CN-T12	CN-T11	8.034.00	8.170.82			Barranco	2	2.032	275	14.00	16									3.90	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.3	29.3	29.3		11.3	11.3	11.7			11.7			11.7	6.3	2.0							
CN-T12	CN-T11	8.035.00	8.171.82			Barranco	2	2.032	275	14.00	16									3.90	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.2	29.2	29.2		11.3	11.3	11.6			11.6			11.6	6.3	2.0							
CN-T12	CN-T11	8.036.00	8.172.82			Barranco	2	2.032	275	14.00	16									3.92	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%			2.5	1.0	29.4	29.4	29.4		11.3	11.3	11.8			11.8												

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto	concacido	zapa	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15, e-borrompi (M4.20	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d-Gabarrillo S15, f-suelo adecuado procedente excavación (<150mm) c/95% PN, g- Lecho mod.	Exposic (m, escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHxH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciolo (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d-Gabarrillo S15	Relevo cobertura e- H4.20	Relevo cobertura f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relevo cobertura g- Lecho modif (m3)	Excedente de tierra (m3) (consumo actual 0%, e-spojaniento vertical 5%)	Cinta liberata (m)	Manto escollera e-0.5m, ancho-30m (m3)
CN-T12	CN-T11	8.334.00	8.470.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.0	3.3	8.0						11.0	6.3	2.0									
CN-T12	CN-T11	8.335.00	8.471.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3	8.0						11.1	6.3	2.0									
CN-T12	CN-T11	8.336.00	8.472.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3	8.0						11.1	6.3	2.0									
CN-T12	CN-T11	8.337.00	8.473.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.1	3.3	8.0						11.1	6.3	2.0									
CN-T12	CN-T11	8.338.00	8.474.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.0	3.3	8.0						11.0	6.3	2.0									
CN-T12	CN-T11	8.339.00	8.475.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.0	3.3	8.0						11.0	6.3	2.0									
CN-T12	CN-T11	8.340.00	8.476.82				2	2.032	275	14.00	16									3.82	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.0	3.3	8.0						11.0	6.3	2.0									
CN-T12	CN-T11	8.341.00	8.477.82				2	2.032	275	14.00	16									3.82	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	11.0	3.3	8.0						11.0	6.3	2.0									
CN-T12	CN-T11	8.342.00	8.478.82				2	2.032	275	14.00	16									3.82	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.343.00	8.479.82				2	2.032	275	14.00	16									3.82	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.344.00	8.480.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.345.00	8.481.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.346.00	8.482.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.347.00	8.483.82				2	2.032	275	14.00	16									3.80	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3	8.0						10.8	6.3	2.0									
CN-T12	CN-T11	8.348.00	8.484.82				2	2.032	275	14.00	16									3.80	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3	8.0						10.8	6.3	2.0									
CN-T12	CN-T11	8.349.00	8.485.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3	8.0						10.8	6.3	2.0									
CN-T12	CN-T11	8.350.00	8.486.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.351.00	8.487.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.352.00	8.488.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.353.00	8.489.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.354.00	8.490.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.355.00	8.491.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.356.00	8.492.82				2	2.032	275	14.00	16									3.80	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.9	3.3	8.0						10.9	6.3	2.0									
CN-T12	CN-T11	8.357.00	8.493.82				2	2.032	275	14.00	16									3.80	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3	8.0						10.8	6.3	2.0									
CN-T12	CN-T11	8.358.00	8.494.82				2	2.032	275	14.00	16									3.80	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3	8.0						10.8	6.3	2.0									
CN-T12	CN-T11	8.359.00	8.495.82				2	2.032	275	14.00	16									3.79	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.3	28.3	28.3	11.3	3.3	8.0	10.7	3.3	8.0						10.7	6.3	2.0									
CN-T12	CN-T11	8.360.00	8.496.82				2	2.032	275	14.00	16									3.79	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.3	28.3	28.3	11.3	3.3	8.0	10.7	3.3	8.0						10.7	6.3	2.0									
CN-T12	CN-T11	8.361.00	8.497.82				2	2.032	275	14.00	16									3.79	0.33	21.2-2.000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.3	28.3	28.3	11.3																						

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valedad (atm)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto/adozo	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón HM-20	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d- Garbanillo S/15, < homopon HM-20	Reforzamiento e- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d- Garbanillo S/15, f- Suela adecuada procedente excavación (<150mm) C/95% PN, g- Luchero mod.	Exposic (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	HD-H4Hz (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama- rñonera (m³)	Relevo c-ama (m³)	Relevo rñonera es(m³)	Relevo cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relevo rñonera suelo seleccionado (m³)	Relevo rñonera grabado (m³)	Relevo cama- rñonera HM-20(m³)	Relevo cobertura c- Suela seleccionada C/95% PN, < 30 mm	Relevo cobertura d-Garbanillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f- Suela adecuada con excavación (<150mm) C/95% PN	Relevo cobertura g- Luchero mod (m³)	Excedente de tierra (m³) (consumo actual 0%, espolvoreo 5%)	Cinta liberada (m)	Manto escollera a- 0.5m, ancho-30m (m³)
CN-12	CN-11	8.593.00	8.729.82				2	2.032	275	14.00	16									3.80	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3		8.0						10.8	6.3	2.0						
CN-12	CN-11	8.594.00	8.730.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3		8.0					10.8	6.3	2.0							
CN-12	CN-11	8.595.00	8.731.82				2	2.032	275	14.00	16									3.82	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3		8.0					10.9	6.3	2.0							
CN-12	CN-11	8.596.00	8.732.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.0	3.3		8.0					11.0	6.3	2.0							
CN-12	CN-11	8.597.00	8.733.82				2	2.032	275	14.00	16									3.84	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3		8.0					11.1	6.3	2.0							
CN-12	CN-11	8.598.00	8.734.82				2	2.032	275	14.00	16									3.85	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.8	28.8	28.8	11.3	3.3	8.0	11.2	3.3		8.0					11.2	6.3	2.0							
CN-12	CN-11	8.599.00	8.735.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3		8.0					11.3	6.3	2.0							
CN-12	CN-11	8.600.00	8.736.82				2	2.032	275	14.00	16									3.87	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.0	29.0	29.0	11.3	3.3	8.0	11.4	3.3		8.0					11.4	6.3	2.0							
CN-12	CN-11	8.601.00	8.737.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0					11.5	6.3	2.0							
CN-12	CN-11	8.602.00	8.738.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0					11.5	6.3	2.0							
CN-12	CN-11	8.603.00	8.739.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0					11.5	6.3	2.0							
CN-12	CN-11	8.604.00	8.740.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.7	3.3		8.0					11.7	6.3	2.0							
CN-12	CN-11	8.605.00	8.741.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0					11.7	6.3	2.0							
CN-12	CN-11	8.606.00	8.742.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.8	3.3		8.0					11.8	6.3	2.0							
CN-12	CN-11	8.607.00	8.743.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0					11.7	6.3	2.0							
CN-12	CN-11	8.608.00	8.744.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0					11.7	6.3	2.0							
CN-12	CN-11	8.609.00	8.745.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0					11.7	6.3	2.0							
CN-12	CN-11	8.610.00	8.746.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0					11.7	6.3	2.0							
CN-12	CN-11	8.611.00	8.747.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0					11.7	6.3	2.0							
CN-12	CN-11	8.612.00	8.748.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0					11.7	6.3	2.0							
CN-12	CN-11	8.613.00	8.749.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0					11.7	6.3	2.0							
CN-12	CN-11	8.614.00	8.750.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3		8.0					11.6	6.3	2.0							
CN-12	CN-11	8.615.00	8.751.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3		8.0					11.6	6.3	2.0							
CN-12	CN-11	8.616.00	8.752.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	a	11.3	3.3	8.0	11.6	3.3		8.0					11.6	6.3	2.0						
CN-12	CN-11	8.617.00	8.753.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0					11.5	6.3	2.0							
CN-12	CN-11	8.618.00	8.754.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0					11.5	6.3	2.0							
CN-12	CN-11	8.619.00	8.755.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0					11.5	6.3	2.0							
CN-12	CN-11	8.620.00	8.756.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3		8														

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Arguta	Observacion	Nº tuberías s	DN vert (mm)	Acero tipo S-	espesor asignado (mm)	PM Tiempo g/a valvulera (min)	Nº ventosas por tubería	DN ventosa (mm)	Nº válvulas de sugie	DN Descarga	Tipo de válvula	Agueta mura tipo	Conex. DN 800 mm paso hombre (m)	Conex. DN 800 mmplazo hombre - Acero-espor-lacunt (mm)		Altura de excavación ± Hn (m)	Talud HW	concalizado zapia	A- separación tubo-lad	S _y -Separación entre tuberías	B-Achto interior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	arg Apoyo	Iq- Alcomiento cobertura inferior (m)	H3-Profundidad mínima s' cave (m)	H4- altura de la boma disco todo	Cama de apoyo -a-cama material granular o arena -b-cama de hormon HM-20	Relinco/nomera c- Sueto seleccionado Q 95% PN, <= 30 mm. d-Garabito S/15 - e-hormigon IM-20	Relinco/cobertura c- Sueto seleccionado Q 95% PN, <= 30 mm. e-HM-20 d-Garabito S/15 f-Sueto adecuado procedente excavación (-15form 0.6% PH, g- Lecho modf.	% Excavable con empleo puntual de martillo	% Excavable íptible con empleo de martillo	H1 tang (m)	HH-DH+2 (m)	Long (m)	Excavación irregular (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable íptible con empleo de martillo	Relinco cama-riflorera (m²)	Relinco cama (m²)	Relinco rlfiorer(m²)	Relinco cobertura (m²)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relinco riflorera suelo selecionado (m³)	Relinco riflorera garbancito (m³)	Relinco cama+riflorera HH-20(m³)	Relinco cobertura c- Sueto seleccionado Q 95% PN, <= 30 mm	Relinco cobertura c-Garbancilo S/15	Relinco cobertura c- HM-20;	Relinco cobertura f-Sueto adecuado procedente excavación (-15form 0.6% PN	Relinco cobertura g- Lecho modif (m³)	Excedente de terras (m³) (exposimieno alveal 0%, esponjamiento licante 5%)	Cinta labores (m)	Manto escollera e-4.5m ancho-3cm (m³)
CN-T12	CN-T11	8723.00	8859.82				2	2032	275	14.00	16										3.79	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.3	28.3	28.3	11.3	3.3	8.0	10.7	3.3	8.0		10.7	6.3	2.0												
CN-T12	CN-T11	8724.00	8860.82				2	2032	275	14.00	16										3.80	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3	8.0		10.8	6.3	2.0												
CN-T12	CN-T11	8725.00	8861.82				2	2032	275	14.00	16										3.82	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0		10.9	6.3	2.0												
CN-T12	CN-T11	8726.00	8862.82				2	2032	275	14.00	16										3.83	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.1	3.3	8.0		11.1	6.3	2.0												
CN-T12	CN-T11	8727.00	8863.82				2	2032	275	14.00	16										3.84	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.2	3.3	8.0		11.2	6.3	2.0												
CN-T12	CN-T11	8728.00	8864.82				2	2032	275	14.00	16										3.85	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.8	28.8	28.8	11.3	3.3	8.0	11.2	3.3	8.0		11.2	6.3	2.0												
CN-T12	CN-T11	8729.00	8865.82				2	2032	275	14.00	16										3.85	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.8	28.8	28.8	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	8730.00	8866.82				2	2032	275	14.00	16										3.85	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.8	28.8	28.8	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	8731.00	8867.82				2	2032	275	14.00	16										3.84	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3	8.0		11.1	6.3	2.0												
CN-T12	CN-T11	8732.00	8868.82				2	2032	275	14.00	16										3.83	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3	8.0		11.1	6.3	2.0												
CN-T12	CN-T11	8733.00	8869.82				2	2032	275	14.00	16										3.84	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3	8.0		11.1	6.3	2.0												
CN-T12	CN-T11	8734.00	8870.82				2	2032	275	14.00	16										3.84	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3	8.0		11.1	6.3	2.0												
CN-T12	CN-T11	8735.00	8871.82				2	2032	275	14.00	16										3.83	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.0	3.3	8.0		11.0	6.3	2.0												
CN-T12	CN-T11	8736.00	8872.82				2	2032	275	14.00	16										3.80	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3	8.0		10.8	6.3	2.0												
CN-T12	CN-T11	8737.00	8873.82				2	2032	275	14.00	16										3.78	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.2	28.2	28.2	11.3	3.3	8.0	10.6	3.3	8.0		10.6	6.3	2.0												
CN-T12	CN-T11	8738.00	8874.82				2	2032	275	14.00	16										3.76	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.0	28.0	28.0	11.3	3.3	8.0	10.4	3.3	8.0		10.4	6.3	2.0												
CN-T12	CN-T11	8739.00	8875.82				2	2032	275	14.00	16										3.73	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	27.8	27.8	27.8	11.3	3.3	8.0	10.2	3.3	8.0		10.2	6.3	2.0												
CN-T12	CN-T11	8739.50	8876.32				2	2032	275	14.00	16										3.72	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	0.5	13.9	13.9	5.7	1.6	4.0	5.1	1.6	4.0		5.1	3.1	1.0													
CN-T12	CN-T11	8740.00	8876.82				2	2032	275	14.00	16										3.72	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	0.5	13.8	13.8	5.7	1.6	4.0	5.0	1.6	4.0		5.0	3.1	1.0													
CN-T12	CN-T11	8741.00	8877.82				2	2032	275	14.00	16										3.75	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	27.9	27.9	27.9	11.3	3.3	8.0	10.3	3.3	8.0		10.3	6.3	2.0												
CN-T12	CN-T11	8742.00	8878.82				2	2032	275	14.00	16										3.79	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.3	28.3	28.3	11.3	3.3	8.0	10.7	3.3	8.0		10.7	6.3	2.0												
CN-T12	CN-T11	8743.00	8879.82				2	2032	275	14.00	16										3.83	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.0	3.3	8.0		11.0	6.3	2.0												
CN-T12	CN-T11	8744.00	8880.82				2	2032	275	14.00	16										3.86	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.4	3.3	8.0		11.4	6.3	2.0												
CN-T12	CN-T11	8745.00	8881.82				2	2032	275	14.00	16										3.91	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	29.4	29.4	29.4	11.3	3.3	8.0	11.8	3.3	8.0		11.8	6.3	2.0												
CN-T12	CN-T11	8746.00	8882.82				2	2032	275	14.00	16										3.95	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3	8.0		12.1	6.3	2.0												
CN-T12	CN-T11	8747.00	8883.82				2	2032	275	14.00	16										4.00	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	30.1	30.1	30.1	11.3	3.3	8.0	12.5	3.3	8.0		12.5	6.3	2.0												
CN-T12	CN-T11	8748.00	8884.82				2	2032	275	14.00	16										4.02	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	30.3	30.3	30.3	11.3	3.3	8.0	12.7	3.3	8.0		12.7	6.3	2.0												
CN-T12	CN-T11	8749.00	8885.82				2	2032	275	14.00	16										4.04	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	30.5	30.5	30.5	11.3	3.3	8.0	12.9	3.3	8.0		12.9	6.3	2.0												
CN-T12	CN-T11	8750.00	8886.82				2	2032	275	14.00	16										4.05	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	30.6	30.6	30.6	11.3	3.3	8.0	13.0	3.3	8.0		13.0	6.3	2.0												
CN-T12	CN-T11	8751.00	8887.82				2	2032	275	14.00	16										4.06	0.33	21.2-2000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	25	1.0	30.7	30.7	30.7	11.3	3.3																				

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (mm)	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto en zapila	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15. e-borrompió HM-20	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S15. f-Suela adecuada procedente excavación (<150mm) c/95% PN. g- Luchero mod.	Exposic (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	H1-DHxH2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama-riñones (m³)	Relevo c-ama (m³)	Relevo riñones es(m)	Relevo cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relevo riñones a suelo seleccionado (m³)	Relevo riñones grabaciolo (m³)	Relevo cama-riñones HM-20(m³)	Relevo cobertura c- Suela seleccionada C/95% PN, < 30 mm	Relevo cobertura. d-Gabarrillo S15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suela adecuada excavación (<150mm) c/95% PN	Relevo cobertura. g- Luchero mod (m³)	Excedente de tierra (m³) (consumo actual 0%, e-spojaniento terciario 5%)	Cinta liberata (m)	Manto escollera a 0.5m. ancho-30m (m³)
CN-12	CN-11	9 229.00	9 365.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.40	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7	11.3	3.3	8.0	16.2	3.3		8.0			16.2	6.3	2.0										
CN-12	CN-11	9 230.00	9 366.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.22	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.1	32.1	32.1	11.3	3.3	8.0	15.5	3.3		8.0			14.5	6.3	2.0										
CN-12	CN-11	9 231.00	9 367.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.13	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.3	31.3	31.3	11.3	3.3	8.0	13.7	3.3		8.0			13.7	6.3	2.0										
CN-12	CN-11	9 232.00	9 368.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.14	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.3	31.3	31.3	11.3	3.3	8.0	13.8	3.3		8.0			13.8	6.3	2.0										
CN-12	CN-11	9 233.00	9 369.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.14	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.3	31.3	31.3	11.3	3.3	8.0	13.8	3.3		8.0			13.8	6.3	2.0										
CN-12	CN-11	9 234.00	9 370.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.15	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.5	31.5	31.5	11.3	3.3	8.0	13.9	3.3		8.0			13.9	6.3	2.0										
CN-12	CN-11	9 235.00	9 371.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.15	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.5	31.5	31.5	11.3	3.3	8.0	13.9	3.3		8.0			13.9	6.3	2.0										
CN-12	CN-11	9 236.00	9 372.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.15	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.5	31.5	31.5	11.3	3.3	8.0	13.9	3.3		8.0			13.9	6.3	2.0										
CN-12	CN-11	9 237.00	9 373.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.15	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.4	31.4	31.4	11.3	3.3	8.0	13.9	3.3		8.0			13.9	6.3	2.0										
CN-12	CN-11	9 238.00	9 374.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.16	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.6	31.6	31.6	11.3	3.3	8.0	14.0	3.3		8.0			14.0	6.3	2.0										
CN-12	CN-11	9 239.00	9 375.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.16	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.6	31.6	31.6	11.3	3.3	8.0	14.0	3.3		8.0			14.0	6.3	2.0										
CN-12	CN-11	9 240.00	9 376.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.18	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.7	31.7	31.7	11.3	3.3	8.0	14.1	3.3		8.0			14.1	6.3	2.0										
CN-12	CN-11	9 241.00	9 377.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.19	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.8	31.8	31.8	11.3	3.3	8.0	14.2	3.3		8.0			14.2	6.3	2.0										
CN-12	CN-11	9 242.00	9 378.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.21	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.0	32.0	32.0	11.3	3.3	8.0	14.4	3.3		8.0			14.4	6.3	2.0										
CN-12	CN-11	9 243.00	9 379.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.23	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.2	32.2	32.2	11.3	3.3	8.0	14.6	3.3		8.0			14.6	6.3	2.0										
CN-12	CN-11	9 244.00	9 380.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.25	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.4	32.4	32.4	11.3	3.3	8.0	14.8	3.3		8.0			14.8	6.3	2.0										
CN-12	CN-11	9 245.00	9 381.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.24	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.2	32.2	32.2	11.3	3.3	8.0	14.7	3.3		8.0			14.7	6.3	2.0										
CN-12	CN-11	9 246.00	9 382.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.26	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.4	32.4	32.4	11.3	3.3	8.0	14.9	3.3		8.0			14.9	6.3	2.0										
CN-12	CN-11	9 247.00	9 383.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.30	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.8	32.8	32.8	11.3	3.3	8.0	15.2	3.3		8.0			15.2	6.3	2.0										
CN-12	CN-11	9 248.00	9 384.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.35	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.3	33.3	33.3	11.3	3.3	8.0	15.7	3.3		8.0			15.7	6.3	2.0										
CN-12	CN-11	9 249.00	9 385.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.40	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7	11.3	3.3	8.0	16.1	3.3		8.0			16.1	6.3	2.0										
CN-12	CN-11	9 249.50	9 386.32				2	2.032	275	14.00	16		2	2.032	275	14.00				4.42	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	0.5	17.0	17.0	17.0	5.7	1.6	4.0	8.2	1.6		4.0			8.2	3.1	1.0										
CN-12	CN-11	9 250.00	9 386.82				2	2.032	275	14.00	16		2	2.032	275	14.00				4.44	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	0.5	17.1	17.1	17.1	5.7	1.6	4.0	8.3	1.6		4.0			8.3	3.1	1.0										
CN-12	CN-11	9 251.00	9 387.82			Azarbe Escomedero	2	2.032	275	14.00	16		2	2.032	275	14.00				4.52	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	34.9	34.9	34.9	11.3	3.3	8.0	17.3	3.3		11.3			17.3	6.3	2.0										
CN-12	CN-11	9 252.00	9 388.82			Azarbe Escomedero	2	2.032	275	14.00	16		2	2.032	275	14.00				4.53	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	34.9	34.9	34.9	11.3	3.3	8.0	17.3	3.3		11.3			17.3	6.3	2.0										
CN-12	CN-11	9 253.00	9 389.82			Azarbe Escomedero	2	2.032	275	14.00	16		2	2.032	275	14.00				4.45	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	34.2	34.2	34.2	11.3	3.3	8.0	16.6	3.3		11.3			16.6	6.3	2.0										
CN-12	CN-11	9 254.00	9 390.82			Azarbe Escomedero	2	2.032	275	14.00	16		2	2.032	275	14.00				4.37	0.33	26.2-2000	0.60	1.00	6.20			0.20	360	0.30	1.50	b	e	f	100%	0.7	2.5	1.0	33.5	33.5	33.5	11.3	3.3	8.0	15.9	3.3		11.3			15.9	6.3	2.0										
CN-12	CN-11	9 255.00	9 391.82			Azarbe Escomedero	2	2.032	275	14.00	16		2	2.032	275	14.00				4.50	0.33	26.2-20																																									

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (limbaje valvulera (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto	concavitado zapla	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rehabilitación a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15, e-borrompió HM-20	Rehabilitación b-c: Suela seleccionada C/95% PN, < 30 mm. e-HM-20. d-Garbanillo S/15, f-suelo adecuado procedente excavación (<150mm) c/95% PN, g- Lecho mod.	Exposor (m, escalón (n)	% Escavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	HD=HDH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñones (m3)	Relevo c-ama (m3)	Relevo riñones es(m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñones+ suelo seleccionado (m3)	Relevo riñones grabanillo (m3)	Relevo cama+riñones HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d-Garbanillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierras (m3) (consumo actual 0%, e-spojaniento 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
CN-T12	CN-T11	9733.00	9869.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.23	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	41.5	41.5	41.5	11.3	3.3	8.0	23.9	3.3		8.0			23.9		6.3	2.0									
CN-T12	CN-T11	9734.00	9870.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.23	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	41.6	41.6	41.6	11.3	3.3	8.0	24.0	3.3		8.0			24.0		6.3	2.0									
CN-T12	CN-T11	9735.00	9871.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.24	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	41.6	41.6	41.6	11.3	3.3	8.0	24.1	3.3		8.0			24.1		6.3	2.0									
CN-T12	CN-T11	9736.00	9872.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.25	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	41.8	41.8	41.8	11.3	3.3	8.0	24.2	3.3		8.0			24.2		6.3	2.0									
CN-T12	CN-T11	9737.00	9873.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.27	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	41.9	41.9	41.9	11.3	3.3	8.0	24.4	3.3		8.0			24.4		6.3	2.0									
CN-T12	CN-T11	9738.00	9874.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.28	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.1	42.1	42.1	11.3	3.3	8.0	24.5	3.3		8.0			24.5		6.3	2.0									
CN-T12	CN-T11	9739.00	9875.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.2	42.2	42.2	11.3	3.3	8.0	24.6	3.3		8.0			24.6		6.3	2.0									
CN-T12	CN-T11	9740.00	9876.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.31	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.3	42.3	42.3	11.3	3.3	8.0	24.7	3.3		8.0			24.7		6.3	2.0									
CN-T12	CN-T11	9741.00	9877.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.32	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.4	42.4	42.4	11.3	3.3	8.0	24.9	3.3		8.0			24.9		6.3	2.0									
CN-T12	CN-T11	9742.00	9878.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.34	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.6	42.6	42.6	11.3	3.3	8.0	25.0	3.3		8.0			25.0		6.3	2.0									
CN-T12	CN-T11	9743.00	9879.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.35	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.7	42.7	42.7	11.3	3.3	8.0	25.1	3.3		8.0			25.1		6.3	2.0									
CN-T12	CN-T11	9744.00	9880.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.36	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.8	42.8	42.8	11.3	3.3	8.0	25.2	3.3		8.0			25.2		6.3	2.0									
CN-T12	CN-T11	9745.00	9881.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.36	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.8	42.8	42.8	11.3	3.3	8.0	25.2	3.3		8.0			25.2		6.3	2.0									
CN-T12	CN-T11	9746.00	9882.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.36	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.8	42.8	42.8	11.3	3.3	8.0	25.2	3.3		8.0			25.2		6.3	2.0									
CN-T12	CN-T11	9747.00	9883.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.36	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.8	42.8	42.8	11.3	3.3	8.0	25.2	3.3		8.0			25.2		6.3	2.0									
CN-T12	CN-T11	9748.00	9884.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.35	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.7	42.7	42.7	11.3	3.3	8.0	25.1	3.3		8.0			25.1		6.3	2.0									
CN-T12	CN-T11	9749.00	9885.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.33	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.6	42.6	42.6	11.3	3.3	8.0	25.0	3.3		8.0			25.0		6.3	2.0									
CN-T12	CN-T11	9750.00	9886.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.32	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.4	42.4	42.4	11.3	3.3	8.0	24.8	3.3		8.0			24.8		6.3	2.0									
CN-T12	CN-T11	9751.00	9887.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.31	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.6	42.6	42.6	11.3	3.3	8.0	24.7	3.3		8.0			24.7		6.3	2.0									
CN-T12	CN-T11	9752.00	9888.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.29	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.1	42.1	42.1	11.3	3.3	8.0	24.5	3.3		8.0			24.5		6.3	2.0									
CN-T12	CN-T11	9753.00	9889.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.26	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	41.8	41.8	41.8	11.3	3.3	8.0	24.3	3.3		8.0			24.3		6.3	2.0									
CN-T12	CN-T11	9754.00	9890.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.23	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	41.6	41.6	41.6	11.3	3.3	8.0	24.0	3.3		8.0			24.0		6.3	2.0									
CN-T12	CN-T11	9755.00	9891.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.21	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	41.3	41.3	41.3	11.3	3.3	8.0	23.7	3.3		8.0			23.7		6.3	2.0									
CN-T12	CN-T11	9756.00	9892.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.18	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	41.1	41.1	41.1	a	11.3	3.3	8.0	23.5	3.3		8.0			23.5		6.3	2.0								
CN-T12	CN-T11	9757.00	9893.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.16	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	40.9	40.9	40.9	11.3	3.3	8.0	23.3	3.3		8.0			23.3		6.3	2.0									
CN-T12	CN-T11	9758.00	9894.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.13	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	40.6	40.6	40.6	11.3	3.3	8.0	23.0	3.3		8.0			23.0		6.3	2.0									
CN-T12	CN-T11	9759.00	9895.82				2	2.032	275	14.00	16		2	2.032	275	14.00				5.11	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	40.4	40.4	40.4	11.3	3.3	8.0	22.8	3.3		8.0			22.8		6.3	2.0									
CN-T12	CN-T11	9760.00	9896																																																													

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN limitaje valvuleta (dm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM20	Reforzamiento c- Suela seleccionada C/95% PN, <= 30 mm. d-Gabarrillo S/15, e-borrompi HM20	Reforzamiento f- Suela seleccionada C/95% PN, <= 30 mm. e- HM20. d-Gabarrillo S/15, f-suela adecuada procedente excavación (<=150mm) c/95% PN, g- Lecho mod.	Exposici. mts. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (n)	HD=HDH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c arena (m3)	Releño riñonera(s)m3	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM 20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera grabado (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura d-Gabarrillo S/15	Releño cobertura e- HM20	Releño cobertura f-Suelo adecuado excavación (<=150mm) c/95% PN	Releño cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (compensando nivel 0%, espolvoreando 5%)	Cinta liberada (m3)	Manto escollera a=0.5m, ancho=30m (m3)
CN-T12	CN-T11	10.120.00	10.256.82				2	2.032	275	14.00	16									4.70	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	36.5	36.5	36.5	11.3	3.3	8.0	18.9	3.3	8.0		18.9	6.3	2.0											
CN-T12	CN-T11	10.121.00	10.257.82				2	2.032	275	14.00	16									4.69	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	36.4	36.4	36.4	11.3	3.3	8.0	18.9	3.3	8.0		18.9	6.3	2.0											
CN-T12	CN-T11	10.122.00	10.258.82				2	2.032	275	14.00	16									4.68	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	36.4	36.4	36.4	11.3	3.3	8.0	18.8	3.3	8.0		18.8	6.3	2.0											
CN-T12	CN-T11	10.123.00	10.259.82				2	2.032	275	14.00	16									4.67	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	36.3	36.3	36.3	11.3	3.3	8.0	18.7	3.3	8.0		18.7	6.3	2.0											
CN-T12	CN-T11	10.124.00	10.260.82				2	2.032	275	14.00	16									4.67	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	36.2	36.2	36.2	11.3	3.3	8.0	18.6	3.3	8.0		18.6	6.3	2.0											
CN-T12	CN-T11	10.125.00	10.261.82				2	2.032	275	14.00	16									4.66	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	36.1	36.1	36.1	11.3	3.3	8.0	18.5	3.3	8.0		18.5	6.3	2.0											
CN-T12	CN-T11	10.126.00	10.262.82				2	2.032	275	14.00	16									4.65	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	36.0	36.0	36.0	11.3	3.3	8.0	18.4	3.3	8.0		18.4	6.3	2.0											
CN-T12	CN-T11	10.127.00	10.263.82				2	2.032	275	14.00	16									4.64	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	36.0	36.0	36.0	11.3	3.3	8.0	18.4	3.3	8.0		18.4	6.3	2.0											
CN-T12	CN-T11	10.128.00	10.264.82				2	2.032	275	14.00	16									4.63	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.9	35.9	35.9	11.3	3.3	8.0	18.3	3.3	8.0		18.3	6.3	2.0											
CN-T12	CN-T11	10.129.00	10.265.82				2	2.032	275	14.00	16									4.63	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.8	35.8	35.8	11.3	3.3	8.0	18.2	3.3	8.0		18.2	6.3	2.0											
CN-T12	CN-T11	10.130.00	10.266.82				2	2.032	275	14.00	16									4.62	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.7	35.7	35.7	11.3	3.3	8.0	18.2	3.3	8.0		18.2	6.3	2.0											
CN-T12	CN-T11	10.131.00	10.267.82				2	2.032	275	14.00	16									4.61	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.7	35.7	35.7	11.3	3.3	8.0	18.1	3.3	8.0		18.1	6.3	2.0											
CN-T12	CN-T11	10.132.00	10.268.82				2	2.032	275	14.00	16									4.61	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.6	35.6	35.6	11.3	3.3	8.0	18.0	3.3	8.0		18.0	6.3	2.0											
CN-T12	CN-T11	10.133.00	10.269.82				2	2.032	275	14.00	16									4.60	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.5	35.5	35.5	11.3	3.3	8.0	18.0	3.3	8.0		18.0	6.3	2.0											
CN-T12	CN-T11	10.134.00	10.270.82				2	2.032	275	14.00	16									4.59	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.4	35.4	35.4	11.3	3.3	8.0	17.9	3.3	8.0		17.9	6.3	2.0											
CN-T12	CN-T11	10.135.00	10.271.82				2	2.032	275	14.00	16									4.57	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.3	35.3	35.3	11.3	3.3	8.0	17.7	3.3	8.0		17.7	6.3	2.0											
CN-T12	CN-T11	10.136.00	10.272.82				2	2.032	275	14.00	16									4.56	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.2	35.2	35.2	11.3	3.3	8.0	17.6	3.3	8.0		17.6	6.3	2.0											
CN-T12	CN-T11	10.137.00	10.273.82				2	2.032	275	14.00	16									4.55	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.1	35.1	35.1	11.3	3.3	8.0	17.5	3.3	8.0		17.5	6.3	2.0											
CN-T12	CN-T11	10.138.00	10.274.82				2	2.032	275	14.00	16									4.54	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	10.139.00	10.275.82				2	2.032	275	14.00	16									4.53	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	34.9	34.9	34.9	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	10.140.00	10.276.82				2	2.032	275	14.00	16									4.52	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	34.8	34.8	34.8	11.3	3.3	8.0	17.3	3.3	8.0		17.3	6.3	2.0											
CN-T12	CN-T11	10.141.00	10.277.82				2	2.032	275	14.00	16									4.51	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.2	3.3	8.0		17.2	6.3	2.0											
CN-T12	CN-T11	10.142.00	10.278.82				2	2.032	275	14.00	16									4.49	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	34.6	34.6	34.6	11.3	3.3	8.0	17.0	3.3	8.0		17.0	6.3	2.0											
CN-T12	CN-T11	10.143.00	10.279.82				2	2.032	275	14.00	16									4.48	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	34.4	34.4	34.4	a	11.3	3.3	8.0	16.9	3.3	8.0		16.9	6.3	2.0										
CN-T12	CN-T11	10.144.00	10.280.82				2	2.032	275	14.00	16									4.46	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	34.3	34.3	34.3	11.3	3.3	8.0	16.7	3.3	8.0		16.7	6.3	2.0											
CN-T12	CN-T11	10.145.00	10.281.82				2	2.032	275	14.00	16									4.44	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	34.1	34.1	34.1	11.3	3.3	8.0	16.5	3.3	8.0		16.5	6.3	2.0											
CN-T12	CN-T11	10.146.00	10.282.82				2	2.032	275	14.00	16									4.42	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.9	33.9	33.9	11.3	3.3	8.0	16.4	3.3	8.0		16.4	6.3	2.0											
CN-T12	CN-T11	10.147.00	10.283.82				2	2.032	275	14.00	16									4.40	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.8	33.8	33.8	11.3	3.3	8.0	16.2	3.3	8.0		16.2	6.3	2.0											
CN-T12	CN-T11	10.148.00	10.284.82				2	2.032	275	14.00	16									4.38	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c																													

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concrecionado zapala	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón (M4.20	Rehabilitación c- Suela seleccionada C/95% PN, <= 30 mm. d- Garbanillo S/15, <borrompió (M4.20	Rehabilitación e- Suela seleccionada C/95% PN, <= 30 mm. e- M4.20. f- Garbanillo S/15, f- Suela adecuada procedente excavación (<150mm) c/95% PN, g- Luchero mod.	Exposor (m, escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	HN-DHxH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera garbanillo (m3)	Relleno cama+riñonera (M4.20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Reelleno cobertura. d-Garbanillo S/15	Reelleno cobertura. e- H4.20;	Reelleno cobertura. f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Reelleno cobertura. g- Luchero modif (m3)	Excedente de tierras (m3) (compensación a nivel 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
CN-T12	CN-T11	10.248.00	10.384.82				2	2.032	275	14.00	16									4.14	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.4	31.4	31.4	11.3	3.3	8.0	13.8	3.3		8.0					13.8	6.3	2.0							
CN-T12	CN-T11	10.249.00	10.385.82				2	2.032	275	14.00	16									4.13	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.3	31.3	31.3	11.3	3.3	8.0	13.7	3.3		8.0				13.7	6.3	2.0								
CN-T12	CN-T11	10.250.00	10.386.82				2	2.032	275	14.00	16									4.12	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.2	31.2	31.2	11.3	3.3	8.0	13.6	3.3		8.0				13.6	6.3	2.0								
CN-T12	CN-T11	10.251.00	10.387.82				2	2.032	275	14.00	16									4.11	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.1	31.1	31.1	11.3	3.3	8.0	13.5	3.3		8.0				13.5	6.3	2.0								
CN-T12	CN-T11	10.252.00	10.388.82				2	2.032	275	14.00	16									4.10	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.0	31.0	31.0	11.3	3.3	8.0	13.4	3.3		8.0				13.4	6.3	2.0								
CN-T12	CN-T11	10.253.00	10.389.82				2	2.032	275	14.00	16									4.09	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.9	30.9	30.9	11.3	3.3	8.0	13.3	3.3		8.0				13.3	6.3	2.0								
CN-T12	CN-T11	10.254.00	10.390.82				2	2.032	275	14.00	16									4.08	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.8	30.8	30.8	11.3	3.3	8.0	13.2	3.3		8.0				13.2	6.3	2.0								
CN-T12	CN-T11	10.255.00	10.391.82				2	2.032	275	14.00	16									4.07	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.8	30.8	30.8	11.3	3.3	8.0	13.2	3.3		8.0				13.2	6.3	2.0								
CN-T12	CN-T11	10.256.00	10.392.82				2	2.032	275	14.00	16									4.06	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.7	30.7	30.7	11.3	3.3	8.0	13.1	3.3		8.0				13.1	6.3	2.0								
CN-T12	CN-T11	10.257.00	10.393.82				2	2.032	275	14.00	16									4.06	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.7	30.7	30.7	11.3	3.3	8.0	13.1	3.3		8.0				13.1	6.3	2.0								
CN-T12	CN-T11	10.258.00	10.394.82				2	2.032	275	14.00	16									4.05	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.6	30.6	30.6	11.3	3.3	8.0	13.0	3.3		8.0				13.0	6.3	2.0								
CN-T12	CN-T11	10.259.00	10.395.82				2	2.032	275	14.00	16									4.05	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.6	30.6	30.6	11.3	3.3	8.0	13.0	3.3		8.0				13.0	6.3	2.0								
CN-T12	CN-T11	10.260.00	10.396.82				2	2.032	275	14.00	16									4.05	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.6	30.6	30.6	11.3	3.3	8.0	13.0	3.3		8.0				13.0	6.3	2.0								
CN-T12	CN-T11	10.261.00	10.397.82				2	2.032	275	14.00	16									4.07	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.7	30.7	30.7	11.3	3.3	8.0	13.1	3.3		8.0				13.1	6.3	2.0								
CN-T12	CN-T11	10.262.00	10.398.82				2	2.032	275	14.00	16									4.08	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	30.8	30.8	30.8	11.3	3.3	8.0	13.2	3.3		8.0				13.2	6.3	2.0								
CN-T12	CN-T11	10.263.00	10.399.82				2	2.032	275	14.00	16									4.09	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.0	31.0	31.0	11.3	3.3	8.0	13.4	3.3		8.0				13.4	6.3	2.0								
CN-T12	CN-T11	10.264.00	10.400.82				2	2.032	275	14.00	16									4.11	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.1	31.1	31.1	11.3	3.3	8.0	13.5	3.3		8.0				13.5	6.3	2.0								
CN-T12	CN-T11	10.265.00	10.401.82				2	2.032	275	14.00	16									4.13	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.3	31.3	31.3	11.3	3.3	8.0	13.7	3.3		8.0				13.7	6.3	2.0								
CN-T12	CN-T11	10.266.00	10.402.82				2	2.032	275	14.00	16									4.12	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.2	31.2	31.2	11.3	3.3	8.0	14.0	3.3		8.0				14.0	6.3	2.0								
CN-T12	CN-T11	10.267.00	10.403.82				2	2.032	275	14.00	16									4.18	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.7	31.7	31.7	11.3	3.3	8.0	14.2	3.3		8.0				14.2	6.3	2.0								
CN-T12	CN-T11	10.268.00	10.404.82				2	2.032	275	14.00	16									4.20	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.4	3.3		8.0				14.4	6.3	2.0								
CN-T12	CN-T11	10.269.00	10.405.82				2	2.032	275	14.00	16									4.22	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	32.1	32.1	32.1	11.3	3.3	8.0	14.5	3.3		8.0				14.5	6.3	2.0								
CN-T12	CN-T11	10.270.00	10.406.82				2	2.032	275	14.00	16									4.25	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	32.3	32.3	32.3	11.3	3.3	8.0	14.8	3.3		8.0				14.8	6.3	2.0								
CN-T12	CN-T11	10.271.00	10.407.82				2	2.032	275	14.00	16									4.27	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	32.5	32.5	32.5	11.3	3.3	8.0	15.0	3.3		8.0				15.0	6.3	2.0								
CN-T12	CN-T11	10.272.00	10.408.82				2	2.032	275	14.00	16									4.28	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	32.7	32.7	32.7	11.3	3.3	8.0	15.1	3.3		8.0				15.1	6.3	2.0								
CN-T12	CN-T11	10.273.00	10.409.82				2	2.032	275	14.00	16									4.29	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	32.7	32.7	32.7	11.3	3.3	8.0	15.1	3.3		8.0				15.1	6.3	2.0								
CN-T12	CN-T11	10.274.00	10.410.82				2	2.032	275	14.00	16									4.28	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	32.7	32.7	32.7	11.3	3.3	8.0	15.1	3.3		8.0				15.1	6.3	2.0								
CN-T12	CN-T11	10.275.00	10.411.82				2	2.032	275	14.00	16									4.28	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	32.6	32.6	32.6	11.3	3.3	8.0	15.0	3.3		8.0														

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor Lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20	Rehabilitación c- Suelo seleccionado C/95% PN, <= 30 mm. d-Garbanillo 5/15. e-borrompi (M4.20	Rehabilitación f- Suelo seleccionado C/95% PN, <= 30 mm. e- M4.20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<=150mm) c/95% PN. g- Lector modif.	Exposor (m). escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	HT-DH42 (m)	Long (m)	Excavación tapas (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñones (m3)	Relevo c-ama (m3)	Relevo riñones (m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relevo riñones+ suelo seleccionado (m3)	Relevo riñones grabanillo (m3)	Relevo cama+riñones (M4.20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo 5/15	Relevo cobertura. e- M4.20	Relevo cobertura. f-Suelo adecuado procedente excavación (<=150mm) c/95% PN	Relevo cobertura. g- Lector modif (m3)	Excedente de tierras (m3) (compensación alvald 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m (m3)
CN-T12	CN-T11	10761.00	10897.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10762.00	10898.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10763.00	10899.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10764.00	10900.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10765.00	10901.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.93	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10766.00	10902.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.93	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10767.00	10903.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.93	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	11.9	3.3		8.0			11.9	6.3	2.0									
CN-T12	CN-T11	10768.00	10904.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10769.00	10905.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.93	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10770.00	10906.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10771.00	10907.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10772.00	10908.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10773.00	10909.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3		8.0			12.0	6.3	2.0									
CN-T12	CN-T11	10774.00	10910.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10775.00	10911.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10776.00	10912.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10777.00	10913.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10778.00	10914.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10779.00	10915.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10780.00	10916.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10781.00	10917.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10782.00	10918.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10783.00	10919.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10784.00	10920.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.96	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.2	3.3		8.0			12.2	6.3	2.0									
CN-T12	CN-T11	10785.00	10921.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.96	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.2	3.3		8.0			12.2	6.3	2.0									
CN-T12	CN-T11	10786.00	10922.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.96	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.2	3.3		8.0			12.2	6.3	2.0									
CN-T12	CN-T11	10787.00	10923.82				2	2.032	275	14.00	16		2	2.032	275	14.00				3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3		8.0			12.1	6.3	2.0									
CN-T12	CN-T11	10788.00	10924.82				2	2.032	275																																																						

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticales	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S2=Separación entre tuberías	B=Archo interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Relaciones: a-c: Suelo seleccionado C/95% PN, <= 30 mm. d-Gabarrillo S/15. e-borrompió M4.20. f-Huella excavación c: Suelo seleccionado C/95% PN, <= 30 mm. e-M4.20. d-Gabarrillo S/15. f-Suelo adecuado para excavación (<=150mm) C/95% PN. g- Lecho mod.	Expos. (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	H1-DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m2)	Relleno c arena (m2)	Relleno riñonera(s)m2)	Relleno cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M4.20(m2)	Relleno riñonera suelo seleccionado (m2)	Relleno riñonera grabaciado (m2)	Relleno cama+riñonera HM-20(m2)	Relleno cobertura c: Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura d-Gabarrillo S/15	Relleno cobertura e- H4.20	Relleno cobertura f-Suelo adecuado para excavación (<=150mm) C/95% PN	Relleno cobertura g- Lecho mod (m2)	Excedente de tierra (m2) (consumo actual 0%, e-spojaniento teórico 5%)	Cinta liberada (m)	Manto escollera a=5.5m, ancho=30m (m2)
CN-T12	CN-T11	11.145.00	11.281.82				2	2.032	275	14.00	16				5.48	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	44.0	44.0	44.0	11.3	3.3	8.0	26.4	3.3		8.0			26.4	6.3	2.0									
CN-T12	CN-T11	11.146.00	11.282.82				2	2.032	275	14.00	16				5.47	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.9	43.9	43.9	11.3	3.3	8.0	26.3	3.3		8.0			26.3	6.3	2.0									
CN-T12	CN-T11	11.147.00	11.283.82				2	2.032	275	14.00	16				5.46	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.8	43.8	43.8	11.3	3.3	8.0	26.2	3.3		8.0			26.2	6.3	2.0									
CN-T12	CN-T11	11.148.00	11.284.82				2	2.032	275	14.00	16				5.46	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.7	43.7	43.7	11.3	3.3	8.0	26.2	3.3		8.0			26.2	6.3	2.0									
CN-T12	CN-T11	11.149.00	11.285.82				2	2.032	275	14.00	16				5.45	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.7	43.7	43.7	11.3	3.3	8.0	26.1	3.3		8.0			26.1	6.3	2.0									
CN-T12	CN-T11	11.150.00	11.286.82				2	2.032	275	14.00	16				5.44	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.6	43.6	43.6	11.3	3.3	8.0	26.0	3.3		8.0			26.0	6.3	2.0									
CN-T12	CN-T11	11.151.00	11.287.82				2	2.032	275	14.00	16				5.43	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.5	43.5	43.5	11.3	3.3	8.0	25.9	3.3		8.0			25.9	6.3	2.0									
CN-T12	CN-T11	11.152.00	11.288.82				2	2.032	275	14.00	16				5.43	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.5	43.5	43.5	11.3	3.3	8.0	25.9	3.3		8.0			25.9	6.3	2.0									
CN-T12	CN-T11	11.153.00	11.289.82				2	2.032	275	14.00	16				5.43	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.5	43.5	43.5	11.3	3.3	8.0	25.9	3.3		8.0			25.9	6.3	2.0									
CN-T12	CN-T11	11.154.00	11.290.82				2	2.032	275	14.00	16				5.43	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.5	43.5	43.5	11.3	3.3	8.0	25.9	3.3		8.0			25.9	6.3	2.0									
CN-T12	CN-T11	11.155.00	11.291.82				2	2.032	275	14.00	16				5.43	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.5	43.5	43.5	11.3	3.3	8.0	25.9	3.3		8.0			25.9	6.3	2.0									
CN-T12	CN-T11	11.156.00	11.292.82				2	2.032	275	14.00	16				5.43	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.5	43.5	43.5	11.3	3.3	8.0	25.9	3.3		8.0			25.9	6.3	2.0									
CN-T12	CN-T11	11.157.00	11.293.82				2	2.032	275	14.00	16				5.42	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.4	43.4	43.4	11.3	3.3	8.0	25.8	3.3		8.0			25.8	6.3	2.0									
CN-T12	CN-T11	11.158.00	11.294.82				2	2.032	275	14.00	16				5.41	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.3	43.3	43.3	11.3	3.3	8.0	25.7	3.3		8.0			25.7	6.3	2.0									
CN-T12	CN-T11	11.159.00	11.295.82				2	2.032	275	14.00	16				5.40	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.2	43.2	43.2	11.3	3.3	8.0	25.6	3.3		8.0			25.6	6.3	2.0									
CN-T12	CN-T11	11.160.00	11.296.82				2	2.032	275	14.00	16				5.39	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.1	43.1	43.1	11.3	3.3	8.0	25.5	3.3		8.0			25.5	6.3	2.0									
CN-T12	CN-T11	11.161.00	11.297.82				2	2.032	275	14.00	16				5.38	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	43.0	43.0	43.0	11.3	3.3	8.0	25.4	3.3		8.0			25.4	6.3	2.0									
CN-T12	CN-T11	11.162.00	11.298.82				2	2.032	275	14.00	16				5.37	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.9	42.9	42.9	11.3	3.3	8.0	25.3	3.3		8.0			25.3	6.3	2.0									
CN-T12	CN-T11	11.163.00	11.299.82				2	2.032	275	14.00	16				5.36	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.8	42.8	42.8	11.3	3.3	8.0	25.2	3.3		8.0			25.2	6.3	2.0									
CN-T12	CN-T11	11.164.00	11.300.82				2	2.032	275	14.00	16				5.35	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.7	42.7	42.7	11.3	3.3	8.0	25.1	3.3		8.0			25.2	6.3	2.0									
CN-T12	CN-T11	11.165.00	11.301.82				2	2.032	275	14.00	16				5.35	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.7	42.7	42.7	11.3	3.3	8.0	25.1	3.3		8.0			25.1	6.3	2.0									
CN-T12	CN-T11	11.166.00	11.302.82				2	2.032	275	14.00	16				5.34	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.6	42.6	42.6	11.3	3.3	8.0	25.0	3.3		8.0			25.0	6.3	2.0									
CN-T12	CN-T11	11.167.00	11.303.82				2	2.032	275	14.00	16				5.33	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.5	42.5	42.5	11.3	3.3	8.0	24.9	3.3		8.0			24.9	6.3	2.0									
CN-T12	CN-T11	11.168.00	11.304.82				2	2.032	275	14.00	16				5.32	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.4	42.4	42.4	11.3	3.3	8.0	24.8	3.3		8.0			24.8	6.3	2.0									
CN-T12	CN-T11	11.169.00	11.305.82				2	2.032	275	14.00	16				5.31	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.3	42.3	42.3	11.3	3.3	8.0	24.8	3.3		8.0			24.8	6.3	2.0									
CN-T12	CN-T11	11.170.00	11.306.82				2	2.032	275	14.00	16				5.31	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.3	42.3	42.3	11.3	3.3	8.0	24.7	3.3		8.0			24.7	6.3	2.0									
CN-T12	CN-T11	11.171.00	11.307.82				2	2.032	275	14.00	16				5.30	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.2	42.2	42.2	11.3	3.3	8.0	24.6	3.3		8.0			24.6	6.3	2.0									
CN-T12	CN-T11	11.172.00	11.308.82				2	2.032	275	14.00	16				5.29	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.1	42.1	42.1	11.3	3.3	8.0	24.5	3.3		8.0			24.5	6.3	2.0									
CN-T12	CN-T11	11.173.00	11.309.82				2	2.032	275	14.00	16				5.28	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.0	42.0	42.0	11.3	3.3	8.0	24.5	3.3		8.0			24.5	6.3	2.0									
CN-T12	CN-T11	11.174.00	11.310.82				2	2.032	275	14.00	16				5.27	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	42.0	42.0	42.0	11.3	3.3	8.0	24.4	3.3		8.0			24.4	6.3	2.0									
CN-T12	CN-T11	11.175.00	11.311.82				2	2.032	275	14.00	16				5.27	0.33	21.2-2.000	0.60	1.00	6.20		0.20	120	0.30</																																

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (mm)	Nº vertederos por tubería	DN vertederos (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto	concantado zapla	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20	Rehabilitación c- Suela seleccionada C/95% PN, <= 30 mm. d-Garcaballa S15, e-borripom (M4.20	Módulo excavadora f- Suela seleccionada C/95% PN, <= 30 mm. e- M4.20. d-Garcaballa S15, f-suela adecuada procedente excavación (<=150mm) C/95% PN, g- Luchto mod.	Exposur (m, escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	HN=DNH2 (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñones (m3)	Relevo c-ama (m3)	Relevo riñones (m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo (M4.20)(m3)	Relevo riñones+ suelo seleccionado (m3)	Relevo riñones grabaciado (m3)	Relevo cama+riñones (M4.20)(m3)	Relevo cobertura c- Suela seleccionada C/95% PN, <= 30 mm	Relevo cobertura d-Garcaballa S15	Relevo cobertura e- H4.20	Relevo cobertura f-Suela adecuada procedente excavación (<=150mm) C/95% PN	Relevo cobertura g- Luchto mod (m3)	Excedente de tierras (m3) (consumo actual 0%, e-spojaniento 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
CN-T12	CN-T11	11.661.00	11.797.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.4	3.3	8.0		11.4	6.3	2.0												
CN-T12	CN-T11	11.662.00	11.798.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.663.00	11.799.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.664.00	11.800.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.665.00	11.801.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.666.00	11.802.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.667.00	11.803.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.668.00	11.804.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.669.00	11.805.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.670.00	11.806.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.671.00	11.807.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.672.00	11.808.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.673.00	11.809.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.674.00	11.810.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.675.00	11.811.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.676.00	11.812.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0		11.3	6.3	2.0												
CN-T12	CN-T11	11.677.00	11.813.82				2	2.032	275	14.00	16									3.87	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.0	29.0	29.0	11.3	3.3	8.0	11.4	3.3	8.0		11.4	6.3	2.0												
CN-T12	CN-T11	11.678.00	11.814.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.6	3.3	8.0		11.6	6.3	2.0												
CN-T12	CN-T11	11.679.00	11.815.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.7	3.3	8.0		11.7	6.3	2.0												
CN-T12	CN-T11	11.680.00	11.816.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.4	29.4	29.4	11.3	3.3	8.0	11.8	3.3	8.0		11.8	6.3	2.0												
CN-T12	CN-T11	11.681.00	11.817.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	11.9	3.3	8.0		11.9	6.3	2.0												
CN-T12	CN-T11	11.682.00	11.818.82				2	2.032	275	14.00	16									3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3	8.0		12.0	6.3	2.0												
CN-T12	CN-T11	11.683.00	11.819.82				2	2.032	275	14.00	16									3.95	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.7	29.7	29.7	11.3	3.3	8.0	12.1	3.3	8.0		12.1	6.3	2.0												
CN-T12	CN-T11	11.684.00	11.820.82				2	2.032	275	14.00	16									3.96	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.8	29.8	29.8	11.3	3.3	8.0	12.2	3.3	8.0		12.2	6.3	2.0												
CN-T12	CN-T11	11.685.00	11.821.82				2	2.032	275	14.00	16									3.97	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.9	29.9	29.9	11.3	3.3	8.0	12.3	3.3	8.0		12.3	6.3	2.0												
CN-T12	CN-T11	11.686.00	11.822.82				2	2.032	275	14.00	16									3.99	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	30.0	30.0	30.0	11.3	3.3	8.0	12.4	3.3	8.0		12.4	6.3	2.0												
CN-T12	CN-T11	11.687.00	11.823.82				2	2.032	275	14.00	16									4.00	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	30.1	30.1	30.1	11.3	3.3	8.0	12.5	3.3	8.0		12.5	6.3	2.0												
CN-T12	CN-T11	11.688.00	11.824.82				2	2.032	275	14.00	16									4.02	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	30.2	30.2	30.2	11.3	3.3	8.0	12.6	3.3	8.0		12.6	6.3	2.0												
CN-T12	CN-T11	11.689.00	11.825.82				2	2.032	275	14.00	16									4.02	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30																																	

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº valvulas de aguas	DN val (mm)	Acero tipo S	espesor adaptado (mm)	PN (limbaje valvulera (mm)	Nº vertederos por tubería	DN vertederos (mm)	Nº valvulas de desagüe	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón HM-20	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d- Garbanillo S/15. e- boronapa HM-20	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d- Garbanillo S/15. f- Suela adecuada procedente excavación (<150mm) C/95% PN. g- Luchito modif.	Exposor (m). escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	H1-DHxH2 (m)	Long (m)	Excavación tapasada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñones (m3)	Relevo c-ama (m3)	Relevo riñones(s/m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñones+ suelo seleccionado (m3)	Relevo riñones grabaciolo (m3)	Relevo cama+riñones HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suelo adecuado procedente excavación (<150mm) C/95% PN	Relevo cobertura. g- Luchito modif (m3)	Excedente de tierras (m3) (compensación anual 0%, e-spojaniento mensual)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m (m3)
CN-12	CN-11	11.789.00	11.925.82				2	2.032	275	14.00	16										4.33	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.1	33.1	33.1	11.3	3.3	8.0	15.5	3.3	8.0				15.5	6.3	2.0									
CN-12	CN-11	11.790.00	11.926.82				2	2.032	275	14.00	16										4.33	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.1	33.1	33.1	11.3	3.3	8.0	15.5	3.3	8.0				15.5	6.3	2.0									
CN-12	CN-11	11.791.00	11.927.82				2	2.032	275	14.00	16										4.32	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.0	33.0	33.0	11.3	3.3	8.0	15.5	3.3	8.0				15.5	6.3	2.0									
CN-12	CN-11	11.792.00	11.928.82				2	2.032	275	14.00	16										4.32	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.0	33.0	33.0	11.3	3.3	8.0	15.4	3.3	8.0				15.4	6.3	2.0									
CN-12	CN-11	11.793.00	11.929.82				2	2.032	275	14.00	16										4.32	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.0	33.0	33.0	11.3	3.3	8.0	15.4	3.3	8.0				15.4	6.3	2.0									
CN-12	CN-11	11.794.00	11.930.82				2	2.032	275	14.00	16										4.31	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.4	3.3	8.0				15.4	6.3	2.0									
CN-12	CN-11	11.795.00	11.931.82				2	2.032	275	14.00	16										4.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3	8.0				15.3	6.3	2.0									
CN-12	CN-11	11.796.00	11.932.82				2	2.032	275	14.00	16										4.29	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.8	32.8	32.8	11.3	3.3	8.0	15.2	3.3	8.0				15.2	6.3	2.0									
CN-12	CN-11	11.797.00	11.933.82				2	2.032	275	14.00	16										4.29	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.7	32.7	32.7	11.3	3.3	8.0	15.1	3.3	8.0				15.1	6.3	2.0									
CN-12	CN-11	11.798.00	11.934.82				2	2.032	275	14.00	16										4.28	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.6	32.6	32.6	11.3	3.3	8.0	15.0	3.3	8.0				15.0	6.3	2.0									
CN-12	CN-11	11.799.00	11.935.82				2	2.032	275	14.00	16										4.27	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.5	32.5	32.5	11.3	3.3	8.0	14.9	3.3	8.0				14.9	6.3	2.0									
CN-12	CN-11	11.800.00	11.936.82				2	2.032	275	14.00	16										4.27	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.5	32.5	32.5	11.3	3.3	8.0	14.9	3.3	8.0				14.9	6.3	2.0									
CN-12	CN-11	11.801.00	11.937.82				2	2.032	275	14.00	16										4.27	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.6	32.6	32.6	11.3	3.3	8.0	15.0	3.3	8.0				15.0	6.3	2.0									
CN-12	CN-11	11.802.00	11.938.82				2	2.032	275	14.00	16										4.28	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.6	32.6	32.6	11.3	3.3	8.0	15.1	3.3	8.0				15.1	6.3	2.0									
CN-12	CN-11	11.803.00	11.939.82				2	2.032	275	14.00	16										4.29	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.7	32.7	32.7	11.3	3.3	8.0	15.1	3.3	8.0				15.1	6.3	2.0									
CN-12	CN-11	11.804.00	11.940.82				2	2.032	275	14.00	16										4.29	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.8	32.8	32.8	11.3	3.3	8.0	15.2	3.3	8.0				15.2	6.3	2.0									
CN-12	CN-11	11.805.00	11.941.82				2	2.032	275	14.00	16										4.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.8	32.8	32.8	11.3	3.3	8.0	15.2	3.3	8.0				15.2	6.3	2.0									
CN-12	CN-11	11.806.00	11.942.82				2	2.032	275	14.00	16										4.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3	8.0				15.3	6.3	2.0									
CN-12	CN-11	11.807.00	11.943.82				2	2.032	275	14.00	16										4.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3	8.0				15.3	6.3	2.0									
CN-12	CN-11	11.808.00	11.944.82				2	2.032	275	14.00	16										4.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3	8.0				15.3	6.3	2.0									
CN-12	CN-11	11.809.00	11.945.82				2	2.032	275	14.00	16										4.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3	8.0				15.3	6.3	2.0									
CN-12	CN-11	11.810.00	11.946.82				2	2.032	275	14.00	16										4.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3	8.0				15.3	6.3	2.0									
CN-12	CN-11	11.811.00	11.947.82				2	2.032	275	14.00	16										4.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3	8.0				15.3	6.3	2.0									
CN-12	CN-11	11.812.00	11.948.82				2	2.032	275	14.00	16										4.30	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3	8.0				15.3	6.3	2.0									
CN-12	CN-11	11.813.00	11.949.82				2	2.032	275	14.00	16										4.31	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3	8.0				15.3	6.3	2.0									
CN-12	CN-11	11.814.00	11.950.82				2	2.032	275	14.00	16										4.31	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.4	3.3	8.0				15.4	6.3	2.0									
CN-12	CN-11	11.815.00	11.951.82				2	2.032	275	14.00	16										4.32	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.0	33.0	33.0	11.3	3.3	8.0	15.4	3.3	8.0				15.4	6.3	2.0									
CN-12	CN-11	11.816.00	11.952.82				2	2.032	275	14.00	16										4.32	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.0	33.0	33.0	11.3	3.3	8.0	15.4	3.3	8.0				15.4	6.3	2.0									

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adoptado (mm)	PN (limbaje valvuleta (dm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sagüe	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor Lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto/adozo	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granulado o arena b-cama de hormigón (M4.20	Rehabilitación c- Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15, e-borrompi (M4.20	Rehabilitación c- Suelo seleccionado C/95% PN, < 30 mm. e- M4.20. f-Garbanillo 5/15, f-suelo adecuado procedente excavación (<150mm) c/65% PN, g- Lecho mod.	Exposor (m, escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	HD-H4Hz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera granallado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d-Garbanillo 5/15	Relevo cobertura. e- H4.20	Relevo cobertura. f-Suelo adecuado procedente excavación (<150mm) c/65% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensación alval 0%, e-spojaniento vertical 5%)	Cinta liberata (m)	Manto escollera a 0.5m, ancho-30m (m3)
CN-T12	CN-T11	11.917.00	12.053.82				2	2.032	275	14.00	16								4.48	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	34.5	34.5	34.5	11.3	3.3	8.0	16.9	3.3	8.0		16.9	6.3	2.0											
CN-T12	CN-T11	11.918.00	12.054.82				2	2.032	275	14.00	16								4.48	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	34.4	34.4	34.4	11.3	3.3	8.0	16.9	3.3	8.0		16.9	6.3	2.0											
CN-T12	CN-T11	11.919.00	12.055.82				2	2.032	275	14.00	16								4.48	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	34.4	34.4	34.4	11.3	3.3	8.0	16.8	3.3	8.0		16.8	6.3	2.0											
CN-T12	CN-T11	11.920.00	12.056.82				2	2.032	275	14.00	16								4.48	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	34.5	34.5	34.5	11.3	3.3	8.0	16.9	3.3	8.0		16.9	6.3	2.0											
CN-T12	CN-T11	11.921.00	12.057.82				2	2.032	275	14.00	16								4.49	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	34.6	34.6	34.6	11.3	3.3	8.0	17.0	3.3	8.0		17.0	6.3	2.0											
CN-T12	CN-T11	11.922.00	12.058.82				2	2.032	275	14.00	16								4.51	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	34.7	34.7	34.7	11.3	3.3	8.0	17.2	3.3	8.0		17.2	6.3	2.0											
CN-T12	CN-T11	11.923.00	12.059.82				2	2.032	275	14.00	16								4.53	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	34.9	34.9	34.9	11.3	3.3	8.0	17.3	3.3	8.0		17.3	6.3	2.0											
CN-T12	CN-T11	11.924.00	12.060.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.5	3.3	8.0		17.5	6.3	2.0											
CN-T12	CN-T11	11.925.00	12.061.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.926.00	12.062.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.927.00	12.063.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.928.00	12.064.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.929.00	12.065.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.930.00	12.066.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.931.00	12.067.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.932.00	12.068.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.933.00	12.069.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.934.00	12.070.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.935.00	12.071.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.4	3.3	8.0		17.4	6.3	2.0											
CN-T12	CN-T11	11.936.00	12.072.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.5	3.3	8.0		17.5	6.3	2.0											
CN-T12	CN-T11	11.937.00	12.073.82				2	2.032	275	14.00	16								4.54	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.0	35.0	35.0	11.3	3.3	8.0	17.5	3.3	8.0		17.5	6.3	2.0											
CN-T12	CN-T11	11.938.00	12.074.82				2	2.032	275	14.00	16								4.55	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.1	35.1	35.1	11.3	3.3	8.0	17.5	3.3	8.0		17.5	6.3	2.0											
CN-T12	CN-T11	11.939.00	12.075.82				2	2.032	275	14.00	16								4.55	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.1	35.1	35.1	11.3	3.3	8.0	17.5	3.3	8.0		17.5	6.3	2.0											
CN-T12	CN-T11	11.940.00	12.076.82				2	2.032	275	14.00	16								4.55	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.1	35.1	35.1	11.3	3.3	8.0	17.5	3.3	8.0		17.5	6.3	2.0											
CN-T12	CN-T11	11.941.00	12.077.82				2	2.032	275	14.00	16								4.56	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.2	35.2	35.2	11.3	3.3	8.0	17.6	3.3	8.0		17.6	6.3	2.0											
CN-T12	CN-T11	11.942.00	12.078.82				2	2.032	275	14.00	16								4.56	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.2	35.2	35.2	11.3	3.3	8.0	17.6	3.3	8.0		17.6	6.3	2.0											
CN-T12	CN-T11	11.943.00	12.079.82				2	2.032	275	14.00	16								4.56	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.2	35.2	35.2	11.3	3.3	8.0	17.6	3.3	8.0		17.6	6.3	2.0											
CN-T12	CN-T11	11.944.00	12.080.82				2	2.032	275	14.00	16								4.57	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.3	35.3	35.3	11.3	3.3	8.0	17.7	3.3	8.0		17.7	6.3	2.0											
CN-T12	CN-T11	11.945.00	12.081.82				2	2.032	275	14.00	16								4.57	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	10.0	35.3	35.3	35.3	11.3</																				

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adaptado (mm)	PN (límite valvuleta (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto/adozo	A=separación tubo salud	S=separación entre tuberías	B=Archo interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recurvimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15, e-borripado (M20)	Reforzamiento f- Suela seleccionada C/95% PN, < 30 mm. e- M20. d-Gabarrillo S15, f-suela alacauda procedente excavación (<150mm) C/6% PN, g- Lecho mod.	Exposor (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	HD-H4Hz (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciolo (m3)	Relevo cama+riñonera (M20(m3)	Relevo cobertura c- Suela seleccionada C/95% PN, <= 30 mm	Relevo cobertura d-Gabarrillo S15	Relevo cobertura e- H420	Relevo cobertura f-Suela alacauda excavación (<150mm) C/6% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierras (m3) (compensación alvald 0%, e-spojaniento terreno 5%)	Cinta liberata (m)	Manto escollera a=0.5m, ancho=30m (m3)
CN-T12	CN-T11	12.047.00	12.183.82				2	2.032	275	14.00	16									4.42	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.9	33.9	33.9		11.3	3.3	8.0	16.3	3.3		8.0					16.3	6.3	2.0						
CN-T12	CN-T11	12.048.00	12.184.82				2	2.032	275	14.00	16									4.42	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.9	33.9	33.9		11.3	3.3	8.0	16.3	3.3		8.0					16.3	6.3	2.0						
CN-T12	CN-T11	12.049.00	12.185.82				2	2.032	275	14.00	16									4.42	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.9	33.9	33.9		11.3	3.3	8.0	16.3	3.3		8.0					16.3	6.3	2.0						
CN-T12	CN-T11	12.050.00	12.186.82				2	2.032	275	14.00	16									4.41	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.8	33.8	33.8		11.3	3.3	8.0	16.2	3.3		8.0					16.2	6.3	2.0						
CN-T12	CN-T11	12.051.00	12.187.82				2	2.032	275	14.00	16									4.41	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.8	33.8	33.8		11.3	3.3	8.0	16.2	3.3		8.0					16.2	6.3	2.0						
CN-T12	CN-T11	12.052.00	12.188.82				2	2.032	275	14.00	16									4.41	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.8	33.8	33.8		11.3	3.3	8.0	16.2	3.3		8.0					16.2	6.3	2.0						
CN-T12	CN-T11	12.053.00	12.189.82				2	2.032	275	14.00	16									4.41	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.8	33.8	33.8		11.3	3.3	8.0	16.2	3.3		8.0					16.2	6.3	2.0						
CN-T12	CN-T11	12.054.00	12.190.82				2	2.032	275	14.00	16									4.40	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.8	33.8	33.8		11.3	3.3	8.0	16.2	3.3		8.0					16.2	6.3	2.0						
CN-T12	CN-T11	12.055.00	12.191.82				2	2.032	275	14.00	16									4.40	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7		11.3	3.3	8.0	16.2	3.3		8.0					16.2	6.3	2.0						
CN-T12	CN-T11	12.056.00	12.192.82				2	2.032	275	14.00	16									4.40	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7		11.3	3.3	8.0	16.1	3.3		8.0					16.2	6.3	2.0						
CN-T12	CN-T11	12.057.00	12.193.82				2	2.032	275	14.00	16									4.40	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7		11.3	3.3	8.0	16.1	3.3		8.0					16.1	6.3	2.0						
CN-T12	CN-T11	12.058.00	12.194.82				2	2.032	275	14.00	16									4.39	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7		11.3	3.3	8.0	16.1	3.3		8.0					16.1	6.3	2.0						
CN-T12	CN-T11	12.059.00	12.195.82				2	2.032	275	14.00	16									4.39	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.6	33.6	33.6		11.3	3.3	8.0	16.0	3.3		8.0					16.0	6.3	2.0						
CN-T12	CN-T11	12.060.00	12.196.82				2	2.032	275	14.00	16									4.39	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.6	33.6	33.6		11.3	3.3	8.0	16.0	3.3		8.0					16.0	6.3	2.0						
CN-T12	CN-T11	12.061.00	12.197.82				2	2.032	275	14.00	16									4.38	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.6	33.6	33.6		11.3	3.3	8.0	16.0	3.3		8.0					16.0	6.3	2.0						
CN-T12	CN-T11	12.062.00	12.198.82				2	2.032	275	14.00	16									4.38	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.6	33.6	33.6		11.3	3.3	8.0	16.0	3.3		8.0					16.0	6.3	2.0						
CN-T12	CN-T11	12.063.00	12.199.82				2	2.032	275	14.00	16									4.38	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5		11.3	3.3	8.0	16.0	3.3		8.0					16.0	6.3	2.0						
CN-T12	CN-T11	12.064.00	12.200.82				2	2.032	275	14.00	16									4.38	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5		11.3	3.3	8.0	15.9	3.3		8.0					15.9	6.3	2.0						
CN-T12	CN-T11	12.065.00	12.201.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5		11.3	3.3	8.0	15.9	3.3		8.0					15.9	6.3	2.0						
CN-T12	CN-T11	12.066.00	12.202.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5		11.3	3.3	8.0	15.9	3.3		8.0					15.9	6.3	2.0						
CN-T12	CN-T11	12.067.00	12.203.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5		11.3	3.3	8.0	15.9	3.3		8.0					15.9	6.3	2.0						
CN-T12	CN-T11	12.068.00	12.204.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4		11.3	3.3	8.0	15.8	3.3		8.0					15.8	6.3	2.0						
CN-T12	CN-T11	12.069.00	12.205.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4		11.3	3.3	8.0	15.8	3.3		8.0					15.8	6.3	2.0						
CN-T12	CN-T11	12.070.00	12.206.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4		11.3	3.3	8.0	15.8	3.3		8.0					15.8	6.3	2.0						
CN-T12	CN-T11	12.071.00	12.207.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4		11.3	3.3	8.0	15.8	3.3		8.0					15.8	6.3	2.0						
CN-T12	CN-T11	12.072.00	12.208.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4		11.3	3.3	8.0	15.8	3.3		8.0					15.8	6.3	2.0						
CN-T12	CN-T11	12.073.00	12.209.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.3	33.3	33.3		11.3	3.3	8.0	15.7	3.3		8.0					15.7	6.3	2.0						
CN-T12	CN-T11	12.074.00	12.210.82				2	2.032	275	14.00	16																																																				

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adaptado (mm)	PN (limpieza válvula (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima 4' cave (m)	HT-altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15, e-borrompi (M4.20	Rehabilitación f- Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d-Garbanillo 5/15, f-suelo adecuado procedente excavación (<150mm) C/6% PN, g- Luchero mod.	Exposor (m, escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (º)	HT-DHxH2 (m)	Long (m)	Excavación tapasocial (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c-arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera granular (m3)	Relleno cama+riñonera (M4.20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura. d-Garbanillo 5/15	Relleno cobertura. e- H4.20	Relleno cobertura. f-Suelo adecuado procedente excavación (<150mm) C/6% PN	Relleno cobertura. g- Luchero mod (m3)	Excedente de tierras (m3) (compensación anual 0%, e-spojaniento vertical 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
CN-T12	CN-T11	12.176.00	12.312.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.9	3.3		8.0			15.9	6.3	2.0									
CN-T12	CN-T11	12.177.00	12.313.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.9	3.3		8.0			15.9	6.3	2.0									
CN-T12	CN-T11	12.178.00	12.314.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0									
CN-T12	CN-T11	12.179.00	12.315.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0									
CN-T12	CN-T11	12.180.00	12.316.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0									
CN-T12	CN-T11	12.181.00	12.317.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0									
CN-T12	CN-T11	12.182.00	12.318.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0									
CN-T12	CN-T11	12.183.00	12.319.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0									
CN-T12	CN-T11	12.184.00	12.320.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0									
CN-T12	CN-T11	12.185.00	12.321.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0									
CN-T12	CN-T11	12.186.00	12.322.82				2	2.032	275	14.00	16									4.35	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.3	33.3	33.3	11.3	3.3	8.0	15.7	3.3		8.0			15.7	6.3	2.0									
CN-T12	CN-T11	12.187.00	12.323.82				2	2.032	275	14.00	16									4.35	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.2	33.2	33.2	11.3	3.3	8.0	15.7	3.3		8.0			15.7	6.3	2.0									
CN-T12	CN-T11	12.188.00	12.324.82				2	2.032	275	14.00	16									4.34	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.2	33.2	33.2	11.3	3.3	8.0	15.6	3.3		8.0			15.6	6.3	2.0									
CN-T12	CN-T11	12.189.00	12.325.82				2	2.032	275	14.00	16									4.33	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.1	33.1	33.1	11.3	3.3	8.0	15.5	3.3		8.0			15.5	6.3	2.0									
CN-T12	CN-T11	12.190.00	12.326.82				2	2.032	275	14.00	16									4.33	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.1	33.1	33.1	11.3	3.3	8.0	15.5	3.3		8.0			15.5	6.3	2.0									
CN-T12	CN-T11	12.191.00	12.327.82				2	2.032	275	14.00	16									4.32	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.0	33.0	33.0	11.3	3.3	8.0	15.4	3.3		8.0			15.4	6.3	2.0									
CN-T12	CN-T11	12.192.00	12.328.82				2	2.032	275	14.00	16									4.33	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.1	33.1	33.1	11.3	3.3	8.0	15.5	3.3		8.0			15.5	6.3	2.0									
CN-T12	CN-T11	12.193.00	12.329.82				2	2.032	275	14.00	16									4.33	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.1	33.1	33.1	11.3	3.3	8.0	15.5	3.3		8.0			15.5	6.3	2.0									
CN-T12	CN-T11	12.194.00	12.330.82				2	2.032	275	14.00	16									4.34	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.2	33.2	33.2	11.3	3.3	8.0	15.6	3.3		8.0			15.6	6.3	2.0									
CN-T12	CN-T11	12.195.00	12.331.82				2	2.032	275	14.00	16									4.35	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.2	33.2	33.2	11.3	3.3	8.0	15.7	3.3		8.0			15.7	6.3	2.0									
CN-T12	CN-T11	12.196.00	12.332.82				2	2.032	275	14.00	16									4.35	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.3	33.3	33.3	11.3	3.3	8.0	15.7	3.3		8.0			15.7	6.3	2.0									
CN-T12	CN-T11	12.197.00	12.333.82				2	2.032	275	14.00	16									4.36	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0									
CN-T12	CN-T11	12.198.00	12.334.82				2	2.032	275	14.00	16									4.37	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.9	3.3		8.0			15.9	6.3	2.0									
CN-T12	CN-T11	12.199.00	12.335.82				2	2.032	275	14.00	16									4.38	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5	11.3	3.3	8.0	15.9	3.3		8.0			15.9	6.3	2.0									
CN-T12	CN-T11	12.200.00	12.336.82				2	2.032	275	14.00	16									4.38	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.6	33.6	33.6	11.3	3.3	8.0	16.0	3.3		8.0			16.0	6.3	2.0									
CN-T12	CN-T11	12.201.00	12.337.82				2	2.032	275	14.00	16									4.39	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.6	33.6	33.6	11.3	3.3	8.0	16.0	3.3		8.0			16.0	6.3	2.0									
CN-T12	CN-T11	12.202.00	12.338.82				2	2.032	275	14.00	16									4.40	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7	11.3	3.3	8.0	16.1	3.3		8.0			16.1	6.3	2.0									
CN-T12	CN-T11	12.203.00	12.339.82				2	2.032	275	14.00	16									4.40	0.33	21.2-2.000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.8	33.8	33.8	11.3	3.3	8.0	16.2	3.3		8.0			16.2	6.3	2.0									
CN-T12	CN-T11	12.204.00	12.340.82				2	2.032	275	14.00																																																				

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concretoado zapala	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Relincolerías c= Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15, e-borrompi (M4.20)	Relincolerías f= Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d-Gabarrillo S/15, f-suela adecuada procedente excavación (<150mm) C/6% PN, g- Luchito modif.	Exposor (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	HD=HDH2 (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleño cama+riñonera (m3)	Relleño c-arena (m3)	Relleño riñonera(s)m3)	Relleño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relleño riñonera suelo seleccionado (m3)	Relleño riñonera grabaciado (m3)	Relleño cama+riñonera (M4.20(m3)	Relleño cobertura c= Suelo seleccionado C/95% PN, <= 30 mm	Relleño cobertura d-Gabarrillo S/15	Relleño cobertura e= H4.20	Relleño cobertura f-Suelo adecuado procedente excavación (<150mm) C/6% PN	Relleño cobertura g= Luchito modif (m3)	Excedente de tierras (m3) (compensación alvald 0%, e-spojaniento terreno 5%)	Cinta liberada (m)	Manto escollera e=0.5m, ancho=30m (m3)
CN-T12	CN-T11	12.306.00	12.442.82				2	2.032	275	14.00	16									3.78	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.2	28.2	28.2	11.3	3.3	8.0	10.6	3.3		8.0					10.6	6.3	2.0							
CN-T12	CN-T11	12.307.00	12.443.82				2	2.032	275	14.00	16									3.78	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.2	28.2	28.2	11.3	3.3	8.0	10.6	3.3		8.0				10.6	6.3	2.0								
CN-T12	CN-T11	12.308.00	12.444.82				2	2.032	275	14.00	16									3.79	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.3	28.3	28.3	11.3	3.3	8.0	10.7	3.3		8.0				10.7	6.3	2.0								
CN-T12	CN-T11	12.309.00	12.445.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.9	3.3		8.0				10.9	6.3	2.0								
CN-T12	CN-T11	12.310.00	12.446.82				2	2.032	275	14.00	16									3.82	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	11.0	3.3		8.0				11.0	6.3	2.0								
CN-T12	CN-T11	12.311.00	12.447.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3		8.0				11.1	6.3	2.0								
CN-T12	CN-T11	12.312.00	12.448.82				2	2.032	275	14.00	16									3.85	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.8	28.8	28.8	11.3	3.3	8.0	11.2	3.3		8.0				11.2	6.3	2.0								
CN-T12	CN-T11	12.313.00	12.449.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3		8.0				11.3	6.3	2.0								
CN-T12	CN-T11	12.314.00	12.450.82				2	2.032	275	14.00	16									3.87	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.0	29.0	29.0	11.3	3.3	8.0	11.4	3.3		8.0				11.4	6.3	2.0								
CN-T12	CN-T11	12.315.00	12.451.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0				11.5	6.3	2.0								
CN-T12	CN-T11	12.316.00	12.452.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3		8.0				11.6	6.3	2.0								
CN-T12	CN-T11	12.317.00	12.453.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0				11.7	6.3	2.0								
CN-T12	CN-T11	12.318.00	12.454.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	11.9	3.3		8.0				11.9	6.3	2.0								
CN-T12	CN-T11	12.319.00	12.455.82				2	2.032	275	14.00	16									3.94	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.6	29.6	29.6	11.3	3.3	8.0	12.0	3.3		8.0				12.0	6.3	2.0								
CN-T12	CN-T11	12.320.00	12.456.82				2	2.032	275	14.00	16									3.96	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.8	29.8	29.8	11.3	3.3	8.0	12.2	3.3		8.0				12.2	6.3	2.0								
CN-T12	CN-T11	12.321.00	12.457.82				2	2.032	275	14.00	16									3.98	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	30.0	30.0	30.0	11.3	3.3	8.0	12.4	3.3		8.0				12.4	6.3	2.0								
CN-T12	CN-T11	12.322.00	12.458.82				2	2.032	275	14.00	16									4.00	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	30.1	30.1	30.1	11.3	3.3	8.0	12.6	3.3		8.0				12.6	6.3	2.0								
CN-T12	CN-T11	12.323.00	12.459.82				2	2.032	275	14.00	16									4.02	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	30.3	30.3	30.3	11.3	3.3	8.0	12.7	3.3		8.0				12.7	6.3	2.0								
CN-T12	CN-T11	12.324.00	12.460.82				2	2.032	275	14.00	16									4.04	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	30.5	30.5	30.5	11.3	3.3	8.0	12.9	3.3		8.0				12.9	6.3	2.0								
CN-T12	CN-T11	12.325.00	12.461.82				2	2.032	275	14.00	16									4.06	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	30.6	30.6	30.6	11.3	3.3	8.0	13.0	3.3		8.0				13.0	6.3	2.0								
CN-T12	CN-T11	12.326.00	12.462.82				2	2.032	275	14.00	16									4.07	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	30.8	30.8	30.8	11.3	3.3	8.0	13.2	3.3		8.0				13.2	6.3	2.0								
CN-T12	CN-T11	12.327.00	12.463.82				2	2.032	275	14.00	16									4.09	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.0	31.0	31.0	11.3	3.3	8.0	13.4	3.3		8.0				13.4	6.3	2.0								
CN-T12	CN-T11	12.328.00	12.464.82				2	2.032	275	14.00	16									4.11	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.1	31.1	31.1	11.3	3.3	8.0	13.5	3.3		8.0				13.5	6.3	2.0								
CN-T12	CN-T11	12.329.00	12.465.82				2	2.032	275	14.00	16									4.12	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.2	31.2	31.2	11.3	3.3	8.0	13.7	3.3		8.0				13.7	6.3	2.0								
CN-T12	CN-T11	12.330.00	12.466.82				2	2.032	275	14.00	16									4.13	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.3	31.3	31.3	11.3	3.3	8.0	13.7	3.3		8.0				13.7	6.3	2.0								
CN-T12	CN-T11	12.331.00	12.467.82				2	2.032	275	14.00	16									4.13	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.3	31.3	31.3	11.3	3.3	8.0	13.7	3.3		8.0				13.7	6.3	2.0								
CN-T12	CN-T11	12.332.00	12.468.82				2	2.032	275	14.00	16									4.13	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.3	31.3	31.3	11.3	3.3	8.0	13.7	3.3		8.0				13.7	6.3	2.0								
CN-T12	CN-T11	12.333.00	12.469.82				2	2.032	275	14.00	16									4.14	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.5	31.5	31.5	11.3	3.3	8.0	13.9	3.3		8.0				13.9	6.3	2.0								

Agrupación	Tamaño	P.K. Acumulado	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (dm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sagüe	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto/adoquillo	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15, e-borrompi (M20) Relación cobertura a-c: Suelo seleccionado C/95% PN, < 30 mm. e- M20. d-Garbanillo 5/15, f-suelo adecuado procedente excavación (<150mm) C/6% PN, g- Lecho mod.	Expos. (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	HD-H4Hz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleño cama-riñones (m3)	Relleño c-arena (m3)	Relleño riñones (m3)	Relleño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Relleño riñones a suelo seleccionado (m3)	Relleño riñones granular (m3)	Relleño cama-riñones (M20(m3)	Relleño cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relleño cobertura d-Garbanillo 5/15	Relleño cobertura e- H4/20	Relleño cobertura f-Suelo adecuado procedente excavación (<150mm) C/6% PN	Relleño cobertura g- Lecho mod (m3)	Excedente de tierras (m3) (compensado a nivel 0%, e-spojaiento 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho 30m (m3)
CN-12	CN-11	12.820.00	12.956.82				2	2.032	275	14.00	16								4.59	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.5	35.5	35.5	11.3	3.3	8.0	17.9	3.3	8.0		17.9	6.3	2.0										
CN-12	CN-11	12.821.00	12.957.82				2	2.032	275	14.00	16								4.59	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.5	35.5	35.5	11.3	3.3	8.0	17.9	3.3	8.0		17.9	6.3	2.0										
CN-12	CN-11	12.822.00	12.958.82				2	2.032	275	14.00	16								4.60	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.6	35.6	35.6	11.3	3.3	8.0	18.0	3.3	8.0		18.0	6.3	2.0										
CN-12	CN-11	12.823.00	12.959.82				2	2.032	275	14.00	16								4.59	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.5	35.5	35.5	11.3	3.3	8.0	17.9	3.3	8.0		17.9	6.3	2.0										
CN-12	CN-11	12.824.00	12.960.82				2	2.032	275	14.00	16								4.58	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.4	35.4	35.4	11.3	3.3	8.0	17.8	3.3	8.0		17.8	6.3	2.0										
CN-12	CN-11	12.825.00	12.961.82				2	2.032	275	14.00	16								4.57	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.3	35.3	35.3	11.3	3.3	8.0	17.7	3.3	8.0		17.7	6.3	2.0										
CN-12	CN-11	12.826.00	12.962.82				2	2.032	275	14.00	16								4.57	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.3	35.3	35.3	11.3	3.3	8.0	17.7	3.3	8.0		17.7	6.3	2.0										
CN-12	CN-11	12.827.00	12.963.82				2	2.032	275	14.00	16								4.57	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.3	35.3	35.3	11.3	3.3	8.0	17.7	3.3	8.0		17.7	6.3	2.0										
CN-12	CN-11	12.828.00	12.964.82				2	2.032	275	14.00	16								4.57	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.3	35.3	35.3	11.3	3.3	8.0	17.7	3.3	8.0		17.7	6.3	2.0										
CN-12	CN-11	12.829.00	12.965.82				2	2.032	275	14.00	16								4.57	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.3	35.3	35.3	11.3	3.3	8.0	17.7	3.3	8.0		17.7	6.3	2.0										
CN-12	CN-11	12.830.00	12.966.82				2	2.032	275	14.00	16								4.55	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	35.1	35.1	35.1	11.3	3.3	8.0	17.5	3.3	8.0		17.5	6.3	2.0										
CN-12	CN-11	12.831.00	12.967.82				2	2.032	275	14.00	16								4.52	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.9	34.9	34.9	11.3	3.3	8.0	17.3	3.3	8.0		17.3	6.3	2.0										
CN-12	CN-11	12.832.00	12.968.82				2	2.032	275	14.00	16								4.51	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0										
CN-12	CN-11	12.833.00	12.969.82				2	2.032	275	14.00	16								4.51	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0										
CN-12	CN-11	12.834.00	12.970.82				2	2.032	275	14.00	16								4.51	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0										
CN-12	CN-11	12.835.00	12.971.82				2	2.032	275	14.00	16								4.50	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0										
CN-12	CN-11	12.836.00	12.972.82				2	2.032	275	14.00	16								4.50	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0										
CN-12	CN-11	12.836.50	12.973.33				2	2.032	275	14.00	16								4.50	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	0.5	17.4	17.4	17.4	5.7	1.6	4.0	8.6	1.6	4.0		8.6	3.2	1.0										
CN-12	CN-11	12.837.00	12.974.82				2	2.032	275	14.00	16								4.50	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	0.5	17.4	17.4	17.4	5.7	1.6	4.0	8.6	1.6	4.0		8.6	3.2	1.0										
CN-12	CN-11	12.838.00	12.974.82				2	2.032	275	14.00	16								4.50	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0										
CN-12	CN-11	12.839.00	12.975.82				2	2.032	275	14.00	16								4.51	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.8	34.8	34.8	11.3	3.3	8.0	17.2	3.3	8.0		17.2	6.3	2.0										
CN-12	CN-11	12.840.00	12.976.82				2	2.032	275	14.00	16								4.51	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.8	34.8	34.8	11.3	3.3	8.0	17.2	3.3	8.0		17.2	6.3	2.0										
CN-12	CN-11	12.841.00	12.977.82				2	2.032	275	14.00	16								4.50	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.7	34.7	34.7	11.3	3.3	8.0	17.1	3.3	8.0		17.1	6.3	2.0										
CN-12	CN-11	12.842.00	12.978.82				2	2.032	275	14.00	16								4.50	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.6	34.6	34.6	11.3	3.3	8.0	17.0	3.3	8.0		17.0	6.3	2.0										
CN-12	CN-11	12.843.00	12.979.82				2	2.032	275	14.00	16								4.49	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.5	34.5	34.5	11.3	3.3	8.0	17.0	3.3	8.0		17.0	6.3	2.0										
CN-12	CN-11	12.844.00	12.980.82				2	2.032	275	14.00	16								4.48	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.5	34.5	34.5	11.3	3.3	8.0	16.9	3.3	8.0		16.9	6.3	2.0										
CN-12	CN-11	12.845.00	12.981.82				2	2.032	275	14.00	16								4.47	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.4	34.4	34.4	11.3	3.3	8.0	16.8	3.3	8.0		16.8	6.3	2.0										
CN-12	CN-11	12.846.00	12.982.82				2	2.032	275	14.00	16								4.47	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.4	34.4	34.4	11.3	3.3	8.0	16.8	3.3	8.0		16.8	6.3	2.0										
CN-12	CN-11	12.847.00	12.983.82				2	2.032	275	14.00	16								4.46	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	34.3	34.3	34.3	11.3	3.3	8.0	16.7	3.3	8.0		16.7												

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto/canchales	A=separación tubo salud	S=separación entre tuberías	B=Archo interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recurvimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	HT-altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15, <bornoplom HM-20	Rehabilitación e- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S/15, f-Suelo adecuado procedente excavación (<150mm) c/95% PN, g- Luchero mod.	Exposici. (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-long (m)	HT-DHxH2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m³)	Relevo c-ama (m³)	Relevo riñonera(s)m³)	Relevo cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relevo riñonera suelo seleccionado (m³)	Relevo riñonera grabaciado (m³)	Relevo cama+riñonera HM-20(m³)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Gabarrillo S/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relevo cobertura. g- Luchero mod (m³)	Excedente de tierra (m³) (consumo actual 0%, espolvoreo 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho-30m (m³)
CN-112	CN-111	13.204.00	13.340.82				2	2.032	275	14.00	16									3.93	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	11.9	3.3	8.0				11.9	6.3	2.0									
CN-112	CN-111	13.305.00	13.341.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	11.9	3.3	8.0				11.9	6.3	2.0									
CN-112	CN-111	13.206.00	13.342.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.4	29.4	29.4	11.3	3.3	8.0	11.9	3.3	8.0				11.9	6.3	2.0									
CN-112	CN-111	13.207.00	13.343.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	11.9	3.3	8.0				11.9	6.3	2.0									
CN-112	CN-111	13.208.00	13.344.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.5	29.5	29.5	11.3	3.3	8.0	11.9	3.3	8.0				11.9	6.3	2.0									
CN-112	CN-111	13.209.00	13.345.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.4	29.4	29.4	11.3	3.3	8.0	11.8	3.3	8.0				11.8	6.3	2.0									
CN-112	CN-111	13.210.00	13.346.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.4	29.4	29.4	11.3	3.3	8.0	11.8	3.3	8.0				11.8	6.3	2.0									
CN-112	CN-111	13.211.00	13.347.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3	8.0				11.7	6.3	2.0									
CN-112	CN-111	13.212.00	13.348.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3	8.0				11.6	6.3	2.0									
CN-112	CN-111	13.213.00	13.349.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3	8.0				11.6	6.3	2.0									
CN-112	CN-111	13.214.00	13.350.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3	8.0				11.5	6.3	2.0									
CN-112	CN-111	13.215.00	13.351.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.0	29.0	29.0	11.3	3.3	8.0	11.5	3.3	8.0				11.5	6.3	2.0									
CN-112	CN-111	13.216.00	13.352.82				2	2.032	275	14.00	16									3.87	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	29.0	29.0	29.0	11.3	3.3	8.0	11.4	3.3	8.0				11.4	6.3	2.0									
CN-112	CN-111	13.217.00	13.353.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3	8.0				11.3	6.3	2.0									
CN-112	CN-111	13.218.00	13.354.82				2	2.032	275	14.00	16									3.85	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.8	28.8	28.8	11.3	3.3	8.0	11.3	3.3	8.0				11.3	6.3	2.0									
CN-112	CN-111	13.219.00	13.355.82				2	2.032	275	14.00	16									3.85	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.8	28.8	28.8	11.3	3.3	8.0	11.2	3.3	8.0				11.2	6.3	2.0									
CN-112	CN-111	13.220.00	13.356.82				2	2.032	275	14.00	16									3.84	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3	8.0				11.1	6.3	2.0									
CN-112	CN-111	13.221.00	13.357.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.1	3.3	8.0				11.1	6.3	2.0									
CN-112	CN-111	13.222.00	13.358.82				2	2.032	275	14.00	16									3.82	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.0	3.3	8.0				11.0	6.3	2.0									
CN-112	CN-111	13.223.00	13.359.82				2	2.032	275	14.00	16									3.82	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3	8.0				10.9	6.3	2.0									
CN-112	CN-111	13.224.00	13.360.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.9	3.3	8.0				10.9	6.3	2.0									
CN-112	CN-111	13.225.00	13.361.82				2	2.032	275	14.00	16									3.80	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.4	28.4	28.4	11.3	3.3	8.0	10.8	3.3	8.0				10.8	6.3	2.0									
CN-112	CN-111	13.226.00	13.362.82				2	2.032	275	14.00	16									3.79	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.3	28.3	28.3	11.3	3.3	8.0	10.7	3.3	8.0				10.7	6.3	2.0									
CN-112	CN-111	13.227.00	13.363.82				2	2.032	275	14.00	16									3.79	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.3	28.3	28.3	11.3	3.3	8.0	10.7	3.3	8.0				10.7	6.3	2.0									
CN-112	CN-111	13.228.00	13.364.82				2	2.032	275	14.00	16									3.78	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.2	28.2	28.2	11.3	3.3	8.0	10.6	3.3	8.0				10.6	6.3	2.0									
CN-112	CN-111	13.229.00	13.365.82				2	2.032	275	14.00	16									3.78	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.2	28.2	28.2	11.3	3.3	8.0	10.6	3.3	8.0				10.6	6.3	2.0									
CN-112	CN-111	13.230.00	13.366.82				2	2.032	275	14.00	16									3.78	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.2	28.2	28.2	11.3	3.3	8.0	10.6	3.3	8.0				10.6	6.3	2.0									
CN-112	CN-111	13.231.00	13.367.82				2	2.032	275	14.00	16									3.78	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	28.2	28.2	28.2	11.3	3.3	8.0	10.6	3.3	8.0				10.6	6.3	2.0									
CN-112	CN-111	13.232.00	13.368.82				2																																																								

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (mm)	Nº verticos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto	separación tubo salud	S ₂ -Separación entre tuberías	B-Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15, e-borrompi HM-20	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S/15, f-suelo adecuado procedente excavación (<150mm) c/95% PN, g- Luchero mod.	Exposici. mts. escalón (m)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	HT-DH+Z (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama-rifonera (m3)	Relevo c-ama (m3)	Relevo rifonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo rifonera suelo seleccionado (m3)	Relevo rifonera grabaciola (m3)	Relevo cama-rifonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d-Gabarrillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relevo cobertura g- Luchero mod (m3)	Excedente de tierra (m3) (compensación anual 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho-30m (m3)
CN-T12	CN-T11	13.332.00	13.468.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3		8.0				11.3	6.3	2.0							
CN-T12	CN-T11	13.333.00	13.469.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.3	3.3		8.0			11.3	6.3	2.0								
CN-T12	CN-T11	13.334.00	13.470.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3		8.0			11.6	6.3	2.0								
CN-T12	CN-T11	13.335.00	13.471.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3		8.0			11.6	6.3	2.0								
CN-T12	CN-T11	13.336.00	13.472.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0			11.7	6.3	2.0								
CN-T12	CN-T11	13.337.00	13.473.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0			11.7	6.3	2.0								
CN-T12	CN-T11	13.338.00	13.474.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3		8.0			11.6	6.3	2.0								
CN-T12	CN-T11	13.339.00	13.475.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0			11.5	6.3	2.0								
CN-T12	CN-T11	13.340.00	13.476.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.6	3.3		8.0			11.6	6.3	2.0								
CN-T12	CN-T11	13.341.00	13.477.82				2	2.032	275	14.00	16									3.89	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.2	29.2	29.2	11.3	3.3	8.0	11.6	3.3		8.0			11.6	6.3	2.0								
CN-T12	CN-T11	13.342.00	13.478.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0			11.5	6.3	2.0								
CN-T12	CN-T11	13.343.00	13.479.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0			11.5	6.3	2.0								
CN-T12	CN-T11	13.344.00	13.480.82				2	2.032	275	14.00	16									3.90	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0			11.7	6.3	2.0								
CN-T12	CN-T11	13.345.00	13.481.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.4	29.4	29.4	11.3	3.3	8.0	11.8	3.3		8.0			11.8	6.3	2.0								
CN-T12	CN-T11	13.346.00	13.482.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.4	29.4	29.4	11.3	3.3	8.0	11.9	3.3		8.0			11.9	6.3	2.0								
CN-T12	CN-T11	13.347.00	13.483.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.4	29.4	29.4	11.3	3.3	8.0	11.9	3.3		8.0			11.9	6.3	2.0								
CN-T12	CN-T11	13.348.00	13.484.82				2	2.032	275	14.00	16									3.92	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.4	29.4	29.4	11.3	3.3	8.0	11.8	3.3		8.0			11.8	6.3	2.0								
CN-T12	CN-T11	13.349.00	13.485.82				2	2.032	275	14.00	16									3.91	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.3	29.3	29.3	11.3	3.3	8.0	11.7	3.3		8.0			11.7	6.3	2.0								
CN-T12	CN-T11	13.350.00	13.486.82				2	2.032	275	14.00	16									3.88	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.1	29.1	29.1	11.3	3.3	8.0	11.5	3.3		8.0			11.5	6.3	2.0								
CN-T12	CN-T11	13.351.00	13.487.82				2	2.032	275	14.00	16									3.87	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.0	29.0	29.0	11.3	3.3	8.0	11.4	3.3		8.0			11.4	6.3	2.0								
CN-T12	CN-T11	13.352.00	13.488.82				2	2.032	275	14.00	16									3.87	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.0	29.0	29.0	11.3	3.3	8.0	11.4	3.3		8.0			11.4	6.3	2.0								
CN-T12	CN-T11	13.353.00	13.489.82				2	2.032	275	14.00	16									3.87	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	29.0	29.0	29.0	11.3	3.3	8.0	11.4	3.3		8.0			11.4	6.3	2.0								
CN-T12	CN-T11	13.354.00	13.490.82				2	2.032	275	14.00	16									3.86	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	28.9	28.9	28.9	11.3	3.3	8.0	11.3	3.3		8.0			11.3	6.3	2.0								
CN-T12	CN-T11	13.355.00	13.491.82				2	2.032	275	14.00	16									3.85	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	28.8	28.8	28.8	11.3	3.3	8.0	11.2	3.3		8.0			11.2	6.3	2.0								
CN-T12	CN-T11	13.356.00	13.492.82				2	2.032	275	14.00	16									3.84	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.2	3.3		8.0			11.2	6.3	2.0								
CN-T12	CN-T11	13.357.00	13.493.82				2	2.032	275	14.00	16									3.83	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	28.7	28.7	28.7	11.3	3.3	8.0	11.1	3.3		8.0			11.1	6.3	2.0								
CN-T12	CN-T11	13.358.00	13.494.82				2	2.032	275	14.00	16									3.82	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	28.6	28.6	28.6	11.3	3.3	8.0	11.0	3.3		8.0			11.0	6.3	2.0								
CN-T12	CN-T11	13.359.00	13.495.82				2	2.032	275	14.00	16									3.81	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.5	1.0	28.5	28.5	28.5	11.3	3.3	8.0	10.9	3.3		8.0			10.9	6.3	2.0								
CN-T12	CN-T11																																																														

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº valvulas de desagüe	DN val (mm)	Acero tipo S	espesor adaptado (mm)	PN (limpieza valvulera (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15, e-borrompi (M20)	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. e- M20. d-Garbanillo S/15, f-suelo adecuado procedente excavación (<150mm) c/95% PN, g- Lecho mod.	Exposor (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	H1-DHxH2 (m)	Long (m)	Excavación tapasada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebelloo cama+riñonera (m3)	Rebelloo c-ama (m3)	Rebelloo riñonera(s)m3)	Rebelloo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Rebelloo riñonera suelo seleccionado (m3)	Rebelloo riñonera garbanillo (m3)	Rebelloo cama+riñonera HM-20(m3)	Rebelloo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Rebelloo cobertura d-Garbanillo S/15	Rebelloo cobertura c- H4/20	Rebelloo cobertura f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Rebelloo cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0%, e-spojaniento teórico 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho 30m (m3)
CN-T12	CN-T11	13.715.00	13.851.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.19	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.8	31.8	31.8	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.716.00	13.852.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.21	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.0	32.0	32.0	11.3	3.3	8.0	14.4	3.3	8.0				14.4	6.3	2.0									
CN-T12	CN-T11	13.717.00	13.853.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.23	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.1	32.1	32.1	11.3	3.3	8.0	14.6	3.3	8.0				14.6	6.3	2.0									
CN-T12	CN-T11	13.718.00	13.854.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.22	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.1	32.1	32.1	11.3	3.3	8.0	14.5	3.3	8.0				14.5	6.3	2.0									
CN-T12	CN-T11	13.719.00	13.855.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.21	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.0	32.0	32.0	11.3	3.3	8.0	14.5	3.3	8.0				14.5	6.3	2.0									
CN-T12	CN-T11	13.720.00	13.856.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.21	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.0	32.0	32.0	11.3	3.3	8.0	14.4	3.3	8.0				14.4	6.3	2.0									
CN-T12	CN-T11	13.721.00	13.857.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.722.00	13.858.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.723.00	13.859.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.724.00	13.860.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.725.00	13.861.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.726.00	13.862.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.727.00	13.863.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.728.00	13.864.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.21	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.0	32.0	32.0	11.3	3.3	8.0	14.4	3.3	8.0				14.4	6.3	2.0									
CN-T12	CN-T11	13.729.00	13.865.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.730.00	13.866.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.19	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.8	31.8	31.8	11.3	3.3	8.0	14.2	3.3	8.0				14.2	6.3	2.0									
CN-T12	CN-T11	13.731.00	13.867.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.19	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.8	31.8	31.8	11.3	3.3	8.0	14.2	3.3	8.0				14.2	6.3	2.0									
CN-T12	CN-T11	13.732.00	13.868.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.733.00	13.869.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.734.00	13.870.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.735.00	13.871.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	31.9	31.9	31.9	11.3	3.3	8.0	14.3	3.3	8.0				14.3	6.3	2.0									
CN-T12	CN-T11	13.736.00	13.872.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.20	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.0	32.0	32.0	11.3	3.3	8.0	14.4	3.3	8.0				14.4	6.3	2.0									
CN-T12	CN-T11	13.737.00	13.873.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.21	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.0	32.0	32.0	11.3	3.3	8.0	14.4	3.3	8.0				14.4	6.3	2.0									
CN-T12	CN-T11	13.738.00	13.874.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.22	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.1	32.1	32.1	11.3	3.3	8.0	14.5	3.3	8.0				14.5	6.3	2.0									
CN-T12	CN-T11	13.739.00	13.875.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.22	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.1	32.1	32.1	11.3	3.3	8.0	14.5	3.3	8.0				14.5	6.3	2.0									
CN-T12	CN-T11	13.740.00	13.876.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.23	0.33	21.2-2000	0.60	1.00	6.20				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.2	32.2	32.2	11.3	3.3	8.0	14.6	3.3	8.0				14.6	6.3	2.0									
CN-T12	CN-T11	13.741.00	13.877.82				2	2.032	275	14.00	16			2	2.032	275	14.00				4.24	0.33	21.2-2000	0.60	1.00	6.20				0.																																		

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Altura de excavación a TH (m)	Talud HW	Altura de excavación a TH (m)	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang Apoyo	H2-Recurvimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Relaciones: a-c: Suelo seleccionado C/95% PN, <= 30 mm. d-Garbanillo 5/15, e-borrompi (M20)	Relaciones: a-c: Suelo seleccionado C/95% PN, <= 30 mm. e-M20: d-Garbanillo 5/15, f-Suelo adecuado procedente excavación (<=150mm) C/6% PN, g- Lecho mod.	Exposic (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera garbanillo (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d-Garbanillo 5/15	Relevo cobertura e- HM20	Relevo cobertura f-Suelo adecuado procedente excavación (<=150mm) C/6% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierras (m3) (compensación anual 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
CN-T12	CN-T11	13.843.00	13.979.82				2	2.032	275	14.00	16		4.38	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5	11.3	3.3	8.0	15.9	3.3		8.0			15.9	6.3	2.0										
CN-T12	CN-T11	13.844.00	13.980.82				2	2.032	275	14.00	16		4.37	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0										
CN-T12	CN-T11	13.845.00	13.981.82				2	2.032	275	14.00	16		4.36	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0										
CN-T12	CN-T11	13.846.00	13.982.82				2	2.032	275	14.00	16		4.37	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5	11.3	3.3	8.0	15.9	3.3		8.0			15.9	6.3	2.0										
CN-T12	CN-T11	13.847.00	13.983.82				2	2.032	275	14.00	16		4.38	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.6	33.6	33.6	11.3	3.3	8.0	16.0	3.3		8.0			16.0	6.3	2.0										
CN-T12	CN-T11	13.848.00	13.984.82				2	2.032	275	14.00	16		4.38	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5	11.3	3.3	8.0	16.0	3.3		8.0			16.0	6.3	2.0										
CN-T12	CN-T11	13.849.00	13.985.82				2	2.032	275	14.00	16		4.39	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.6	33.6	33.6	11.3	3.3	8.0	16.0	3.3		8.0			16.0	6.3	2.0										
CN-T12	CN-T11	13.850.00	13.986.82				2	2.032	275	14.00	16		4.40	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7	11.3	3.3	8.0	16.1	3.3		8.0			16.1	6.3	2.0										
CN-T12	CN-T11	13.851.00	13.987.82				2	2.032	275	14.00	16		4.39	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7	11.3	3.3	8.0	16.1	3.3		8.0			16.1	6.3	2.0										
CN-T12	CN-T11	13.852.00	13.989.82				2	2.032	275	14.00	16		4.39	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7	11.3	3.3	8.0	16.1	3.3		8.0			16.1	6.3	2.0										
CN-T12	CN-T11	13.853.00	13.989.82				2	2.032	275	14.00	16		4.40	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7	11.3	3.3	8.0	16.1	3.3		8.0			16.1	6.3	2.0										
CN-T12	CN-T11	13.854.00	13.990.82				2	2.032	275	14.00	16		4.39	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.7	33.7	33.7	11.3	3.3	8.0	16.1	3.3		8.0			16.1	6.3	2.0										
CN-T12	CN-T11	13.855.00	13.991.82				2	2.032	275	14.00	16		4.38	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.6	33.6	33.6	11.3	3.3	8.0	16.0	3.3		8.0			16.0	6.3	2.0										
CN-T12	CN-T11	13.856.00	13.992.82				2	2.032	275	14.00	16		4.38	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.5	33.5	33.5	11.3	3.3	8.0	16.0	3.3		8.0			16.0	6.3	2.0										
CN-T12	CN-T11	13.857.00	13.993.82				2	2.032	275	14.00	16		4.37	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.9	3.3		8.0			15.9	6.3	2.0										
CN-T12	CN-T11	13.858.00	13.994.82				2	2.032	275	14.00	16		4.37	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.9	3.3		8.0			15.9	6.3	2.0										
CN-T12	CN-T11	13.859.00	13.995.82				2	2.032	275	14.00	16		4.36	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.4	33.4	33.4	11.3	3.3	8.0	15.8	3.3		8.0			15.8	6.3	2.0										
CN-T12	CN-T11	13.860.00	13.996.82				2	2.032	275	14.00	16		4.36	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.3	33.3	33.3	11.3	3.3	8.0	15.7	3.3		8.0			15.7	6.3	2.0										
CN-T12	CN-T11	13.861.00	13.997.82				2	2.032	275	14.00	16		4.35	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.2	33.2	33.2	11.3	3.3	8.0	15.7	3.3		8.0			15.7	6.3	2.0										
CN-T12	CN-T11	13.862.00	13.998.82				2	2.032	275	14.00	16		4.34	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.2	33.2	33.2	11.3	3.3	8.0	15.6	3.3		8.0			15.6	6.3	2.0										
CN-T12	CN-T11	13.863.00	13.999.82				2	2.032	275	14.00	16		4.34	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.2	33.2	33.2	11.3	3.3	8.0	15.6	3.3		8.0			15.6	6.3	2.0										
CN-T12	CN-T11	13.864.00	14.000.82				2	2.032	275	14.00	16		4.33	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.1	33.1	33.1	11.3	3.3	8.0	15.5	3.3		8.0			15.5	6.3	2.0										
CN-T12	CN-T11	13.865.00	14.001.82				2	2.032	275	14.00	16		4.33	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.1	33.1	33.1	11.3	3.3	8.0	15.5	3.3		8.0			15.5	6.3	2.0										
CN-T12	CN-T11	13.866.00	14.002.82				2	2.032	275	14.00	16		4.32	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.0	33.0	33.0	11.3	3.3	8.0	15.4	3.3		8.0			15.4	6.3	2.0										
CN-T12	CN-T11	13.867.00	14.003.82				2	2.032	275	14.00	16		4.31	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	33.0	33.0	33.0	11.3	3.3	8.0	15.4	3.3		8.0			15.4	6.3	2.0										
CN-T12	CN-T11	13.868.00	14.004.82				2	2.032	275	14.00	16		4.31	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.9	32.9	32.9	11.3	3.3	8.0	15.3	3.3		8.0			15.3	6.3	2.0										
CN-T12	CN-T11	13.869.00	14.005.82				2	2.032	275	14.00	16		4.30	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.8	32.8	32.8	11.3	3.3	8.0	15.3	3.3		8.0			15.3	6.3	2.0										
CN-T12	CN-T11	13.870.00	14.006.82				2	2.032	275	14.00	16		4.30	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.8	32.8	32.8	11.3	3.3	8.0	15.2	3.3		8.0			15.2	6.3	2.0										
CN-T12	CN-T11	13.871.00	14.007.82				2	2.032	275	14.00	16		4.29	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.7	32.7	32.7	11.3	3.3	8.0	15.2	3.3		8.0			15.2	6.3	2.0										
CN-T12	CN-T11	13.872.00	14.008.82				2	2.032	275	14.00	16		4.29	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.7	32.7	32.7	11.3	3.3	8.0	15.1	3.3		8.0			15.1	6.3	2.0										
CN-T12	CN-T11	13.873.00	14.009.82				2	2.032	275	14.00	16		4.28	0.33	21.2-2000	0.60	1.00	6.20			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.5	1.0	32.																								

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verederos por tubería	DN verederos (mm)	Nº valvulas de sagu	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón (M20)	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d- Garbanillo 5/15 e- homopon (M20) Malla cobertura f- Suela seleccionada C/95% PN, < 30 mm. e- M20. d- Garbanillo 5/15. f- Suela adecuada pendiente excavación (<150mm) C/65 % PN. g- Lecho mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT- ang (n)	HT- DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama- ríñonera (m2)	Relevo cama- ríñonera (m2)	Relevo ríñonera (m2)	Relevo ríñonera (m2)	Relevo ríñonera a suelo seleccionado (m2)	Relevo ríñonera grabaciolo (m2)	Relevo cama- ríñonera (M20(m2)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d- Garbanillo 5/15	Relevo cobertura e- H20;	Relevo cobertura f- Suelo adecuado y excavación (<150mm) C/65 % PN	Relevo cobertura g- Lecho mod (m2)	Excedente de tierra (m2) (compensando nivel 0%, e- porcentaje lateral 5%)	Cinta liberada (m)	Manto escollera a- 0.5m, ancho-30m (m2)
CN-T12	T11-T12	192.00	14.618.82				2	1.829	275	11.50	16						3.57	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9		7.1			9.8	5.3	2.0							
CN-T12	T11-T12	193.00	14.619.82				2	1.829	275	11.50	16						3.58	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9		7.1			9.9	5.3	2.0							
CN-T12	T11-T12	194.00	14.620.82				2	1.829	275	11.50	16						3.58	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9		7.1			10.0	5.3	2.0							
CN-T12	T11-T12	195.00	14.621.82				2	1.829	275	11.50	16						3.59	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9		7.1			10.0	5.3	2.0							
CN-T12	T11-T12	196.00	14.622.82				2	1.829	275	11.50	16						3.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9		7.1			10.1	5.3	2.0							
CN-T12	T11-T12	197.00	14.623.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0							
CN-T12	T11-T12	198.00	14.624.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	199.00	14.625.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	200.00	14.626.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	201.00	14.627.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1			10.4	5.3	2.0							
CN-T12	T11-T12	202.00	14.628.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1			10.4	5.3	2.0							
CN-T12	T11-T12	203.00	14.629.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1			10.4	5.3	2.0							
CN-T12	T11-T12	204.00	14.630.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1			10.4	5.3	2.0							
CN-T12	T11-T12	205.00	14.631.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	206.00	14.632.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	207.00	14.633.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	208.00	14.634.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	209.00	14.635.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	210.00	14.636.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	211.00	14.637.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0							
CN-T12	T11-T12	212.00	14.638.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0							
CN-T12	T11-T12	213.00	14.639.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0							
CN-T12	T11-T12	213.24	14.640.06				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.02	6.1	6.1	6.1	2.4	0.7	1.7	2.4	0.7		1.7			2.4	1.3	0.5							
CN-T12	T11-T12	214.00	14.640.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.08	19.3	19.3	19.3	7.5	2.2	5.4	7.8	2.2		5.4			7.8	4.1	1.5							
CN-T12	T11-T12	215.00	14.641.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0							
CN-T12	T11-T12	216.00	14.642.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0							
CN-T12	T11-T12	217.00	14.643.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0							
CN-T12	T11-T12	218.00	14.644.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0							
CN-T12	T11-T12	219.00	14.645.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0							
CN-T12	T11-T12	220.00	14.646.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9																	

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja concalcionada zanja	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	HT= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Reforzamientos c= Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15. e-borrompió (M4.20) 30 mm. e- M4.20. d-Gabarrillo S/15. f-suelo adecuado para excavación (<150mm C/95% PN. g- Luchito modif.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT= ang (n)	HT=DNH2 (m)	Long (m)	Excavación tapasada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Releño cama+riñonera (m3)	Releño c-arena (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera grabaciado (m3)	Releño cama+riñonera (M4.20(m3)	Releño cobertura c= Suelo seleccionado C/95% PN, < 30 mm	Releño cobertura. d-Gabarrillo S/15	Releño cobertura. e= H4/20	Releño cobertura. f-Suelo adecuado y excavación (<150mm C/95% PN	Releño cobertura. g= Luchito modif (m3)	Excedente de tierra (m3) (consumo actual 0% e-spojaniento lateral 5%)	Cinta liberada (m3)	Manto escollera a 0.5m. ancho 30m. (m3)
CN-T12	T11-T12	448.00	14.874.82				2	1.829	275	11.50	16				3.92	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.8	27.8	27.8	10.0	2.9	7.1	13.7	2.9	7.1							12.7	5.3	2.0						
CN-T12	T11-T12	449.00	14.875.82				2	1.829	275	11.50	16				3.92	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.8	27.8	27.8	10.0	2.9	7.1	13.7	2.9	7.1							12.7	5.3	2.0						
CN-T12	T11-T12	450.00	14.876.82				2	1.829	275	11.50	16				3.92	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.8	27.8	27.8	10.0	2.9	7.1	13.7	2.9	7.1							12.7	5.3	2.0						
CN-T12	T11-T12	451.00	14.877.82				2	1.829	275	11.50	16				3.92	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.9	27.9	27.9	10.0	2.9	7.1	13.7	2.9	7.1							12.8	5.3	2.0						
CN-T12	T11-T12	452.00	14.878.82				2	1.829	275	11.50	16				3.93	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.9	27.9	27.9	10.0	2.9	7.1	13.7	2.9	7.1							12.8	5.3	2.0						
CN-T12	T11-T12	453.00	14.879.82				2	1.829	275	11.50	16				3.93	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.9	27.9	27.9	10.0	2.9	7.1	13.7	2.9	7.1							12.8	5.3	2.0						
CN-T12	T11-T12	454.00	14.880.82				2	1.829	275	11.50	16				3.94	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.0	28.0	28.0	10.0	2.9	7.1	13.7	2.9	7.1							12.9	5.3	2.0						
CN-T12	T11-T12	455.00	14.881.82				2	1.829	275	11.50	16				3.94	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.0	28.0	28.0	10.0	2.9	7.1	13.7	2.9	7.1							12.9	5.3	2.0						
CN-T12	T11-T12	456.00	14.882.82				2	1.829	275	11.50	16				3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.7	2.9	7.1							13.0	5.3	2.0						
CN-T12	T11-T12	457.00	14.883.82				2	1.829	275	11.50	16				3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.7	2.9	7.1							13.0	5.3	2.0						
CN-T12	T11-T12	458.00	14.884.82				2	1.829	275	11.50	16				3.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.7	2.9	7.1							13.0	5.3	2.0						
CN-T12	T11-T12	459.00	14.885.82				2	1.829	275	11.50	16				3.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.7	2.9	7.1							13.1	5.3	2.0						
CN-T12	T11-T12	460.00	14.886.82				2	1.829	275	11.50	16				3.97	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.7	2.9	7.1							13.1	5.3	2.0						
CN-T12	T11-T12	461.00	14.887.82				2	1.829	275	11.50	16				3.97	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.7	2.9	7.1							13.2	5.3	2.0						
CN-T12	T11-T12	462.00	14.888.82				2	1.829	275	11.50	16				3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.7	2.9	7.1							13.2	5.3	2.0						
CN-T12	T11-T12	463.00	14.889.82				2	1.829	275	11.50	16				3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.7	2.9	7.1							13.2	5.3	2.0						
CN-T12	T11-T12	464.00	14.890.82				2	1.829	275	11.50	16				3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.7	2.9	7.1							13.3	5.3	2.0						
CN-T12	T11-T12	465.00	14.891.82				2	1.829	275	11.50	16				3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.7	2.9	7.1							13.3	5.3	2.0						
CN-T12	T11-T12	466.00	14.892.82				2	1.829	275	11.50	16				3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.7	2.9	7.1							13.3	5.3	2.0						
CN-T12	T11-T12	467.00	14.893.82				2	1.829	275	11.50	16				3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.7	2.9	7.1							13.2	5.3	2.0						
CN-T12	T11-T12	468.00	14.894.82				2	1.829	275	11.50	16				3.97	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.7	2.9	7.1							13.2	5.3	2.0						
CN-T12	T11-T12	469.00	14.895.82				2	1.829	275	11.50	16				3.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.7	2.9	7.1							13.1	5.3	2.0						
CN-T12	T11-T12	470.00	14.896.82				2	1.829	275	11.50	16				3.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.7	2.9	7.1							13.1	5.3	2.0						
CN-T12	T11-T12	471.00	14.897.82				2	1.829	275	11.50	16				3.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.7	2.9	7.1							13.1	5.3	2.0						
CN-T12	T11-T12	472.00	14.898.82				2	1.829	275	11.50	16				3.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.7	2.9	7.1							13.1	5.3	2.0						
CN-T12	T11-T12	473.00	14.899.82				2	1.829	275	11.50	16				3.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.7	2.9	7.1							13.0	5.3	2.0						
CN-T12	T11-T12	474.00	14.900.82				2	1.829	275	11.50	16				3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.7	2.9	7.1							13.0	5.3	2.0						
CN-T12	T11-T12	475.00	14.901.82				2	1.829	275	11.50	16				3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.7	2.9	7.1							13.0	5.3	2.0						
CN-T12	T11-T12	476.00	14.902.82				2	1.829	275	11.50	16				3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.7	2.9	7.1							13.0	5.3	2.0						
CN-T12	T11-T12	477.00	14.903.82				2	1.829	275	11.50	16				3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	12																																	

Agregación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	HT-altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones: a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió HM-20. f-Malla coberturera c- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suela adecuada procedente excavación (<150mm) c/65% PN. g- Lecho mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m2)	Reelleno cama (m2)	Reelleno riñonera(s)m2)	Reelleno cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M 20(m2)	Reelleno riñonera suelo seleccionado (m2)	Reelleno riñonera garbanillo (m2)	Reelleno cama+riñonera HM-20(m2)	Reelleno cobertura c- Suela seleccionada C/95% PN, < 30 mm	Reelleno cobertura. d-Garbanillo 5/15	Reelleno cobertura. e- HM-20	Reelleno cobertura. f-Suela adecuada procedente excavación (<150mm) c/65% PN	Reelleno cobertura. g- Lecho mod (m2)	Excedente de tierra (m2) (consumo actual 0%, espolvoreo teórico 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho 30m. (m2)
CN-T12	T11-T12	577.00	15.003.82				2	1.829	275	11.50	16				4.02	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9	7.1		13.6	5.3	2.0											
CN-T12	T11-T12	578.00	15.004.82				2	1.829	275	11.50	16				4.01	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1		13.5	5.3	2.0											
CN-T12	T11-T12	579.00	15.005.82				2	1.829	275	11.50	16				4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1		13.4	5.3	2.0											
CN-T12	T11-T12	580.00	15.006.82				2	1.829	275	11.50	16				3.99	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9	7.1		13.3	5.3	2.0											
CN-T12	T11-T12	581.00	15.007.82				2	1.829	275	11.50	16				3.97	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1		13.2	5.3	2.0											
CN-T12	T11-T12	582.00	15.008.82				2	1.829	275	11.50	16				3.96	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.1	2.9	7.1		13.1	5.3	2.0											
CN-T12	T11-T12	583.00	15.009.82				2	1.829	275	11.50	16				3.95	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9	7.1		13.0	5.3	2.0											
CN-T12	T11-T12	584.00	15.010.82				2	1.829	275	11.50	16				3.94	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.0	28.0	28.0	10.0	2.9	7.1	12.9	2.9	7.1		12.9	5.3	2.0											
CN-T12	T11-T12	585.00	15.011.82				2	1.829	275	11.50	16				3.95	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9	7.1		13.0	5.3	2.0											
CN-T12	T11-T12	586.00	15.012.82				2	1.829	275	11.50	16				3.95	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9	7.1		13.0	5.3	2.0											
CN-T12	T11-T12	587.00	15.013.82				2	1.829	275	11.50	16				3.96	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.1	2.9	7.1		13.1	5.3	2.0											
CN-T12	T11-T12	588.00	15.014.82				2	1.829	275	11.50	16				3.97	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1		13.2	5.3	2.0											
CN-T12	T11-T12	589.00	15.015.82				2	1.829	275	11.50	16				3.98	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1		13.2	5.3	2.0											
CN-T12	T11-T12	590.00	15.016.82				2	1.829	275	11.50	16				3.98	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9	7.1		13.3	5.3	2.0											
CN-T12	T11-T12	591.00	15.017.82				2	1.829	275	11.50	16				3.99	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1		13.4	5.3	2.0											
CN-T12	T11-T12	592.00	15.018.82				2	1.829	275	11.50	16				4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1		13.4	5.3	2.0											
CN-T12	T11-T12	593.00	15.019.82				2	1.829	275	11.50	16				4.01	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1		13.5	5.3	2.0											
CN-T12	T11-T12	594.00	15.020.82				2	1.829	275	11.50	16				4.01	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.7	28.7	28.7	10.0	2.9	7.1	13.5	2.9	7.1		13.5	5.3	2.0											
CN-T12	T11-T12	595.00	15.021.82				2	1.829	275	11.50	16				4.02	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9	7.1		13.6	5.3	2.0											
CN-T12	T11-T12	596.00	15.022.82				2	1.829	275	11.50	16				4.03	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.8	28.8	28.8	10.0	2.9	7.1	13.7	2.9	7.1		13.7	5.3	2.0											
CN-T12	T11-T12	597.00	15.023.82				2	1.829	275	11.50	16				4.04	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9	7.1		13.8	5.3	2.0											
CN-T12	T11-T12	598.00	15.024.82				2	1.829	275	11.50	16				4.05	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9	7.1		13.8	5.3	2.0											
CN-T12	T11-T12	599.00	15.025.82				2	1.829	275	11.50	16				4.05	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9	7.1		13.9	5.3	2.0											
CN-T12	T11-T12	600.00	15.026.82				2	1.829	275	11.50	16				4.06	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.1	29.1	29.1	10.0	2.9	7.1	13.9	2.9	7.1		13.9	5.3	2.0											
CN-T12	T11-T12	601.00	15.027.82				2	1.829	275	11.50	16				4.07	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9	7.1		14.0	5.3	2.0											
CN-T12	T11-T12	602.00	15.028.82				2	1.829	275	11.50	16				4.08	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9	7.1		14.1	5.3	2.0											
CN-T12	T11-T12	603.00	15.029.82				2	1.829	275	11.50	16				4.10	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.4	29.4	29.4	10.0	2.9	7.1	14.3	2.9	7.1		14.3	5.3	2.0											
CN-T12	T11-T12	604.00	15.030.82				2	1.829	275	11.50	16				4.12	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.5	29.5	29.5	10.0	2.9	7.1	14.4	2.9	7.1		14.4	5.3	2.0											
CN-T12	T11-T12	605.00	15.031.82				2	1.829	275	11.50	16				4.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1		14.7	5.3	2.0											
CN-T12	T11-T12	606.00	15.032.82				2	1.829	275	11.50	16				4.18	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1		14.9	5.3	2.0											
CN-T12	T11-T12	607.00	15.033.82				2	1.829	275	11.50	16				4.16	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9	7.1		14.8	5.3	2.0											
CN-T12	T11-T12	608.00	15.034.82				2	1.829	275	11.50	16				4.18	0.33	21.2-1800	0.60	1.00	5.80																																				

Agrupación	Tamaño	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Desague	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2=Recubrimiento cobertura mínima (m)	H3=Profundidad mínima s/ cave (m)	H4=altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rehabilitación a-c: Suela seleccionada C/95% PN, c= 30 mm. d-Garbanillo 5/15. e-borrompió HM-20. f-Malla excubierta c: Suela seleccionada C/95% PN, c= 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suela adecuada procedente excavación (<=150mm) c/6% PN. g- Lecho mod.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m2)	Relevo c-ama (m2)	Relevo riñonera(s)m2)	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M 20(m2)	Relevo riñonera suelo seleccionado (m2)	Relevo riñonera grabaciado (m2)	Relevo cama+riñonera HM-20(m2)	Relevo cobertura c: Suelo seleccionado C/95% PN, c= 30 mm	Relevo cobertura. d-Garbanillo 5/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suelo adecuado excavación (<=150mm) c/6% PN	Relevo cobertura. g- Lecho modif (m2)	Excedente de tierra (m2) (compensación alvald 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a=0.5m. ancho=30m. (m2)
CN-T12	T11-T12	833.00	15.269.82			2	1.829	275	11.50	16				4.29	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.0	31.0	31.0	10.0	2.9	7.1	15.9	2.9	7.1				15.9	5.3	2.0								
CN-T12	T11-T12	834.00	15.260.82			2	1.829	275	11.50	16				4.28	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9	7.1				15.8	5.3	2.0								
CN-T12	T11-T12	835.00	15.261.82			2	1.829	275	11.50	16				4.28	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9	7.1				15.8	5.3	2.0								
CN-T12	T11-T12	836.00	15.262.82			2	1.829	275	11.50	16				4.27	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.7	2.9	7.1				15.7	5.3	2.0								
CN-T12	T11-T12	837.00	15.263.82			2	1.829	275	11.50	16				4.27	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1				15.7	5.3	2.0								
CN-T12	T11-T12	838.00	15.264.82			2	1.829	275	11.50	16				4.26	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1				15.7	5.3	2.0								
CN-T12	T11-T12	839.00	15.265.82			2	1.829	275	11.50	16				4.26	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.7	30.7	30.7	10.0	2.9	7.1	15.6	2.9	7.1				15.6	5.3	2.0								
CN-T12	T11-T12	840.00	15.266.82			2	1.829	275	11.50	16				4.25	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.7	30.7	30.7	10.0	2.9	7.1	15.6	2.9	7.1				15.6	5.3	2.0								
CN-T12	T11-T12	841.00	15.267.82			2	1.829	275	11.50	16				4.25	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.5	2.9	7.1				15.5	5.3	2.0								
CN-T12	T11-T12	842.00	15.268.82			2	1.829	275	11.50	16				4.24	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.5	2.9	7.1				15.5	5.3	2.0								
CN-T12	T11-T12	843.00	15.269.82			2	1.829	275	11.50	16				4.24	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.5	2.9	7.1				15.5	5.3	2.0								
CN-T12	T11-T12	844.00	15.270.82			2	1.829	275	11.50	16				4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1				15.4	5.3	2.0								
CN-T12	T11-T12	845.00	15.271.82			2	1.829	275	11.50	16				4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1				15.4	5.3	2.0								
CN-T12	T11-T12	846.00	15.272.82			2	1.829	275	11.50	16				4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1				15.3	5.3	2.0								
CN-T12	T11-T12	847.00	15.273.82			2	1.829	275	11.50	16				4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1				15.3	5.3	2.0								
CN-T12	T11-T12	848.00	15.274.82			2	1.829	275	11.50	16				4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1				15.2	5.3	2.0								
CN-T12	T11-T12	849.00	15.275.82			2	1.829	275	11.50	16				4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1				15.2	5.3	2.0								
CN-T12	T11-T12	850.00	15.276.82			2	1.829	275	11.50	16				4.20	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1				15.2	5.3	2.0								
CN-T12	T11-T12	851.00	15.277.82			2	1.829	275	11.50	16				4.19	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1				15.1	5.3	2.0								
CN-T12	T11-T12	852.00	15.278.82			2	1.829	275	11.50	16				4.19	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1				15.1	5.3	2.0								
CN-T12	T11-T12	853.00	15.279.82			2	1.829	275	11.50	16				4.19	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1				15.1	5.3	2.0								
CN-T12	T11-T12	854.00	15.280.82			2	1.829	275	11.50	16				4.20	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1				15.1	5.3	2.0								
CN-T12	T11-T12	855.00	15.281.82			2	1.829	275	11.50	16				4.20	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1				15.1	5.3	2.0								
CN-T12	T11-T12	856.00	15.282.82			2	1.829	275	11.50	16				4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1				15.2	5.3	2.0								
CN-T12	T11-T12	857.00	15.283.82			2	1.829	275	11.50	16				4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1				15.2	5.3	2.0								
CN-T12	T11-T12	858.00	15.284.82			2	1.829	275	11.50	16				4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1				15.3	5.3	2.0								
CN-T12	T11-T12	859.00	15.285.82			2	1.829	275	11.50	16				4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1				15.3	5.3	2.0								
CN-T12	T11-T12	860.00	15.286.82			2	1.829	275	11.50	16				4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1				15.4	5.3	2.0								
CN-T12	T11-T12	861.00	15.287.82			2	1.829	275	11.50	16				4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1				15.4	5.3	2.0								
CN-T12	T11-T12	862.00	15.288.82			2	1.829	275	11.50	16				4.24	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.4	2.9	7.1				15.4	5.3	2.0								
CN-T12	T11-T12	863.00	15.289.82			2	1.829	275	11.50	16				4.25	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0																			

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A= Separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	HT= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	HT= altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Reforzamientos c= Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15, <borrompi (M20)	Reforzamientos e= Suela seleccionada C/95% PN, < 30 mm. e- M20. d-Garbanillo S/15, < Suela adecuada procedente excavación (<150mm) C/65% PN, g= Lecho mod.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT= ang (n)	HT=DNH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Releño cama+riñonera (m2)	Releño cama+riñonera (m2)	Releño cama+riñonera (m2)	Releño cama+riñonera (m2)	Releño cobertura c= Suelo seleccionado C/95% PN, < 30 mm	Releño cobertura d-Garbanillo S/15	Releño cobertura e= H2/20	Releño cobertura f= Suelo adecuado a excavación (<150mm) C/65% PN	Releño cobertura g= Lecho mod (m2)	Excedente de tierras (m2) (compensación altura 0%, e-spojaamiento 5%)	Cinta liberada (m)	Manto escollera a= 0.5m, ancho=30m (m2)
CN-T12	T11-T12	1219.00	15645.82				2	1.829	275	1150	16						4.16	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9	7.1					14.8	5.3	2.0				
CN-T12	T11-T12	1220.00	15646.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.1	30.1	30.1	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0				
CN-T12	T11-T12	1221.00	15647.82				2	1.829	275	1150	16						4.20	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1					15.1	5.3	2.0				
CN-T12	T11-T12	1222.00	15648.82				2	1.829	275	1150	16						4.22	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1					15.3	5.3	2.0				
CN-T12	T11-T12	1223.00	15649.82				2	1.829	275	1150	16						4.22	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1					15.3	5.3	2.0				
CN-T12	T11-T12	1223.75	15650.57				2	1.829	275	1150	16						4.22	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1					15.1	5.3	2.0				
CN-T12	T11-T12	1224.00	15650.82				2	1.829	275	1150	16						4.21	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.3	7.7	7.7	7.7	2.5	0.7	1.8	3.9	0.7	1.8					3.9	1.4	0.5				
CN-T12	T11-T12	1225.00	15651.82				2	1.829	275	1150	16						4.21	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1					15.2	5.3	2.0				
CN-T12	T11-T12	1226.00	15652.82				2	1.829	275	1150	16						4.20	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1					15.1	5.3	2.0				
CN-T12	T11-T12	1227.00	15653.82				2	1.829	275	1150	16						4.19	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1					15.1	5.3	2.0				
CN-T12	T11-T12	1228.00	15654.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0				
CN-T12	T11-T12	1229.00	15655.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0				
CN-T12	T11-T12	1230.00	15656.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0				
CN-T12	T11-T12	1231.00	15657.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0				
CN-T12	T11-T12	1232.00	15658.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0				
CN-T12	T11-T12	1233.00	15659.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0				
CN-T12	T11-T12	1234.00	15660.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0				
CN-T12	T11-T12	1235.00	15661.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0				
CN-T12	T11-T12	1236.00	15662.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9	7.1					14.8	5.3	2.0				
CN-T12	T11-T12	1237.00	15663.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0				
CN-T12	T11-T12	1238.00	15664.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0				
CN-T12	T11-T12	1239.00	15665.82				2	1.829	275	1150	16						4.18	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0				
CN-T12	T11-T12	1240.00	15666.82				2	1.829	275	1150	16						4.17	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0				
CN-T12	T11-T12	1241.00	15667.82				2	1.829	275	1150	16						4.15	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1					14.7	5.3	2.0				
CN-T12	T11-T12	1242.00	15668.82				2	1.829	275	1150	16						4.15	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1					14.7	5.3	2.0				
CN-T12	T11-T12	1243.00	15669.82				2	1.829	275	1150	16						4.14	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1					14.7	5.3	2.0				
CN-T12	T11-T12	1244.00	15670.82				2	1.829	275	1150	16						4.13	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	29.6	29.6	29.6	10.0	2.9	7.1	14.5	2.9	7.1					14.5	5.3	2.0				
CN-T12	T11-T12	1245.00	15671.82				2	1.829	275	1150	16						4.12	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	29.5	29.5	29.5	10.0	2.9	7.1	14.4	2.9	7.1					14.4	5.3	2.0				
CN-T12	T11-T12	1246.00	15672.82				2	1.829	275	1150	16						4.10	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	29.4	29.4	29.4	10.0	2.9	7.1	14.3	2.9	7.1					14.3	5.3	2.0				
CN-T12	T11-T12	1247.00	15673.82				2	1.829	275	1150	16						4.09	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9												

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja	Alcance tubo salud	Sep. Separación entre tuberías	B-Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompió HM-20. f-Malla coberturas (-) Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S/15. f-Suela adecuada procedente excavación (-150mm) C/95% PN. g- Lecho mod.	Expos. (m. escalón (n)	% Escarable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciolo (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suela seleccionada C/95% PN, < 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suela adecuada y excavación (-150mm) C/95% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensando nivel 0% y espolvoreado vertical 5%)	Cinta liberada (m)	Manto escollera a 45.5m. ancho-30m. (m3)
CN-T12	T11-T12	1.347.00	15.773.82				2	1829	275	1150	16						3.64	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.5	25.5	25.5	100	2.9	7.1	10.4	2.9	7.1							10.4	5.3	2.0						
CN-T12	T11-T12	1.348.00	15.774.82				2	1829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9	7.1							10.3	5.3	2.0						
CN-T12	T11-T12	1.349.00	15.775.82				2	1829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.350.00	15.776.82				2	1829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.351.00	15.777.82				2	1829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.352.00	15.778.82				2	1829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.353.00	15.779.82				2	1829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.354.00	15.780.82				2	1829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.355.00	15.781.82				2	1829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.356.00	15.782.82				2	1829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.357.00	15.783.82				2	1829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.358.00	15.784.82				2	1829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.359.00	15.785.82				2	1829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0						
CN-T12	T11-T12	1.360.00	15.786.82				2	1829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9	7.1							10.1	5.3	2.0						
CN-T12	T11-T12	1.361.00	15.787.82				2	1829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9	7.1							10.1	5.3	2.0						
CN-T12	T11-T12	1.362.00	15.788.82				2	1829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9	7.1							10.1	5.3	2.0						
CN-T12	T11-T12	1.363.00	15.789.82				2	1829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9	7.1							10.1	5.3	2.0						
CN-T12	T11-T12	1.364.00	15.790.82				2	1829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9	7.1							10.1	5.3	2.0						
CN-T12	T11-T12	1.365.00	15.791.82				2	1829	275	1150	16						3.59	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.1	25.1	25.1	100	2.9	7.1	10.0	2.9	7.1							10.0	5.3	2.0						
CN-T12	T11-T12	1.366.00	15.792.82				2	1829	275	1150	16						3.59	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.1	25.1	25.1	100	2.9	7.1	10.0	2.9	7.1							10.0	5.3	2.0						
CN-T12	T11-T12	1.367.00	15.793.82				2	1829	275	1150	16						3.59	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.1	25.1	25.1	100	2.9	7.1	10.0	2.9	7.1							10.0	5.3	2.0						
CN-T12	T11-T12	1.368.00	15.794.82				2	1829	275	1150	16						3.59	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.1	25.1	25.1	100	2.9	7.1	10.0	2.9	7.1							10.0	5.3	2.0						
CN-T12	T11-T12	1.369.00	15.795.82				2	1829	275	1150	16						3.58	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.0	25.0	25.0	100	2.9	7.1	9.9	2.9	7.1							9.9	5.3	2.0						
CN-T12	T11-T12	1.370.00	15.796.82				2	1829	275	1150	16						3.56	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.9	24.9	24.9	100	2.9	7.1	9.8	2.9	7.1							9.8	5.3	2.0						
CN-T12	T11-T12	1.371.00	15.797.82				2	1829	275	1150	16						3.55	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.8	24.8	24.8	100	2.9	7.1	9.7	2.9	7.1							9.7	5.3	2.0						
CN-T12	T11-T12	1.372.00	15.798.82				2	1829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	100	2.9	7.1	9.5	2.9	7.1							9.5	5.3	2.0						
CN-T12	T11-T12	1.373.00	15.799.82				2	1829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	100	2.9	7.1	9.5	2.9	7.1							9.5	5.3	2.0						
CN-T12	T11-T12	1.374.00	15.800.82				2	1829	275	1150	16						3.52	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	100	2.9	7.1	9.5	2.9	7.1							9.5	5.3	2.0						
CN-T12	T11-T12	1.375.00	15.801.82				2	1829	275	1150	16						3.52	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	100	2.9	7.1	9.5	2.9	7.1							9.5	5.3	2.0						
CN-T12	T11-T12	1.376.00	15.802.8																																																								

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verticos por tubería	DN vertical (mm)	Nº valvulas de sagüe	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= Separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	HT= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima 4' cave (m)	HT= altura de la borra desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15, e-borromp HM-20. Relación cobertura c: Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15, f-suela adecuada procedente excavación (<150mm) c/6% PN. g- Lecho mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT= ang (n)	HT=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Releño cama+riñonera (m3)	Releño c-arena (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera garbanillo (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c: Suela seleccionada C/95% PN, < 30 mm	Releño cobertura d-Garbanillo 5/15	Releño cobertura e- HM-20	Releño cobertura f-Suela adecuada procedente excavación (<150mm) c/6% PN	Releño cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (compensado a nivel 0%, e-spojaiento vertical 5%)	Cinta liberada (m3)	Manto escollera a 45.5m. ancho-30m. (m3)
CN-T12	T11-T12	1990.00	16416.82				2	1.829	275	1150	16						3.68	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9	7.1							10.7	5.3	2.0					
CN-T12	T11-T12	1991.00	16417.82				2	1.829	275	1150	16						3.65	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.5	2.9	7.1							10.5	5.3	2.0					
CN-T12	T11-T12	1992.00	16418.82				2	1.829	275	1150	16						3.63	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9	7.1							10.3	5.3	2.0					
CN-T12	T11-T12	1993.00	16419.82				2	1.829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1							10.2	5.3	2.0					
CN-T12	T11-T12	1994.00	16420.82				2	1.829	275	1150	16						3.59	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.0	2.9	7.1							10.0	5.3	2.0					
CN-T12	T11-T12	1995.00	16421.82				2	1.829	275	1150	16						3.57	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.9	24.9	24.9	100	2.9	7.1	9.8	2.9	7.1							9.8	5.3	2.0					
CN-T12	T11-T12	1996.00	16422.82				2	1.829	275	1150	16						3.56	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.8	24.8	24.8	100	2.9	7.1	9.7	2.9	7.1							9.7	5.3	2.0					
CN-T12	T11-T12	1997.00	16423.82				2	1.829	275	1150	16						3.57	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.0	25.0	25.0	100	2.9	7.1	9.9	2.9	7.1							9.9	5.3	2.0					
CN-T12	T11-T12	1998.00	16424.82				2	1.829	275	1150	16						3.58	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.0	25.0	25.0	100	2.9	7.1	9.9	2.9	7.1							9.9	5.3	2.0					
CN-T12	T11-T12	1999.00	16425.82				2	1.829	275	1150	16						3.56	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.8	24.8	24.8	100	2.9	7.1	9.7	2.9	7.1							9.7	5.3	2.0					
CN-T12	T11-T12	2000.00	16426.82				2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.7	24.7	24.7	100	2.9	7.1	9.6	2.9	7.1							9.6	5.3	2.0					
CN-T12	T11-T12	2001.00	16427.82				2	1.829	275	1150	16						3.52	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	100	2.9	7.1	9.5	2.9	7.1							9.5	5.3	2.0					
CN-T12	T11-T12	2002.00	16428.82				2	1.829	275	1150	16						3.51	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.5	24.5	24.5	100	2.9	7.1	9.4	2.9	7.1							9.4	5.3	2.0					
CN-T12	T11-T12	2003.00	16429.82				2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	100	2.9	7.1	9.5	2.9	7.1							9.5	5.3	2.0					
CN-T12	T11-T12	2004.00	16430.82				2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.9	24.9	24.9	100	2.9	7.1	9.8	2.9	7.1							9.8	5.3	2.0					
CN-T12	T11-T12	2005.00	16431.82				2	1.829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9	7.1							10.1	5.3	2.0					
CN-T12	T11-T12	2006.00	16432.82				2	1.829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9	7.1							10.3	5.3	2.0					
CN-T12	T11-T12	2007.00	16433.82				2	1.829	275	1150	16						3.65	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.5	2.9	7.1							10.5	5.3	2.0					
CN-T12	T11-T12	2008.00	16434.82				2	1.829	275	1150	16						3.68	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.9	25.9	25.9	100	2.9	7.1	10.8	2.9	7.1							10.8	5.3	2.0					
CN-T12	T11-T12	2009.00	16435.82				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.2	26.2	26.2	100	2.9	7.1	11.1	2.9	7.1							11.1	5.3	2.0					
CN-T12	T11-T12	2010.00	16436.82				2	1.829	275	1150	16						3.76	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.5	26.5	26.5	100	2.9	7.1	11.4	2.9	7.1							11.4	5.3	2.0					
CN-T12	T11-T12	2011.00	16437.82				2	1.829	275	1150	16						3.79	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.8	26.8	26.8	100	2.9	7.1	11.7	2.9	7.1							11.7	5.3	2.0					
CN-T12	T11-T12	2012.00	16438.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	27.0	27.0	27.0	100	2.9	7.1	11.9	2.9	7.1							11.9	5.3	2.0					
CN-T12	T11-T12	2013.00	16439.82				2	1.829	275	1150	16						3.85	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	27.2	27.2	27.2	100	2.9	7.1	12.1	2.9	7.1							12.1	5.3	2.0					
CN-T12	T11-T12	2014.00	16440.82				2	1.829	275	1150	16						3.88	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	27.5	27.5	27.5	100	2.9	7.1	12.4	2.9	7.1							12.4	5.3	2.0					
CN-T12	T11-T12	2015.00	16441.82				2	1.829	275	1150	16						3.90	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	27.7	27.7	27.7	100	2.9	7.1	12.6	2.9	7.1							12.6	5.3	2.0					
CN-T12	T11-T12	2016.00	16442.82				2	1.829	275	1150	16						3.94	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.0	28.0	28.0	100	2.9	7.1	12.9	2.9	7.1							12.9	5.3	2.0					
CN-T12	T11-T12	2017.00	16443.82				2	1.829	275	1150	16						3.99	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.3	28.3	28.3	100	2.9	7.1	13.2	2.9	7.1							13.2	5.3	2.0					
CN-T12	T11-T12	2018.00	16444.82				2	1.829	275	1150	16						4.00	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.6	28.6	28.6	100	2.9	7.1	13.5	2.9	7.1							13.5	5.3	2.0					
CN-T12	T11-T12	2019.00	16445.82				2																																																			

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Rebavillados a: c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompi (M20) < 30 mm. f- Suela seleccionada C/95% PN, < 30 mm. g- M20. d-Garbanillo 5/15. f-Suela adecuada procedente excavación (<150mm) c/6% PN. g- Luchero modif.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c-arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera granbanillo (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura. d-Garbanillo 5/15	Relleno cobertura. e- H4/20	Relleno cobertura. f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Relleno cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (consumo actual 0%, esparcimiento 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho 30m. (m3)
CN-T12	T11-T12	2118.00	16544.82				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.2	26.2	26.2	100	2.9	7.1	11.1	2.9	7.1						11.1	5.3	2.0						
CN-T12	T11-T12	2119.00	16545.82				2	1.829	275	1150	16						3.70	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.0	26.0	26.0	100	2.9	7.1	10.9	2.9	7.1						10.9	5.3	2.0						
CN-T12	T11-T12	2120.00	16546.82				2	1.829	275	1150	16						3.68	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.9	25.9	25.9	100	2.9	7.1	10.8	2.9	7.1						10.8	5.3	2.0						
CN-T12	T11-T12	2121.00	16547.82				2	1.829	275	1150	16						3.67	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9	7.1						10.6	5.3	2.0						
CN-T12	T11-T12	2122.00	16548.82				2	1.829	275	1150	16						3.67	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9	7.1						10.7	5.3	2.0						
CN-T12	T11-T12	2123.00	16549.82				2	1.829	275	1150	16						3.68	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9	7.1						10.7	5.3	2.0						
CN-T12	T11-T12	2124.00	16550.82				2	1.829	275	1150	16						3.68	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9	7.1						10.7	5.3	2.0						
CN-T12	T11-T12	2125.00	16551.82				2	1.829	275	1150	16						3.67	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9	7.1						10.6	5.3	2.0						
CN-T12	T11-T12	2126.00	16552.82				2	1.829	275	1150	16						3.66	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9	7.1						10.6	5.3	2.0						
CN-T12	T11-T12	2127.00	16553.82				2	1.829	275	1150	16						3.66	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9	7.1						10.6	5.3	2.0						
CN-T12	T11-T12	2128.00	16554.82				2	1.829	275	1150	16						3.67	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1						10.2	5.3	2.0						
CN-T12	T11-T12	2129.00	16555.82				2	1.829	275	1150	16						3.56	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.8	24.8	24.8	100	2.9	7.1	9.7	2.9	7.1						9.7	5.3	2.0						
CN-T12	T11-T12	2130.00	16556.82				2	1.829	275	1150	16						3.55	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.8	24.8	24.8	100	2.9	7.1	9.7	2.9	7.1						9.7	5.3	2.0						
CN-T12	T11-T12	2131.00	16557.82				2	1.829	275	1150	16						3.57	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.9	24.9	24.9	100	2.9	7.1	9.8	2.9	7.1						9.8	5.3	2.0						
CN-T12	T11-T12	2132.00	16558.82				2	1.829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.1	25.1	25.1	100	2.9	7.1	10.1	2.9	7.1						10.1	5.3	2.0						
CN-T12	T11-T12	2133.00	16559.82				2	1.829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1						10.2	5.3	2.0						
CN-T12	T11-T12	2134.00	16560.82				2	1.829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9	7.1						10.1	5.3	2.0						
CN-T12	T11-T12	2135.00	16561.82				2	1.829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1						10.2	5.3	2.0						
CN-T12	T11-T12	2136.00	16562.82				2	1.829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.5	25.5	25.5	100	2.9	7.1	10.4	2.9	7.1						10.4	5.3	2.0						
CN-T12	T11-T12	2137.00	16563.82				2	1.829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9	7.1						10.3	5.3	2.0						
CN-T12	T11-T12	2138.00	16564.82				2	1.829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1						10.2	5.3	2.0						
CN-T12	T11-T12	2139.00	16565.82				2	1.829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9	7.1						10.3	5.3	2.0						
CN-T12	T11-T12	2140.00	16566.82				2	1.829	275	1150	16						3.64	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.5	25.5	25.5	100	2.9	7.1	10.4	2.9	7.1						10.4	5.3	2.0						
CN-T12	T11-T12	2141.00	16567.82				2	1.829	275	1150	16						3.65	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.5	2.9	7.1						10.5	5.3	2.0						
CN-T12	T11-T12	2142.00	16568.82				2	1.829	275	1150	16						3.67	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9	7.1						10.7	5.3	2.0						
CN-T12	T11-T12	2143.00	16569.82				2	1.829	275	1150	16						3.69	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.9	25.9	25.9	100	2.9	7.1	10.8	2.9	7.1						10.8	5.3	2.0						
CN-T12	T11-T12	2144.00	16570.82				2	1.829	275	1150	16						3.71	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.1	26.1	26.1	100	2.9	7.1	11.0	2.9	7.1						11.0	5.3	2.0						
CN-T12	T11-T12	2145.00	16571.82				2	1.829	275	1150	16						3.71	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.1	26.1	26.1	100	2.9	7.1	11.0	2.9	7.1						11.0	5.3	2.0						
CN-T12	T11-T12	2145.49	16572.31				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	0.5	12.8	12.8	12.8	4.9	1.4	5.5	5.4	1.4	3.5						5.4	2.6	1.0						
CN-T12	T11-T12	2146.00	16572.82				2	1.829	275	1150	16						3.72	0.33	212-1800																																							

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= Separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Reforzamientos c= Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15, s-borrompi (M40)	Relieve cobertura f= Suela seleccionada C/95% PN, < 30 mm. e- M40. d-Garbanillo S/15, f-suela adecuada procedente excavación (<150mm) c/6% PN, g- Lecho mod.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (n)	HI=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleño cama+riñonera (m3)	Relleño c-ama (m3)	Relleño riñonera(s)m3)	Relleño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M40(m3)	Relleño riñonera suelo seleccionado (m3)	Relleño riñonera garbanillo (m3)	Relleño cama+riñonera HM-20(m3)	Relleño cobertura c= Suela seleccionada C/95% PN, < 30 mm	Relleño cobertura d-Garbanillo S/15	Relleño cobertura e= H4/20	Relleño cobertura f= Suela adecuada procedente excavación (<150mm) c/6% PN	Relleño cobertura g= Lecho modif (m3)	Excedente de tierra (m3) (compensación anual 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
CN112	T11-T12	2502.00	16928.82				2	1.829	275	1150	16					3.51	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.4	24.4	24.4	100	2.9	7.1	9.3	2.9		7.1					9.3	5.3	2.0							
CN112	T11-T12	2503.00	16929.82				2	1.829	275	1150	16					3.52	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.5	24.5	24.5	100	2.9	7.1	9.4	2.9		7.1				9.4	5.3	2.0								
CN112	T11-T12	2504.00	16930.82				2	1.829	275	1150	16					3.53	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	100	2.9	7.1	9.5	2.9		7.1				9.5	5.3	2.0								
CN112	T11-T12	2505.00	16931.82				2	1.829	275	1150	16					3.57	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	24.9	24.9	24.9	100	2.9	7.1	9.8	2.9		7.1				9.8	5.3	2.0								
CN112	T11-T12	2506.00	16932.82				2	1.829	275	1150	16					3.62	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9		7.1				10.2	5.3	2.0								
CN112	T11-T12	2507.00	16933.82				2	1.829	275	1150	16					3.64	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.5	2.9		7.1				10.5	5.3	2.0								
CN112	T11-T12	2508.00	16934.82				2	1.829	275	1150	16					3.65	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.5	2.9		7.1				10.5	5.3	2.0								
CN112	T11-T12	2509.00	16935.82				2	1.829	275	1150	16					3.63	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9		7.1				10.3	5.3	2.0								
CN112	T11-T12	2510.00	16936.82				2	1.829	275	1150	16					3.63	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9		7.1				10.3	5.3	2.0								
CN112	T11-T12	2511.00	16937.82				2	1.829	275	1150	16					3.64	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.4	2.9		7.1				10.4	5.3	2.0								
CN112	T11-T12	2512.00	16938.82				2	1.829	275	1150	16					3.66	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.5	2.9		7.1				10.5	5.3	2.0								
CN112	T11-T12	2513.00	16939.82				2	1.829	275	1150	16					3.67	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9		7.1				10.6	5.3	2.0								
CN112	T11-T12	2514.00	16940.82				2	1.829	275	1150	16					3.66	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9		7.1				10.6	5.3	2.0								
CN112	T11-T12	2515.00	16941.82				2	1.829	275	1150	16					3.66	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9		7.1				10.6	5.3	2.0								
CN112	T11-T12	2516.00	16942.82				2	1.829	275	1150	16					3.69	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9		7.1				10.7	5.3	2.0								
CN112	T11-T12	2517.00	16943.82				2	1.829	275	1150	16					3.68	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9		7.1				10.7	5.3	2.0								
CN112	T11-T12	2518.00	16944.82				2	1.829	275	1150	16					3.67	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.6	2.9		7.1				10.6	5.3	2.0								
CN112	T11-T12	2519.00	16945.82				2	1.829	275	1150	16					3.66	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9		7.1				10.6	5.3	2.0								
CN112	T11-T12	2520.00	16946.82				2	1.829	275	1150	16					3.67	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9		7.1				10.7	5.3	2.0								
CN112	T11-T12	2521.00	16947.82				2	1.829	275	1150	16					3.68	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9		7.1				10.7	5.3	2.0								
CN112	T11-T12	2522.00	16948.82				2	1.829	275	1150	16					3.68	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.9	25.9	25.9	100	2.9	7.1	10.8	2.9		7.1				10.8	5.3	2.0								
CN112	T11-T12	2523.00	16949.82				2	1.829	275	1150	16					3.69	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	25.9	25.9	25.9	100	2.9	7.1	10.8	2.9		7.1				10.8	5.3	2.0								
CN112	T11-T12	2524.00	16950.82				2	1.829	275	1150	16					3.70	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.0	26.0	26.0	100	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN112	T11-T12	2525.00	16951.82				2	1.829	275	1150	16					3.71	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.1	26.1	26.1	100	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN112	T11-T12	2526.00	16952.82				2	1.829	275	1150	16					3.72	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.1	26.1	26.1	100	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN112	T11-T12	2527.00	16953.82				2	1.829	275	1150	16					3.72	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.2	26.2	26.2	100	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN112	T11-T12	2528.00	16954.82				2	1.829	275	1150	16					3.73	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.3	26.3	26.3	100	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN112	T11-T12	2529.00	16955.82				2	1.829	275	1150	16					3.74	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.3	26.3	26.3	100	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN112	T11-T12	2530.00	16956.82				2	1.829	275	1150	16					3.75	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.4	26.4	26.4	100	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN112	T11-T12	2531.00	16957.82				2	1.829	275	1150	16					3.76	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	26.5	26.5	26.5	100	2.9	7.1	11.4	2.9		7.1				11.4	5.3	2.0								
CN112	T11-T12																																																									

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sagüe	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre, Acero o espesor lateral (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A- Separación tubo salud	S- Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15, <borrompió (M40, 20 mm. e- Suela seleccionada C/95% PN, < 30 mm. f- M40, 20 d-Garbanillo S/15, f- Suela adecuada procedente excavación (<150mm) c/95% PN, g- Luchero mod.	Expos. (m), escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT- ang (m)	HT- DH+H2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c- arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera granitica (m3)	Relleno cama+riñonera (M40-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura, d-Garbanillo S/15	Relleno cobertura, e- M40,20	Relleno cobertura, f- Suelo adecuado y excavación (<150mm) c/95% PN	Relleno cobertura, g- Luchero mod (m3)	Excedente de tierra (m3) (compromiso actual 0%, e- porcentaje teórico 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho 30m (m3)
CN-T12	T11-T12	2.885.00	17.311.82				2	1.829	275	11.50	16						3.56	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9		7.1				9.8	5.3	2.0								
CN-T12	T11-T12	2.886.00	17.312.82				2	1.829	275	11.50	16						3.57	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9		7.1				9.8	5.3	2.0								
CN-T12	T11-T12	2.887.00	17.313.82				2	1.829	275	11.50	16						3.57	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9		7.1				9.9	5.3	2.0								
CN-T12	T11-T12	2.888.00	17.314.82				2	1.829	275	11.50	16						3.58	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9		7.1				9.9	5.3	2.0								
CN-T12	T11-T12	2.889.00	17.315.82				2	1.829	275	11.50	16						3.58	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.1	25.1	25.1	10.0	2.9	7.1	9.9	2.9		7.1				9.9	5.3	2.0								
CN-T12	T11-T12	2.890.00	17.316.82				2	1.829	275	11.50	16						3.59	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9		7.1				10.0	5.3	2.0								
CN-T12	T11-T12	2.891.00	17.317.82				2	1.829	275	11.50	16						3.59	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9		7.1				10.0	5.3	2.0								
CN-T12	T11-T12	2.892.00	17.318.82				2	1.829	275	11.50	16						3.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9		7.1				10.1	5.3	2.0								
CN-T12	T11-T12	2.893.00	17.319.82				2	1.829	275	11.50	16						3.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9		7.1				10.1	5.3	2.0								
CN-T12	T11-T12	2.894.00	17.320.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9		7.1				10.1	5.3	2.0								
CN-T12	T11-T12	2.895.00	17.321.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1				10.2	5.3	2.0								
CN-T12	T11-T12	2.896.00	17.322.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1				10.2	5.3	2.0								
CN-T12	T11-T12	2.897.00	17.323.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1				10.3	5.3	2.0								
CN-T12	T11-T12	2.898.00	17.324.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1				10.3	5.3	2.0								
CN-T12	T11-T12	2.899.00	17.325.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.3	2.9		7.1				10.3	5.3	2.0								
CN-T12	T11-T12	2.900.00	17.326.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1				10.4	5.3	2.0								
CN-T12	T11-T12	2.901.00	17.327.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1				10.4	5.3	2.0								
CN-T12	T11-T12	2.902.00	17.328.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9		7.1				10.5	5.3	2.0								
CN-T12	T11-T12	2.903.00	17.329.82				2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.5	2.9		7.1				10.5	5.3	2.0								
CN-T12	T11-T12	2.904.00	17.330.82				2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9		7.1				10.6	5.3	2.0								
CN-T12	T11-T12	2.905.00	17.331.82				2	1.829	275	11.50	16						3.68	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9		7.1				10.7	5.3	2.0								
CN-T12	T11-T12	2.906.00	17.332.82				2	1.829	275	11.50	16						3.69	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9		7.1				10.8	5.3	2.0								
CN-T12	T11-T12	2.907.00	17.333.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	2.908.00	17.334.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	2.909.00	17.335.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	2.910.00	17.336.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	2.911.00	17.337.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	2.912.00	17.338.82				2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN-T12	T11-T12	2.913.00	17.339.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	2.914.00	17.340.82				2	1.829	275	11.50	16						3.																																										

[illegible]

Agregación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sagüe	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= Separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima 4' cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Relaciones a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15, < homopon (M4.20) Malla excavadora c: Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d-Garbanillo 5/15, f-Suela adecuada procedente excavación (<150mm) c/65% PN. g- Luchero modif.	Exposor (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (n)	HI=DNH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m2)	Reelleno cama (m2)	Reelleno riñonera(s)m2)	Reelleno cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M4.20(m2)	Reelleno riñonera suelo seleccionado (m2)	Reelleno riñonera grabaciado (m2)	Reelleno cama+riñonera HM-20(m2)	Reelleno cobertura c: Suela seleccionada C/95% PN, < 30 mm	Reelleno cobertura d-Garbanillo 5/15	Reelleno cobertura e- H4.20	Reelleno cobertura f-Suela adecuada excavación (<150mm) c/65% PN	Reelleno cobertura g- Luchero modif (m2)	Excedente de tierra (m2) (compensando altura 0% e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m2)
CN-T12	T11-T12	3.395.00	17.821.82				2	1.829	275	11.50	16						3.53	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.7	24.7	24.7	10.0	2.9	7.1	9.5	2.9	7.1						9.5	5.3	2.0						
CN-T12	T11-T12	3.396.00	17.822.82				2	1.829	275	11.50	16						3.54	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1				9.6	5.3	2.0								
CN-T12	T11-T12	3.397.00	17.823.82				2	1.829	275	11.50	16						3.54	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1				9.6	5.3	2.0								
CN-T12	T11-T12	3.398.00	17.824.82				2	1.829	275	11.50	16						3.54	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1				9.6	5.3	2.0								
CN-T12	T11-T12	3.399.00	17.825.82				2	1.829	275	11.50	16						3.55	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.8	24.8	24.8	10.0	2.9	7.1	9.6	2.9	7.1				9.6	5.3	2.0								
CN-T12	T11-T12	3.400.00	17.826.82				2	1.829	275	11.50	16						3.54	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1				9.6	5.3	2.0								
CN-T12	T11-T12	3.401.00	17.827.82				2	1.829	275	11.50	16						3.53	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1				9.5	5.3	2.0								
CN-T12	T11-T12	3.402.00	17.828.82				2	1.829	275	11.50	16						3.52	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1				9.5	5.3	2.0								
CN-T12	T11-T12	3.403.00	17.829.82				2	1.829	275	11.50	16						3.51	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1				9.4	5.3	2.0								
CN-T12	T11-T12	3.404.00	17.830.82				2	1.829	275	11.50	16						3.52	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1				9.4	5.3	2.0								
CN-T12	T11-T12	3.405.00	17.831.82				2	1.829	275	11.50	16						3.53	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1				9.5	5.3	2.0								
CN-T12	T11-T12	3.406.00	17.832.82				2	1.829	275	11.50	16						3.54	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1				9.6	5.3	2.0								
CN-T12	T11-T12	3.407.00	17.833.82				2	1.829	275	11.50	16						3.55	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.8	24.8	24.8	10.0	2.9	7.1	9.7	2.9	7.1				9.7	5.3	2.0								
CN-T12	T11-T12	3.408.00	17.834.82				2	1.829	275	11.50	16						3.56	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9	7.1				9.8	5.3	2.0								
CN-T12	T11-T12	3.409.00	17.835.82				2	1.829	275	11.50	16						3.58	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9	7.1				9.9	5.3	2.0								
CN-T12	T11-T12	3.410.00	17.836.82				2	1.829	275	11.50	16						3.59	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9	7.1				10.0	5.3	2.0								
CN-T12	T11-T12	3.411.00	17.837.82				2	1.829	275	11.50	16						3.60	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9	7.1				10.1	5.3	2.0								
CN-T12	T11-T12	3.412.00	17.838.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9	7.1				10.2	5.3	2.0								
CN-T12	T11-T12	3.413.00	17.839.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9	7.1				10.3	5.3	2.0								
CN-T12	T11-T12	3.414.00	17.840.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9	7.1				10.4	5.3	2.0								
CN-T12	T11-T12	3.415.00	17.841.82				2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9	7.1				10.5	5.3	2.0								
CN-T12	T11-T12	3.416.00	17.842.82				2	1.829	275	11.50	16						3.66	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9	7.1				10.6	5.3	2.0								
CN-T12	T11-T12	3.417.00	17.843.82				2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9	7.1				10.7	5.3	2.0								
CN-T12	T11-T12	3.418.00	17.844.82				2	1.829	275	11.50	16						3.68	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9	7.1				10.8	5.3	2.0								
CN-T12	T11-T12	3.419.00	17.845.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9	7.1				10.9	5.3	2.0								
CN-T12	T11-T12	3.420.00	17.846.82				2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9	7.1				11.0	5.3	2.0								
CN-T12	T11-T12	3.421.00	17.847.82				2	1.829	275	11.50	16						3.72	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9	7.1				11.1	5.3	2.0								
CN-T12	T11-T12	3.422.00	17.848.82				2	1.829	275	11.50	16						3.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9	7.1				11.2	5.3	2.0								
CN-T12	T11-T12	3.423.00	17.849.82				2	1.829	275	11.50	16						3.74	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9	7.1				11.3	5.3	2.0								
CN-T12	T11-T12	3.424.00	17.850.82				2	1.829	275	11.50	16						3.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c																												

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desague	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A- Separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Reforzamientos c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompi (M4.20) 30 mm. e- M4.20. f- Suela seleccionada C/95% PN, < 30 mm. g- M4.20. d-Garbanillo S/15. f-Suela adecuada pendiente excavación (<150mm) c/6% PN. g- Luchero modif.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c-ama (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera granitica (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura. d-Garbanillo S/15	Releño cobertura. e- H4.20	Releño cobertura. f-Suelo adecuado excavación (<150mm) c/6% PN	Releño cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (consumo actual 0%, e-superavitario 5%)	Cinta liberada (m3)	Manto escollera a 45.5m. ancho 30m. (m3)
CN-T12	T11-T12	3523.00	17949.82				2	1.829	275	1150	16						4.24	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1					15.4	5.3	2.0							
CN-T12	T11-T12	3524.00	17950.82				2	1.829	275	1150	16						4.24	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1					15.4	5.3	2.0							
CN-T12	T11-T12	3525.00	17951.82				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1					15.4	5.3	2.0							
CN-T12	T11-T12	3526.00	17952.82				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1					15.4	5.3	2.0							
CN-T12	T11-T12	3527.00	17953.82				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1					15.4	5.3	2.0							
CN-T12	T11-T12	3528.00	17954.82				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1					15.3	5.3	2.0							
CN-T12	T11-T12	3529.00	17955.82				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1					15.3	5.3	2.0							
CN-T12	T11-T12	3530.00	17956.82				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1					15.3	5.3	2.0							
CN-T12	T11-T12	3531.00	17957.82				2	1.829	275	1150	16						4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.2	2.9	7.1					15.2	5.3	2.0							
CN-T12	T11-T12	3532.00	17958.82				2	1.829	275	1150	16						4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1					15.2	5.3	2.0							
CN-T12	T11-T12	3533.00	17959.82				2	1.829	275	1150	16						4.20	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1					15.2	5.3	2.0							
CN-T12	T11-T12	3534.00	17960.82				2	1.829	275	1150	16						4.20	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1					15.1	5.3	2.0							
CN-T12	T11-T12	3535.00	17961.82				2	1.829	275	1150	16						4.19	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0							
CN-T12	T11-T12	3536.00	17962.82				2	1.829	275	1150	16						4.18	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0							
CN-T12	T11-T12	3537.00	17963.82				2	1.829	275	1150	16						4.17	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0							
CN-T12	T11-T12	3538.00	17964.82				2	1.829	275	1150	16						4.17	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0							
CN-T12	T11-T12	3539.00	17965.82				2	1.829	275	1150	16						4.14	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	29.7	29.7	29.7	10.0	2.9	7.1	14.6	2.9	7.1					14.6	5.3	2.0							
CN-T12	T11-T12	3540.00	17966.82				2	1.829	275	1150	16						4.12	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	29.5	29.5	29.5	10.0	2.9	7.1	14.4	2.9	7.1					14.4	5.3	2.0							
CN-T12	T11-T12	3541.00	17967.82				2	1.829	275	1150	16						4.09	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9	7.1					14.2	5.3	2.0							
CN-T12	T11-T12	3542.00	17968.82				2	1.829	275	1150	16						4.06	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	29.1	29.1	29.1	10.0	2.9	7.1	13.9	2.9	7.1					13.9	5.3	2.0							
CN-T12	T11-T12	3543.00	17969.82				2	1.829	275	1150	16						4.02	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9	7.1					13.6	5.3	2.0							
CN-T12	T11-T12	3544.00	17970.82				2	1.829	275	1150	16						3.97	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1					13.2	5.3	2.0							
CN-T12	T11-T12	3545.00	17971.82				2	1.829	275	1150	16						3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9	7.1					13.0	5.3	2.0							
CN-T12	T11-T12	3546.00	17972.82				2	1.829	275	1150	16						3.91	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1					12.6	5.3	2.0							
CN-T12	T11-T12	3547.00	17973.82				2	1.829	275	1150	16						3.88	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	27.5	27.5	27.5	10.0	2.9	7.1	12.4	2.9	7.1					12.4	5.3	2.0							
CN-T12	T11-T12	3548.00	17974.82				2	1.829	275	1150	16						3.85	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1					12.2	5.3	2.0							
CN-T12	T11-T12	3549.00	17975.82				2	1.829	275	1150	16						3.83	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9	7.1					12.0	5.3	2.0							
CN-T12	T11-T12	3550.00	17976.82				2	1.829	275	1150	16						3.82	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9	7.1					11.8	5.3	2.0							
CN-T12	T11-T12	3551.00	17977.82				2	1.829	275	1150	16						3.79	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9	7.1					11.7	5.3	2.0							
CN-T12	T11-T12	3552.00																																																									

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	HT- altura de la borra desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Relaciones a-c: S=acero laminado C/95% PN, e=30 mm. d-Garbanillo 5/15. e-borrompió (M4.20) Relaciones b-c: S=acero laminado C/95% PN, e=30 mm. e-M4.20. d-Garbanillo 5/15. f-suelo adecuado procedente excavación (<-150mm) c/6% PN. g- Luchero modif.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (º)	HT-DHHz (m)	Long (m)	Excavación tapizada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Reelleno cama+riñonera (m3)	Reelleno riñonera (m3)	Reelleno riñonera (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Reelleno riñonera suelo seleccionado (m3)	Reelleno riñonera grabada (m3)	Reelleno cama+riñonera (M4.20)(m3)	Reelleno cobertura c- Suelo seleccionado C/95% PN, e= 30 mm	Reelleno cobertura. d-Garbanillo 5/15	Reelleno cobertura. e- H4.20	Reelleno cobertura. f-Suelo adecuado e excavación (<-150mm) c/6% PN	Reelleno cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (compromiso actual 0%, e-spojaniento teórico 5%)	Cinta liberada (m)	Manto escollera e-0.5m. ancho-30m (m3)
CN-T12	T11-T12	3.652.00	18.078.82				2	1.829	275	11.50	16					4.35	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.5	31.5	31.5	10.0	2.9	7.1	16.4	2.9			16.4	5.3	2.0											
CN-T12	T11-T12	3.653.00	18.079.82				2	1.829	275	11.50	16					4.34	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.5	31.5	31.5	10.0	2.9	7.1	16.3	2.9			16.3	5.3	2.0											
CN-T12	T11-T12	3.654.00	18.080.82				2	1.829	275	11.50	16					4.33	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.4	31.4	31.4	10.0	2.9	7.1	16.3	2.9			16.3	5.3	2.0											
CN-T12	T11-T12	3.655.00	18.081.82				2	1.829	275	11.50	16					4.33	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.3	31.3	31.3	10.0	2.9	7.1	16.2	2.9			16.2	5.3	2.0											
CN-T12	T11-T12	3.656.00	18.082.82				2	1.829	275	11.50	16					4.32	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.3	31.3	31.3	10.0	2.9	7.1	16.2	2.9			16.2	5.3	2.0											
CN-T12	T11-T12	3.657.00	18.083.82				2	1.829	275	11.50	16					4.32	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.2	31.2	31.2	10.0	2.9	7.1	16.1	2.9			16.1	5.3	2.0											
CN-T12	T11-T12	3.658.00	18.084.82				2	1.829	275	11.50	16					4.31	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.2	31.2	31.2	10.0	2.9	7.1	16.1	2.9			16.1	5.3	2.0											
CN-T12	T11-T12	3.659.00	18.085.82				2	1.829	275	11.50	16					4.30	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.1	31.1	31.1	10.0	2.9	7.1	16.0	2.9			16.0	5.3	2.0											
CN-T12	T11-T12	3.660.00	18.086.82				2	1.829	275	11.50	16					4.30	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.1	31.1	31.1	10.0	2.9	7.1	16.0	2.9			16.0	5.3	2.0											
CN-T12	T11-T12	3.661.00	18.087.82				2	1.829	275	11.50	16					4.29	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.0	31.0	31.0	10.0	2.9	7.1	15.9	2.9			15.9	5.3	2.0											
CN-T12	T11-T12	3.662.00	18.088.82				2	1.829	275	11.50	16					4.29	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.0	31.0	31.0	10.0	2.9	7.1	15.9	2.9			15.9	5.3	2.0											
CN-T12	T11-T12	3.663.00	18.089.82				2	1.829	275	11.50	16					4.28	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9			15.8	5.3	2.0											
CN-T12	T11-T12	3.664.00	18.090.82				2	1.829	275	11.50	16					4.28	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9			15.8	5.3	2.0											
CN-T12	T11-T12	3.665.00	18.091.82				2	1.829	275	11.50	16					4.27	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9			15.7	5.3	2.0											
CN-T12	T11-T12	3.666.00	18.092.82				2	1.829	275	11.50	16					4.27	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9			15.7	5.3	2.0											
CN-T12	T11-T12	3.667.00	18.093.82				2	1.829	275	11.50	16					4.29	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.0	31.0	31.0	10.0	2.9	7.1	15.9	2.9			15.9	5.3	2.0											
CN-T12	T11-T12	3.668.00	18.094.82				2	1.829	275	11.50	16					4.31	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.2	31.2	31.2	10.0	2.9	7.1	16.1	2.9			16.1	5.3	2.0											
CN-T12	T11-T12	3.669.00	18.095.82				2	1.829	275	11.50	16					4.33	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.3	31.3	31.3	10.0	2.9	7.1	16.2	2.9			16.2	5.3	2.0											
CN-T12	T11-T12	3.670.00	18.096.82				2	1.829	275	11.50	16					4.35	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.5	31.5	31.5	10.0	2.9	7.1	16.4	2.9			16.4	5.3	2.0											
CN-T12	T11-T12	3.671.00	18.097.82				2	1.829	275	11.50	16					4.36	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.6	31.6	31.6	10.0	2.9	7.1	16.5	2.9			16.5	5.3	2.0											
CN-T12	T11-T12	3.672.00	18.098.82				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9			16.7	5.3	2.0											
CN-T12	T11-T12	3.673.00	18.099.82				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9			16.7	5.3	2.0											
CN-T12	T11-T12	3.674.00	18.100.82				2	1.829	275	11.50	16					4.39	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9			16.7	5.3	2.0											
CN-T12	T11-T12	3.675.00	18.101.82				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9			16.7	5.3	2.0											
CN-T12	T11-T12	3.676.00	18.102.82				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9			16.7	5.3	2.0											
CN-T12	T11-T12	3.677.00	18.103.82				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9			16.7	5.3	2.0											
CN-T12	T11-T12	3.678.00	18.104.82				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9			16.7	5.3	2.0											
CN-T12	T11-T12	3.679.00	18.105.82				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9			16.7	5.3	2.0											
CN-T12	T11-T12	3.680.00	18.106.82				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9			16.7	5.3	2.0											
CN-T12	T11-T12	3.680.66	18.107.48				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.7	20.8	20.8	20.8	6.6	1.9	4.7	10.9	1.9			4.7	10.9	1.9	1.3										
CN-T12	T11-T12	3.681.00	18.107.82				2	1.829	275	11.50	16					4.38	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.3	11.0	11.0	11.0	3.5	1.0	2.5	5.8	1.0			2.5	5.8	1.0	0.7										
CN-T12	T11-T12	3.682.00	18.108.82				2																																																		

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja	A- Separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón (M4.20)	Rebavaciones c- Suela seleccionada C/95% PN, < 30 mm. d- Gargallo 5/15 e- Borrompi (M4.20) f- Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d- Gargallo 5/15. f- Suela seleccionada procedente excavación (<150mm) C/65% PN. g- Lecho mod.	Exposic. (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT- ang (n)	HT- DMH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama- rñonera (m2)	Relevo c- ama (m2)	Relevo rñonera(s)m2)	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M4.20(m2)	Relevo rñonera suelo seleccionado (m2)	Relevo rñonera grabaciolo (m2)	Relevo cama- rñonera HM-20(m2)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d- Gargallo 5/15	Relevo cobertura. e- H4.20	Relevo cobertura. f- Suelo seleccionado excavación (<150mm) C/65% PN	Relevo cobertura. g- Lecho mod (m2)	Excedente de tierra (m2) (consumo actual 0%, e- porcentaje teórico 5%)	Cinta liberata (m)	Manto escollera a- 0.5m. ancho-30m (m2)
CN-T12	T11-T12	3.909.00	18.335.82				2	1.829	275	11.50	16				3.68	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9		7.1					10.8	5.3	2.0							
CN-T12	T11-T12	3.910.00	18.336.82				2	1.829	275	11.50	16				3.69	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	3.911.00	18.337.82				2	1.829	275	11.50	16				3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN-T12	T11-T12	3.912.00	18.338.82				2	1.829	275	11.50	16				3.72	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	3.913.00	18.339.82				2	1.829	275	11.50	16				3.73	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN-T12	T11-T12	3.914.00	18.340.82				2	1.829	275	11.50	16				3.74	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN-T12	T11-T12	3.915.00	18.341.82				2	1.829	275	11.50	16				3.74	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN-T12	T11-T12	3.916.00	18.342.82				2	1.829	275	11.50	16				3.74	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN-T12	T11-T12	3.917.00	18.343.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN-T12	T11-T12	3.918.00	18.344.82				2	1.829	275	11.50	16				3.76	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9		7.1				11.5	5.3	2.0								
CN-T12	T11-T12	3.919.00	18.345.82				2	1.829	275	11.50	16				3.78	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9		7.1				11.6	5.3	2.0								
CN-T12	T11-T12	3.920.00	18.346.82				2	1.829	275	11.50	16				3.78	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9		7.1				11.6	5.3	2.0								
CN-T12	T11-T12	3.921.00	18.347.82				2	1.829	275	11.50	16				3.77	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9		7.1				11.5	5.3	2.0								
CN-T12	T11-T12	3.922.00	18.348.82				2	1.829	275	11.50	16				3.77	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9		7.1				11.5	5.3	2.0								
CN-T12	T11-T12	3.923.00	18.349.82				2	1.829	275	11.50	16				3.76	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9		7.1				11.4	5.3	2.0								
CN-T12	T11-T12	3.924.00	18.350.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9		7.1				11.4	5.3	2.0								
CN-T12	T11-T12	3.925.00	18.351.82			Apoyo arqueta	2	1.829	275	11.50	16				3.71	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	26.1	26.1	26.1	10.4	3.2	7.2	10.6		3.2	7.2	10.6		3.2	7.2	10.6	5.3	2.0							
CN-T12	T11-T12	3.926.00	18.352.82			Apoyo arqueta	2	1.829	275	11.50	16				3.67	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.8	25.8	25.8	10.4	3.2	7.2	10.3		3.2	7.2	10.3		3.2	7.2	10.3	5.3	2.0							
CN-T12	T11-T12	3.927.00	18.353.82			Apoyo arqueta	2	1.829	275	11.50	16				3.66	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.7	25.7	25.7	10.4	3.2	7.2	10.2		3.2	7.2	10.2		3.2	7.2	10.2	5.3	2.0							
CN-T12	T11-T12	3.928.00	18.354.82			Apoyo arqueta	2	1.829	275	11.50	16				3.66	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.7	25.7	25.7	10.4	3.2	7.2	10.2		3.2	7.2	10.2		3.2	7.2	10.2	5.3	2.0							
CN-T12	T11-T12	3.929.00	18.355.82			Apoyo arqueta	2	1.829	275	11.50	16				3.66	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.7	25.7	25.7	10.4	3.2	7.2	10.2		3.2	7.2	10.2		3.2	7.2	10.2	5.3	2.0							
CN-T12	T11-T12	3.930.00	18.356.82			Apoyo arqueta	2	1.829	275	11.50	16			2.10	S275-6.4	3.66	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.7	25.7	25.7	10.4	3.2	7.2	10.2		3.2	7.2	10.2		3.2	7.2	10.2	5.3	2.0						
CN-T12	T11-T12	3.931.00	18.357.82			Apoyo arqueta	2	1.829	275	11.50	16				3.66	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.7	25.7	25.7	10.4	3.2	7.2	10.2		3.2	7.2	10.2		3.2	7.2	10.2	5.3	2.0							
CN-T12	T11-T12	3.932.00	18.358.82			Apoyo arqueta	2	1.829	275	11.50	16				3.66	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.7	25.7	25.7	10.4	3.2	7.2	10.2		3.2	7.2	10.2		3.2	7.2	10.2	5.3	2.0							
CN-T12	T11-T12	3.933.00	18.359.82			Apoyo arqueta	2	1.829	275	11.50	16				3.65	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.6	25.6	25.6	10.4	3.2	7.2	10.2		3.2	7.2	10.2		3.2	7.2	10.2	5.3	2.0							
CN-T12	T11-T12	3.934.00	18.360.82			Apoyo arqueta	2	1.829	275	11.50	16				3.65	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.6	25.6	25.6	10.4	3.2	7.2	10.1		3.2	7.2	10.1		3.2	7.2	10.1	5.3	2.0							
CN-T12	T11-T12	3.935.00	18.361.82			Apoyo arqueta	2	1.829	275	11.50	16				3.65	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.6	25.6	25.6	10.4	3.2	7.2	10.1		3.2	7.2	10.1		3.2	7.2	10.1	5.3	2.0							
CN-T12	T11-T12	3.936.00	18.362.82			Apoyo arqueta	2	1.829	275	11.50	16				3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1				10.4	5.3	2.0								
CN-T12	T11-T12	3.937.00	18.363.82			Apoyo arqueta	2	1.829	275	11.50	16				3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1				10.4	5.3	2.0								
CN-T12	T11-T12	3.938.00	18.364.82				2	1.829	275																																																

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desague	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto/azopla	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang Apoyo	H2-Recurvimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	HT-altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rebavaciones a: S= Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompió HM-20. f-Malla de cobertura c= Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S/15. f-Suela adecuada procedente excavación (<150mm) C/65 % PN. g- Lecho mod.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT-long (m)	HT-DHxH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama+riñonera (m3)	Relevo cama+riñonera (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c: Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- H4/20	Relevo cobertura. f-Suela adecuada procedente excavación (<150mm) C/65 % PN	Relevo cobertura. g- Lecho modif (m3)	Excedente de tierra (m3) (compensación alvald 0%, e-spojaniento lateral 5%)	Cinta liberada (m3)	Manto escollera a=0.5m. ancho=30m. (m3)
CN-T12	T11-T12	4.295.00	18.721.82				2	1.829	275	11.50	16						3.80	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9							11.8	5.3	2.0						
CN-T12	T11-T12	4.296.00	18.722.82				2	1.829	275	11.50	16						3.79	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9							11.7	5.3	2.0						
CN-T12	T11-T12	4.297.00	18.723.82				2	1.829	275	11.50	16						3.79	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9							11.6	5.3	2.0						
CN-T12	T11-T12	4.298.00	18.724.82				2	1.829	275	11.50	16						3.78	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9							11.6	5.3	2.0						
CN-T12	T11-T12	4.299.00	18.725.82				2	1.829	275	11.50	16						3.77	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9							11.5	5.3	2.0						
CN-T12	T11-T12	4.300.00	18.726.82				2	1.829	275	11.50	16						3.77	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9							11.5	5.3	2.0						
CN-T12	T11-T12	4.301.00	18.727.82				2	1.829	275	11.50	16						3.76	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9							11.4	5.3	2.0						
CN-T12	T11-T12	4.302.00	18.728.82				2	1.829	275	11.50	16						3.75	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9							11.4	5.3	2.0						
CN-T12	T11-T12	4.303.00	18.729.82				2	1.829	275	11.50	16						3.75	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9							11.3	5.3	2.0						
CN-T12	T11-T12	4.304.00	18.730.82				2	1.829	275	11.50	16						3.74	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9							11.3	5.3	2.0						
CN-T12	T11-T12	4.305.00	18.731.82				2	1.829	275	11.50	16						3.73	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9							11.2	5.3	2.0						
CN-T12	T11-T12	4.306.00	18.732.82				2	1.829	275	11.50	16						3.73	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9							11.1	5.3	2.0						
CN-T12	T11-T12	4.307.00	18.733.82				2	1.829	275	11.50	16						3.72	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9							11.1	5.3	2.0						
CN-T12	T11-T12	4.308.00	18.734.82				2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9							11.0	5.3	2.0						
CN-T12	T11-T12	4.309.00	18.735.82				2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9							11.0	5.3	2.0						
CN-T12	T11-T12	4.310.00	18.736.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9							10.9	5.3	2.0						
CN-T12	T11-T12	4.311.00	18.737.82				2	1.829	275	11.50	16						3.69	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9							10.8	5.3	2.0						
CN-T12	T11-T12	4.312.00	18.738.82				2	1.829	275	11.50	16						3.69	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9							10.8	5.3	2.0						
CN-T12	T11-T12	4.313.00	18.739.82				2	1.829	275	11.50	16						3.68	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9							10.7	5.3	2.0						
CN-T12	T11-T12	4.314.00	18.740.82				2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9							10.7	5.3	2.0						
CN-T12	T11-T12	4.315.00	18.741.82				2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9							10.6	5.3	2.0						
CN-T12	T11-T12	4.316.00	18.742.82				2	1.829	275	11.50	16						3.66	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9							10.6	5.3	2.0						
CN-T12	T11-T12	4.317.00	18.743.82				2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9							10.5	5.3	2.0						
CN-T12	T11-T12	4.318.00	18.744.82				2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9							10.5	5.3	2.0						
CN-T12	T11-T12	4.319.00	18.745.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9							10.4	5.3	2.0						
CN-T12	T11-T12	4.320.00	18.746.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9							10.4	5.3	2.0						
CN-T12	T11-T12	4.321.00	18.747.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9							10.3	5.3	2.0						
CN-T12	T11-T12	4.322.00	18.748.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9							10.2	5.3	2.0						
CN-T12	T11-T12	4.323.00	18.749.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9							10.2	5.3	2.0						
CN-T12	T11-T12	4.324.00	18.750.82				2	1.829	275	11.50	16																																															

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sagüe	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= Separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón (M20)	Relaciones: c= Suelo seleccionado C/95% PN, < 30 mm. d- Gabarillo 515. e- boronapa (M20) Relación cobertura c= Suelo seleccionado C/95% PN, < 30 mm. e- M20. d- Gabarillo 515. f- Suelo adecuado para excavación (<150mm) c/6% PN. g- Lecho mod.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT- ang (n)	HT- DMH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Releño cama+riñonera (m3)	Releño cama (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera grabaciolo (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c= Suelo seleccionado C/95% PN, < 30 mm	Releño cobertura d-Gabarillo 515	Releño cobertura c= HM-20	Releño cobertura f- Suelo adecuado para excavación (<150mm) c/6% PN	Releño cobertura g= Lecho mod (m3)	Excedente de tierra (m3) (compensado a nivel 0%, e- porcentaje lateral 5%)	Cinta liberata (m)	Manto escollera a 45.5m. ancho 30m. (m3)
CN-T12	T11-T12	4.551.00	18.977.82				2	1.829	275	11.50	16				4.14	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1					14.7	5.3	2.0								
CN-T12	T11-T12	4.552.00	18.978.82				2	1.829	275	11.50	16				4.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1					14.7	5.3	2.0								
CN-T12	T11-T12	4.553.00	18.979.82				2	1.829	275	11.50	16				4.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1					14.7	5.3	2.0								
CN-T12	T11-T12	4.554.00	18.980.82				2	1.829	275	11.50	16				4.16	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9	7.1					14.8	5.3	2.0								
CN-T12	T11-T12	4.555.00	18.981.82				2	1.829	275	11.50	16				4.17	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9	7.1					14.8	5.3	2.0								
CN-T12	T11-T12	4.556.00	18.982.82				2	1.829	275	11.50	16				4.17	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0								
CN-T12	T11-T12	4.557.00	18.983.82				2	1.829	275	11.50	16				4.18	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1					14.9	5.3	2.0								
CN-T12	T11-T12	4.558.00	18.984.82				2	1.829	275	11.50	16				4.18	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0								
CN-T12	T11-T12	4.559.00	18.985.82				2	1.829	275	11.50	16				4.19	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1					15.0	5.3	2.0								
CN-T12	T11-T12	4.560.00	18.986.82				2	1.829	275	11.50	16				4.19	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1					15.1	5.3	2.0								
CN-T12	T11-T12	4.561.00	18.987.82				2	1.829	275	11.50	16				4.20	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1					15.1	5.3	2.0								
CN-T12	T11-T12	4.562.00	18.988.82				2	1.829	275	11.50	16				4.20	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1					15.1	5.3	2.0								
CN-T12	T11-T12	4.563.00	18.989.82				2	1.829	275	11.50	16				4.21	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1					15.2	5.3	2.0								
CN-T12	T11-T12	4.564.00	18.990.82				2	1.829	275	11.50	16				4.21	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1					15.2	5.3	2.0								
CN-T12	T11-T12	4.565.00	18.991.82				2	1.829	275	11.50	16				4.22	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1					15.3	5.3	2.0								
CN-T12	T11-T12	4.566.00	18.992.82				2	1.829	275	11.50	16				4.22	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1					15.3	5.3	2.0								
CN-T12	T11-T12	4.567.00	18.993.82				2	1.829	275	11.50	16				4.23	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1					15.4	5.3	2.0								
CN-T12	T11-T12	4.568.00	18.994.82				2	1.829	275	11.50	16				4.23	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1					15.4	5.3	2.0								
CN-T12	T11-T12	4.569.00	18.995.82				2	1.829	275	11.50	16				4.24	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1					15.4	5.3	2.0								
CN-T12	T11-T12	4.570.00	18.996.82				2	1.829	275	11.50	16				4.24	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.5	2.9	7.1					15.5	5.3	2.0								
CN-T12	T11-T12	4.571.00	18.997.82				2	1.829	275	11.50	16				4.25	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.5	2.9	7.1					15.5	5.3	2.0								
CN-T12	T11-T12	4.572.00	18.998.82				2	1.829	275	11.50	16				4.25	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.7	30.7	30.7	10.0	2.9	7.1	15.6	2.9	7.1					15.6	5.3	2.0								
CN-T12	T11-T12	4.573.00	18.999.82				2	1.829	275	11.50	16				4.26	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.7	30.7	30.7	10.0	2.9	7.1	15.6	2.9	7.1					15.6	5.3	2.0								
CN-T12	T11-T12	4.574.00	19.000.82				2	1.829	275	11.50	16				4.26	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1					15.7	5.3	2.0								
CN-T12	T11-T12	4.575.00	19.001.82				2	1.829	275	11.50	16				4.27	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1					15.7	5.3	2.0								
CN-T12	T11-T12	4.576.00	19.002.82				2	1.829	275	11.50	16				4.26	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1					15.7	5.3	2.0								
CN-T12	T11-T12	4.577.00	19.003.82				2	1.829	275	11.50	16				4.26	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1					15.7	5.3	2.0								
CN-T12	T11-T12	4.578.00	19.004.82				2	1.829	275	11.50	16				4.26	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1					15.7	5.3	2.0								
CN-T12	T11-T12	4.579.00	19.005.82				2	1.829	275	11.50	16				4.26	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1					15.7	5.3	2.0								
CN-T12	T11-T12	4.580.00	19.006.82				2	1.829	275	11.50	16				4.26	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1					15.7	5.3	2.0								
CN-T12	T11-T12	4.581.00	19.007.82				2	1.829	275	11.50	16				4.26																																									

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verticos por tubería	Nº verticos (mm)	Nº valvulas de sagüe	DN Desague	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4-altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón(M4.20)	Rebavilaciones c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15. e-borrompi(M4.20) f-Rebavilaciones g- Suela seleccionada C/95% PN, < 30 mm. h-M4.20. d-Gabarrillo S/15. f-Suela adecuada procedente excavación (<150mm)C/6% PN. g- Lecho mod. i-Exposi. m. escalón(n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	HI-DHHz (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cama+riñonera (m³)	Rebello cama+riñonera (m³)	Rebello rñonera s/ suelo seleccionado (m³)	Rebello rñonera grabaciado (m³)	Rebello cama+riñonera HM-20(m³)	Rebello cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Rebello cobertura. d-Gabarrillo S/15	Rebello cobertura. e- H4.20	Rebello cobertura. f-Suelo adecuado procedente excavación (<150mm)C/6% PN	Rebello cobertura. g- Lecho mod (m³)	Excedente de tierra (m³) (consumo actual 0% e-spojaniento teorico 5%)	Cinta liberata (m³)	Manto escollera a 0.5m. ancho-30m (m³)
CN-T12	T11-T12	5.19200	19.618.82				2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9		7.1			10.5	5.3	2.0				
CN-T12	T11-T12	5.19300	19.619.82				2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9		7.1			10.6	5.3	2.0				
CN-T12	T11-T12	5.19400	19.620.82				2	1.829	275	11.50	16						3.68	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9		7.1			10.8	5.3	2.0				
CN-T12	T11-T12	5.19500	19.621.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0				
CN-T12	T11-T12	5.19600	19.622.82				2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1			11.0	5.3	2.0				
CN-T12	T11-T12	5.19700	19.623.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0				
CN-T12	T11-T12	5.19800	19.624.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0				
CN-T12	T11-T12	5.19900	19.625.82				2	1.829	275	11.50	16						3.69	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0				
CN-T12	T11-T12	5.20000	19.626.82				2	1.829	275	11.50	16						3.69	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9		7.1			10.8	5.3	2.0				
CN-T12	T11-T12	5.20100	19.627.82				2	1.829	275	11.50	16						3.68	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9		7.1			10.8	5.3	2.0				
CN-T12	T11-T12	5.20200	19.628.82				2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9		7.1			10.7	5.3	2.0				
CN-T12	T11-T12	5.20300	19.629.82				2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9		7.1			10.7	5.3	2.0				
CN-T12	T11-T12	5.20400	19.630.82				2	1.829	275	11.50	16						3.66	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9		7.1			10.6	5.3	2.0				
CN-T12	T11-T12	5.20500	19.631.82				2	1.829	275	11.50	16						3.66	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.5	2.9		7.1			10.5	5.3	2.0				
CN-T12	T11-T12	5.20600	19.632.82				2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9		7.1			10.5	5.3	2.0				
CN-T12	T11-T12	5.20700	19.633.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1			10.4	5.3	2.0				
CN-T12	T11-T12	5.20800	19.634.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1			10.4	5.3	2.0				
CN-T12	T11-T12	5.20900	19.635.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0				
CN-T12	T11-T12	5.21000	19.636.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0				
CN-T12	T11-T12	5.21100	19.637.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0				
CN-T12	T11-T12	5.21200	19.638.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0				
CN-T12	T11-T12	5.21300	19.639.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0				
CN-T12	T11-T12	5.21400	19.640.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0				
CN-T12	T11-T12	5.21500	19.641.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0				
CN-T12	T11-T12	5.21600	19.642.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0				
CN-T12	T11-T12	5.21700	19.643.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0				
CN-T12	T11-T12	5.21800	19.644.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0				
CN-T12	T11-T12	5.21900	19.645.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0				
CN-T12	T11-T12	5.22000	19.646.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1			10.2	5.3	2.0				
CN-T12	T11-T12	5.22100	19.647.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1			10.3	5.3	2.0				
CN-T12	T11-T12	5.22200	19.648.82																																																		

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	Nº vertederos (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	HT-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Relaciones: a-c: Suela seleccionada C/95% PN, e-30 mm, d-Garbanillo 5/15, e-borrompi (M4.20) Relaciones: a-c: Suela seleccionada C/95% PN, e-30 mm, e-M4.20, d-Garbanillo 5/15, f-Suela adecuada procedente excavación (<150mm) C/65 % PN, g- Lecho mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciolo (m3)	Relevo cama+riñonera (M4.20(m3)	Relevo cobertura c- Suela seleccionada C/95% PN, e-30 mm	Relevo cobertura d-Garbanillo 5/15	Relevo cobertura e- H4.20	Relevo cobertura f-Suela adecuada procedente excavación (<150mm) C/65 % PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0% e-spojaniento teórico 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho 30m (m3)
CN-T12	T11-T12	5.319.00	19.745.82				2	1.829	275	11.50	16						4.01	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1						13.5	5.3	2.0							
CN-T12	T11-T12	5.320.00	19.746.82				2	1.829	275	11.50	16						4.01	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1						13.5	5.3	2.0							
CN-T12	T11-T12	5.321.00	19.747.82				2	1.829	275	11.50	16						4.01	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1						13.5	5.3	2.0							
CN-T12	T11-T12	5.322.00	19.748.82				2	1.829	275	11.50	16						4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1						13.5	5.3	2.0							
CN-T12	T11-T12	5.323.00	19.749.82				2	1.829	275	11.50	16						4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1						13.5	5.3	2.0							
CN-T12	T11-T12	5.324.00	19.750.82				2	1.829	275	11.50	16						4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.4	2.9	7.1						13.4	5.3	2.0							
CN-T12	T11-T12	5.325.00	19.751.82				2	1.829	275	11.50	16						4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1						13.4	5.3	2.0							
CN-T12	T11-T12	5.326.00	19.752.82				2	1.829	275	11.50	16						4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1						13.4	5.3	2.0							
CN-T12	T11-T12	5.327.00	19.753.82				2	1.829	275	11.50	16						4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1						13.4	5.3	2.0							
CN-T12	T11-T12	5.328.00	19.754.82				2	1.829	275	11.50	16						4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1						13.4	5.3	2.0							
CN-T12	T11-T12	5.329.00	19.755.82				2	1.829	275	11.50	16						4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1						13.4	5.3	2.0							
CN-T12	T11-T12	5.330.00	19.756.82				2	1.829	275	11.50	16						3.99	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9	7.1						13.3	5.3	2.0							
CN-T12	T11-T12	5.331.00	19.757.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9	7.1						13.3	5.3	2.0							
CN-T12	T11-T12	5.332.00	19.758.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1						13.2	5.3	2.0							
CN-T12	T11-T12	5.333.00	19.759.82				2	1.829	275	11.50	16						3.97	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1						13.2	5.3	2.0							
CN-T12	T11-T12	5.334.00	19.760.82				2	1.829	275	11.50	16						3.96	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.1	2.9	7.1						13.1	5.3	2.0							
CN-T12	T11-T12	5.335.00	19.761.82				2	1.829	275	11.50	16						3.95	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9	7.1						13.0	5.3	2.0							
CN-T12	T11-T12	5.336.00	19.762.82				2	1.829	275	11.50	16						3.94	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.0	28.0	28.0	10.0	2.9	7.1	12.9	2.9	7.1						12.9	5.3	2.0							
CN-T12	T11-T12	5.337.00	19.763.82				2	1.829	275	11.50	16						3.92	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.9	27.9	27.9	10.0	2.9	7.1	12.8	2.9	7.1						12.8	5.3	2.0							
CN-T12	T11-T12	5.338.00	19.764.82				2	1.829	275	11.50	16						3.92	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.8	27.8	27.8	10.0	2.9	7.1	12.7	2.9	7.1						12.7	5.3	2.0							
CN-T12	T11-T12	5.339.00	19.765.82				2	1.829	275	11.50	16						3.91	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.8	27.8	27.8	10.0	2.9	7.1	12.7	2.9	7.1						12.7	5.3	2.0							
CN-T12	T11-T12	5.340.00	19.766.82				2	1.829	275	11.50	16						3.91	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.8	27.8	27.8	10.0	2.9	7.1	12.7	2.9	7.1						12.7	5.3	2.0							
CN-T12	T11-T12	5.341.00	19.767.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1						12.6	5.3	2.0							
CN-T12	T11-T12	5.342.00	19.768.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1						12.6	5.3	2.0							
CN-T12	T11-T12	5.343.00	19.769.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1						12.6	5.3	2.0							
CN-T12	T11-T12	5.344.00	19.770.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1						12.6	5.3	2.0							
CN-T12	T11-T12	5.345.00	19.771.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1						12.6	5.3	2.0							
CN-T12	T11-T12	5.346.00	19.772.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1						12.6	5.3	2.0							
CN-T12	T11-T12	5.347.00	19.773.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1						12.6	5.3	2.0							
CN-T12	T11-T12	5.348.00	19.774.82				2	1.829	275	11.50	16																																															

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concreto	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recurvimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompi (M4.20) < 30 mm. f-Garbanillo S/15. g-Suelo seleccionado C/95% PN, < 30 mm. h-M4.20. i-Garbanillo S/15. f-Suelo seleccionado precedente excavación (<150mm) C/65% PN. g- Lecho mod.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT-ang (n)	HT-DHxH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Relevo riñonera+ suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- H4.20	Relevo cobertura. f-Suelo seleccionado precedente excavación (<150mm) C/65% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de bermas (m3) (consumo actual 0%, e-spojaniento teórico 5%)	Cinta liberada (m)	Manto escollera a 45.5m. ancho 30m. (m3)
CN-T12	T11-T12	5.833.00	20.259.82				2	1.829	275	11.50	16						3.82	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9							11.9	5.3	2.0							
CN-T12	T11-T12	5.834.00	20.260.82				2	1.829	275	11.50	16						3.80	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9							11.8	5.3	2.0							
CN-T12	T11-T12	5.835.00	20.261.82				2	1.829	275	11.50	16						3.78	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9							11.6	5.3	2.0							
CN-T12	T11-T12	5.836.00	20.262.82				2	1.829	275	11.50	16						3.77	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9							11.5	5.3	2.0							
CN-T12	T11-T12	5.837.00	20.263.82				2	1.829	275	11.50	16						3.75	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9							11.3	5.3	2.0							
CN-T12	T11-T12	5.838.00	20.264.82				2	1.829	275	11.50	16						3.73	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9							11.1	5.3	2.0							
CN-T12	T11-T12	5.839.00	20.265.82				2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9							11.0	5.3	2.0							
CN-T12	T11-T12	5.840.00	20.266.82				2	1.829	275	11.50	16						3.69	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9							10.8	5.3	2.0							
CN-T12	T11-T12	5.841.00	20.267.82				2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9							10.7	5.3	2.0							
CN-T12	T11-T12	5.842.00	20.268.82				2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9							10.5	5.3	2.0							
CN-T12	T11-T12	5.843.00	20.269.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9							10.4	5.3	2.0							
CN-T12	T11-T12	5.844.00	20.270.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9							10.4	5.3	2.0							
CN-T12	T11-T12	5.845.00	20.271.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9							10.3	5.3	2.0							
CN-T12	T11-T12	5.846.00	20.272.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9							10.3	5.3	2.0							
CN-T12	T11-T12	5.847.00	20.273.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9							10.2	5.3	2.0							
CN-T12	T11-T12	5.848.00	20.274.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9							10.2	5.3	2.0							
CN-T12	T11-T12	5.849.00	20.275.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9							10.2	5.3	2.0							
CN-T12	T11-T12	5.850.00	20.276.82				2	1.829	275	11.50	16						3.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9							10.1	5.3	2.0							
CN-T12	T11-T12	5.851.00	20.277.82				2	1.829	275	11.50	16						3.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9							10.1	5.3	2.0							
CN-T12	T11-T12	5.852.00	20.278.82				2	1.829	275	11.50	16						3.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9							10.1	5.3	2.0							
CN-T12	T11-T12	5.853.00	20.279.82				2	1.829	275	11.50	16						3.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9							10.1	5.3	2.0							
CN-T12	T11-T12	5.854.00	20.280.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9							10.2	5.3	2.0							
CN-T12	T11-T12	5.855.00	20.281.82				2	1.829	275	11.50	16						3.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9							10.3	5.3	2.0							
CN-T12	T11-T12	5.856.00	20.282.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9							10.3	5.3	2.0							
CN-T12	T11-T12	5.857.00	20.283.82				2	1.829	275	11.50	16						3.63	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9							10.4	5.3	2.0							
CN-T12	T11-T12	5.858.00	20.284.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9							10.4	5.3	2.0							
CN-T12	T11-T12	5.859.00	20.285.82				2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9							10.5	5.3	2.0							
CN-T12	T11-T12	5.860.00	20.286.82				2	1.829	275	11.50	16						3.66	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9							10.6	5.3	2.0							
CN-T12	T11-T12	5.861.00	20.287.82				2	1.829	275	11.50	16						3.66	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9							10.6	5.3	2.0							
CN-T12	T11-T12	5.862.00	20.288.82				2	1.829	275	11.50																																																	

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lateral (mm)	Altura de excavación a TH (m)	Talud HV	concreto/losa zapala	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Reforzamientos c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15, e-borrompió HM-20, 30 mm. e- HM-20. f-Suela seleccionada C/95% PN, < 30 mm. e- HM-20. g-Gabarrillo S/15, f-Suela seleccionada C/95% PN, < 30 mm. g- Lecho modif. h- Lecho modif.	Exposic (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT+ang (m)	HT+DNH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m2)	Relevo cama (m2)	Relevo riñonera(s)m2)	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M 20(m2)	Relevo riñonera suelo seleccionado (m2)	Relevo riñonera grabaciado (m2)	Relevo cama+riñonera HM-20(m2)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura d-Gabarrillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f-Suela seleccionada C/95% PN, excavación (<150mm) C/95% PN	Relevo cobertura g- Lecho modif (m2)	Excedente de tierras (m2) (compensación anual 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m2)
CN-T12	T11-T12	5.963.00	20.389.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9		7.1				12.6	5.3	2.0								
CN-T12	T11-T12	5.964.00	20.390.82				2	1.829	275	11.50	16						3.87	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9		7.1				12.3	5.3	2.0								
CN-T12	T11-T12	5.965.00	20.391.82				2	1.829	275	11.50	16						3.83	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9		7.1				12.0	5.3	2.0								
CN-T12	T11-T12	5.966.00	20.392.82				2	1.829	275	11.50	16						3.81	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1				11.9	5.3	2.0								
CN-T12	T11-T12	5.967.00	20.393.82				2	1.829	275	11.50	16						3.80	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9		7.1				11.7	5.3	2.0								
CN-T12	T11-T12	5.968.00	20.394.82				2	1.829	275	11.50	16						3.78	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9		7.1				11.6	5.3	2.0								
CN-T12	T11-T12	5.969.00	20.395.82				2	1.829	275	11.50	16						3.76	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9		7.1				11.4	5.3	2.0								
CN-T12	T11-T12	5.970.00	20.396.82				2	1.829	275	11.50	16						3.75	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN-T12	T11-T12	5.971.00	20.397.82				2	1.829	275	11.50	16						3.73	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN-T12	T11-T12	5.972.00	20.398.82				2	1.829	275	11.50	16						3.72	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	5.973.00	20.399.82				2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	5.974.00	20.400.82				2	1.829	275	11.50	16						3.69	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9		7.1				10.8	5.3	2.0								
CN-T12	T11-T12	5.975.00	20.401.82				2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9		7.1				10.7	5.3	2.0								
CN-T12	T11-T12	5.976.00	20.402.82				2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9		7.1				10.5	5.3	2.0								
CN-T12	T11-T12	5.977.00	20.403.82				2	1.829	275	11.50	16						3.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9		7.1				10.4	5.3	2.0								
CN-T12	T11-T12	5.978.00	20.404.82				2	1.829	275	11.50	16						3.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9		7.1				10.3	5.3	2.0								
CN-T12	T11-T12	5.979.00	20.405.82				2	1.829	275	11.50	16						3.61	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9		7.1				10.1	5.3	2.0								
CN-T12	T11-T12	5.980.00	20.406.82				2	1.829	275	11.50	16						3.59	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9		7.1				10.0	5.3	2.0								
CN-T12	T11-T12	5.981.00	20.407.82				2	1.829	275	11.50	16						3.58	0.33	21.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9		7.1				9.9	5.3	2.0								
CN-T12	T11-T12	5.982.00	20.408.82				2	1.829	275	11.50	16						3.57	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.0	25.0	25.0	10.0	10.4	3.2	7.2	9.5		3.2	7.2	9.5		5.3	2.0									
CN-T12	T11-T12	5.983.00	20.409.82				2	1.829	275	11.50	16						3.58	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.0	25.0	25.0	10.0	10.4	3.2	7.2	9.5		3.2	7.2	9.5		5.3	2.0									
CN-T12	T11-T12	5.984.00	20.410.82				2	1.829	275	11.50	16						3.58	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.0	25.0	25.0	10.0	10.4	3.2	7.2	9.6		3.2	7.2	9.6		5.3	2.0									
CN-T12	T11-T12	5.985.00	20.411.82				2	1.829	275	11.50	16						3.58	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.1	25.1	25.1	10.0	10.4	3.2	7.2	9.6		3.2	7.2	9.6		5.3	2.0									
CN-T12	T11-T12	5.986.00	20.412.82				2	1.829	275	11.50	16						3.59	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.1	25.1	25.1	10.0	10.4	3.2	7.2	9.6		3.2	7.2	9.6		5.3	2.0									
CN-T12	T11-T12	5.987.00	20.413.82				2	1.829	275	11.50	16						3.59	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.1	25.1	25.1	10.0	10.4	3.2	7.2	9.6		3.2	7.2	9.6		5.3	2.0									
CN-T12	T11-T12	5.987.37	20.414.19	Vertosa	V25-200		2	1.829	275	11.50	16	1	200			2.00	S275-6.4	3.59	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	0.4	9.2	9.2	9.2	3.8	1.2	2.6	3.5	1.2	2.6	3.5		2.0	0.7										
CN-T12	T11-T12	5.988.00	20.414.82				2	1.829	275	11.50	16						3.59	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	0.6	15.9	15.9	15.9	6.6	2.0	4.5	6.1	2.0	4.5	6.1		4.4	1.3											
CN-T12	T11-T12	5.989.00	20.415.82				2	1.829	275	11.50	16						3.58	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.9	24.9	24.9	10.0	2.9	7.1	9.9	2.9		7.1				9.9	5.3	2.0								
CN-T12	T11-T12	5.990.00	20.416.82				2	1.829	275	11.50	16						3.57	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	25.0	25.0	25.0	10.0	10.4	3.2	7.2	9.5		3.2	7.2	9.5		5.3	2.0									
CN-T12	T11-T12	5.991.00	20.417.82				2	1.829	275	11.50	16																																																

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones a-c: S=acero laminado C/95% PN, <= 30 mm. d-Garbanillo S/15. e-borrompió HM-20. Relación cobertura c: S=acero laminado C/95% PN, <= 30 mm. e-HM-20. d-Garbanillo S/15. f-suelo adecuado para excavación (<=150mm) c/6% PN. g- Lecho mod.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (º)	H1-DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m2)	Relevo a cama (m2)	Relevo riñonera(s)m2)	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M 20(m2)	Relevo riñonera suelo seleccionado (m2)	Relevo riñonera grabado (m2)	Relevo cama+riñonera HM-20(m2)	Relevo cobertura c: Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d-Garbanillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f-Suelo adecuado para excavación (<=150mm) c/6% PN	Relevo cobertura g- Lecho mod (m2)	Excedente de bermas (m2) (consumo actual 0%, e-superficie lateral 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho 30m. (m2)
CN-T12	T11-T12	6.472.00	20.998.82				2	1.829	275	1150	16					3.55	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.8	24.8	24.8	100	2.9	7.1	9.6	2.9	7.1					9.6	5.3	2.0								
CN-T12	T11-T12	6.473.00	20.999.82				2	1.829	275	1150	16					3.55	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.8	24.8	24.8	100	2.9	7.1	9.7	2.9	7.1					9.7	5.3	2.0								
CN-T12	T11-T12	6.474.00	20.900.82				2	1.829	275	1150	16					3.56	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.9	24.9	24.9	100	2.9	7.1	9.8	2.9	7.1					9.8	5.3	2.0								
CN-T12	T11-T12	6.475.00	20.901.82				2	1.829	275	1150	16					3.57	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.0	25.0	25.0	100	2.9	7.1	9.9	2.9	7.1					9.9	5.3	2.0								
CN-T12	T11-T12	6.476.00	20.902.82				2	1.829	275	1150	16					3.58	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.0	25.0	25.0	100	2.9	7.1	9.9	2.9	7.1					9.9	5.3	2.0								
CN-T12	T11-T12	6.477.00	20.903.82				2	1.829	275	1150	16					3.58	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.0	25.0	25.0	100	2.9	7.1	9.9	2.9	7.1					9.9	5.3	2.0								
CN-T12	T11-T12	6.478.00	20.904.82				2	1.829	275	1150	16					3.59	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.1	25.1	25.1	100	2.9	7.1	10.0	2.9	7.1					10.0	5.3	2.0								
CN-T12	T11-T12	6.479.00	20.905.82				2	1.829	275	1150	16					3.59	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.1	25.1	25.1	100	2.9	7.1	10.0	2.9	7.1					10.0	5.3	2.0								
CN-T12	T11-T12	6.480.00	20.906.82				2	1.829	275	1150	16					3.60	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9	7.1					10.1	5.3	2.0								
CN-T12	T11-T12	6.481.00	20.907.82				2	1.829	275	1150	16					3.60	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9	7.1					10.1	5.3	2.0								
CN-T12	T11-T12	6.482.00	20.908.82				2	1.829	275	1150	16					3.61	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1					10.2	5.3	2.0								
CN-T12	T11-T12	6.483.00	20.909.82				2	1.829	275	1150	16					3.61	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9	7.1					10.2	5.3	2.0								
CN-T12	T11-T12	6.484.00	20.910.82				2	1.829	275	1150	16					3.62	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9	7.1					10.3	5.3	2.0								
CN-T12	T11-T12	6.485.00	20.911.82				2	1.829	275	1150	16					3.62	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9	7.1					10.3	5.3	2.0								
CN-T12	T11-T12	6.486.00	20.912.82				2	1.829	275	1150	16					3.63	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.5	25.5	25.5	100	2.9	7.1	10.3	2.9	7.1					10.3	5.3	2.0								
CN-T12	T11-T12	6.487.00	20.913.82				2	1.829	275	1150	16					3.64	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.5	25.5	25.5	100	2.9	7.1	10.4	2.9	7.1					10.4	5.3	2.0								
CN-T12	T11-T12	6.488.00	20.914.82				2	1.829	275	1150	16					3.64	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.5	25.5	25.5	100	2.9	7.1	10.4	2.9	7.1					10.4	5.3	2.0								
CN-T12	T11-T12	6.489.00	20.915.82				2	1.829	275	1150	16					3.65	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.5	2.9	7.1					10.5	5.3	2.0								
CN-T12	T11-T12	6.490.00	20.916.82				2	1.829	275	1150	16					3.65	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.5	2.9	7.1					10.5	5.3	2.0								
CN-T12	T11-T12	6.491.00	20.917.82				2	1.829	275	1150	16					3.65	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.5	2.9	7.1					10.5	5.3	2.0								
CN-T12	T11-T12	6.492.00	20.918.82				2	1.829	275	1150	16					3.66	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9	7.1					10.6	5.3	2.0								
CN-T12	T11-T12	6.493.00	20.919.82				2	1.829	275	1150	16					3.66	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9	7.1					10.6	5.3	2.0								
CN-T12	T11-T12	6.494.00	20.920.82				2	1.829	275	1150	16					3.67	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.6	2.9	7.1					10.6	5.3	2.0								
CN-T12	T11-T12	6.495.00	20.921.82				2	1.829	275	1150	16					3.67	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9	7.1					10.7	5.3	2.0								
CN-T12	T11-T12	6.496.00	20.922.82				2	1.829	275	1150	16					3.68	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.9	25.9	25.9	100	2.9	7.1	10.8	2.9	7.1					10.8	5.3	2.0								
CN-T12	T11-T12	6.496.22	20.923.04				2	1.829	275	1150	16					3.68	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.2	5.7	5.7	5.7	2.2	0.6	1.6	2.4	0.6	1.6					2.4	1.2	0.4								
CN-T12	T11-T12	6.497.00	20.923.82				2	1.829	275	1150	16					3.69	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.8	20.3	20.3	20.3	7.8	23	55	8.5	2.3	5.5					2.3	4.2	1.6								
CN-T12	T11-T12	6.498.00	20.924.82				2	1.829	275	1150	16					3.69	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	100	2.9	7.1	10.8	2.9	7.1					10.8	5.3	2.0								
CN-T12	T11-T12	6.498.76	20.925.58				2	1.829	275	1150	16					3.68	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.8	19.6	19.6	19.6	7.6	2.2	5.4	8.2	2.2	5.4					8.2	4.1	1.5								
CN-T12	T11-T12	6.499.00	20.925.82				2	1.829	275	1150	16					3.68	0.33	212-1800	0.60	100	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.2	6.2	6.2	6.2	2.4	0.7	1.7	2.6	0.7	1.7					2.6	1.3	0.5								
CN-T12	T11-T12	6.500.00	20.926.82				2	1.829	275	1150	16					3.67	0.33	212-1800	0.60	1																																					

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima 4' cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Reforzamientos c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15, e-borrompi (M20)	Módulo excavadora f- Suela seleccionada C/95% PN, < 30 mm. g-M20. d-Garbanillo 5/15, f-Suela adecuada procedente excavación (<150mm) c/95% PN, g- Luchero mod.	Expos. (m). escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño c-ama (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera garbanillo (m3)	Releño cama+riñonera (M20(m3)	Releño cobertura c- Suela seleccionada C/95% PN, <= 30 mm	Releño cobertura d-Garbanillo 5/15	Releño cobertura e- H4/20	Releño cobertura f-Suela adecuada procedente excavación (<150mm) c/95% PN	Releño cobertura g- Luchero modif (m3)	Excedente de tierra (m3) (compensando nivel 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a 45.5m. ancho 30m (m3)
CN112	T11-T12	6.726.00	21.152.82				2	1.829	275	11.50	16					4.44	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	34.1	34.1	34.1	10.0	2.9	7.1	19.0	2.9		7.1						19.0	5.3	2.0							
CN112	T11-T12	6.727.00	21.153.82				2	1.829	275	11.50	16					4.66	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	34.3	34.3	34.3	10.0	2.9	7.1	19.2	2.9		7.1						19.2	5.3	2.0							
CN112	T11-T12	6.728.00	21.154.82				2	1.829	275	11.50	16					4.68	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	34.5	34.5	34.5	10.0	2.9	7.1	19.4	2.9		7.1						19.4	5.3	2.0							
CN112	T11-T12	6.729.00	21.155.82				2	1.829	275	11.50	16					4.70	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	34.6	34.6	34.6	10.0	2.9	7.1	19.5	2.9		7.1						19.5	5.3	2.0							
CN112	T11-T12	6.730.00	21.156.82				2	1.829	275	11.50	16					4.72	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	34.8	34.8	34.8	10.0	2.9	7.1	19.7	2.9		7.1						19.7	5.3	2.0							
CN112	T11-T12	6.731.00	21.157.82				2	1.829	275	11.50	16					4.74	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	35.0	35.0	35.0	10.0	2.9	7.1	19.9	2.9		7.1						19.9	5.3	2.0							
CN112	T11-T12	6.732.00	21.158.82				2	1.829	275	11.50	16					4.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	35.2	35.2	35.2	10.0	2.9	7.1	20.1	2.9		7.1						20.1	5.3	2.0							
CN112	T11-T12	6.733.00	21.159.82				2	1.829	275	11.50	16					4.78	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	35.4	35.4	35.4	10.0	2.9	7.1	20.3	2.9		7.1						20.3	5.3	2.0							
CN112	T11-T12	6.734.00	21.160.82				2	1.829	275	11.50	16					4.80	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	35.5	35.5	35.5	10.0	2.9	7.1	20.4	2.9		7.1						20.4	5.3	2.0							
CN112	T11-T12	6.735.00	21.161.82				2	1.829	275	11.50	16					4.82	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	35.7	35.7	35.7	10.0	2.9	7.1	20.6	2.9		7.1						20.6	5.3	2.0							
CN112	T11-T12	6.736.00	21.162.82				2	1.829	275	11.50	16					4.84	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	35.9	35.9	35.9	10.0	2.9	7.1	20.8	2.9		7.1						20.8	5.3	2.0							
CN112	T11-T12	6.736.39	21.163.21				2	1.829	275	11.50	16					4.85	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.4	13.9	13.9	13.9	3.9	1.1	2.7	8.0	1.1	2.7				8.0	2.1	0.8										
CN112	T11-T12	6.737.00	21.163.82				2	1.829	275	11.50	16					4.86	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.6	22.2	22.2	22.2	6.2	1.8	4.4	12.9	1.8	4.4				12.9	3.3	1.2										
CN112	T11-T12	6.738.00	21.164.82				2	1.829	275	11.50	16					4.88	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.3	36.3	36.3	10.0	2.9	7.1	21.2	2.9		7.1						21.2	5.3	2.0							
CN112	T11-T12	6.739.00	21.165.82				2	1.829	275	11.50	16					4.90	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.5	36.5	36.5	10.0	2.9	7.1	21.4	2.9		7.1						21.4	5.3	2.0							
CN112	T11-T12	6.740.00	21.166.82				2	1.829	275	11.50	16					4.92	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.6	36.6	36.6	10.0	2.9	7.1	21.5	2.9		7.1						21.5	5.3	2.0							
CN112	T11-T12	6.741.00	21.167.82				2	1.829	275	11.50	16					4.95	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.8	36.8	36.8	10.0	2.9	7.1	21.7	2.9		7.1						21.7	5.3	2.0							
CN112	T11-T12	6.742.00	21.168.82				2	1.829	275	11.50	16					4.97	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.0	37.0	37.0	10.0	2.9	7.1	21.9	2.9		7.1						21.9	5.3	2.0							
CN112	T11-T12	6.743.00	21.169.82				2	1.829	275	11.50	16					4.99	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.2	37.2	37.2	10.0	2.9	7.1	22.1	2.9		7.1						22.1	5.3	2.0							
CN112	T11-T12	6.744.00	21.170.82				2	1.829	275	11.50	16					5.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.4	37.4	37.4	10.0	2.9	7.1	22.3	2.9		7.1						22.3	5.3	2.0							
CN112	T11-T12	6.745.00	21.171.82				2	1.829	275	11.50	16					5.02	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.5	37.5	37.5	10.0	2.9	7.1	22.4	2.9		7.1						22.4	5.3	2.0							
CN112	T11-T12	6.746.00	21.172.82				2	1.829	275	11.50	16					5.04	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.7	37.7	37.7	10.0	2.9	7.1	22.6	2.9		7.1						22.6	5.3	2.0							
CN112	T11-T12	6.747.00	21.173.82				2	1.829	275	11.50	16					5.07	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.0	38.0	38.0	10.0	2.9	7.1	22.9	2.9		7.1						22.9	5.3	2.0							
CN112	T11-T12	6.748.00	21.174.82				2	1.829	275	11.50	16					5.10	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.2	38.2	38.2	10.0	2.9	7.1	23.1	2.9		7.1						23.1	5.3	2.0							
CN112	T11-T12	6.749.00	21.175.82				2	1.829	275	11.50	16					5.12	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.5	38.5	38.5	10.0	2.9	7.1	23.4	2.9		7.1						23.4	5.3	2.0							
CN112	T11-T12	6.750.00	21.176.82				2	1.829	275	11.50	16					5.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.7	38.7	38.7	10.0	2.9	7.1	23.6	2.9		7.1						23.6	5.3	2.0							
CN112	T11-T12	6.751.00	21.177.82				2	1.829	275	11.50	16					5.18	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	39.0	39.0	39.0	10.0	2.9	7.1	23.9	2.9		7.1						23.9	5.3	2.0							
CN112	T11-T12	6.752.00	21.178.82				2	1.829	275	11.50	16					5.19	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	39.2	39.2	39.2	10.0	2.9	7.1	24.1	2.9		7.1						24.1	5.3	2.0							
CN112	T11-T12	6.753.00	21.179.82				2	1.829	275	11.50	16					5.23	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	39.5	39.5	39.5	10.0	2.9	7.1	24.4	2.9		7.1						24.4	5.3	2.0							
CN112	T11-T12	6.754.00	21.180.82				2	1.829	275	11.50	16					5.26	0.33	21.2-1																																								

Agregación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= Separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Reforzamiento c= Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15, e-borrompi (M4.20)	Módulo excavación f= Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d-Garbanillo S/15, f-suela adecuada procedente excavación (<150mm) c/65% PN, g- Luchero modif.	Exposici. (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (º)	H1=DNH2 (m)	Long (m)	Excavación tapasocial (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c-arena (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera garbanillo (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c= Suela seleccionada C/95% PN, <= 30 mm	Releño cobertura d-Garbanillo S/15	Releño cobertura e= H4/20	Releño cobertura f= Suela adecuada procedente excavación (<150mm) c/65% PN	Releño cobertura g= Luchero modif (m3)	Excedente de tierras (m3) (compensación actual 0%, espolvoreo lateral 5%)	Cinta liberada (m)	Manto escollera a= 0.5m, ancho=30m (m3)
CN-T12	T11-T12	6.851.00	21.277.82				2	1.829	275	1150	16						3.88	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	27.5	27.5	27.5	10.0	2.9	7.1	12.4	2.9	7.1				12.4	5.3	2.0									
CN-T12	T11-T12	6.852.00	21.278.82				2	1.829	275	1150	16						3.90	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1				12.6	5.3	2.0									
CN-T12	T11-T12	6.853.00	21.279.82				2	1.829	275	1150	16						3.94	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	28.0	28.0	28.0	10.0	2.9	7.1	12.9	2.9	7.1				12.9	5.3	2.0									
CN-T12	T11-T12	6.854.00	21.280.82				2	1.829	275	1150	16						3.97	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1				13.2	5.3	2.0									
CN-T12	T11-T12	6.855.00	21.281.82				2	1.829	275	1150	16						4.01	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1				13.5	5.3	2.0									
CN-T12	T11-T12	6.856.00	21.282.82				2	1.829	275	1150	16						4.07	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9	7.1				14.0	5.3	2.0									
CN-T12	T11-T12	6.857.00	21.283.82				2	1.829	275	1150	16						4.10	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	29.4	29.4	29.4	10.0	2.9	7.1	14.3	2.9	7.1				14.3	5.3	2.0									
CN-T12	T11-T12	6.858.00	21.284.82				2	1.829	275	1150	16						4.17	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9	7.1				14.8	5.3	2.0									
CN-T12	T11-T12	6.859.00	21.285.82				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1				15.3	5.3	2.0									
CN-T12	T11-T12	6.859.79	21.286.82				2	1.829	275	1150	16						4.26	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.6	2.9	7.1				15.6	5.3	2.0									
CN-T12	T11-T12	6.860.00	21.286.82				2	1.829	275	1150	16						4.27	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	31.2	31.2	31.2	10.0	2.9	7.1	15.8	2.9	7.1				15.8	5.3	2.0									
CN-T12	T11-T12	6.861.00	21.287.82				2	1.829	275	1150	16						4.30	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	31.1	31.1	31.1	10.0	2.9	7.1	16.0	2.9	7.1				16.0	5.3	2.0									
CN-T12	T11-T12	6.862.00	21.288.82				2	1.829	275	1150	16						4.34	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	31.4	31.4	31.4	10.0	2.9	7.1	16.3	2.9	7.1				16.3	5.3	2.0									
CN-T12	T11-T12	6.863.00	21.289.82				2	1.829	275	1150	16						4.37	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	31.7	31.7	31.7	10.0	2.9	7.1	16.6	2.9	7.1				16.6	5.3	2.0									
CN-T12	T11-T12	6.864.00	21.290.82				2	1.829	275	1150	16						4.40	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	31.9	31.9	31.9	10.0	2.9	7.1	16.8	2.9	7.1				16.8	5.3	2.0									
CN-T12	T11-T12	6.865.00	21.291.82				2	1.829	275	1150	16						4.43	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	32.2	32.2	32.2	10.0	2.9	7.1	17.1	2.9	7.1				17.1	5.3	2.0									
CN-T12	T11-T12	6.866.00	21.292.82				2	1.829	275	1150	16						4.46	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	32.5	32.5	32.5	10.0	2.9	7.1	17.4	2.9	7.1				17.4	5.3	2.0									
CN-T12	T11-T12	6.867.00	21.293.82				2	1.829	275	1150	16						4.49	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	32.7	32.7	32.7	10.0	2.9	7.1	17.6	2.9	7.1				17.6	5.3	2.0									
CN-T12	T11-T12	6.868.00	21.294.82				2	1.829	275	1150	16						4.52	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	33.0	33.0	33.0	10.0	2.9	7.1	17.9	2.9	7.1				17.9	5.3	2.0									
CN-T12	T11-T12	6.869.00	21.295.82				2	1.829	275	1150	16						4.53	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	33.1	33.1	33.1	10.0	2.9	7.1	18.0	2.9	7.1				18.0	5.3	2.0									
CN-T12	T11-T12	6.870.00	21.296.82				2	1.829	275	1150	16						4.52	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	33.0	33.0	33.0	10.0	2.9	7.1	17.9	2.9	7.1				17.9	5.3	2.0									
CN-T12	T11-T12	6.870.29	21.297.12				2	1.829	275	1150	16						4.52	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	0.3	9.7	9.7	9.7	2.9	0.9	2.1	5.2	0.9	2.1				5.2	0.9	2.1									
CN-T12	T11-T12	6.871.00	21.297.82				2	1.829	275	1150	16						4.52	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	0.7	23.3	23.3	23.3	7.1	2.1	5.0	12.6	2.1	5.0				12.6	5.3	2.0									
CN-T12	T11-T12	6.872.00	21.298.82				2	1.829	275	1150	16						4.51	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	32.9	32.9	32.9	10.0	2.9	7.1	17.8	2.9	7.1				17.8	5.3	2.0									
CN-T12	T11-T12	6.873.00	21.299.82				2	1.829	275	1150	16						4.51	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	32.9	32.9	32.9	10.0	2.9	7.1	17.8	2.9	7.1				17.8	5.3	2.0									
CN-T12	T11-T12	6.874.00	21.300.82				2	1.829	275	1150	16						4.50	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	32.9	32.9	32.9	10.0	2.9	7.1	17.7	2.9	7.1				17.7	5.3	2.0									
CN-T12	T11-T12	6.875.00	21.301.82				2	1.829	275	1150	16						4.50	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	32.8	32.8	32.8	10.0	2.9	7.1	17.7	2.9	7.1				17.7	5.3	2.0									
CN-T12	T11-T12	6.876.00	21.302.82				2	1.829	275	1150	16						4.49	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	32.8	32.8	32.8	10.0	2.9	7.1	17.7	2.9	7.1				17.7	5.3	2.0									
CN-T12	T11-T12	6.877.00	21.303.82				2	1.829	275	1150	16						4.47	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	32.6	32.6	32.6	10.0	2.9	7.1	17.5	2.9	7.1				17.5	5.3	2.0									
CN-T12	T11-T12	6.878.00	21.304.82				2	1.829	275	1150	16						4.45	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c																													

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desague	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	HT-altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones: a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió HM-20 Módulo excavadora (-): Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suela adecuada procedente excavación (-):150mm C/65% PN. g- Lecho mod.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT-long (m)	HT-DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m2)	Relevo a cama (m2)	Relevo riñonera(s)m2)	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M 20(m2)	Relevo riñonera suelo seleccionado (m2)	Relevo riñonera grabada (m2)	Relevo cama+riñonera HM-20(m2)	Relevo cobertura c- Suela seleccionada C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo 5/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suela adecuada procedente excavación (-):150mm C/65% PN	Relevo cobertura. g- Lecho mod (m2)	Excedente de tierra (m2) (consumo actual 0%, espolvoreo teórico 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m (m2)
CN-T12	T11-T12	6.974.00	21.400.82				2	1.829	275	11.50	16						3.82	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9	7.1						11.9	5.3	2.0							
CN-T12	T11-T12	6.975.00	21.401.82				2	1.829	275	11.50	16						3.84	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9	7.1						12.1	5.3	2.0							
CN-T12	T11-T12	6.976.00	21.402.82				2	1.829	275	11.50	16						3.87	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9	7.1						12.3	5.3	2.0							
CN-T12	T11-T12	6.977.00	21.403.82				2	1.829	275	11.50	16						3.89	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.6	27.6	27.6	10.0	2.9	7.1	12.5	2.9	7.1						12.5	5.3	2.0							
CN-T12	T11-T12	6.978.00	21.404.82				2	1.829	275	11.50	16						3.92	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.9	27.9	27.9	10.0	2.9	7.1	12.8	2.9	7.1						12.8	5.3	2.0							
CN-T12	T11-T12	6.979.00	21.405.82				2	1.829	275	11.50	16						3.96	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.0	2.9	7.1						13.0	5.3	2.0							
CN-T12	T11-T12	6.980.00	21.406.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1						13.2	5.3	2.0							
CN-T12	T11-T12	6.981.00	21.407.82				2	1.829	275	11.50	16						3.99	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9	7.1						13.3	5.3	2.0							
CN-T12	T11-T12	6.982.00	21.408.82				2	1.829	275	11.50	16						3.99	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9	7.1						13.3	5.3	2.0							
CN-T12	T11-T12	6.983.00	21.409.82				2	1.829	275	11.50	16						3.99	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9	7.1						13.3	5.3	2.0							
CN-T12	T11-T12	6.984.00	21.410.82				2	1.829	275	11.50	16						3.97	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1						13.2	5.3	2.0							
CN-T12	T11-T12	6.985.00	21.411.82				2	1.829	275	11.50	16						3.96	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.1	2.9	7.1						13.1	5.3	2.0							
CN-T12	T11-T12	6.986.00	21.412.82				2	1.829	275	11.50	16						3.96	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.1	2.9	7.1						13.1	5.3	2.0							
CN-T12	T11-T12	6.987.00	21.413.82				2	1.829	275	11.50	16						3.97	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1						13.2	5.3	2.0							
CN-T12	T11-T12	6.988.00	21.414.82				2	1.829	275	11.50	16						3.97	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1						13.2	5.3	2.0							
CN-T12	T11-T12	6.989.00	21.415.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9	7.1						13.3	5.3	2.0							
CN-T12	T11-T12	6.990.00	21.416.82				2	1.829	275	11.50	16						4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1						13.4	5.3	2.0							
CN-T12	T11-T12	6.991.00	21.417.82				2	1.829	275	11.50	16						4.01	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1						13.5	5.3	2.0							
CN-T12	T11-T12	6.992.00	21.418.82				2	1.829	275	11.50	16						4.02	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9	7.1						13.6	5.3	2.0							
CN-T12	T11-T12	6.993.00	21.419.82				2	1.829	275	11.50	16						4.02	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9	7.1						13.6	5.3	2.0							
CN-T12	T11-T12	6.994.00	21.420.82				2	1.829	275	11.50	16						4.03	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.8	28.8	28.8	10.0	2.9	7.1	13.7	2.9	7.1						13.7	5.3	2.0							
CN-T12	T11-T12	6.995.00	21.421.82				2	1.829	275	11.50	16						4.04	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9	7.1						13.8	5.3	2.0							
CN-T12	T11-T12	6.996.00	21.422.82				2	1.829	275	11.50	16						4.06	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9	7.1						13.9	5.3	2.0							
CN-T12	T11-T12	6.997.00	21.423.82				2	1.829	275	11.50	16						4.07	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9	7.1						14.1	5.3	2.0							
CN-T12	T11-T12	6.998.00	21.424.82				2	1.829	275	11.50	16						4.10	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.4	29.4	29.4	10.0	2.9	7.1	14.3	2.9	7.1						14.3	5.3	2.0							
CN-T12	T11-T12	6.999.00	21.425.82				2	1.829	275	11.50	16						4.12	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.6	29.6	29.6	10.0	2.9	7.1	14.5	2.9	7.1						14.5	5.3	2.0							
CN-T12	T11-T12	7.000.00	21.426.82				2	1.829	275	11.50	16						4.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1						14.7	5.3	2.0							
CN-T12	T11-T12	7.001.00	21.427.82				2	1.829	275	11.50	16						4.18	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1						14.9	5.3	2.0							
CN-T12	T11-T12	7.002.00	21.428.82				2	1.829	275	11.50	16						4.20	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1						15.1	5.3	2.0							
CN-T12	T11-T12	7.003.00	21.429.82				2	1.829	275	11.50	16						4.23																																									

Agrupación	Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías s	DN ext (mm)	Acero tipo S-	espesor asignado (mm)	PN Time (g) valvula (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº válvulas de suape	DN Descarga	Tipo de valvula	Agueta rotura tipo	Conex. DN 800 mm paso hombre (m)	Conex. DN 800 impaso hombre - Acero-esporazinc lamin (mm)	Altura de excavación ± Hn (m)	Talud HW concavizado zapia	A- separación tubo-lad	Sy-Separacion entre tuberias	B-Achto interior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	áng Apoyo	IQ-Documento cobertura minimo (m)	H3-Profundidad minima s/c cave (m)	H4= altura de la boma desde fondo	Cama de apoyo «-cama material granular o arena b-cama de hormon HM-20	Relinco interior c- Sueto seleccionado C 95% PN <= 30 mm - d-Garanticillo S/15 - e-hormigon HM-20	Relinco cobertura c- Sueto seleccionado C 95% PN <= 30 mm - e-HM-20 - d-Garanticillo S/15 - f-Suolo adecuado precedente excavación (<-150mm 0.6% PH g- Lecho modif	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1 tang (m)	HH-DH+12 (m)	Long (m)	Excavación Inapuntual (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relinco cama+riñones (m3)	Relinco cama (m3)	Relinco riñones(eq/m3)	Relleño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleño riñones suelo seleccionado (m3)	Relleño riñones garbancos (m3)	Relleño cama+riñones HH-20(m3)	Relleño cobertura c- Sueto seleccionado C 95% PN <= 30 mm	Relleño cobertura d-Garanticillo S/15	Relleño cobertura e- HM-20:	Relleño cobertura f-Suolo adecuado precedente excavación (<-150mm 0.6% PN	Relleño cobertura g- Lecho model (m3)	Excedente de terras (m3) (equipamiento actual 0%, equipamiento licitaca 5%)	Cinta labores (m)	Manto escollera e-4.5m ancho-30m (m3)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
CN-T12	T11-T12	7103.00	21.529,82			2	1.829	275	11.50	16									3.84	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c		100%	0.7	2.3	1.0	27.2	27.2		27.2	100	29	7.1	12.1	2.9	7.1							12.1	5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CN-T12	T11-T12	7104.00	21.530,82			2	1.829	275	11.50	16									3.88	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.5	27.5		27.5	100	29	7.1	12.4	2.9	7.1							12.4	5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
CN-T12	T11-T12	7105.00	21.531,82		Apoyo arqueta	2	1.829	275	11.50	16									3.91	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	1.0	27.8	27.8		27.8	104	3.2	7.2	12.3	3.2	7.2			12.3			5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
CN-T12	T11-T12	7106.00	21.532,82		Apoyo arqueta	2	1.829	275	11.50	16									3.91	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	1.0	27.7	27.7		27.7	104	3.2	7.2	12.3	3.2	7.2			12.3			5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
CN-T12	T11-T12	7107.00	21.533,82		Apoyo arqueta	2	1.829	275	11.50	16									3.91	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	1.0	27.8	27.8		27.8	104	3.2	7.2	12.3	3.2	7.2			12.3			5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
CN-T12	T11-T12	7108.00	21.534,82		Apoyo arqueta	2	1.829	275	11.50	16									3.86	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	1.0	27.3	27.3		27.3	104	3.2	7.2	11.9	3.2	7.2			11.9			5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
CN-T12	T11-T12	7109.00	21.535,82		Apoyo arqueta	2	1.829	275	11.50	16									3.83	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	1.0	27.1	27.1		27.1	104	3.2	7.2	11.7	3.2	7.2			11.7			5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
CN-T12	T11-T12	7110.00	21.536,82	Ventosa	VZS-200	Apoyo arqueta	2	1.829	275	11.50	16	1	200				2.30	SZ75-6.4		3.81	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	1.0	26.9	26.9		26.9	104	3.2	7.2	11.5	3.2	7.2			11.5			5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
CN-T12	T11-T12	7111.00	21.537,82		Apoyo arqueta	2	1.829	275	11.50	16									3.79	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	1.0	26.7	26.7		26.7	104	3.2	7.2	11.3	3.2	7.2			11.3			5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
CN-T12	T11-T12	7112.00	21.538,82		Apoyo arqueta	2	1.829	275	11.50	16									3.76	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	1.0	26.5	26.5		26.5	104	3.2	7.2	11.1	3.2	7.2			11.1			5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
CN-T12	T11-T12	7113.00	21.539,82		Apoyo arqueta	2	1.829	275	11.50	16									3.74	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	1.0	26.4	26.4		26.4	104	3.2	7.2	10.9	3.2	7.2			10.9			5.3	2.0																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
CN-T12	T11-T12	7113.92	21.540.74		Apoyo arqueta	2	1.829	275	11.50	16									3.72	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	d	e	100%	0.7	2.4	0.9	24.0	24.0		24.0	9.5	3.0	6.6	9.8	3.0	6.6			9.8			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.6			4.9	1.8	3.0	6.

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concrecionado zapala	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	HT= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	HT= altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Reforzamientos c= Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió (M40) 30 mm. e-M420. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<150mm) c/95% PN. g- Lecho mod.	Exposic (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT= ang (n)	HT=DNH2 (m)	Long (m)	Excavación tapasocial (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c/ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M40(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera (M40(m3)	Relevo cobertura c= Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d-Garbanillo 5/15	Relevo cobertura. e= M420	Relevo cobertura. f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensando nivel 0% e-spojaniento lateral 5%)	Cinta liberata (m3)	Manto escollera a= 0.5m. ancho=30m (m3)
CN112	T11-T12	7871.00	22 297.82				2	1.829	275	1150	16						3.87	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9		7.1					12.3	5.3	2.0							
CN112	T11-T12	7872.00	22 298.82				2	1.829	275	1150	16						3.87	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9		7.1				12.3	5.3	2.0								
CN112	T11-T12	7873.00	22 299.82				2	1.829	275	1150	16						3.87	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.5	27.5	27.5	10.0	2.9	7.1	12.4	2.9		7.1				12.4	5.3	2.0								
CN112	T11-T12	7874.00	22 300.82				2	1.829	275	1150	16						3.88	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.5	27.5	27.5	10.0	2.9	7.1	12.4	2.9		7.1				12.4	5.3	2.0								
CN112	T11-T12	7875.00	22 301.82				2	1.829	275	1150	16						3.88	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.5	27.5	27.5	10.0	2.9	7.1	12.4	2.9		7.1				12.4	5.3	2.0								
CN112	T11-T12	7876.00	22 302.82				2	1.829	275	1150	16						3.89	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.6	27.6	27.6	10.0	2.9	7.1	12.5	2.9		7.1				12.5	5.3	2.0								
CN112	T11-T12	7877.00	22 303.82				2	1.829	275	1150	16						3.89	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.6	27.6	27.6	10.0	2.9	7.1	12.5	2.9		7.1				12.5	5.3	2.0								
CN112	T11-T12	7878.00	22 304.82				2	1.829	275	1150	16						3.90	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9		7.1				12.6	5.3	2.0								
CN112	T11-T12	7879.00	22 305.82				2	1.829	275	1150	16						3.90	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9		7.1				12.6	5.3	2.0								
CN112	T11-T12	7880.00	22 306.82				2	1.829	275	1150	16						3.91	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9		7.1				12.6	5.3	2.0								
CN112	T11-T12	7881.00	22 307.82				2	1.829	275	1150	16						3.91	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.8	27.8	27.8	10.0	2.9	7.1	12.7	2.9		7.1				12.7	5.3	2.0								
CN112	T11-T12	7882.00	22 308.82				2	1.829	275	1150	16						3.90	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9		7.1				12.6	5.3	2.0								
CN112	T11-T12	7883.00	22 309.82				2	1.829	275	1150	16						3.88	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.5	27.5	27.5	10.0	2.9	7.1	12.4	2.9		7.1				12.4	5.3	2.0								
CN112	T11-T12	7884.00	22 310.82				2	1.829	275	1150	16						3.87	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9		7.1				12.3	5.3	2.0								
CN112	T11-T12	7885.00	22 311.82				2	1.829	275	1150	16						3.86	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9		7.1				12.2	5.3	2.0								
CN112	T11-T12	7886.00	22 312.82				2	1.829	275	1150	16						3.86	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9		7.1				12.2	5.3	2.0								
CN112	T11-T12	7887.00	22 313.82				2	1.829	275	1150	16						3.85	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9		7.1				12.1	5.3	2.0								
CN112	T11-T12	7888.00	22 314.82				2	1.829	275	1150	16						3.84	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9		7.1				12.1	5.3	2.0								
CN112	T11-T12	7889.00	22 315.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9		7.1				12.0	5.3	2.0								
CN112	T11-T12	7890.00	22 316.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1				11.9	5.3	2.0								
CN112	T11-T12	7891.00	22 317.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1				11.9	5.3	2.0								
CN112	T11-T12	7892.00	22 318.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1				11.9	5.3	2.0								
CN112	T11-T12	7893.00	22 319.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1				11.9	5.3	2.0								
CN112	T11-T12	7894.00	22 320.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1				11.9	5.3	2.0								
CN112	T11-T12	7895.00	22 321.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1				11.9	5.3	2.0								
CN112	T11-T12	7896.00	22 322.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1				11.9	5.3	2.0								
CN112	T11-T12	7897.00	22 323.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9		7.1				12.0	5.3	2.0								
CN112	T11-T12	7898.00	22 324.82				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9		7.1				12.0	5.3	2.0								
CN112	T11-T12	7899.00	22 325.82				2	1.829	275	1150	16						3.83	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9		7.1				12.0	5.3	2.0								
CN112	T11-T12	7900.00	22 326.82				2	1.829	275	1150	16						3.83	0.33	212-1800	0.60	1.00	5.80																																					

Agrupación	Tamaño	P. K. Armado	Elemento	Arquilla	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquelat rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Al- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo S/15. e-borneopig HM-20. Relación cobertura c: Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S/15. f-suelo adecuado para excavación (<150mm) C/65% PN. g- Lecho mod.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (n)	HI-DHxH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m2)	Relevo c-ama (m2)	Relevo riñonera(s)m2)	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M-20(m2)	Relevo riñonera suelo seleccionado (m2)	Relevo riñonera grabaciado (m2)	Relevo cama+riñonera HM-20(m2)	Relevo cobertura c: Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-suelo adecuado para excavación (<150mm) C/65% PN	Relevo cobertura. g- Lecho mod (m2)	Excedente de tierra (m2) (consumo actual 0%, espolvoreo teórico 5%)	Cinta liberada (m)	Manto escollera a-0.5m. ancho-30m. (m2)
CN-T12	T11-T12	7.999.00	22.425.82			2	1.829	275	11.50	16					3.57	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9	7.1							9.9	5.3	2.0						
CN-T12	T11-T12	8.000.00	22.426.82			2	1.829	275	11.50	16					3.58	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9	7.1							9.9	5.3	2.0						
CN-T12	T11-T12	8.001.00	22.427.82			2	1.829	275	11.50	16					3.60	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9	7.1							10.1	5.3	2.0						
CN-T12	T11-T12	8.002.00	22.428.82			2	1.829	275	11.50	16					3.63	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9	7.1							10.4	5.3	2.0						
CN-T12	T11-T12	8.003.00	22.429.82			2	1.829	275	11.50	16					3.66	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9	7.1							10.6	5.3	2.0						
CN-T12	T11-T12	8.004.00	22.430.82			2	1.829	275	11.50	16					3.69	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	25.9	25.9	25.9	10.0	2.9	7.1	10.8	2.9	7.1							10.8	5.3	2.0						
CN-T12	T11-T12	8.005.00	22.431.82			2	1.829	275	11.50	16					3.72	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9	7.1							11.1	5.3	2.0						
CN-T12	T11-T12	8.006.00	22.432.82			2	1.829	275	11.50	16					3.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1							11.4	5.3	2.0						
CN-T12	T11-T12	8.007.00	22.433.82			2	1.829	275	11.50	16					3.79	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9	7.1							11.7	5.3	2.0						
CN-T12	T11-T12	8.008.00	22.434.82			2	1.829	275	11.50	16					3.83	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9	7.1							12.0	5.3	2.0						
CN-T12	T11-T12	8.009.00	22.435.82			2	1.829	275	11.50	16					3.86	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9	7.1							12.3	5.3	2.0						
CN-T12	T11-T12	8.009.50	22.436.32			2	1.829	275	11.50	16					3.88	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.5	13.8	13.8	13.8	5.0	1.5	3.6	6.2	1.5	3.6							6.2	2.7	1.0						
CN-T12	T11-T12	8.010.00	22.436.82			2	1.829	275	11.50	16					3.89	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.5	13.8	13.8	13.8	5.0	1.5	3.6	6.3	1.5	3.6							6.3	2.7	1.0						
CN-T12	T11-T12	8.011.00	22.437.82			2	1.829	275	11.50	16					3.93	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.9	27.9	27.9	10.0	2.9	7.1	12.8	2.9	7.1							12.8	5.3	2.0						
CN-T12	T11-T12	8.012.00	22.438.82			2	1.829	275	11.50	16					3.95	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9	7.1							13.0	5.3	2.0						
CN-T12	T11-T12	8.013.00	22.439.82			2	1.829	275	11.50	16					3.98	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1							13.2	5.3	2.0						
CN-T12	T11-T12	8.014.00	22.440.82			2	1.829	275	11.50	16					4.00	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1							13.5	5.3	2.0						
CN-T12	T11-T12	8.015.00	22.441.82			2	1.829	275	11.50	16					4.02	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9	7.1							13.6	5.3	2.0						
CN-T12	T11-T12	8.016.00	22.442.82			2	1.829	275	11.50	16					4.05	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9	7.1							13.8	5.3	2.0						
CN-T12	T11-T12	8.017.00	22.443.82			2	1.829	275	11.50	16					4.09	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9	7.1							14.0	5.3	2.0						
CN-T12	T11-T12	8.018.00	22.444.82			2	1.829	275	11.50	16					4.09	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9	7.1							14.2	5.3	2.0						
CN-T12	T11-T12	8.019.00	22.445.82			2	1.829	275	11.50	16					4.11	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.5	29.5	29.5	10.0	2.9	7.1	14.4	2.9	7.1							14.4	5.3	2.0						
CN-T12	T11-T12	8.020.00	22.446.82			2	1.829	275	11.50	16					4.13	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.6	29.6	29.6	10.0	2.9	7.1	14.5	2.9	7.1							14.5	5.3	2.0						
CN-T12	T11-T12	8.021.00	22.447.82			2	1.829	275	11.50	16					4.13	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.7	29.7	29.7	10.0	2.9	7.1	14.6	2.9	7.1							14.6	5.3	2.0						
CN-T12	T11-T12	8.022.00	22.448.82			2	1.829	275	11.50	16					4.14	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.7	29.7	29.7	10.0	2.9	7.1	14.6	2.9	7.1							14.6	5.3	2.0						
CN-T12	T11-T12	8.023.00	22.449.82			2	1.829	275	11.50	16					4.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1							14.7	5.3	2.0						
CN-T12	T11-T12	8.024.00	22.450.82			2	1.829	275	11.50	16					4.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1							14.7	5.3	2.0						
CN-T12	T11-T12	8.025.00	22.451.82			2	1.829	275	11.50	16					4.16	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9	7.1							14.8	5.3	2.0						
CN-T12	T11-T12	8.026.00	22.452.82			2	1.829	275	11.50	16					4.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1							14.7	5.3	2.0						
CN-T12	T11-T12	8.027.00	22.453.82			2	1.829	275	11.50	16					4.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8																							

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= Separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Rehabilitación a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió (M4.20) M4.20. f-Suela seleccionada C/95% PN, < 30 mm. e-M4.20. d-Garbanillo 5/15. f-Suela seleccionada procedente excavación (<150mm) C/65 % PN. g- Lecho modif.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (n)	H1=DNH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m2)	Relleno c arena (m2)	Relleno riñonera(s)m2)	Relleno cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M4.20(m2)	Relleno riñonera suelo seleccionado (m2)	Relleno riñonera grabaciado (m2)	Relleno cama+riñonera (M4.20(m2)	Relleno cobertura c: Suelo seleccionado C/95% PN, <= 30 mm	Reelleno cobertura. d-Garbanillo 5/15	Reelleno cobertura. e- H4.20	Reelleno cobertura. f-Suelo adecuado a excavación (<150mm) C/65 % PN	Reelleno cobertura. g- Lecho modif (m2)	Excedente de tierra (m2) (compensando nivel 0% e-spojaniento vertical 5%)	Cinta liberada (m)	Manto escollera a=0.5m. ancho=30m. (m2)
CN-T12	T11-T12	91024.00	23450.82				2	1.829	275	1150	16					4.03	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.8	28.8	28.8	10.0	2.9	7.1	13.7	2.9		7.1			13.7	5.3	2.0								
CN-T12	T11-T12	91025.00	23451.82				2	1.829	275	1150	16					4.03	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.8	28.8	28.8	10.0	2.9	7.1	13.7	2.9		7.1			13.7	5.3	2.0								
CN-T12	T11-T12	91026.00	23452.82				2	1.829	275	1150	16					4.03	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.8	28.8	28.8	10.0	2.9	7.1	13.7	2.9		7.1			13.7	5.3	2.0								
CN-T12	T11-T12	91027.00	23453.82				2	1.829	275	1150	16					4.03	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.8	28.8	28.8	10.0	2.9	7.1	13.7	2.9		7.1			13.7	5.3	2.0								
CN-T12	T11-T12	91028.00	23454.82				2	1.829	275	1150	16					4.04	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9		7.1			13.8	5.3	2.0								
CN-T12	T11-T12	91029.00	23455.82				2	1.829	275	1150	16					4.04	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9		7.1			13.8	5.3	2.0								
CN-T12	T11-T12	91030.00	23456.82				2	1.829	275	1150	16					4.05	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9		7.1			13.8	5.3	2.0								
CN-T12	T11-T12	91031.00	23457.82				2	1.829	275	1150	16					4.05	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1			13.9	5.3	2.0								
CN-T12	T11-T12	91032.00	23458.82				2	1.829	275	1150	16					4.06	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1			13.9	5.3	2.0								
CN-T12	T11-T12	91033.00	23459.82				2	1.829	275	1150	16					4.06	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9		7.1			14.0	5.3	2.0								
CN-T12	T11-T12	91034.00	23460.82				2	1.829	275	1150	16					4.07	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9		7.1			14.0	5.3	2.0								
CN-T12	T11-T12	91035.00	23461.82				2	1.829	275	1150	16					4.07	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.2	29.2	29.2	10.0	2.9	7.1	14.0	2.9		7.1			14.0	5.3	2.0								
CN-T12	T11-T12	91036.00	23462.82				2	1.829	275	1150	16					4.08	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9		7.1			14.1	5.3	2.0								
CN-T12	T11-T12	91037.00	23463.82				2	1.829	275	1150	16					4.08	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9		7.1			14.1	5.3	2.0								
CN-T12	T11-T12	91038.00	23464.82				2	1.829	275	1150	16					4.09	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9		7.1			14.2	5.3	2.0								
CN-T12	T11-T12	91039.00	23465.82				2	1.829	275	1150	16					4.09	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9		7.1			14.2	5.3	2.0								
CN-T12	T11-T12	91040.00	23466.82				2	1.829	275	1150	16					4.09	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9		7.1			14.2	5.3	2.0								
CN-T12	T11-T12	91041.00	23467.82				2	1.829	275	1150	16					4.09	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9		7.1			14.2	5.3	2.0								
CN-T12	T11-T12	91042.00	23468.82				2	1.829	275	1150	16					4.09	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9		7.1			14.2	5.3	2.0								
CN-T12	T11-T12	91043.00	23469.82				2	1.829	275	1150	16					4.09	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9		7.1			14.2	5.3	2.0								
CN-T12	T11-T12	91044.00	23470.82				2	1.829	275	1150	16					4.08	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9		7.1			14.1	5.3	2.0								
CN-T12	T11-T12	91045.00	23471.82				2	1.829	275	1150	16					4.08	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9		7.1			14.1	5.3	2.0								
CN-T12	T11-T12	91046.00	23472.82				2	1.829	275	1150	16					4.08	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9		7.1			14.1	5.3	2.0								
CN-T12	T11-T12	91047.00	23473.82				2	1.829	275	1150	16					4.07	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.2	29.2	29.2	10.0	2.9	7.1	14.0	2.9		7.1			14.0	5.3	2.0								
CN-T12	T11-T12	91048.00	23474.82				2	1.829	275	1150	16					4.07	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9		7.1			14.0	5.3	2.0								
CN-T12	T11-T12	91049.00	23475.82				2	1.829	275	1150	16					4.07	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9		7.1			14.0	5.3	2.0								
CN-T12	T11-T12	91050.00	23476.82				2	1.829	275	1150	16					4.07	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9		7.1			14.0	5.3	2.0								
CN-T12	T11-T12	91051.00	23477.82				2	1.829	275	1150	16					4.06	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1			13.9	5.3	2.0								
CN-T12	T11-T12	91052.00	23478.82				2	1.829	275	1150	16					4.06	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1			13.9	5.3	2.0								
CN-T12	T11-T12	91053.00	23479.82				2	1.829	275	1150	16					4.05	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1			13.9	5.3	2.0								
CN-T12	T11-T12	91054.00	23480.82																																																						

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sagu	DN Desague	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A- Separación tubo salud	S- Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15, e-borripap (M4.20) M4.20	Reforzamiento f- Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d-Gabarrillo S15, f-Suela adecuada para excavación (<150mm) C/95% PN, g- Lecho mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1- ang (n)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relevo riñonera suela seleccionada (m3)	Relevo riñonera grabaciolo (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suela seleccionada C/95% PN, < 30 mm	Relevo cobertura d-Gabarrillo S15	Relevo cobertura e- H4.20	Relevo cobertura f-Suela adecuada para excavación (<150mm) C/95% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (compensación alval 0%, e-spojaniento lateral 5%)	Cinta liberata (m3)	Manto escollera a 45.5m. ancho-30m. (m3)
CN-T12	T11-T12	91540.00	23580.82				2	1.829	275	1150	16						3.70	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1					10.9	5.3	2.0							
CN-T12	T11-T12	91550.00	23581.82				2	1.829	275	1150	16						3.70	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	91560.00	23582.82				2	1.829	275	1150	16						3.70	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1				10.9	5.3	2.0								
CN-T12	T11-T12	91570.00	23583.82				2	1.829	275	1150	16						3.71	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN-T12	T11-T12	91580.00	23584.82				2	1.829	275	1150	16						3.71	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN-T12	T11-T12	91590.00	23585.82				2	1.829	275	1150	16						3.71	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN-T12	T11-T12	91600.00	23586.82				2	1.829	275	1150	16						3.71	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN-T12	T11-T12	91610.00	23587.82				2	1.829	275	1150	16						3.71	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN-T12	T11-T12	91620.00	23588.82				2	1.829	275	1150	16						3.71	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1				11.0	5.3	2.0								
CN-T12	T11-T12	91630.00	23589.82				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	91640.00	23590.82				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	91650.00	23591.82				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	91660.00	23592.82				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	91670.00	23593.82				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	91680.00	23594.82				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	91690.00	23595.82				2	1.829	275	1150	16						3.72	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	91700.00	23596.82				2	1.829	275	1150	16						3.73	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	91710.00	23597.82				2	1.829	275	1150	16						3.73	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1				11.1	5.3	2.0								
CN-T12	T11-T12	91720.00	23598.82				2	1.829	275	1150	16						3.73	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN-T12	T11-T12	91730.00	23599.82				2	1.829	275	1150	16						3.73	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN-T12	T11-T12	91740.00	23600.82				2	1.829	275	1150	16						3.73	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN-T12	T11-T12	91750.00	23601.82				2	1.829	275	1150	16						3.73	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN-T12	T11-T12	91760.00	23602.82				2	1.829	275	1150	16						3.74	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN-T12	T11-T12	91770.00	23603.82				2	1.829	275	1150	16						3.74	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN-T12	T11-T12	91780.00	23604.82				2	1.829	275	1150	16						3.74	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1				11.2	5.3	2.0								
CN-T12	T11-T12	91790.00	23605.82				2	1.829	275	1150	16						3.74	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN-T12	T11-T12	91800.00	23606.82				2	1.829	275	1150	16						3.74	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN-T12	T11-T12	91810.00	23607.82				2	1.829	275	1150	16						3.75	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN-T12	T11-T12	91820.00	23608.82				2	1.829	275	1150	16						3.75	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9		7.1				11.3	5.3	2.0								
CN-T12	T11-T12	91830.00	23609.82				2	1.829																																																				

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre, Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Rehabilitación a: S= Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompi (M20)	Rehabilitación b: S= Suela seleccionada C/95% PN, < 30 mm. e- M20. d-Garbanillo S/15. f-Suela adecuada procedimiento excavación (<150mm) C/65 % PN. g- Luchero modif.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (n)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c: Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- H4/20	Relevo cobertura. f-Suela adecuada excavación (<150mm) C/65 % PN	Relevo cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (compensación alval 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
CN-T12	T11-T12	9474.00	24100.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1						13.3	5.3	2.0						
CN-T12	T11-T12	9475.00	24101.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9476.00	24102.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9477.00	24103.82				2	1.829	275	1150	16						3.97	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9478.00	24104.82				2	1.829	275	1150	16						3.97	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9479.00	24105.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9480.00	24106.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9481.00	24107.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9482.00	24108.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9483.00	24109.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9484.00	24110.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9485.00	24111.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9486.00	24112.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9487.00	24113.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9		7.1					13.2	5.3	2.0							
CN-T12	T11-T12	9488.00	24114.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9489.00	24115.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9490.00	24116.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9491.00	24117.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9492.00	24118.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9493.00	24119.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9494.00	24120.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9495.00	24121.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9496.00	24122.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9497.00	24123.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9498.00	24124.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9499.00	24125.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9500.00	24126.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9501.00	24127.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3	5.3	2.0							
CN-T12	T11-T12	9502.00	24128.82				2	1.829	275	1150	16						3.98	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1					13.3									

[illegible]

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lateral (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Relaciones a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15, e-borrompi (M40)	Relaciones b-c: Suelo seleccionado C/95% PN, < 30 mm. e-M420. d-Garbanillo 5/15, f-suelo adecuado procedente excavación (<150mm) c/65% PN, g- Lector modif.	Exposic (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (º)	H1-DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m2)	Relleno cama (m2)	Relleno riñonera(s)m2)	Relleno cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M 20(m2)	Relleno riñonera suelo seleccionado (m2)	Relleno riñonera garbanillo (m2)	Relleno cama+riñonera HM-20(m2)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura d-Garbanillo 5/15	Relleno cobertura e- HM20	Relleno cobertura f-Suelo adecuado procedente excavación (<150mm) c/65% PN	Relleno cobertura g- Lector modif (m2)	Excedente de tierra (m2) (consumo actual 0%, e-spojaiento teórico 5%)	Cinta liberata (m2)	Manto escollera a 0.5m. ancho 30m. (m2)
CN-T12	T11-T12	10.580.00	25.006.82				2	1.829	275	11.50	16					3.63	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.4	25.4	25.4	100	2.9	7.1	10.3	2.9		7.1					10.3	5.3	2.0								
CN-T12	T11-T12	10.581.00	25.007.82				2	1.829	275	11.50	16					3.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.3	25.3	25.3	100	2.9	7.1	10.2	2.9		7.1					10.2	5.3	2.0								
CN-T12	T11-T12	10.582.00	25.008.82				2	1.829	275	11.50	16					3.60	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9		7.1					10.1	5.3	2.0								
CN-T12	T11-T12	10.583.00	25.009.82				2	1.829	275	11.50	16					3.59	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.0	2.9		7.1					10.0	5.3	2.0								
CN-T12	T11-T12	10.584.00	25.010.82				2	1.829	275	11.50	16					3.58	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.1	25.1	25.1	100	2.9	7.1	10.0	2.9		7.1					10.0	5.3	2.0								
CN-T12	T11-T12	10.585.00	25.011.82				2	1.829	275	11.50	16					3.57	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.0	25.0	25.0	100	2.9	7.1	9.9	2.9		7.1					9.9	5.3	2.0								
CN-T12	T11-T12	10.586.00	25.012.82				2	1.829	275	11.50	16					3.56	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.9	24.9	24.9	100	2.9	7.1	9.8	2.9		7.1					9.8	5.3	2.0								
CN-T12	T11-T12	10.587.00	25.013.82				2	1.829	275	11.50	16					3.55	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.8	24.8	24.8	100	2.9	7.1	9.7	2.9		7.1					9.7	5.3	2.0								
CN-T12	T11-T12	10.588.00	25.014.82				2	1.829	275	11.50	16					3.54	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.7	24.7	24.7	100	2.9	7.1	9.6	2.9		7.1					9.6	5.3	2.0								
CN-T12	T11-T12	10.589.00	25.015.82				2	1.829	275	11.50	16					3.53	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	100	2.9	7.1	9.5	2.9		7.1					9.5	5.3	2.0								
CN-T12	T11-T12	10.590.00	25.016.82				2	1.829	275	11.50	16					3.52	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.5	24.5	24.5	100	2.9	7.1	9.4	2.9		7.1					9.4	5.3	2.0								
CN-T12	T11-T12	10.591.00	25.017.82				2	1.829	275	11.50	16					3.50	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.4	24.4	24.4	100	2.9	7.1	9.3	2.9		7.1					9.3	5.3	2.0								
CN-T12	T11-T12	10.592.00	25.018.82				2	1.829	275	11.50	16					3.50	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.4	24.4	24.4	100	2.9	7.1	9.3	2.9		7.1					9.3	5.3	2.0								
CN-T12	T11-T12	10.593.00	25.019.82				2	1.829	275	11.50	16					3.53	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.7	24.7	24.7	100	2.9	7.1	9.5	2.9		7.1					9.5	5.3	2.0								
CN-T12	T11-T12	10.594.00	25.020.82				2	1.829	275	11.50	16					3.57	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.9	24.9	24.9	100	2.9	7.1	9.8	2.9		7.1					9.8	5.3	2.0								
CN-T12	T11-T12	10.595.00	25.021.82				2	1.829	275	11.50	16					3.60	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2	25.2	100	2.9	7.1	10.1	2.9		7.1					10.1	5.3	2.0								
CN-T12	T11-T12	10.596.00	25.022.82				2	1.829	275	11.50	16					3.63	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.5	25.5	25.5	100	2.9	7.1	10.4	2.9		7.1					10.4	5.3	2.0								
CN-T12	T11-T12	10.597.00	25.023.82				2	1.829	275	11.50	16					3.67	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9		7.1					10.7	5.3	2.0								
CN-T12	T11-T12	10.598.00	25.024.82				2	1.829	275	11.50	16					3.70	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	26.0	26.0	26.0	100	2.9	7.1	10.9	2.9		7.1					10.9	5.3	2.0								
CN-T12	T11-T12	10.599.00	25.025.82				2	1.829	275	11.50	16					3.74	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	26.3	26.3	26.3	100	2.9	7.1	11.2	2.9		7.1					11.2	5.3	2.0								
CN-T12	T11-T12	10.600.00	25.026.82				2	1.829	275	11.50	16					3.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	26.4	26.4	26.4	100	2.9	7.1	11.3	2.9		7.1					11.3	5.3	2.0								
CN-T12	T11-T12	10.601.00	25.027.82				2	1.829	275	11.50	16					3.74	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	26.4	26.4	26.4	100	2.9	7.1	11.3	2.9		7.1					11.3	5.3	2.0								
CN-T12	T11-T12	10.602.00	25.028.82				2	1.829	275	11.50	16					3.72	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	26.2	26.2	26.2	100	2.9	7.1	11.1	2.9		7.1					11.1	5.3	2.0								
CN-T12	T11-T12	10.603.00	25.029.82				2	1.829	275	11.50	16					3.70	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	26.0	26.0	26.0	100	2.9	7.1	10.9	2.9		7.1					10.9	5.3	2.0								
CN-T12	T11-T12	10.604.00	25.030.82				2	1.829	275	11.50	16					3.68	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.8	25.8	25.8	100	2.9	7.1	10.7	2.9		7.1					10.7	5.3	2.0								
CN-T12	T11-T12	10.605.00	25.031.82				2	1.829	275	11.50	16					3.66	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.7	25.7	25.7	100	2.9	7.1	10.6	2.9		7.1					10.6	5.3	2.0								
CN-T12	T11-T12	10.606.00	25.032.82				2	1.829	275	11.50	16					3.64	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.5	25.5	25.5	100	2.9	7.1	10.4	2.9		7.1					10.4	5.3	2.0								
CN-T12	T11-T12	10.607.00	25.033.82				2	1.829	275	11.50	16					3.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.5	25.5	25.5	100	2.9	7.1	10.4	2.9		7.1					10.4	5.3	2.0								
CN-T12	T11-T12	10.608.00	25.034.82				2	1.829	275	11.50	16					3.65	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100	2.9	7.1	10.5	2.9		7.1					10.5	5.3	2.0								
CN-T12	T11-T12	10.609.00	25.035.82				2	1.829	275	11.50	16					3.65	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.6	25.6	25.6	100																					

Agrupación	Tamaño	P. K. Armado	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verticos por tubería	DN vertical (mm)	Nº valvulas de sagüe	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lateral (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recurvimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	HT-altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rebavaciones a: S= Suela seleccionada C/95% PM, < 30 mm. d-Garbanillo S/15, <boromop HM-20	Rebavaciones b: S= Suela seleccionada C/95% PM, < 30 mm. e- HM-20. d-Garbanillo S/15, < Suela seleccionada precedente excavación (<150mm) c/6% PM, g- Lecho mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera granbaillo (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PM, <= 30 mm	Relevo cobertura d-Garbanillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f-Suelo seleccionado precedente excavación (<150mm) c/6% PM	Relevo cobertura g- Lecho modif (m3)	Excedente de tierra (m3) (compensación alvald 0%, e-spojaniento vertical 5%)	Cinta liberada (m3)	Manto escollera a=0.5m, ancho=30m (m3)
CN-112	11-112	10710.00	25136.82				2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.7	24.7	24.7	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10711.00	25137.82				2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.7	24.7	24.7	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10712.00	25138.82				2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1					9.6	5.3	2.0								
CN-112	11-112	10713.00	25139.82				2	1.829	275	1150	16						3.55	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.8	24.8	24.8	10.0	2.9	7.1	9.7	2.9	7.1					9.7	5.3	2.0								
CN-112	11-112	10714.00	25140.82				2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1					9.6	5.3	2.0								
CN-112	11-112	10715.00	25141.82				2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1					9.6	5.3	2.0								
CN-112	11-112	10716.00	25142.82				2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10717.00	25143.82				2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10718.00	25144.82				2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10719.00	25145.82				2	1.829	275	1150	16						3.52	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.9	24.9	24.9	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10720.00	25146.82				2	1.829	275	1150	16						3.52	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10721.00	25147.82				2	1.829	275	1150	16						3.52	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10722.00	25148.82				2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10723.00	25149.82				2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10724.00	25150.82				2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1					9.5	5.3	2.0								
CN-112	11-112	10725.00	25151.82				2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1					9.6	5.3	2.0								
CN-112	11-112	10726.00	25152.82				2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1					9.6	5.3	2.0								
CN-112	11-112	10727.00	25153.82				2	1.829	275	1150	16						3.55	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.8	24.8	24.8	10.0	2.9	7.1	9.7	2.9	7.1					9.7	5.3	2.0								
CN-112	11-112	10728.00	25154.82				2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9	7.1					9.8	5.3	2.0								
CN-112	11-112	10729.00	25155.82				2	1.829	275	1150	16						3.57	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9	7.1					9.8	5.3	2.0								
CN-112	11-112	10730.00	25156.82				2	1.829	275	1150	16						3.58	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9	7.1					9.9	5.3	2.0								
CN-112	11-112	10731.00	25157.82				2	1.829	275	1150	16						3.58	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9	7.1					10.0	5.3	2.0								
CN-112	11-112	10732.00	25158.82				2	1.829	275	1150	16						3.59	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9	7.1					10.0	5.3	2.0								
CN-112	11-112	10733.00	25159.82				2	1.829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9	7.1					10.1	5.3	2.0								
CN-112	11-112	10734.00	25160.82				2	1.829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9	7.1					10.2	5.3	2.0								
CN-112	11-112	10735.00	25161.82				2	1.829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	25.4	25.4	25.4	10.0	2.9	7.1	10.3	2.9	7.1					10.3	5.3	2.0								
CN-112	11-112	10736.00	25162.82				2	1.829	275	1150	16						3.63	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9	7.1					10.4	5.3	2.0								
CN-112	11-112	10737.00	25163.82				2	1.829	275	1150	16						3.64	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	25.5	25.5	25.5	10.0	2.9	7.1	10.4	2.9	7.1					10.4	5.3	2.0								
CN-112	11-112	10738.00	25164.82				2	1.829	275	1150	16						3.65	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9	7.1					10.5	5.3	2.0								
CN-112	11-112	10739.00	25165.82				2	1.829	275	1150	16						3.65	0.33	212-1800	0.60																																							

Agregación	Tamaño	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verederos por tubería	DN vertical (mm)	Nº valvulas de sagu	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A-: Separación tubo salud	S ₂ :- Separación entre tuberías	B-:Ancho interior (m)	Borne X1	Borne X2	H1-:Cama apoyo (m)	Ang. Apoyo	H2-:Recubrimiento cobertura mínimo (m)	H3-:Profundidad mínima 4' cave (m)	H4-: altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompió HM-20. f-Huila excavadora (-: Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S/15. f-Suelo adecuado para excavación (-:150mm) C/65% PN. g- Lecho mod.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	HN-DHHz (m)	Long (m)	Excavación tapasocial (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciolo (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c-: Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suelo adecuado para excavación (-:150mm) C/65% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensado a nivel 0%, e-spojaniento vertical 5%)	Cinta liberata (m3)	Manto escollera a 45.5m. ancho-30m. (m3)
CN-T12	T11-T12	11.097.00	25.523.82			2	1.829	275	11.50	16						3.65	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.6	25.6	25.6	10.0	2.9	7.1	10.5	2.9		7.1			10.5	5.3	2.0							
CN-T12	T11-T12	11.098.00	25.524.82			2	1.829	275	11.50	16						3.66	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.7	25.7	25.7	10.0	2.9	7.1	10.6	2.9		7.1			10.6	5.3	2.0							
CN-T12	T11-T12	11.099.00	25.525.82			2	1.829	275	11.50	16						3.67	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9		7.1			10.7	5.3	2.0							
CN-T12	T11-T12	11.100.00	25.526.82			2	1.829	275	11.50	16						3.68	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	25.8	25.8	25.8	10.0	2.9	7.1	10.7	2.9		7.1			10.7	5.3	2.0							
CN-T12	T11-T12	11.101.00	25.527.82			2	1.829	275	11.50	16						3.69	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0							
CN-T12	T11-T12	11.102.00	25.528.82			2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0							
CN-T12	T11-T12	11.103.00	25.529.82			2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1			11.0	5.3	2.0							
CN-T12	T11-T12	11.104.00	25.530.82			2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1			11.0	5.3	2.0							
CN-T12	T11-T12	11.105.00	25.531.82			2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1			11.0	5.3	2.0							
CN-T12	T11-T12	11.106.00	25.532.82			2	1.829	275	11.50	16						3.72	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1			11.1	5.3	2.0							
CN-T12	T11-T12	11.107.00	25.533.82			2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1			11.0	5.3	2.0							
CN-T12	T11-T12	11.108.00	25.534.82			2	1.829	275	11.50	16						3.72	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1			11.1	5.3	2.0							
CN-T12	T11-T12	11.109.00	25.535.82			2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1			11.0	5.3	2.0							
CN-T12	T11-T12	11.110.00	25.536.82			2	1.829	275	11.50	16						3.71	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.1	26.1	26.1	10.0	2.9	7.1	11.0	2.9		7.1			11.0	5.3	2.0							
CN-T12	T11-T12	11.111.00	25.537.82			2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0							
CN-T12	T11-T12	11.112.00	25.538.82			2	1.829	275	11.50	16						3.69	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0							
CN-T12	T11-T12	11.113.00	25.539.82			2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0							
CN-T12	T11-T12	11.114.00	25.540.82			2	1.829	275	11.50	16						3.70	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.0	26.0	26.0	10.0	2.9	7.1	10.9	2.9		7.1			10.9	5.3	2.0							
CN-T12	T11-T12	11.115.00	25.541.82			2	1.829	275	11.50	16						3.72	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1			11.1	5.3	2.0							
CN-T12	T11-T12	11.116.00	25.542.82			2	1.829	275	11.50	16						3.72	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.2	26.2	26.2	10.0	2.9	7.1	11.1	2.9		7.1			11.1	5.3	2.0							
CN-T12	T11-T12	11.117.00	25.543.82			2	1.829	275	11.50	16						3.73	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1			11.2	5.3	2.0							
CN-T12	T11-T12	11.118.00	25.544.82			2	1.829	275	11.50	16						3.74	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.3	26.3	26.3	10.0	2.9	7.1	11.2	2.9		7.1			11.2	5.3	2.0							
CN-T12	T11-T12	11.119.00	25.545.82			2	1.829	275	11.50	16						3.75	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9		7.1			11.4	5.3	2.0							
CN-T12	T11-T12	11.120.00	25.546.82			2	1.829	275	11.50	16						3.76	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9		7.1			11.4	5.3	2.0							
CN-T12	T11-T12	11.121.00	25.547.82			2	1.829	275	11.50	16						3.79	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9		7.1			11.7	5.3	2.0							
CN-T12	T11-T12	11.122.00	25.548.82			2	1.829	275	11.50	16						3.82	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1			11.9	5.3	2.0							
CN-T12	T11-T12	11.123.00	25.549.82			2	1.829	275	11.50	16						3.80	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9		7.1			11.7	5.3	2.0							
CN-T12	T11-T12	11.124.00	25.550.82			2	1.829	275	11.50	16						3.79	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9		7.1			11.7	5.3	2.0							
CN-T12	T11-T12	11.125.00	25.551.82			2	1.829	275	11.50	16						3.79	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9		7.1			11.7	5.3	2.0							
CN-T12	T11-T12	11.126.00	25.552.82			2	1.829	275	11.50	16						3.79	0.33	21.2-1800	0.60	1.00	5.80</																																				

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Relaciones: a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompi (M40, 20 mm. e- M420. d-Garbanillo 5/15. f-suela adecuada procedente excavación (<150mm) c/65% PN. g- Luchto modif.	Exposur (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT-ang (º)	HT-DHxH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m2)	Reelleno cama (m2)	Reelleno riñonera(s)m2)	Reelleno cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M40(m2)	Reelleno riñonera suelo seleccionado (m2)	Reelleno riñonera grabaciado (m2)	Reelleno cama+riñonera (M40+20m2)	Reelleno cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Reelleno cobertura. d-Garbanillo 5/15	Reelleno cobertura. e- M420	Reelleno cobertura. f-Suelo adecuado procedente excavación (<150mm) c/65% PN	Reelleno cobertura. g- Luchto modif (m2)	Excedente de tierras (m2) (compensación actual 0%, e-spojaamiento teórico 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho 30m. (m2)
CN-T12	T11-T12	11.224.00	25.650.82			Apoyo anular	2	1.829	275	11.50	16						5.58	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	b	a	c	f	100%	0.7	2.4	1.0	42.7	42.7	42.7	10.4	3.2	1.2	21.2	3.2	7.2	27.2							5.3	2.0					
CN-T12	T11-T12	11.225.00	25.651.82			Apoyo arqueta	2	1.829	275	11.50	16						5.55	0.33	25.2-1800	0.60	1.00	5.80		0.25	120	0.30	2.00	a	c	f	100%	0.7	2.4	1.0	42.4	42.4	42.4	10.4	3.2	1.2	21.0	3.2	7.2	27.0							5.3	2.0						
CN-T12	T11-T12	11.226.00	25.652.82				2	1.829	275	11.50	16						5.45	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	41.5	41.5	41.5	10.0	2.9	7.1	26.4	2.9	7.1								26.4	5.3	2.0					
CN-T12	T11-T12	11.227.00	25.653.82				2	1.829	275	11.50	16						5.41	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	41.1	41.1	41.1	10.0	2.9	7.1	26.0	2.9	7.1								26.0	5.3	2.0					
CN-T12	T11-T12	11.228.00	25.654.82				2	1.829	275	11.50	16						5.29	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	40.0	40.0	40.0	10.0	2.9	7.1	24.9	2.9	7.1								24.9	5.3	2.0					
CN-T12	T11-T12	11.229.00	25.655.82				2	1.829	275	11.50	16						5.16	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.8	38.8	38.8	10.0	2.9	7.1	21.7	2.9	7.1								21.7	5.3	2.0					
CN-T12	T11-T12	11.230.00	25.656.82				2	1.829	275	11.50	16						5.04	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.7	37.7	37.7	10.0	2.9	7.1	22.6	2.9	7.1								22.6	5.3	2.0					
CN-T12	T11-T12	11.230.50	25.657.32				2	1.829	275	11.50	16						4.99	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.5	18.6	18.6	18.6	5.0	1.5	3.6	11.0	1.5	3.6								11.0	2.7	1.0					
CN-T12	T11-T12	11.231.00	25.657.82				2	1.829	275	11.50	16						4.93	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.5	18.4	18.4	18.4	5.0	1.5	3.6	10.8	1.5	3.6								10.8	2.7	1.0					
CN-T12	T11-T12	11.232.00	25.658.82				2	1.829	275	11.50	16						4.81	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.6	35.6	35.6	10.0	2.9	7.1	20.5	2.9	7.1								20.5	5.3	2.0					
CN-T12	T11-T12	11.233.00	25.659.82				2	1.829	275	11.50	16						4.69	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.5	34.5	34.5	10.0	2.9	7.1	19.4	2.9	7.1								19.4	5.3	2.0					
CN-T12	T11-T12	11.234.00	25.660.82				2	1.829	275	11.50	16						4.57	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	33.4	33.4	33.4	10.0	2.9	7.1	18.3	2.9	7.1								18.3	5.3	2.0					
CN-T12	T11-T12	11.235.00	25.661.82				2	1.829	275	11.50	16						4.45	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.4	32.4	32.4	10.0	2.9	7.1	17.3	2.9	7.1								17.3	5.3	2.0					
CN-T12	T11-T12	11.236.00	25.662.82				2	1.829	275	11.50	16						4.30	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.1	31.1	31.1	10.0	2.9	7.1	16.0	2.9	7.1								16.0	5.3	2.0					
CN-T12	T11-T12	11.237.00	25.663.82				2	1.829	275	11.50	16						4.20	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1								15.1	5.3	2.0					
CN-T12	T11-T12	11.238.00	25.664.82				2	1.829	275	11.50	16						4.15	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9	7.1								14.7	5.3	2.0					
CN-T12	T11-T12	11.239.00	25.665.82				2	1.829	275	11.50	16						4.19	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1								15.0	5.3	2.0					
CN-T12	T11-T12	11.240.00	25.666.82				2	1.829	275	11.50	16						4.34	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.4	31.4	31.4	10.0	2.9	7.1	16.3	2.9	7.1								16.3	5.3	2.0					
CN-T12	T11-T12	11.241.00	25.667.82				2	1.829	275	11.50	16						4.39	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.9	31.9	31.9	10.0	2.9	7.1	16.7	2.9	7.1								16.7	5.3	2.0					
CN-T12	T11-T12	11.242.00	25.668.82				2	1.829	275	11.50	16						4.40	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.0	32.0	32.0	10.0	2.9	7.1	16.9	2.9	7.1								16.9	5.3	2.0					
CN-T12	T11-T12	11.243.00	25.669.82				2	1.829	275	11.50	16						4.45	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.4	32.4	32.4	10.0	2.9	7.1	17.3	2.9	7.1								17.3	5.3	2.0					
CN-T12	T11-T12	11.244.00	25.670.82				2	1.829	275	11.50	16						4.44	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.3	32.3	32.3	10.0	2.9	7.1	17.2	2.9	7.1								17.2	5.3	2.0					
CN-T12	T11-T12	11.245.00	25.671.82				2	1.829	275	11.50	16						4.44	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.3	32.3	32.3	10.0	2.9	7.1	17.2	2.9	7.1								17.2	5.3	2.0					
CN-T12	T11-T12	11.246.00	25.672.82				2	1.829	275	11.50	16						4.43	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.2	32.2	32.2	10.0	2.9	7.1	17.1	2.9	7.1								17.1	5.3	2.0					
CN-T12	T11-T12	11.247.00	25.673.82				2	1.829	275	11.50	16						4.42	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.2	32.2	32.2	10.0	2.9	7.1	17.1	2.9	7.1								17.1	5.3	2.0					
CN-T12	T11-T12	11.248.00	25.674.82				2	1.829	275	11.50	16						4.44	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.3	32.3	32.3	10.0	2.9	7.1	17.2	2.9	7.1								17.2	5.3	2.0					
CN-T12	T11-T12	11.249.00	25.675.82				2	1.829	275	11.50	16						4.43	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.2	32.2	32.2	10.0	2.9	7.1	17.1	2.9	7.1								17.1	5.3	2.0					
CN-T12	T11-T12	11.250.00	25.676.82				2	1.829	275	11.50	16						4.44	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.3	32.3	32.3	10.0	2.9	7.1	17.2	2.9	7.1								17.2	5.3	2.0					
CN-T12	T11-T12	11.251.00	25.677.82				2	1.829	275	11.50	16						4.49	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0																								

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto/azopla	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompió HM-20 Relaciones b-c: Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S/15. f-suela adecuada procedente excavación (<150mm) c/95% PN. g- Luchero modif.	Exposic (m). escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT- ang (n)	HT-DHxH2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleño cama+riñonera (m³)	Relleño c-arena (m³)	Relleño riñonera(s)m²)	Relleño cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relleño riñonera suelo seleccionado (m³)	Relleño riñonera garbanillo (m³)	Relleño cama+riñonera HM-20(m³)	Relleño cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relleño cobertura. d-Garbanillo S/15	Relleño cobertura. e- HM-20	Relleño cobertura. f-Suelo adecuado y excavación (<150mm) c/95% PN	Relleño cobertura. g- Luchero modif (m³)	Excedente de tierra (m³) (consumo actual 0%, e-spojaniento teórico 5%)	Cinta liberada (m)	Manto escollera a-0.5m. ancho-30m. (m³)
CN-T12	T11-T12	11.607.45	26.034.28				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.5	12.8	12.8	12.8	4.5	1.3	3.2	6.0	1.3			3.2		2.4	0.9									
CN-T12	T11-T12	11.608.00	26.034.82				2	1.829	275	11.50	16						3.97	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.5	15.5	15.5	15.5	5.5	1.6	3.9	7.2	1.6			3.9		2.9	1.1									
CN-T12	T11-T12	11.609.00	26.035.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9			7.1		13.2		5.3	2.0							
CN-T12	T11-T12	11.610.00	26.036.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9			7.1		13.2		5.3	2.0							
CN-T12	T11-T12	11.611.00	26.037.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9			7.1		13.2		5.3	2.0							
CN-T12	T11-T12	11.612.00	26.038.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9			7.1		13.2		5.3	2.0							
CN-T12	T11-T12	11.613.00	26.039.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9			7.1		13.2		5.3	2.0							
CN-T12	T11-T12	11.614.00	26.040.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9			7.1		13.2		5.3	2.0							
CN-T12	T11-T12	11.615.00	26.041.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9			7.1		13.2		5.3	2.0							
CN-T12	T11-T12	11.616.00	26.042.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9			7.1		13.2		5.3	2.0							
CN-T12	T11-T12	11.617.00	26.043.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.618.00	26.044.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.619.00	26.045.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.620.00	26.046.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.621.00	26.047.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.622.00	26.048.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.623.00	26.049.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.624.00	26.050.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.625.00	26.051.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.626.00	26.052.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.627.00	26.053.82				2	1.829	275	11.50	16						3.99	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9			7.1		13.3		5.3	2.0							
CN-T12	T11-T12	11.628.00	26.054.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9			7.1		13.2		5.3	2.0							
CN-T12	T11-T12	11.629.00	26.055.82				2	1.829	275	11.50	16						3.97	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.1	2.9			7.1		13.1		5.3	2.0							
CN-T12	T11-T12	11.630.00	26.056.82				2	1.829	275	11.50	16						3.94	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.0	2.9			7.1		13.0		5.3	2.0							
CN-T12	T11-T12	11.631.00	26.057.82				2	1.829	275	11.50	16						3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9			7.1		13.0		5.3	2.0							
CN-T12	T11-T12	11.632.00	26.058.82				2	1.829	275	11.50	16						3.93	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.0	28.0	28.0	10.0	2.9	7.1	12.9	2.9			7.1		12.9		5.3	2.0							
CN-T12	T11-T12	11.633.00	26.059.82				2	1.829	275	11.50	16						3.92	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	27.9	27.9	27.9	10.0	2.9	7.1	12.8	2.9			7.1		12.8		5.3	2.0							
CN-T12	T11-T12	11.634.00	26.060.82				2	1.829	275	11.50	16						3.92	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	27.8	27.8	27.8	10.0	2.9	7.1	12.7	2.9			7.1		12.7		5.3	2.0							
CN-T12	T11-T12	11.635.00	26.061.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9			7.1		12.6		5								

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Agua	Observación	N° tuberías	DN ext (mm)	Acero tipo S- espesor adaptado (mm)	PN Tinte de valvula (atm)	N° ventosas por tubería	DN ventosa (mm)	N° valvulas de escape	DN Descarga	Tipo de valvula	Aguella otra tipo	Conex. DN 800 mm peso hundido (m)	Conex. DN 800 mm paso hombre - Acero-espesor lámina (mm)	Altura de excavación a TN (m)	Talud HW	A- separación tubo-tubo S ₁ - Separación entre tuberías B- Ancho interior (m) Barras X1 Barras X2 H1- Cama apoyo (m) Ang. Apoyo H2- Recubrimiento cobertura mínimo (m) H3- Profundidad mínimo s/ cave (m) H4- Altura de la bermá desde fondo Cama de apoyo a- cama apaisial granular e arena b- cama de hormigón H4-20 Relinco rñonera c- Suelo seleccionado 0'95% PN, <= 30 mm. d- Gatuaculo 5/15. e- Hormigón H4-20 Relinco rñonera f- Suelo seleccionado 0'95% PN, <= 30 mm. g- Lodo H4-20. h- Gatuaculo 5/15. i- S&S Relinco rñonera j- Suelo seleccionado <=150mm 0'95% PN, g- Lodo m&g.	% Excavable con empleo puntal de marfillo	% Excavable ripable con empleo de marfillo	H1-Vara (m)	H1-DN+H2 (m)	Long (m)	Excavación Impositada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntal de marfillo	Total excavable ripable con empleo de marfillo	Relinco cama- rñonera (m3)	Relinco cama (m3)	Relinco rñonera(rñ3)	Relinco cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo H4-20(m3)	Relinco rñonera suelo seleccionado (m3)	Relinco rñonera granular (m3)	Relinco cama- rñonera H4-20(m3)	Relinco cobertura c- Suelo seleccionado 0'95% PN, <= 30 mm	Relinco cobertura d- Gatuaculo 5/15	Relinco cobertura e- H4-20	Relinco cobertura f- Suelo adecuado precedente excavación (<=150mm 0'95% PN)	Relinco cobertura g- Lodo molli (m3)	Excidente de arena (m3) (apagarse arena 0% espagarse turba 5%)	Cota laberas (m)	Marlo escalera +d3m, ancho=30m (m3)				
H2-DC	H2-T13	25,00	26,291,82				2	1,829	275	11,50	16						3,73	1,00	21,2-1800	0,60	1,00	5,80			0,20	120	0,30	1,50		a	c	f	100%		0,7	2,3	1,0	35,6	35,6	35,6	135	3,2	10,4	16,9	3,2	10,4				16,9	5,1	2,0
H2-DC	H2-T13	26,00	26,292,82				2	1,829	275	11,50	16						3,73	1,00	21,2-1800	0,60	1,00	5,80			0,20	120	0,30	1,50		a	c	f	100%		0,7	2,3	1,0	35,5	35,5	35,5	135	3,2	10,4	16,9	3,2	10,4			16,9	5,1	2,0	
H2-DC	H2-T13	27,00	26,293,82				2	1,829	275	11,50	16						3,72	1,00	21,2-1800	0,60	1,00	5,80			0,20	120	0,30	1,50		a	c	f	100%		0,7	2,3	1,0	35,5	35,5	35,5	135	3,2	10,4	16,8	3,2	10,4			16,8	5,1	2,0	
H2-DC	H2-T13	28,00	26,294,82				2	1,829	275	11,50	16						3,72	1,00	21,2-1800	0,60	1,00	5,80			0,20	120	0,30	1,50		a	c	f	100%		0,7	2,3	1,0	35,4	35,4	35,4	135	3,2	10,4	16,8	3,2	10,4			16,8	5,1	2,0	
H2-DC	H2-T13	29,00	26,295,82				2	1,829	275	11,50	16						3,71	1,00	21,2-1800	0,60	1,00	5,80			0,20	120	0,30	1,50		a	c	f	100%		0,7	2,3	1,0	35,4	35,4	35,4	135	3,2	10,4	16,7	3,2	10,4			16,7	5,1	2,0	
H2-DC	H2-T13	30,00	26,296,82				2	1,829	275	11,50	16						3,71	1,00	21,2-1800	0,60	1,00	5,80			0,20	120	0,30	1,50		a	c	f	100%		0,7	2,3	1,0	35,3	35,3	35,3	135	3,2	10,4	16,7	3,2	10,4			16,7	5,1	2,0	
H2-DC	H2-T13	31,00	26,297,82				2	1,829	275	11,50	16						3,70	1,00	21,2-1800	0,60	1,00	5,80			0,20	120	0,30	1,50		a	c	f	100%		0,7	2,3	1,0	35,2	35,2	35,2	135	3,2	10,4	16,6	3,2	10,4			16,6	5,1	2,0	
H2-DC	H2-T13	32,00	26,298,82				2	1,829	275	11,50	16						3,70	1,00	21,2-1800	0,60	1,00	5,80			0,20	120	0,30	1,50		a	c	f	100%		0,7	2,3	1,0	35,2	35,2	35,2	135	3,2	10,4	16,6	3,2	10,4			16,6	5,1	2,0	
H2-DC	H2-T13	33,00</																																																		

Agrupación	Tramo	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Al- separación entre tuberías	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón (M20)	Reforzamientos c- Suela seleccionada C/95% PN, < 30 mm. d- Garbanillo 5/15 e- homopon (M20) Malla en cobertura f- Suela seleccionada C/95% PN, < 30 mm. g- M20. d- Garbanillo 5/15. f- Suela adecuada procedente excavación (<150mm) c/6% PN. g- Luchero modif.	Exposic (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1- ang (n)	H1- DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno cama+riñonera (m3)	Releño c/ arena (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera granitica (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura d-Garbanillo 5/15	Releño cobertura e- H4/20	Releño cobertura f- Suelo adecuado procedente excavación (<150mm) c/6% PN	Releño cobertura g- Luchero modif (m3)	Excedente de tierra (m3) (compensando altura 0% e- espolvoreado vertical 5%)	Cinta liberata (m)	Manto escollera a- 0.5m. ancho-30m. (m3)
T12-DC	T12-T13	282.00	26.548.82				2	1.829	275	11.50	16				3.82	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9	7.1				11.9	5.3	2.0										
T12-DC	T12-T13	283.00	26.549.82				2	1.829	275	11.50	16				3.81	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9	7.1				11.9	5.3	2.0										
T12-DC	T12-T13	284.00	26.550.82				2	1.829	275	11.50	16				3.81	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9	7.1				11.8	5.3	2.0										
T12-DC	T12-T13	285.00	26.551.82				2	1.829	275	11.50	16				3.80	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9	7.1				11.8	5.3	2.0										
T12-DC	T12-T13	286.00	26.552.82				2	1.829	275	11.50	16				3.80	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9	7.1				11.7	5.3	2.0										
T12-DC	T12-T13	287.00	26.553.82				2	1.829	275	11.50	16				3.79	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9	7.1				11.7	5.3	2.0										
T12-DC	T12-T13	288.00	26.554.82				2	1.829	275	11.50	16				3.79	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9	7.1				11.7	5.3	2.0										
T12-DC	T12-T13	289.00	26.555.82				2	1.829	275	11.50	16				3.79	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9	7.1				11.7	5.3	2.0										
T12-DC	T12-T13	290.00	26.556.82				2	1.829	275	11.50	16				3.79	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9	7.1				11.6	5.3	2.0										
T12-DC	T12-T13	291.00	26.557.82				2	1.829	275	11.50	16				3.78	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9	7.1				11.6	5.3	2.0										
T12-DC	T12-T13	292.00	26.558.82				2	1.829	275	11.50	16				3.78	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9	7.1				11.6	5.3	2.0										
T12-DC	T12-T13	293.00	26.559.82				2	1.829	275	11.50	16				3.78	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9	7.1				11.6	5.3	2.0										
T12-DC	T12-T13	294.00	26.560.82				2	1.829	275	11.50	16				3.77	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9	7.1				11.5	5.3	2.0										
T12-DC	T12-T13	295.00	26.561.82				2	1.829	275	11.50	16				3.77	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9	7.1				11.5	5.3	2.0										
T12-DC	T12-T13	296.00	26.562.82				2	1.829	275	11.50	16				3.77	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9	7.1				11.5	5.3	2.0										
T12-DC	T12-T13	297.00	26.563.82				2	1.829	275	11.50	16				3.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1				11.4	5.3	2.0										
T12-DC	T12-T13	298.00	26.564.82				2	1.829	275	11.50	16				3.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1				11.4	5.3	2.0										
T12-DC	T12-T13	299.00	26.565.82				2	1.829	275	11.50	16				3.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1				11.4	5.3	2.0										
T12-DC	T12-T13	300.00	26.566.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1				11.4	5.3	2.0										
T12-DC	T12-T13	301.00	26.567.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9	7.1				11.3	5.3	2.0										
T12-DC	T12-T13	302.00	26.568.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9	7.1				11.3	5.3	2.0										
T12-DC	T12-T13	303.00	26.569.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9	7.1				11.3	5.3	2.0										
T12-DC	T12-T13	304.00	26.570.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9	7.1				11.3	5.3	2.0										
T12-DC	T12-T13	305.00	26.571.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9	7.1				11.3	5.3	2.0										
T12-DC	T12-T13	306.00	26.572.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.4	26.4	26.4	10.0	2.9	7.1	11.3	2.9	7.1				11.3	5.3	2.0										
T12-DC	T12-T13	307.00	26.573.82				2	1.829	275	11.50	16				3.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1				11.4	5.3	2.0										
T12-DC	T12-T13	308.00	26.574.82				2	1.829	275	11.50	16				3.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1				11.4	5.3	2.0										
T12-DC	T12-T13	309.00	26.575.82				2	1.829	275	11.50	16				3.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1				11.4	5.3	2.0										
T12-DC	T12-T13	310.00	26.576.82				2	1.829	275	11.50	16				3.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9	7.1				11.5	5.3	2.0										
T12-DC	T12-T13	311.00	26.577.82				2	1.829	275	11.50	16				3.77	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9	7.1				11.5	5.3	2.0										
T12-DC	T12-T13	312.00	26.578.82				2	1.829	275	11.50	16				3.77	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	26.6																								

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías s	DN ref (mm)	Acero tipo S-	espesor asignado (mm)	PM Time (g) valvula (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº válvulas de sugie	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. DN 800 mm paso hombre (m)	Conex. DN 800 impase hombre - Acero-espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A- concavidad zapia	S _p -separacion entre tuberías	B-Achto interior (m) 5 m	Berna X1	Berna X2	H1-Cama apoyo (m)	arg Apoyo	Iq- Recubrimiento cobertura minimo (m)	H3-Profundidad minima s' cave (m)	H4- altura de la b. forma fondo	Cama de apoyo -a-cama material granular a arena b-cama de hormigon HM-20	Relino rñonera c - Sulo seleccionado C 95% PH - <= 30 mm - d-Garbanco S/15 - e-hormigon HM-20	Relino rñonera c - Sulo seleccionado C 95% PH - <= 30 mm - e-HM-20 d-Garbanco S/15 f-Sulo adecuado precedente excavación (-150mm) c65% PH g- Lecho modif.	% Escarable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1 tang (m)	HH-DH+2 (m)	Long (m)	Excavación Inapazoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relieno cama+rñonera (m3)	Relieno cama (m3)	Relieno rñonera esq(m3)	Relieno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relieno rñonera sulo seleccionado (m3)	Relieno rñonera garbancho (m3)	Relieno cama+rñonera HH-20(m3)	Relieno cobertura c - Sulo seleccionado C 95% PH <= 30 mm	Relieno cobertura d-Garbancho S/15	Relieno cobertura e- HM-20:	Relieno cobertura f-Sulo adecuado precedente excavación (-150mm) c65% PH	Relieno cobertura g- Lecho modif (m3)	Excedente de terras (m3) (espigamiento actual 0%, espigamiento licante 5%)	Cinta labores (m)	Manto escollera e-4,5m ancho-30m (m3)
H12-DC	H12-T13	668,00	26.934,82		Barraanco		2	1.829	275	11,50	16									5,09	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	38,1	38,1	38,1	10,0				10,0			23,0			23,0		5,3	2,0					
H12-DC	H12-T13	669,00	26.935,82		Barraanco		2	1.829	275	11,50	16									5,13	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	38,5	38,5	38,5	10,0				10,0			23,4			23,4		5,3	2,0					
H12-DC	H12-T13	670,00	26.936,82		Barraanco		2	1.829	275	11,50	16									5,15	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	38,7	38,7	38,7	10,0				10,0			23,6			23,6		5,3	2,0					
H12-DC	H12-T13	671,00	26.937,82		Barraanco		2	1.829	275	11,50	16									5,16	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	38,8	38,8	38,8	10,0				10,0			23,7			23,7		5,3	2,0					
H12-DC	H12-T13	672,00	26.938,82		Barraanco		2	1.829	275	11,50	16									5,15	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	38,7	38,7	38,7	10,0				10,0			23,6			23,6		5,3	2,0					
H12-DC	H12-T13	672,65	26.939,47		Barraanco		2	1.829	275	11,50	16									5,17	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	0,6	25,2	25,2	25,2	6,5				6,5			15,4			15,4		3,5	1,3					
H12-DC	H12-T13	673,00	26.939,82		Barraanco		2	1.829	275	11,50	16									5,19	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	0,4	13,7	13,7	13,7	3,5				3,5			8,4			8,4		1,9	0,7					
H12-DC	H12-T13	674,00	26.940,82		Barraanco		2	1.829	275	11,50	16									5,20	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	39,2	39,2	39,2	10,0				10,0			24,1			24,1		5,3	2,0					
H12-DC	H12-T13	675,00	26.941,82		Barraanco		2	1.829	275	11,50	16									5,13	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	38,5	38,5	38,5	10,0				10,0			23,4			23,4		5,3	2,0					
H12-DC	H12-T13	676,00	26.942,82		Barraanco		2	1.829	275	11,50	16									4,96	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	36,9	36,9	36,9	10,0				10,0			21,8			21,8		5,3	2,0					
H12-DC	H12-T13	677,00	26.943,82		Barraanco		2	1.829	275	11,50	16									4,78	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	35,4	35,4	35,4	10,0				10,0			20,3			20,3		5,3	2,0					
H12-DC	H12-T13	678,00	26.944,82		Barraanco		2	1.829	275	11,50	16									4,61	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	33,8	33,8	33,8	10,0				10,0			18,7			18,7		5,3	2,0					
H12-DC	H12-T13	679,00	26.945,82		Barraanco		2	1.829	275	11,50	16									4,45	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	29,4	29,4	29,4	10,0				10,0			17,3			17,3		5,3	2,0					
H12-DC	H12-T13	680,00	26.946,82		Barraanco		2	1.829	275	11,50	16									4,35	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	31,6	31,6	31,6	10,0				10,0			16,5			16,5		5,3	2,0					
H12-DC	H12-T13	681,00	26.947,82		Barraanco		2	1.829	275	11,50	16									4,28	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	31,0	31,0	31,0	10,0				10,0			15,9			15,9		5,3	2,0					
H12-DC	H12-T13	682,00	26.948,82		Barraanco		2	1.829	275	11,50	16									4,21	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	30,3	30,3	30,3	10,0				10,0			15,2			15,2		5,3	2,0					
H12-DC	H12-T13	683,00	26.949,82		Barraanco		2	1.829	275	11,50	16									4,14	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	29,1	29,1	29,1	10,0				10,0			14,5			14,5		5,3	2,0					
H12-DC	H12-T13	684,00	26.950,82		Barraanco		2	1.829	275	11,50	16									4,04	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	28,9	28,9	28,9	10,0				10,0			13,8			13,8		5,3	2,0					
H12-DC	H12-T13	685,00	26.951,82		Barraanco		2	1.829	275	11,50	16									4,01	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	28,6	28,6	28,6	10,0				10,0			13,5			13,5		5,3	2,0					
H12-DC	H12-T13	686,00	26.952,82		Barraanco		2	1.829	275	11,50	16									4,01	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	28,6	28,6	28,6	10,0				10,0			13,5			13,5		5,3	2,0					
H12-DC	H12-T13	686,65	26.953,47		Barraanco		2	1.829	275	11,50	16									4,02	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	0,6	18,6	18,6	18,6	6,5				6,5			8,8			8,8		3,5	1,3					
H12-DC	H12-T13	687,00	26.953,82		Barraanco		2	1.829	275	11,50	16									4,02	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	29,1	29,1	29,1	10,0				10,0			18,3			18,3		5,3	2,0					
H12-DC	H12-T13	688,00	26.954,82		Barraanco		2	1.829	275	11,50	16									4,03	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	28,8	28,8	28,8	10,0				10,0			13,7			13,7		5,3	2,0					
H12-DC	H12-T13	689,00	26.955,82		Barraanco		2	1.829	275	11,50	16									4,02	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	28,7	28,7	28,7	10,0				10,0			13,6			13,6		5,3	2,0					
H12-DC	H12-T13	690,00	26.956,82		Barraanco		2	1.829	275	11,50	16									4,26	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	30,8	30,8	30,8	10,0				10,0			15,7			15,7		5,3	2,0					
H12-DC	H12-T13	691,00	26.957,82		Barraanco		2	1.829	275	11,50	16									4,54	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	34,7	34,7	34,7	10,0				10,0			18,3			18,3		5,3	2,0					
H12-DC	H12-T13	692,00	26.958,82		Barraanco		2	1.829	275	11,50	16									4,78	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	35,3	35,3	35,3	10,0				10,0			20,2			20,2		5,3	2,0					
H12-DC	H12-T13	693,00	26.959,82		Barraanco		2	1.829	275	11,50	16									4,51	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	33,0	33,0	33,0	10,0				10,0			17,9			17,9		5,3	2,0					
H12-DC	H12-T13	694,00	26.960,82		Barraanco		2	1.829	275	11,50	16									4,24	0,33	26-2-1800	0,60	1,00	5,80		0,20	360	0,30	1,50	b	e				100%		2,3	1,0	30,6	30,6	30,6	10,0				10,0			15,5			15,5								

Agrupación		Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concrecionado zapala	A- Separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió (M20) 30 mm. e- M20. d-Garbanillo 5/15. f-suelo adecuado procedente excavación (<150mm) C/65% PN. g- Lecho mod.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	HI-DHx2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Reelleno c-ama (m3)	Reelleno riñonera(s)m3)	Reelleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Reelleno riñonera suelo seleccionado (m3)	Reelleno riñonera granitica (m3)	Reelleno cama+riñonera HM-20(m3)	Reelleno cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Reelleno cobertura d-Garbanillo 5/15	Reelleno cobertura e- H4/20	Reelleno cobertura f-Suelo adecuado procedente excavación (<150mm) C/65% PN	Reelleno cobertura g- Lecho mod (m3)	Excedente de tierras (m3) (consumo actual 0%, e-superavitario 5%)	Cinta liberata (m3)	Manto escollera a 0.5m. ancho-30m (m3)
T12-DC	T12-T13	1.177.00	27.443.82					2	1.829	275	1150	16						3.51	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	24.4	24.4	24.4	10.0	2.9	7.1	9.3	2.9		7.1					9.3	5.3	2.0						
T12-DC	T12-T13	1.178.00	27.444.82					2	1.829	275	1150	16						3.50	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	24.4	24.4	24.4	10.0	2.9	7.1	9.3	2.9		7.1				9.3	5.3	2.0							
T12-DC	T12-T13	1.179.00	27.445.82					2	1.829	275	1150	16						3.51	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	24.4	24.4	24.4	10.0	2.9	7.1	9.3	2.9		7.1				9.3	5.3	2.0							
T12-DC	T12-T13	1.179.60	27.446.42					2	1.829	275	1150	16						3.51	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.6	14.6	14.6	14.6	6.0	1.7	4.3	5.6	1.7		4.3				5.6	3.2	1.2							
T12-DC	T12-T13	1.180.00	27.446.82					2	1.829	275	1150	16						3.51	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.4	9.8	9.8	9.8	4.0	1.2	2.9	3.8	1.2		2.9				3.8	2.1	0.8							
T12-DC	T12-T13	1.180.06	27.446.89					2	1.829	275	1150	16						3.51	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.1	1.6	1.6	1.6	0.6	0.2	0.5	0.6	0.2		0.6				0.6	0.3	0.3							
T12-DC	T12-T13	1.181.00	27.447.82					2	1.829	275	1150	16						3.51	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.9	22.9	22.9	22.9	9.4	2.7	6.7	8.8	2.7		6.7				8.8	5.0	1.9							
T12-DC	T12-T13	1.182.00	27.448.82					2	1.829	275	1150	16						3.52	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9		7.1				9.4	5.3	2.0							
T12-DC	T12-T13	1.183.00	27.449.82					2	1.829	275	1150	16						3.52	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9		7.1				9.5	5.3	2.0							
T12-DC	T12-T13	1.184.00	27.450.82					2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9		7.1				9.5	5.3	2.0							
T12-DC	T12-T13	1.185.00	27.451.82					2	1.829	275	1150	16						3.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9		7.1				9.5	5.3	2.0							
T12-DC	T12-T13	1.186.00	27.452.82					2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9		7.1				9.6	5.3	2.0							
T12-DC	T12-T13	1.187.00	27.453.82					2	1.829	275	1150	16						3.54	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9		7.1				9.6	5.3	2.0							
T12-DC	T12-T13	1.188.00	27.454.82					2	1.829	275	1150	16						3.55	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.8	24.8	24.8	10.0	2.9	7.1	9.7	2.9		7.1				9.7	5.3	2.0							
T12-DC	T12-T13	1.189.00	27.455.82					2	1.829	275	1150	16						3.55	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.8	24.8	24.8	10.0	2.9	7.1	9.7	2.9		7.1				9.7	5.3	2.0							
T12-DC	T12-T13	1.190.00	27.456.82					2	1.829	275	1150	16						3.56	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.8	24.8	24.8	10.0	2.9	7.1	9.7	2.9		7.1				9.7	5.3	2.0							
T12-DC	T12-T13	1.191.00	27.457.82					2	1.829	275	1150	16						3.56	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9		7.1				9.8	5.3	2.0							
T12-DC	T12-T13	1.192.00	27.458.82					2	1.829	275	1150	16						3.57	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9		7.1				9.8	5.3	2.0							
T12-DC	T12-T13	1.193.00	27.459.82					2	1.829	275	1150	16						3.57	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9		7.1				9.8	5.3	2.0							
T12-DC	T12-T13	1.194.00	27.460.82					2	1.829	275	1150	16						3.57	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9		7.1				9.8	5.3	2.0							
T12-DC	T12-T13	1.195.00	27.461.82					2	1.829	275	1150	16						3.57	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9		7.1				9.9	5.3	2.0							
T12-DC	T12-T13	1.196.00	27.462.82					2	1.829	275	1150	16						3.58	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9		7.1				9.9	5.3	2.0							
T12-DC	T12-T13	1.197.00	27.463.82					2	1.829	275	1150	16						3.58	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9		7.1				9.9	5.3	2.0							
T12-DC	T12-T13	1.198.00	27.464.82					2	1.829	275	1150	16						3.59	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9		7.1				10.0	5.3	2.0							
T12-DC	T12-T13	1.199.00	27.465.82					2	1.829	275	1150	16						3.59	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9		7.1				10.0	5.3	2.0							
T12-DC	T12-T13	1.200.00	27.466.82					2	1.829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9		7.1				10.1	5.3	2.0							
T12-DC	T12-T13	1.201.00	27.467.82					2	1.829	275	1150	16						3.60	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	25.2	25.2	25.2	10.0	2.9	7.1	10.1	2.9		7.1				10.1	5.3	2.0							
T12-DC	T12-T13	1.202.00	27.468.82					2	1.829	275	1150	16						3.61	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1				10.2	5.3	2.0							
T12-DC	T12-T13	1.203.00	27.469.82					2	1.829	275	1150	16						3.62	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	25.3	25.3	25.3	10.0	2.9	7.1	10.2	2.9		7.1				10.2	5.3								

Agrupación	Tramo	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verticos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lateral (mm)	Altura de excavación a TH (m)	Talud HV	concretoado zapla	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15. e-hormigón (M20)	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. e- M20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<150mm) C/65 % PN. g- Lecho mod.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno cama+riñonera (m3)	Releño c-ama (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera granitica (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura. d-Garbanillo 5/15	Releño cobertura. e- M20	Releño cobertura. f-Suelo adecuado procedente excavación (<150mm) C/65 % PN	Releño cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0% e-spojaniento teórico 5%)	Cinta liberata (m3)	Manto escollera a 45.5m. ancho-30m. (m3)
T12-DC	T12-T13	2716.00	28982.82				2	1.829	275	1150	16						5.59	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.8	42.8	42.8	10.0	2.9	7.1	27.7	2.9	7.1				27.7	5.3	2.0											
T12-DC	T12-T13	2717.00	28983.82				2	1.829	275	1150	16						5.57	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.6	42.6	42.6	10.0	2.9	7.1	27.5	2.9	7.1				27.5	5.3	2.0											
T12-DC	T12-T13	2718.00	28984.82				2	1.829	275	1150	16						5.55	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.5	42.5	42.5	10.0	2.9	7.1	27.4	2.9	7.1				27.4	5.3	2.0											
T12-DC	T12-T13	2719.00	28985.82				2	1.829	275	1150	16						5.53	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.3	42.3	42.3	10.0	2.9	7.1	27.2	2.9	7.1				27.2	5.3	2.0											
T12-DC	T12-T13	2720.00	28986.82				2	1.829	275	1150	16						5.52	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.1	42.1	42.1	10.0	2.9	7.1	27.0	2.9	7.1				27.0	5.3	2.0											
T12-DC	T12-T13	2721.00	28987.82				2	1.829	275	1150	16						5.50	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	41.9	41.9	41.9	10.0	2.9	7.1	26.8	2.9	7.1				26.8	5.3	2.0											
T12-DC	T12-T13	2722.00	28988.82				2	1.829	275	1150	16						5.48	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	41.8	41.8	41.8	10.0	2.9	7.1	26.7	2.9	7.1				26.7	5.3	2.0											
T12-DC	T12-T13	2723.00	28989.82				2	1.829	275	1150	16						5.46	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	41.6	41.6	41.6	10.0	2.9	7.1	26.5	2.9	7.1				26.5	5.3	2.0											
T12-DC	T12-T13	2724.00	28990.82				2	1.829	275	1150	16						5.44	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	41.4	41.4	41.4	10.0	2.9	7.1	26.3	2.9	7.1				26.3	5.3	2.0											
T12-DC	T12-T13	2724.51	28991.33				2	1.829	275	1150	16						5.43	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.5	20.9	20.9	20.9	5.1	1.5	3.6	13.3	1.5	2.0				24.0	5.3	2.0											
T12-DC	T12-T13	2725.00	28991.82				2	1.829	275	1150	16						5.42	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.5	20.3	20.3	20.3	4.9	1.4	3.5	12.9	1.4	3.5				12.9	2.6	1.0											
T12-DC	T12-T13	2726.00	28992.82				2	1.829	275	1150	16						5.40	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	41.0	41.0	41.0	10.0	2.9	7.1	25.9	2.9	7.1				25.9	5.3	2.0											
T12-DC	T12-T13	2727.00	28993.82				2	1.829	275	1150	16						5.38	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	40.9	40.9	40.9	10.0	2.9	7.1	25.7	2.9	7.1				25.7	5.3	2.0											
T12-DC	T12-T13	2728.00	28994.82				2	1.829	275	1150	16						5.36	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	40.7	40.7	40.7	10.0	2.9	7.1	25.6	2.9	7.1				25.6	5.3	2.0											
T12-DC	T12-T13	2729.00	28995.82				2	1.829	275	1150	16						5.34	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	40.5	40.5	40.5	10.0	2.9	7.1	25.4	2.9	7.1				25.4	5.3	2.0											
T12-DC	T12-T13	2730.00	28996.82				2	1.829	275	1150	16						5.32	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	40.3	40.3	40.3	10.0	2.9	7.1	25.2	2.9	7.1				25.2	5.3	2.0											
T12-DC	T12-T13	2731.00	28997.82				2	1.829	275	1150	16						5.30	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	40.1	40.1	40.1	10.0	2.9	7.1	25.0	2.9	7.1				25.0	5.3	2.0											
T12-DC	T12-T13	2732.00	28998.82				2	1.829	275	1150	16						5.28	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	39.9	39.9	39.9	10.0	2.9	7.1	24.8	2.9	7.1				24.8	5.3	2.0											
T12-DC	T12-T13	2733.00	28999.82				2	1.829	275	1150	16						5.26	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	39.8	39.8	39.8	10.0	2.9	7.1	24.7	2.9	7.1				24.7	5.3	2.0											
T12-DC	T12-T13	2734.00	29000.82				2	1.829	275	1150	16						5.25	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	39.6	39.6	39.6	10.0	2.9	7.1	24.5	2.9	7.1				24.5	5.3	2.0											
T12-DC	T12-T13	2735.00	29001.82				2	1.829	275	1150	16						5.23	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	39.4	39.4	39.4	10.0	2.9	7.1	24.3	2.9	7.1				24.3	5.3	2.0											
T12-DC	T12-T13	2736.00	29002.82				2	1.829	275	1150	16						5.21	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	39.2	39.2	39.2	10.0	2.9	7.1	24.1	2.9	7.1				24.1	5.3	2.0											
T12-DC	T12-T13	2737.00	29003.82				2	1.829	275	1150	16						5.19	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	39.1	39.1	39.1	10.0	2.9	7.1	24.0	2.9	7.1				24.0	5.3	2.0											
T12-DC	T12-T13	2738.00	29004.82				2	1.829	275	1150	16						5.17	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.9	38.9	38.9	10.0	2.9	7.1	23.8	2.9	7.1				23.8	5.3	2.0											
T12-DC	T12-T13	2739.00	29005.82				2	1.829	275	1150	16						5.15	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.7	38.7	38.7	10.0	2.9	7.1	23.6	2.9	7.1				23.6	5.3	2.0											
T12-DC	T12-T13	2740.00	29006.82				2	1.829	275	1150	16						5.13	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.5	38.5	38.5	10.0	2.9	7.1	23.4	2.9	7.1				23.4	5.3	2.0											
T12-DC	T12-T13	2741.00	29007.82				2	1.829	275	1150	16						5.11	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.4	38.4	38.4	10.0	2.9	7.1	23.3	2.9	7.1				23.3	5.3	2.0											
T12-DC	T12-T13	2742.00	29008.82				2	1.829	275	1150	16						5.09	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.2	38.2	38.2	10.0	2.9	7.1	23.1	2.9	7.1				23.1	5.3	2.0											
T12-DC	T12-T13	2743.00	29009.82				2	1.829	275	1150	16						5.08	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.0	38.0	38.0	10.0	2.9	7.1	22.9	2.9	7.1				22.9	5.3	2.0											
T12-DC	T12-T13	2744.00	29010.82				2	1.829	275	1150	16						5.05	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.8	37.8	37.8	10.0	2.9	7.1	22.																			

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adoptado (mm)	PN (limpieza valvulera (dm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concrecionado zapala	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20	Rehabilitación c= Suelo seleccionado C/95% PN, <= 30 mm. d-Garbanillo 5/15. e-borrompien (M20) Malla excavadora f= Suelo seleccionado C/95% PN, <= 30 mm. e- M20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<=150mm) c/6% PN. g- Lecho mod.	Exposic (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (n)	HI=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera granitica (m3)	Relleno cama+riñonera (M20(m3)	Relleno cobertura c= Suelo seleccionado C/95% PN, <= 30 mm	Reelleno cobertura. d-Garbanillo 5/15	Reelleno cobertura. e- H4/20	Reelleno cobertura. f-Suelo adecuado e excavación (<=150mm) c/6% PN	Reelleno cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensación a nivel 0%, e-spojaniento vertical 5%)	Cinta liberata (m3)	Manto escollera a= 0.5m. ancho=30m. (m3)
T12-DC	T12-T13	3.728.00	29.994.82				2	1.829	275	12.50	16								4.19	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1							15.0	5.3	2.0				
T12-DC	T12-T13	3.729.00	29.995.82				2	1.829	275	12.50	16								4.19	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1							15.0	5.3	2.0				
T12-DC	T12-T13	3.730.00	29.996.82				2	1.829	275	12.50	16								4.18	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1							15.0	5.3	2.0				
T12-DC	T12-T13	3.731.00	29.997.82				2	1.829	275	12.50	16								4.18	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1							15.0	5.3	2.0				
T12-DC	T12-T13	3.732.00	29.998.82				2	1.829	275	12.50	16								4.18	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1							15.0	5.3	2.0				
T12-DC	T12-T13	3.733.00	29.999.82				2	1.829	275	12.50	16								4.19	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1							15.1	5.3	2.0				
T12-DC	T12-T13	3.734.00	30.000.82				2	1.829	275	12.50	16								4.20	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1							15.1	5.3	2.0				
T12-DC	T12-T13	3.735.00	30.001.82				2	1.829	275	12.50	16								4.21	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1							15.2	5.3	2.0				
T12-DC	T12-T13	3.736.00	30.002.82				2	1.829	275	12.50	16								4.22	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1							15.3	5.3	2.0				
T12-DC	T12-T13	3.737.00	30.003.82				2	1.829	275	12.50	16								4.22	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1							15.3	5.3	2.0				
T12-DC	T12-T13	3.738.00	30.004.82				2	1.829	275	12.50	16								4.21	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1							15.2	5.3	2.0				
T12-DC	T12-T13	3.739.00	30.005.82				2	1.829	275	12.50	16								4.20	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1							15.1	5.3	2.0				
T12-DC	T12-T13	3.740.00	30.006.82				2	1.829	275	12.50	16								4.19	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1							15.0	5.3	2.0				
T12-DC	T12-T13	3.741.00	30.007.82				2	1.829	275	12.50	16								4.17	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1							14.9	5.3	2.0				
T12-DC	T12-T13	3.742.00	30.008.82				2	1.829	275	12.50	16								4.16	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9	7.1							14.8	5.3	2.0				
T12-DC	T12-T13	3.743.00	30.009.82				2	1.829	275	12.50	16								4.14	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.7	29.7	29.7	10.0	2.9	7.1	14.6	2.9	7.1							14.6	5.3	2.0				
T12-DC	T12-T13	3.744.00	30.010.82				2	1.829	275	12.50	16								4.13	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.6	29.6	29.6	10.0	2.9	7.1	14.5	2.9	7.1							14.5	5.3	2.0				
T12-DC	T12-T13	3.745.00	30.011.82				2	1.829	275	12.50	16								4.11	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.5	29.5	29.5	10.0	2.9	7.1	14.4	2.9	7.1							14.4	5.3	2.0				
T12-DC	T12-T13	3.746.00	30.012.82				2	1.829	275	12.50	16								4.09	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.4	29.4	29.4	10.0	2.9	7.1	14.2	2.9	7.1							14.2	5.3	2.0				
T12-DC	T12-T13	3.747.00	30.013.82				2	1.829	275	12.50	16								4.07	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9	7.1							14.1	5.3	2.0				
T12-DC	T12-T13	3.748.00	30.014.82				2	1.829	275	12.50	16								4.06	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9	7.1							13.9	5.3	2.0				
T12-DC	T12-T13	3.749.00	30.015.82				2	1.829	275	12.50	16								4.04	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9	7.1							13.8	5.3	2.0				
T12-DC	T12-T13	3.750.00	30.016.82				2	1.829	275	12.50	16								4.02	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9	7.1							13.6	5.3	2.0				
T12-DC	T12-T13	3.751.00	30.017.82				2	1.829	275	12.50	16								4.00	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1							13.4	5.3	2.0				
T12-DC	T12-T13	3.752.00	30.018.82				2	1.829	275	12.50	16								3.98	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9	7.1							13.3	5.3	2.0				
T12-DC	T12-T13	3.753.00	30.019.82				2	1.829	275	12.50	16								3.97	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1							13.2	5.3	2.0				
T12-DC	T12-T13	3.754.00	30.020.82				2	1.829	275	12.50	16								3.95	0.33	21.2-1800	0.60	1.00	5.80				0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9	7.1							13.0	5.3	2.0				
T12-DC	T12-T13	3.755.00	30.021.82				2	1.829	275	12.50	16								3.92	0.33	21.2-1800	0.60	1.00	5.80				0.20																																	

[illegible]

Agregación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº vertebra por tubería	Nº tuberías DN en (mm)	Acero tipo S	espesor adaptado (mm)	PN limitaje valedura (dm)	Nº vertebra por tubería	DN vertebra (mm)	Nº valvulas de sagüe	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concrecionado zapala	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Rehabilitación c= Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15, e-bornopon (M4.20)	Malla excéntrica f= Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d-Gabarrillo S15, f-suela adecuada procedente excavación (<150mm) c/95% PN, g- Luchito mod.	Exposici. (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavado ripable con empleo de martillo	H1= ang (m)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño c-ama (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera granallado (m3)	Releño cama+riñonera (M4.20(m3)	Releño cobertura c= Suelo seleccionado C/95% PN, < 30 mm	Releño cobertura d-Gabarrillo S15	Releño cobertura e- H4.20	Releño cobertura f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Releño cobertura g- Luchito mod (m3)	Excedente de tierra (m3) (consumo a nivel 0%, e-spojaniento 5%)	Cinta liberata (m)	Manto escollera a=0.5m, ancho=30m (m3)
T12-DC	T12-13	8.193.00	34.459.82				2	1.829	355	13.00	25									3.70	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.0	42.0	42.0	16.2	3.4	12.8	20.7	3.4	12.8			20.7	5.1	2.0											
T12-DC	T12-13	8.194.00	34.460.82				2	1.829	355	13.00	25									3.71	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.1	42.1	42.1	16.2	3.4	12.8	20.9	3.4	12.8			20.9	5.1	2.0											
T12-DC	T12-13	8.195.00	34.461.82				2	1.829	355	13.00	25									3.72	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.3	42.3	42.3	16.2	3.4	12.8	21.0	3.4	12.8			21.0	5.1	2.0											
T12-DC	T12-13	8.196.00	34.462.82				2	1.829	355	13.00	25									3.73	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.4	42.4	42.4	16.2	3.4	12.8	21.1	3.4	12.8			21.1	5.1	2.0											
T12-DC	T12-13	8.197.00	34.463.82				2	1.829	355	13.00	25									3.73	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.6	42.6	42.6	16.2	3.4	12.8	21.3	3.4	12.8			21.3	5.1	2.0											
T12-DC	T12-13	8.198.00	34.464.82				2	1.829	355	13.00	25									3.74	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.7	42.7	42.7	16.2	3.4	12.8	21.4	3.4	12.8			21.4	5.1	2.0											
T12-DC	T12-13	8.199.00	34.465.82				2	1.829	355	13.00	25									3.75	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.9	42.9	42.9	16.2	3.4	12.8	21.6	3.4	12.8			21.6	5.1	2.0											
T12-DC	T12-13	8.200.00	34.466.82				2	1.829	355	13.00	25									3.76	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	43.0	43.0	43.0	16.2	3.4	12.8	21.7	3.4	12.8			21.7	5.1	2.0											
T12-DC	T12-13	8.201.00	34.467.82				2	1.829	355	13.00	25									3.77	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	43.2	43.2	43.2	16.2	3.4	12.8	21.9	3.4	12.8			21.9	5.1	2.0											
T12-DC	T12-13	8.202.00	34.468.82				2	1.829	355	13.00	25									3.78	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	43.3	43.3	43.3	16.2	3.4	12.8	22.0	3.4	12.8			22.0	5.1	2.0											
T12-DC	T12-13	8.203.00	34.469.82				2	1.829	355	13.00	25									3.79	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	43.5	43.5	43.5	16.2	3.4	12.8	22.2	3.4	12.8			22.2	5.1	2.0											
T12-DC	T12-13	8.203.24	34.470.07				2	1.829	355	13.00	25									3.79	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.2	10.5	10.5	10.5	3.9	0.8	3.1	5.4	0.8			5.4	1.2	0.5												
T12-DC	T12-13	8.204.00	34.470.82				2	1.829	355	13.00	25									3.79	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.8	33.0	33.0	33.0	12.3	2.6	9.7	16.9	2.6			9.7	3.9	1.5												
T12-DC	T12-13	8.205.00	34.471.82				2	1.829	355	13.00	25									3.80	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	43.8	43.8	43.8	16.2	3.4	12.8	22.5	3.4	12.8			22.5	5.1	2.0											
T12-DC	T12-13	8.206.00	34.472.82				2	1.829	355	13.00	25									3.81	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	43.9	43.9	43.9	16.2	3.4	12.8	22.6	3.4	12.8			22.6	5.1	2.0											
T12-DC	T12-13	8.207.00	34.473.82				2	1.829	355	13.00	25									3.82	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	44.0	44.0	44.0	16.2	3.4	12.8	22.8	3.4	12.8			22.8	5.1	2.0											
T12-DC	T12-13	8.208.00	34.474.82				2	1.829	355	13.00	25									3.83	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	44.2	44.2	44.2	16.2	3.4	12.8	22.9	3.4	12.8			22.9	5.1	2.0											
T12-DC	T12-13	8.209.00	34.475.82				2	1.829	355	13.00	25									3.84	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	44.4	44.4	44.4	16.2	3.4	12.8	23.1	3.4	12.8			23.1	5.1	2.0											
T12-DC	T12-13	8.210.00	34.476.82				2	1.829	355	13.00	25									3.85	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	44.5	44.5	44.5	16.2	3.4	12.8	23.2	3.4	12.8			23.2	5.1	2.0											
T12-DC	T12-13	8.211.00	34.477.82				2	1.829	355	13.00	25									3.86	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	44.7	44.7	44.7	16.2	3.4	12.8	23.4	3.4	12.8			23.4	5.1	2.0											
T12-DC	T12-13	8.212.00	34.478.82				2	1.829	355	13.00	25									3.86	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	44.8	44.8	44.8	16.2	3.4	12.8	23.5	3.4	12.8			23.5	5.1	2.0											
T12-DC	T12-13	8.213.00	34.479.82				2	1.829	355	13.00	25									3.87	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	44.9	44.9	44.9	16.2	3.4	12.8	23.7	3.4	12.8			23.7	5.1	2.0											
T12-DC	T12-13	8.214.00	34.480.82				2	1.829	355	13.00	25									3.88	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	45.1	45.1	45.1	16.2	3.4	12.8	23.8	3.4	12.8			23.8	5.1	2.0											
T12-DC	T12-13	8.215.00	34.481.82				2	1.829	355	13.00	25									3.89	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	45.0%	0.7	2.3	1.0	45.2	45.2	45.2	16.2	3.4	12.8	24.0	3.4	12.8			24.0	5.1	2.0											
T12-DC	T12-13	8.216.00	34.482.82				2	1.829	355	13.00	25									3.90	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	45.3	45.3	45.3	16.2	3.4	12.8	24.1	3.4	12.8			24.1	5.1	2.0											
T12-DC	T12-13	8.217.00	34.483.82				2	1.829	355	13.00	25									3.90	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	45.4	45.4	45.4	16.2	3.4	12.8	24.1	3.4	12.8			24.1	5.1	2.0											
T12-DC	T12-13	8.218.00	34.484.82				2	1.829	355	13.00	25									3.90	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	45.5	45.5	45.5	16.2	3.4	12.8	24.2	3.4	12.8			24.2	5.1	2.0											
T12-DC	T12-13	8.219.00	34.485.82				2	1.829	355	13.00	25									3.91	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	45.6	45.6	45.6	16.2	3.4	12.8	24.3	3.4	12.8			24.3	5.1	2.0											
T12-DC	T12-13	8.220.00	34.486.82				2	1.829	355	13.00	25									3.91	1.50	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	45.6	45.6	45.6	16.																					

Agrupación		Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN ext (mm)	Acero tipo S	espesor adaptado (mm)	PN limitaje valvulera (djm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de valvula	Aquella rotura tipo	Conex. DN 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena: b- cama de hormigón HM20	Rehabilitación: c- Suela seleccionada C/95% PN, <= 30 mm. d- Garbancillo S/15. e- borropipeo HM20. f- Microexcavatura (- Suela seleccionada C/95% PN, <= 30 mm. e- HM20. d- Garbancillo S/15. f- Suela adecuada para excavación (-<150mm) C/95% PN. g- Lecho modif.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	HI=DNHz (m)	Long (m)	Excavación tapazonal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releñe cama (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera grabancillo (m3)	Releño cama+riñonera HM20(m3)	Releño cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura. d-Garbancillo S/15	Releño cobertura. e- HM20	Releño cobertura. f-Suelo adecuado a excavación (-<150mm) C/95% PN	Releño cobertura. g- Lecho modif (m3)	Excedente de tierra (m3) (consumo a nivel 0%, e- conjunto terciario 5%)	Cinta liberata (m)	Manto escollera a 0.5m. ancho 30m. (m3)
T12-DC	T12-T13	8.841.00	35.107.82					2	1.829	355	13.00	25									5.23	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	71.3	71.3	71.3	16.2	3.4	12.8	50.0	3.4		12.8			50.0			5.1	2.0				
T12-DC	T12-T13	8.842.00	35.108.82					2	1.829	355	13.00	25										5.28	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	72.4	72.4	72.4	16.2	3.4	12.8	51.1	3.4		12.8			51.1			5.1	2.0			
T12-DC	T12-T13	8.843.00	35.109.82					2	1.829	355	13.00	25										5.33	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	73.6	73.6	73.6	16.2	3.4	12.8	52.3	3.4		12.8			52.3			5.1	2.0			
T12-DC	T12-T13	8.844.00	35.110.82					2	1.829	355	13.00	25										5.39	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	74.8	74.8	74.8	16.2	3.4	12.8	53.3	3.4		12.8			53.3			5.1	2.0			
T12-DC	T12-T13	8.845.00	35.111.82					2	1.829	355	13.00	25										5.45	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	76.1	76.1	76.1	16.2	3.4	12.8	54.8	3.4		12.8			54.8			5.1	2.0			
T12-DC	T12-T13	8.846.00	35.112.82					2	1.829	355	13.00	25										5.51	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	77.4	77.4	77.4	16.2	3.4	12.8	56.2	3.4		12.8			56.2			5.1	2.0			
T12-DC	T12-T13	8.847.00	35.113.82					2	1.829	355	13.00	25										5.57	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	78.8	78.8	78.8	16.2	3.4	12.8	57.6	3.4		12.8			57.6			5.1	2.0			
T12-DC	T12-T13	8.848.00	35.114.82					2	1.829	355	13.00	25										5.63	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	80.3	80.3	80.3	16.2	3.4	12.8	59.0	3.4		12.8			59.0			5.1	2.0			
T12-DC	T12-T13	8.849.00	35.115.82					2	1.829	355	13.00	25										5.70	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	81.8	81.8	81.8	16.2	3.4	12.8	60.5	3.4		12.8			60.5			5.1	2.0			
T12-DC	T12-T13	8.850.00	35.116.82					2	1.829	355	13.00	25										5.77	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	83.3	83.3	83.3	16.2	3.4	12.8	62.1	3.4		12.8			62.1			5.1	2.0			
T12-DC	T12-T13	8.851.00	35.117.82					2	1.829	355	13.00	25										5.84	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	85.0	85.0	85.0	16.2	3.4	12.8	63.8	3.4		12.8			63.8			5.1	2.0			
T12-DC	T12-T13	8.852.00	35.118.82					2	1.829	355	13.00	25										5.92	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	86.9	86.9	86.9	16.2	3.4	12.8	65.6	3.4		12.8			65.6			5.1	2.0			
T12-DC	T12-T13	8.853.00	35.119.82					2	1.829	355	13.00	25										6.00	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	88.7	88.7	88.7	16.2	3.4	12.8	67.5	3.4		12.8			67.5			5.1	2.0			
T12-DC	T12-T13	8.854.00	35.120.82					2	1.829	355	13.00	25										6.08	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	90.7	90.7	90.7	16.2	3.4	12.8	69.4	3.4		12.8			69.4			5.1	2.0			
T12-DC	T12-T13	8.855.00	35.121.82					2	1.829	355	13.00	25										6.16	1.50	212-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%		0.7	2.3	1.0	92.7	92.7	92.7	16.2	3.4	12.8	71.4	3.4		12.8			71.4			5.1	2.0			
T12-DC	T12-T13	8.856.00	35.122.82					2	1.829	355	13.00	25										6.25	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	94.8	4.5	99.3	99.3	16.2	3.4	12.8	78.0	3.4		12.8			78.0			5.1	2.0	
T12-DC	T12-T13	8.857.00	35.123.82					2	1.829	355	13.00	25										6.33	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	96.9	5.0	101.9	101.9	16.2	3.4	12.8	80.6	3.4		12.8			80.6			5.1	2.0	
T12-DC	T12-T13	8.858.00	35.124.82					2	1.829	355	13.00	25										6.42	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	99.1	5.5	104.7	104.7	16.2	3.4	12.8	83.4	3.4		12.8			83.4			5.1	2.0	
T12-DC	T12-T13	8.859.00	35.125.82					2	1.829	355	13.00	25										6.51	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	101.4	6.1	107.5	107.5	16.2	3.4	12.8	86.2	3.4		12.8			86.2			5.1	2.0	
T12-DC	T12-T13	8.860.00	35.126.82					2	1.829	355	13.00	25										6.61	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	103.8	6.6	110.4	110.4	16.2	3.4	12.8	89.2	3.4		12.8			89.2			5.1	2.0	
T12-DC	T12-T13	8.861.00	35.127.82					2	1.829	355	13.00	25										6.70	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	106.2	7.2	113.5	113.5	16.2	3.4	12.8	92.2	3.4		12.8			92.2			5.1	2.0	
T12-DC	T12-T13	8.862.00	35.128.82					2	1.829	355	13.00	25										6.80	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	108.7	7.8	116.5	116.5	16.2	3.4	12.8	95.2	3.4		12.8			95.2			5.1	2.0	
T12-DC	T12-T13	8.863.00	35.129.82					2	1.829	355	13.00	25										6.89	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	111.2	8.4	119.6	119.6	16.2	3.4	12.8	98.3	3.4		12.8			98.3			5.1	2.0	
T12-DC	T12-T13	8.864.00	35.130.82					2	1.829	355	13.00	25										6.99	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	113.8	8.9	122.7	122.7	16.2	3.4	12.8	101.5	3.4		12.8			101.5			5.1	2.0	
T12-DC	T12-T13	8.865.00	35.131.82		Transición			2	1.829	355	14.00	25										7.09	1.50	222-2-1800	0.60	1.00	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	116.4	9.5	125.9	125.9	16.2	3.4	12.8	104.6	3.4		12.8			104.6			5.1	2.0	
T12-DC	T12-T13	8.866.00	35.132.82		Transición			2	1.829	355	14.00	25										7.18	1.50	222-2-1800	0.60	1.70	5.80	1.00	3.00	0.20	120	0.30	1.50	5.50		a	c	f	100%		0.7	2.3	1.0	119.0	10.1	129.1	129.1	16.2	3.4	12.8	107.8	3.4		12.8			107.8			5.1	2.	

[illegible]

[illegible]

[illegible]

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adoptado (mm)	PN (límite valedad (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre. Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto en zapala	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompi (M20) 30 mm. e- M20. d-Garbanillo 5/15. f-suelo adecuado para excavación (<150mm) c/95% PN. g- Lecho mod.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (n)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciolo (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura d-Garbanillo 5/15	Relevo cobertura e- H4/20	Relevo cobertura f-Suelo adecuado para excavación (<150mm) c/95% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0% e-spojaniento teorico 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m (m3)
T12-DC	T12-T13	10.493.00	36.759.82				2	1.829	355	11.50	25								4.81	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.6	35.6	35.6	10.0	2.9	7.1	20.5	2.9	7.1				20.5	5.3	2.0									
T12-DC	T12-T13	10.494.00	36.760.82				2	1.829	355	11.50	25								4.83	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.8	35.8	35.8	10.0	2.9	7.1	20.7	2.9	7.1				20.7	5.3	2.0									
T12-DC	T12-T13	10.495.00	36.761.82				2	1.829	355	11.50	25								4.85	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.9	35.9	35.9	10.0	2.9	7.1	20.8	2.9	7.1				20.8	5.3	2.0									
T12-DC	T12-T13	10.496.00	36.762.82				2	1.829	355	11.50	25								4.86	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.1	36.1	36.1	10.0	2.9	7.1	21.0	2.9	7.1				21.0	5.3	2.0									
T12-DC	T12-T13	10.497.00	36.763.82				2	1.829	355	11.50	25								4.88	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.2	36.2	36.2	10.0	2.9	7.1	21.1	2.9	7.1				21.1	5.3	2.0									
T12-DC	T12-T13	10.498.00	36.764.82				2	1.829	355	11.50	25								4.89	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.4	36.4	36.4	10.0	2.9	7.1	21.3	2.9	7.1				21.3	5.3	2.0									
T12-DC	T12-T13	10.499.00	36.765.82				2	1.829	355	11.50	25								4.91	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.5	36.5	36.5	10.0	2.9	7.1	21.4	2.9	7.1				21.4	5.3	2.0									
T12-DC	T12-T13	10.500.00	36.766.82				2	1.829	355	11.50	25								4.93	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.7	36.7	36.7	10.0	2.9	7.1	21.6	2.9	7.1				21.6	5.3	2.0									
T12-DC	T12-T13	10.501.00	36.767.82				2	1.829	355	11.50	25								4.94	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.8	36.8	36.8	10.0	2.9	7.1	21.7	2.9	7.1				21.7	5.3	2.0									
T12-DC	T12-T13	10.502.00	36.768.82				2	1.829	355	11.50	25								4.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.9	36.9	36.9	10.0	2.9	7.1	21.8	2.9	7.1				21.8	5.3	2.0									
T12-DC	T12-T13	10.503.00	36.769.82				2	1.829	355	11.50	25								4.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	36.9	36.9	36.9	10.0	2.9	7.1	21.8	2.9	7.1				21.8	5.3	2.0									
T12-DC	T12-T13	10.504.00	36.770.82				2	1.829	355	11.50	25								4.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.0	37.0	37.0	10.0	2.9	7.1	21.9	2.9	7.1				21.9	5.3	2.0									
T12-DC	T12-T13	10.505.00	36.771.82				2	1.829	355	11.50	25								4.97	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.1	37.1	37.1	10.0	2.9	7.1	22.0	2.9	7.1				22.0	5.3	2.0									
T12-DC	T12-T13	10.506.00	36.772.82				2	1.829	355	11.50	25								4.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.1	37.1	37.1	10.0	2.9	7.1	22.0	2.9	7.1				22.0	5.3	2.0									
T12-DC	T12-T13	10.507.00	36.773.82				2	1.829	355	11.50	25								4.99	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.2	37.2	37.2	10.0	2.9	7.1	22.1	2.9	7.1				22.1	5.3	2.0									
T12-DC	T12-T13	10.508.00	36.774.82				2	1.829	355	11.50	25								4.99	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.3	37.3	37.3	10.0	2.9	7.1	22.1	2.9	7.1				22.1	5.3	2.0									
T12-DC	T12-T13	10.509.00	36.775.82				2	1.829	355	11.50	25								5.01	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.4	37.4	37.4	10.0	2.9	7.1	22.3	2.9	7.1				22.3	5.3	2.0									
T12-DC	T12-T13	10.510.00	36.776.82				2	1.829	355	11.50	25								5.03	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.6	37.6	37.6	10.0	2.9	7.1	22.5	2.9	7.1				22.5	5.3	2.0									
T12-DC	T12-T13	10.511.00	36.777.82				2	1.829	355	11.50	25								5.05	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.8	37.8	37.8	10.0	2.9	7.1	22.7	2.9	7.1				22.7	5.3	2.0									
T12-DC	T12-T13	10.512.00	36.778.82				2	1.829	355	11.50	25								5.06	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	37.9	37.9	37.9	10.0	2.9	7.1	22.8	2.9	7.1				22.8	5.3	2.0									
T12-DC	T12-T13	10.513.00	36.779.82				2	1.829	355	11.50	25								5.08	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.0	38.0	38.0	10.0	2.9	7.1	22.9	2.9	7.1				22.9	5.3	2.0									
T12-DC	T12-T13	10.514.00	36.780.82				2	1.829	355	11.50	25								5.09	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.2	38.2	38.2	10.0	2.9	7.1	23.1	2.9	7.1				23.1	5.3	2.0									
T12-DC	T12-T13	10.515.00	36.781.82				2	1.829	355	11.50	25								5.10	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.3	38.3	38.3	10.0	2.9	7.1	23.2	2.9	7.1				23.2	5.3	2.0									
T12-DC	T12-T13	10.516.00	36.782.82				2	1.829	355	11.50	25								5.12	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.4	38.4	38.4	10.0	2.9	7.1	23.3	2.9	7.1				23.3	5.3	2.0									
T12-DC	T12-T13	10.517.00	36.783.82				2	1.829	355	11.50	25								5.13	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.5	38.5	38.5	10.0	2.9	7.1	23.4	2.9	7.1				23.4	5.3	2.0									
T12-DC	T12-T13	10.518.00	36.784.82				2	1.829	355	11.50	25								5.13	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.5	38.5	38.5	10.0	2.9	7.1	23.4	2.9	7.1				23.4	5.3	2.0									
T12-DC	T12-T13	10.519.00	36.785.82				2	1.829	355	11.50	25								5.14	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.6	38.6	38.6	10.0	2.9	7.1	23.5	2.9	7.1				23.5	5.3	2.0									
T12-DC	T12-T13	10.520.00	36.786.82				2	1.829	355	11.50	25								5.16	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.8	38.8	38.8	10.0	2.9	7.1	23.7	2.9	7.1				23.7	5.3	2.0									
T12-DC	T12-T13	10.521.00	36.787.82				2	1.829	355	11.50	25								5.16	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	38.8	38.8	38.8	10.0	2.9	7.1	23.7	2.9	7.1															

[illegible]

Agrupación	Tamaño	P.L. tamaño		ELEMENTO	Aligada	Observacion	Nº tuberías	DN ext (mm)	Acero tipo S.	espesor asignado (mm)	PH Típicos ejé valores (Jm)	Nº ventosas por tuberia	DN ventosa (mm)	Nº válvulas de agua	DN Descage	Tipología de valvula	Agueta otera tipo	Conec. DN 800 mm peso hombre (n)	Conec. DN 600 mm peso hombre - Acero-espagar laterales (mm)		Altura de excavación a TN (m)	Talud HW	S _y -Separación entre tuberías	B-Achto interior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	Anq Apoyo	IQ-Reclomiento cobertura minimo (m)	H3-Profundidad minima si cave (m)	H4-alzura de la bermá desde fondo	Cama de apoyo ac-amam metalial granular á arena b-cama de hormigon H=20 cm	Relleno diñonera c-Suelo seleccionado G 95% PN < 30 mm d-Gabarrilla S15 e-hormigon HM-20 Relleno coberturá f-Sale seleccionad n°76% PN < 30 mm g-HM20 d-Gabrillaco S15 f-Sulo adscacdo procedente excavaciön (>150mm)G6% PN q-Lecho mofl modf	% Escavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-Lang(m)	H1-DH+Z2(m)	Long (m)	Excavación tapasodal (m³)	Excavaciön de barmas (m³)	Total excavaciön (m³)	Total excavate ripabile con empleo de martillo	Total excavate ripabile con empleo de martillo	Relleno cama-diñoneras (m³)	Relleno cama (m²)	Relleno r(ioner)(m³)	Rrelleno coberturas (m³)	Cama apoye granular (m³)	Cama apoyo HM-20(m³)	Rrelleno diñonera suelo selecionado (m³)	Rrelleno r(ioner garbicoidal (m³)	Rrelleno cama r(ionera sHM-20)m³	Rrelleno coberturá c-Sulo seleccionad G 95% PN < 30 mm	Rrelleno coberturá d-Gabrillacio S15	Rrelleno coberturá e- HM-20;	Rrelleno coberturá f-Sulo adecuado procediente excavaciön (>150mm)G6% PN	Rrelleno coberturá g-Lecho modal (m³)	Excedente de terras (n) (espagoniamó alaval 0%, espagroniamó licuarú 5%)	Cinta labores (m)	Manti escalerá e-4,5m ancho-30cm (m³)
T12.DC	T12.T13	12.299,00	38.565,82	2	1.829	355	11.50	25													4.43	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.2	32.2	32.2	10.0	2.9	7.1	17.1	2.9	7.1										17.1	5.3	2.0	
T12.DC	T12.T13	12.300,00	38.566,62	2	1.829	355	11.50	25													4.41	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.0	32.0	32.0	10.0	2.9	7.1	16.9	2.9	7.1										16.9	5.3	2.0	
T12.DC	T12.T13	12.301,00	38.567,82	2	1.829	355	11.50	25													4.41	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.1	32.1	32.1	10.0	2.9	7.1	17.0	2.9	7.1										17.0	5.3	2.0	
T12.DC	T12.T13	12.302,00	38.568,62	2	1.829	355	11.50	25													4.48	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.6	32.6	32.6	10.0	2.9	7.1	17.5	2.9	7.1										17.5	5.3	2.0	
T12.DC	T12.T13	12.303,00	38.569,82	2	1.829	355	11.50	25													4.48	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	33.0	33.0	33.0	10.0	2.9	7.1	18.0	2.9	7.1									18.0	5.3	2.0		
T12.DC	T12.T13	12.304,00	38.570,82	2	1.829	355	11.50	25													4.62	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	33.9	33.9	33.9	10.0	2.9	7.1	18.8	2.9	7.1									18.8	5.3	2.0		
T12.DC	T12.T13	12.305,00	38.571,82	2	1.829	355	11.50	25													4.69	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.5	34.5	34.5	10.0	2.9	7.1	19.4	2.9	7.1									19.4	5.3	2.0		
T12.DC	T12.T13	12.306,00	38.572,82	2	1.829	355	11.50	25													4.68	0.33	21.2-1800	0.60	1.00	5.80		0.20	120																															

[illegible]

Agrupación		Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verticos por tubería	Nº valvulas de sagu	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja	Alcance de tubo salud	Sep. Separación entre tuberías	B-Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recurvimiento cobertura mínima (m)	H3-Profundidad mínima 4' cave (m)	Alt. altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Requisitos: a- Suela seleccionada C/95% PN, c- 30 mm. d-Gabarrillo S15. e-borrompi (M20) Malla cobertura c- Suela seleccionada C/95% PN, c- 30 mm. e- M20. d-Gabarrillo S15. f-Suela adecuada procedente excavación (<150mm) c/6% PN. g- Luchero mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHxH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno cama+riñonera (m3)	Relleno cama (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Relleno riñonera suelo seleccionado C/95% PN, c- 30 mm	Relleno riñonera grabada (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suela seleccionada C/95% PN, c- 30 mm	Relleno cobertura d-Gabarrillo S15	Relleno cobertura c- H420	Relleno cobertura f-Suela adecuada procedente excavación (<150mm) c/6% PN	Relleno cobertura g- Luchero mod (m3)	Excedente de tierra (m3) (consumo actual 0%, e-spojaniento teórico 5%)	Cinta liberada (m)	Manto escollera a 45.5m. ancho-30m. (m3)
T12-DC	T13-T13B	1.021.00	39.787.82					2	1.829	275	11.50	16					4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9		7.1		15.2	5.3	2.0										
T12-DC	T13-T13B	1.022.00	39.788.82					2	1.829	275	11.50	16					4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9		7.1		15.2	5.3	2.0										
T12-DC	T13-T13B	1.023.00	39.789.82					2	1.829	275	11.50	16					4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9		7.1		15.2	5.3	2.0										
T12-DC	T13-T13B	1.024.00	39.790.82					2	1.829	275	11.50	16					4.20	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9		7.1		15.1	5.3	2.0										
T12-DC	T13-T13B	1.025.00	39.791.82					2	1.829	275	11.50	16					4.19	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9		7.1		15.0	5.3	2.0										
T12-DC	T13-T13B	1.025.80	39.792.82					2	1.829	275	11.50	16					4.18	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.2	6.2	6.2	6.2	2.1	0.6	1.5	3.1	0.6		1.5		3.1	1.1	0.4										
T12-DC	T13-T13B	1.026.00	39.793.82					2	1.829	275	11.50	16					4.16	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9		7.1		14.8	5.3	2.0										
T12-DC	T13-T13B	1.028.00	39.794.82					2	1.829	275	11.50	16					4.15	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.8	29.8	29.8	10.0	2.9	7.1	14.7	2.9		7.1		14.7	5.3	2.0										
T12-DC	T13-T13B	1.029.00	39.795.82					2	1.829	275	11.50	16					4.14	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.7	29.7	29.7	10.0	2.9	7.1	14.6	2.9		7.1		14.6	5.3	2.0										
T12-DC	T13-T13B	1.030.00	39.796.82					2	1.829	275	11.50	16					4.12	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.6	29.6	29.6	10.0	2.9	7.1	14.5	2.9		7.1		14.5	5.3	2.0										
T12-DC	T13-T13B	1.031.00	39.797.82					2	1.829	275	11.50	16					4.11	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.5	29.5	29.5	10.0	2.9	7.1	14.4	2.9		7.1		14.4	5.3	2.0										
T12-DC	T13-T13B	1.032.00	39.798.82					2	1.829	275	11.50	16					4.10	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.4	29.4	29.4	10.0	2.9	7.1	14.3	2.9		7.1		14.3	5.3	2.0										
T12-DC	T13-T13B	1.033.00	39.799.82					2	1.829	275	11.50	16					4.09	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.3	29.3	29.3	10.0	2.9	7.1	14.2	2.9		7.1		14.2	5.3	2.0										
T12-DC	T13-T13B	1.034.00	39.800.82					2	1.829	275	11.50	16					4.08	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9		7.1		14.1	5.3	2.0										
T12-DC	T13-T13B	1.035.00	39.801.82					2	1.829	275	11.50	16					4.07	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9		7.1		14.0	5.3	2.0										
T12-DC	T13-T13B	1.036.00	39.802.82					2	1.829	275	11.50	16					4.06	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.1	29.1	29.1	10.0	2.9	7.1	13.9	2.9		7.1		13.9	5.3	2.0										
T12-DC	T13-T13B	1.037.00	39.803.82					2	1.829	275	11.50	16					4.06	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1		13.9	5.3	2.0										
T12-DC	T13-T13B	1.038.00	39.804.82					2	1.829	275	11.50	16					4.05	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9		7.1		13.8	5.3	2.0										
T12-DC	T13-T13B	1.039.00	39.805.82					2	1.829	275	11.50	16					4.05	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9		7.1		13.8	5.3	2.0										
T12-DC	T13-T13B	1.040.00	39.806.82					2	1.829	275	11.50	16					4.05	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9		7.1		13.8	5.3	2.0										
T12-DC	T13-T13B	1.041.00	39.807.82					2	1.829	275	11.50	16					4.05	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9		7.1		13.8	5.3	2.0										
T12-DC	T13-T13B	1.042.00	39.808.82					2	1.829	275	11.50	16					4.05	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	28.9	28.9	28.9	10.0	2.9	7.1	13.9	2.9		7.1		13.9	5.3	2.0										
T12-DC	T13-T13B	1.043.00	39.809.82					2	1.829	275	11.50	16					4.06	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1		13.9	5.3	2.0										
T12-DC	T13-T13B	1.044.00	39.810.82					2	1.829	275	11.50	16					4.07	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9		7.1		14.0	5.3	2.0										
T12-DC	T13-T13B	1.045.00	39.811.82					2	1.829	275	11.50	16					4.08	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9		7.1		14.1	5.3	2.0										
T12-DC	T13-T13B	1.046.00	39.812.82					2	1.829	275	11.50	16					4.07	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.2	29.2	29.2	10.0	2.9	7.1	14.1	2.9		7.1		14.1	5.3	2.0										
T12-DC	T13-T13B	1.047.00	39.813.82					2	1.829	275	11.50	16					4.09	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9		7.1		14.0	5.3	2.0										
T12-DC	T13-T13B	1.048.00	39.814.82					2	1.829	275	11.50	16					4.06	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1		13.9	5.3	2.0										
T12-DC	T13-T13B	1.049.00	39.815.82					2	1.829	275	11.50	16					4.06	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1		13.9	5.3	2.0										
T12-DC	T13-T13B	1.050.00	39.816.82					2	1.829	275	11.50	16					4.05	0.33	21.2-1800	0.60	1.00	5.80			0.20																																			

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN ext (mm)	Acero tipo S-	espe sor asignada (mm)	PN Tubería (g) valores (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº válvulas de segu	DN Desagüe	Tipo de válvula	Arqueta tipo	Conec. DN 800 mm peso trombe (m)	Conec. DN 800 mm peso trombe - Acero-espor tuberia (mm)	Altura de excavación a TN (m)	Total HW	A- Separación tubo-bald	S ₂ -Separación entre tuberías	B-Achaz interior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	arg. Apoyo	IQ2-Decremento cobertura inferior (m)	IQ3-Profundidad mínima s/case (m)	H4- altura de la boma desde fondo	Cama de 8090 g-a cama material granular + arena	b-Cama de barrigon H4-20	Relevo rítonera c- Suale seleccionado C 95% PN, <= 30 mm. g-Gabarrillo S15	Relevo rítonera c- Suale seleccionado C 75% PN, <= 30 mm. g-Gabarrillo S15	Relevo rítonera c- Suale seleccionado C 65% PN, g-Lado mób.	% Excavaci con empleo puntual de martillo	% Excavable (ipable con empleo de martillo	H1 Leng (m)	H1+H2+H3 (m)	Leng (m)	Excavación Imposible (m)	Excavación de bermas (m)	Total excavación (m)	Total excavabi con empleo puntual de martillo	Total excavabi (ipable con empleo de martillo	Relevo cama-rítonera (m)	Relevo c.cama (m)	Relevo rítonera (m)	Relevo rítonera suelo seleccionado (m)	Relevo rítonera grabado (m)	Relevo cama-rítonera H4-20(m)	Relevo cobertura c- Suale seleccionada C 95% PN, <= 30 mm	Relevo cobertura e-Gabarrillo S15	Relevo coberturas e- H4-20	Relevo cobertura f-Suato adecuado procedente excavación (<-150mm) 05% PN	Relevo cobertura g- Licho móvil (m)	Excedente de tierras (m) (aportaciones alval 0%, exajuntamiento local 5%)	Cinta labores (m)	Manto escollera<-0.5m ancho=30m (m)
T12-D0C	T13-T1-B38	1.532.00	40.299.82				2	1.829	275	11.50	16									5.55	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	42.5	42.5	42.5	10.0	2.9	7.1	27.4	2.9	7.1					27.4	5.3	2.0							
T12-D0C	T13-T1-B38	1.533.00	40.299.82				2	1.829	275	11.50	16									5.68	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	43.7	43.7	43.7	10.0	2.9	7.1	28.6	2.9	7.1					28.6	5.3	2.0							
T12-D0C	T13-T1-B38	1.534.00	40.300.82				2	1.829	275	11.50	16									5.78	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	44.6	44.6	44.6	10.0	2.9	7.1	29.5	2.9	7.1					29.5	5.3	2.0							
T12-D0C	T13-T1-B38	1.535.00	40.301.82				2	1.829	275	11.50	16									5.88	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	45.6	45.6	45.6	10.0	2.9	7.1	30.5	2.9	7.1					30.5	5.3	2.0							
T12-D0C	T13-T1-B38	1.536.00	40.302.82				2	1.829	275	11.50	16									5.97	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	46.5	46.5	46.5	10.0	2.9	7.1	31.4	2.9	7.1					31.4	5.3	2.0							
T12-D0C	T13-T1-B38	1.537.00	40.303.82				2	1.829	275	11.50	16									6.07	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	47.5	47.5	47.5	10.0	2.9	7.1	32.4	2.9	7.1					32.4	5.3	2.0							
T12-D0C	T13-T1-B38	1.538.00	40.304.82				2	1.829	275	11.50	16									6.17	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	48.4	48.4	48.4	10.0	2.9	7.1	33.3	2.9	7.1					33.3	5.3	2.0							
T12-D0C	T13-T1-B38	1.539.00	40.305.82				2	1.829	275	11.50	16									6.17	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	48.5	48.5	48.5	10.0	2.9	7.1	33.4	2.9	7.1					33.4	5.3								

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Aguata	Observacion	Nº tuberías	DN ext (mm)	Acero tipo S-	espe sor adigada (mm)	PN Tubería g.l valvulas (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº válvulas de segue	DN Descarga		Type de válvula	Agueta rotera tipo	Conec. DN 800 mm peso trombe (n)	Conec. DN 800 mmo pso trombe - Acero-esposar tubería (mm)	Altura de excavación a TN (m)	Total RV	H1-Canalizo zanja convalado zanja	A.- separacon tubo-lad	S.- Separacion entre tuberias	B.- Ancho interior (m)	Berna X1	Berna X2	H1-Cana apoyo (m)	Anq Apoyo	IQ2-Docubimeto cobertura minimo (m)	IQ3-Profundidad minima s' case (m)	H4... altura do la boma desde fondo	Cama de 190gr/m ³ -acero material granular + arena	b-Cama de barrigon IM20	Relevo rñoneras c.. Suale selecciondo C 95% PN, <= 30 mm. g-Gabarrillo SFIS - e-homopon IM20	Relino rñonera c.. Suale selecciondo C 70% PN, <= 60 mm. g-Gabarrillo SFIS - e-homopon IM20	% Excavable con empleo puntual de martillo	% Excavable /tpable con empleo de martillo	H1-Larg (m)	H1-QH+I2 (m)	Loug (m)	Excavaciòn Inpendental (m³)	Exca vaciòn de bermas (m³)	Total exca vaciòn (m³)	Total exca vabe con empleo puntual de martillo	Total exca vabe con empleo de martillo	Relleno cama-rñonera (m³)	Relleno c.cma (m³)	Relleno rñonera(cin²)	Relleno cobertur (m³)	Relleno rñonera girabrando (m³)	Relleno cama-rñonera HM-20(m³)	Rallno cobertur c.. Suale seleccionda C 95% PN, <= 30 mm	Relleno cobertur e-Gabarrillo SFIS	Relleno cobertur .. H4-ZD:	Relloe cobertur :f-Suile ade usado procedente excavaciòn (f-Suile seleccionado C 70% PN, <= 30 mm)	Relleno cobertur g.. Luchio molil (m³)	Eccedente de terras (m³) [exponiendo alaval 0%, exponiendo licuar 5%]	Otra Labores (m)	Manto escollera<-0.5m ancho=30m (m²)
T12.DC	T13-T13B	1.662.00	40.428.82				2	1.829	275	1150	16										5.18	0.33	Z1-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f		100%	0.7	2.3	10	39.0	39.0	39.0	10.0	2.9	7.1	23.9	2.9	7.1		23.9	5.3	2.0								
T12.DC	T13-T13B	1.663.00	40.429.82				2	1.829	275	1150	16										5.10	0.33	Z1-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f		100%	0.7	2.3	10	38.3	38.3	38.3	10.0	2.9	7.1	23.2	2.9	7.1		23.2	5.3	2.0								
T12.DC	T13-T13B	1.664.00	40.430.82				2	1.829	275	1150	16										5.00	0.33	Z1-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f		100%	0.7	2.3	10	37.3	37.3	37.3	10.0	2.9	7.1	22.2	2.9	7.1		22.2	5.3	2.0								
T12.DC	T13-T13B	1.665.00	40.431.82				2	1.829	275	1150	16										4.86	0.33	Z1-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f		100%	0.7	2.3	10	36.1	36.1	36.1	10.0	2.9	7.1	21.0	2.9	7.1		21.0	5.3	2.0								
T12.DC	T13-T13B	1.666.00	40.432.82				2	1.829	275	1150	16										4.66	0.33	Z1-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f		100%	0.7	2.3	10	34.7	34.7	34.7	10.0	2.9	7.1	19.8	2.9	7.1		19.8	5.3	2.0								
T12.DC	T13-T13B	1.667.00	40.433.82				2	1.829	275	1150	16										4.57	0.33	Z1-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f		100%	0.7	2.3	10	33.5	33.5	33.5	10.0	2.9	7.1	18.4	2.9	7.1		18.4	5.3	2.0								
T12.DC	T13-T13B	1.668.00	40.434.82				2	1.829	275	1150	16										4.45	0.33	Z1-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f		100%	0.7	2.3	10	32.4	32.4	32.4	10.0	2.9	7.1	17.3	2.9	7.1		17.3	5.3	2.0								
T12.DC	T13-T13B	1.669.00	40.435.82				2	1.829	275	1150	16										4.34	0.33	Z1-2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f		100%	0.7	2.3	10	31.5	31.5	31.5	10.0	2.9	7.1	16.4	2.9	7.1		16.4	5.3	2.0								

Agrupación	Tramo	P. L. tramo	P.K. Acumulado	Elemento	Aguila	Observación	Nº tuberías	DN ext (mm)	Acero tipo S	espesor asignado (mm)	PN Tubería (valvulas 2mm)	Nº ventosas por tubería	DN ventosa (mm)	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aguila o otra tipo	Conex. DN 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero-espagoso latencia (mm)	Altura de excavación a TN (m)	Tubid HW		As-separación tubo-lado	S ₂ -Separación entre tuberías	B-A-Bruto interior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Reclomiento cobertura minimo (m)	H3-Profundidad minima 5' cave (m)	H4 - altura de la bermá desde fondo	Cama de apoyo: a-cama material granular a arena: b-cama de hormigon (H=20)	Baldosa (tuberías c: Suelo seleccionado 0'95% PN, c: 30 mm, d-Gratabas 5'15 - c-hormigon H=20)	Relevo cobertura: c: Suelo adecuado 0'76% PN, c: 30 mm, d-Gratabas 5'15 - f-Suelo adecuado precedente excavación (c=150mm 0'6% PN, g- Lecho mold.)	Espesor min. escalera (m)	% Escarable con empleo puntal de martillo	% Escarable ripable con empleo de martillo	H1-Lang (m)	H1-DN (m)	Long (m)	Excavación tapazonal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavado ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo fñonera(m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c: Suelo seleccionado 0'95% PN, c: 30 mm	Relevo cobertura c-Gratabas 5'15	Relevo cobertura: c= HM-20;	Relevo cobertura: f-Suelo adecuado precedente excavación (c=150mm 0'6% PN)	Relevo cobertura: g- Lecho mold (m3)	Excedente de tierras (m3) (esportacion avalu 0%, esportacion licuada 5%)	Cinta labores (m)	Manto escalera e-4,5m, ancho-50m (m3)
																					Altim. de excavación a TN (m)	Altim. de excavación a TN (m)																																								
T12-DC	T13-11-38	1.791,00	40.557,82			Cerro-auste piezom.	2	1.829	275	11,50	16									9,82	0,33	23-2-1800	0,60	1,00	5,80	1,00	3,00	0,20	120	0,30	1,50	5,50	b	e	e	100%	0,7	2,3	1,0	89,1	5,8	94,9	94,9	10,0	2,9	7,1	79,8	2,9		7,1			79,8		5,3	2,0						
T12-DC	T13-11-38	1.792,00	40.558,82			Cerro-auste piezom.	2	1.829	275	11,50	16									9,67	0,33	23-2-1800	0,60	1,00	5,80	1,00	3,00	0,20	120	0,30	1,50	5,50	b	e	e	100%	0,7	2,3	1,0	87,2	5,6	92,8	92,8	10,0	2,9	7,1	77,7	2,9		7,1			77,7		5,3	2,0						
T12-DC	T13-11-38	1.793,00	40.559,82			Cerro-auste piezom.	2	1.829	275	11,50	16									9,53	0,33	23-2-1800	0,60	1,00	5,80	1,00	3,00	0,20	120	0,30	1,50	5,50	b	e	e	100%	0,7	2,3	1,0	85,5	5,4	90,9	90,9	10,0	2,9	7,1	75,8	2,9		7,1			75,8		5,3	2,0						
T12-DC	T13-11-38	1.794,00	40.560,82			Cerro-auste piezom.	2	1.829	275	11,50	16									9,39	0,33	23-2-1800	0,60	1,00	5,80	1,00	3,00	0,20	120	0,30	1,50	5,50	b	e	e	100%	0,7	2,3	1,0	83,9	5,2	89,1	89,1	10,0	2,9	7,1	74,0	2,9		7,1			74,0		5,3	2,0						
T12-DC	T13-11-38	1.795,00	40.561,82			Cerro-auste piezom.	2	1.829	275	11,50	16									9,25	0,33	23-2-1800	0,60	1,00	5,80	1,00	3,00	0,20	120	0,30	1,50	5,50	b	e	e	100%	0,7	2,3	1,0	82,3	5,0	87,3	87,3	10,0	2,9	7,1	72,1	2,9		7,1			72,1		5,3	2,0						
T12-DC	T13-11-38	1.796,00	40.562,82			Cerro-auste piezom.	2	1.829	275	11,50	16									9,16	0,33	23-2-1800	0,60	1,00	5,80	1,00	3,00	0,20	120	0,30	1,50	5,50	b	e	e	100%	0,7	2,3	1,0	81,1	4,9	86,0	86,0	10,0	2,9	7,1	70,9	2,9		7,1			70,9		5,3	2,0						
T12-DC	T13-11-38	1.797,00	40.563,82			Cerro-auste piezom.	2	1.829	275	11,50	16									9,06	0,33	23-2-1800	0,60	1,00	5,80	1,00	3,00	0,20	120	0,30	1,50	5,50	b																													

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor asignado (mm)	PN Tubería g. valvulas (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº válvulas de segu.	DN Desagüe	Tipo de válvula	Apertura tipo	Conec. DN 800 mm peso tromba (n)	Conec. DN 800 mm peso hombre - Acero-espesor lámina (mm)		Altura de excavación a TN (m)	Total HW	A.- separador tubo-bald	S.- Separación entre tuberías	B.- Activo inferior (m)	Bomba X1	Bomba X2	H1-Cama apoyo (m)	Anq. Apoyo	IQ2-Docimiento cobertura inferior (m)	IQ3-Profundidad mínima s/case (m)	HT-altura de la boma desde fondo	Cama de grapo a-cama material granular + arena b-cama de barrigon IIA20	Relevo rítonera c.- Sualo seleccionado O'95% PN, <- 30 mm. g-Gabarrillo S15. e-homopon IIIA20	Relevo rítonera c.- Sualo seleccionado O'75% PN, <- 30 mm. g-Gabarrillo S15. e-homopon IIIA20	% Excavable con empleo puntual de martillo	% Excavable (ipable con empleo de martillo	H1-Larg (m)	H1-HI+H2 (m)	Largo (m)	Excavación Imponetral (m²)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable (ipable con empleo de martillo	Relevo cama-rítonera (m³)	Relleno c.cma (m³)	Relleno rítonera es(m²)	Relleno cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo IH-20(m³)	Relleno rítonera suelo seleccionado (m³)	Relleno rítonera graballito (m³)	Relleno cama-rítonera HH-20(m³)	Relleno cobertura c.- Sualo seleccionada C'95% PN, e<= 30 mm	Relleno cobertura d-Gabarrillo S15	Relleno cobertur... e= HA-20:	Relleno cobertura f-Suolo adecuado procedente excavación (->150mm)O6% PN	Relleno cobertura g.- Llucho móvil (m³)	Excedente de tierras (m³) (aportaciones alval 0%, explotación local 5%)	Cinta Láteras (m)	Manto escollera<-0.5m ancho>30m (m²)
I12.DC	I13-I13B	2.441.00	41.207,82				2	1.829	275	1150	16										1.97	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1						13.2	5.3	2.0						
I12.DC	I13-I13B	2.442.00	41.208,82				2	1.829	275	1150	16										1.96	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.2	28.2	28.2	10.0	2.9	7.1	13.1	2.9	7.1						13.1	5.3	2.0						
I12.DC	I13-I13B	2.443.00	41.209,82				2	1.829	275	1150	16										1.94	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	28.0	28.0	28.0	10.0	2.9	7.1	12.9	2.9	7.1						12.9	5.3	2.0						
I12.DC	I13-I13B	2.444.00	41.210,82				2	1.829	275	1150	16										1.93	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.9	27.9	27.9	10.0	2.9	7.1	12.8	2.9	7.1						12.8	5.3	2.0						
I12.DC	I13-I13B	2.445.00	41.211,82				2	1.829	275	1150	16										1.92	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.8	27.8	27.8	10.0	2.9	7.1	12.7	2.9	7.1						12.7	5.3	2.0						
I12.DC	I13-I13B	2.446.00	41.212,82				2	1.829	275	1150	16										1.91	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.8	27.8	27.8	10.0	2.9	7.1	12.7	2.9	7.1						12.7	5.3	2.0						
I12.DC	I13-I13B	2.447.00	41.213,82				2	1.829	275	1150	16										1.91	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1						12.6	5.3	2.0						
I12.DC	I13-I13B	2.448.00	41.214,82				2	1.829	275	1150	16										1.90	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c																												

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Acotura	Observación	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor asignado (mm)	PN final y/o valvulas (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº valvulas de segua	DN Desagüe	Tipo de válvula	Agueta rolera tipo	Conec. DN 800 mm peso hombre (m)	Conec. DN 800 mm paso hombre - Acero-espesor tubería (mm)	Altura de excavación a TN (m)	Talud RV	H1-Profundidad mínima s/case (m)	H2-Recubrimiento cobertura a mínima (m)	H3-Profundidad mínima s/case (m)	H4- altura de la boma desde fondo	Cama de apoyo -a-cama material granular + arena -b-cama de barrido H=20	Relevo rítones c- Suelo seleccionado C 95% PN, <= 30 mm. g-Garancia S15	Relevo rítones c- Suelo seleccionado C 75% PN, <= 30 mm. g-Horizonte H=20	Relevo rítones c- Suelo seleccionado C 65% PN, <= 30 mm. g-Lado precedente excavación (<-150mm) c65 % PN, g- Lado mób.	Espesor mil. ocidatón(h)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1 Long (m)	H1-DH+H2 (m)	Long (m)	Excavación Imposible (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama- rítones a(m3)	Relevo c ama (m3)	Relevo rítones c(m3)	Relevo rítones c(m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo rítones suelo seleccionado (m3)	Relevo rítones grabado (m3)	Relevo cama- rítones H=20(m3)	Relevo cobertura c- Suelo seleccionado C 95% PN, <= 30 mm	Relevo cobertura d-Garancilla S15	Relevo cobertura e- H4-20:	Relevo cobertura f-Suelo adecuado precedente excavación (<-150mm) c65% PN	Relevo cobertura g- Lecho móvil (m3)	Excedente de tierras (m3) (equiposión anual 0%, equipamiento licitar 5%)	Cima laberas (m)	Monto escollera<-0.5m ancho-30m (m2)
T12-DC	T13-T13B	2.699,00	41.465,82				2	1.829	275	1150	16									3.52	0.33	212-1800	0.60	1.00	5.80	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1							9.4	5.3	2.0			
T12-DC	T13-T13B	2.700,00	41.466,82				2	1.829	275	1150	16									3.52	0.33	212-1800	0.60	1.00	5.80	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1							9.4	5.3	2.0			
T12-DC	T13-T13B	2.701,00	41.467,82				2	1.829	275	1150	16									3.52	0.33	212-1800	0.60	1.00	5.80	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1							9.4	5.3	2.0			
T12-DC	T13-T13B	2.702,00	41.468,82				2	1.829	275	1150	16									3.52	0.33	212-1800	0.60	1.00	5.80	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1							9.4	5.3	2.0			
T12-DC	T13-T13B	2.703,00	41.469,82				2	1.829	275	1150	16									3.52	0.33	212-1800	0.60	1.00	5.80	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1							9.4	5.3	2.0			
T12-DC	T13-T13B	2.704,00	41.470,82				2	1.829	275	1150	16									3.52	0.33	212-1800	0.60	1.00	5.80	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1							9.4	5.3	2.0			
T12-DC	T13-T13B	2.705,00	41.471,82				2	1.829	275	1150	16									3.52	0.33	212-1800	0.60	1.00	5.80	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1							9.4	5.3	2.0			
T12-DC	T13-T13B	2.706,00	41.472,82				2	1.829	275	1150	16									3.52	0.33	212-1800	0.60	1.00	5.80	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	10.0	2.9	7.1	9.4	2.9	7.1							9.4	5				

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN util (mm)	Acero tipo S	espesor adoptado (mm)	PN (limpieza valvulera (dim)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero+espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concrecionalado zapaja	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón (M4.20)	Reforzamientos c- Suela seleccionada C/95% PN, < 30 mm. d- Garbanillo 5/15. e- hormigón (M4.20) M4.20 Reforzamientos f- Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d- Garbanillo 5/15. f- Suela adecuada procedente excavación (<150mm) C/95% PN. g- Luchito modif.	Expos. (m). escalón (m)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno cama (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera garbanillo (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Reello cobertura. d-Garbanillo 5/15	Reelleno cobertura. e- HM20	Reelleno cobertura. f- Suelo adecuado e procedente excavación (<150mm) C/95% PN	Reelleno cobertura. g- Luchito modif (m3)	Excedente de tierra (m3) (consumo a nivel 0%, e- conjunto terciario 5%)	Cinta liberata (m)	Manto escollera a 0.5m. ancho-30m (m3)
T12-DC	T13-T13B	2.814,00	41.580,82			Ctra. Acceso Central Solar	2	1.829	275	11.50	16									4,07	0,33	24-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	b	e	e		100%	0,7	2,3	1,0	29,1	29,1	29,1	10,0	2,9	7,1	14,0	2,9				14,0			5,3	2,0						
T12-DC	T13-T13B	2.815,00	41.581,82			Ctra. Acceso Central Solar	2	1.829	275	11.50	16									4,08	0,33	24-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	b	e	e		100%	0,7	2,3	1,0	29,2	29,2	29,2	10,0	2,9	7,1	14,1	2,9				14,1			5,3	2,0						
T12-DC	T13-T13B	2.816,00	41.582,82			Ctra. Acceso Central Solar	2	1.829	275	11.50	16									4,09	0,33	24-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	b	e	e		100%	0,7	2,3	1,0	29,3	29,3	29,3	10,0	2,9	7,1	14,2	2,9				14,2			5,3	2,0						
T12-DC	T13-T13B	2.817,00	41.583,82			Ctra. Acceso Central Solar	2	1.829	275	11.50	16									4,12	0,33	24-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	b	e	e		100%	0,7	2,3	1,0	29,5	29,5	29,5	10,0	2,9	7,1	14,4	2,9				14,4			5,3	2,0						
T12-DC	T13-T13B	2.818,00	41.584,82			Ctra. Acceso Central Solar	2	1.829	275	11.50	16									4,14	0,33	24-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	b	e	e		100%	0,7	2,3	1,0	29,7	29,7	29,7	10,0	2,9	7,1	14,6	2,9				14,6			5,3	2,0						
T12-DC	T13-T13B	2.819,00	41.585,82			Ctra. Acceso Central Solar	2	1.829	275	11.50	16									4,11	0,33	24-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	b	e	e		100%	0,7	2,3	1,0	29,5	29,5	29,5	10,0	2,9	7,1	14,4	2,9				14,4			5,3	2,0						
T12-DC	T13-T13B	2.820,00	41.586,82			Ctra. Acceso Central Solar	2	1.829	275	11.50	16									4,03	0,33	24-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	b	e	e		100%	0,7	2,3	1,0	28,8	28,8	28,8	10,0	2,9	7,1	13,7	2,9				13,7			5,3	2,0						
T12-DC	T13-T13B	2.821,00	41.587,82				2	1.829	275	11.50	16									4,01	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	28,6	28,6	28,6	10,0	2,9	7,1	13,5	2,9				13,5			5,3	2,0						
T12-DC	T13-T13B	2.822,00	41.588,82				2	1.829	275	11.50	16									3,99	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	28,5	28,5	28,5	10,0	2,9	7,1	13,4	2,9				13,4			5,3	2,0						
T12-DC	T13-T13B	2.823,00	41.589,82				2	1.829	275	11.50	16									3,95	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	28,1	28,1	28,1	10,0	2,9	7,1	13,0	2,9				13,0			5,3	2,0						
T12-DC	T13-T13B	2.824,00	41.590,82				2	1.829	275	11.50	16									3,89	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	27,6	27,6	27,6	10,0	2,9	7,1	12,5	2,9				12,5			5,3	2,0						
T12-DC	T13-T13B	2.825,00	41.591,82				2	1.829	275	11.50	16									3,86	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	27,4	27,4	27,4	10,0	2,9	7,1	12,3	2,9				12,3			5,3	2,0						
T12-DC	T13-T13B	2.826,00	41.592,82				2	1.829	275	11.50	16									3,84	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	27,2	27,2	27,2	10,0	2,9	7,1	12,1	2,9				12,1			5,3	2,0						
T12-DC	T13-T13B	2.827,00	41.593,82				2	1.829	275	11.50	16									3,81	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	26,9	26,9	26,9	10,0	2,9	7,1	11,8	2,9				11,8			5,3	2,0						
T12-DC	T13-T13B	2.828,00	41.594,82				2	1.829	275	11.50	16									3,78	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	26,7	26,7	26,7	10,0	2,9	7,1	11,6	2,9				11,6			5,3	2,0						
T12-DC	T13-T13B	2.829,00	41.595,82				2	1.829	275	11.50	16									3,75	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	26,4	26,4	26,4	10,0	2,9	7,1	11,3	2,9				11,3			5,3	2,0						
T12-DC	T13-T13B	2.830,00	41.596,82				2	1.829	275	11.50	16									3,72	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	26,2	26,2	26,2	10,0	2,9	7,1	11,1	2,9				11,1			5,3	2,0						
T12-DC	T13-T13B	2.831,00	41.597,82				2	1.829	275	11.50	16									3,69	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	25,9	25,9	25,9	10,0	2,9	7,1	10,8	2,9				10,8			5,3	2,0						
T12-DC	T13-T13B	2.832,00	41.598,82				2	1.829	275	11.50	16									3,66	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	25,7	25,7	25,7	10,0	2,9	7,1	10,6	2,9				10,6			5,3	2,0						
T12-DC	T13-T13B	2.833,00	41.599,82				2	1.829	275	11.50	16									3,64	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	25,5	25,5	25,5	10,0	2,9	7,1	10,4	2,9				10,4			5,3	2,0						
T12-DC	T13-T13B	2.834,00	41.600,82				2	1.829	275	11.50	16									3,63	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	25,4	25,4	25,4	10,0	2,9	7,1	10,3	2,9				10,3			5,3	2,0						
T12-DC	T13-T13B	2.835,00	41.601,82				2	1.829	275	11.50	16									3,62	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	25,3	25,3	25,3	10,0	2,9	7,1	10,2	2,9				10,2			5,3	2,0						
T12-DC	T13-T13B	2.836,00	41.602,82				2	1.829	275	11.50	16									3,61	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	25,3	25,3	25,3	10,0	2,9	7,1	10,2	2,9				10,2			5,3	2,0						
T12-DC	T13-T13B	2.837,00	41.603,82				2	1.829	275	11.50	16									3,60	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	25,2	25,2	25,2	10,0	2,9	7,1	10,1	2,9				10,1			5,3	2,0						
T12-DC	T13-T13B	2.838,00	41.604,82				2	1.829	275	11.50	16									3,59	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	25,1	25,1	25,1	10,0	2,9	7,1	10,0	2,9				10,0			5,3	2,0						
T12-DC	T13-T13B	2.839,00	41.605,82				2	1.829	275	11.50	16									3,58	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	25,0	25,0	25,0	10,0	2,9	7,1	9,9	2,9				9,9			5,3	2,0						
T12-DC	T13-T13B	2.840,00	41.606,82				2	1.829	275	11.50	16									3,57	0,33	21-2-1800	0,60	1,00	5,80				0,20	120	0,30	1,50	a	c	f		100%	0,7	2,3	1,0	24,9	24,9	24,9	10,0	2,9	7,1	9,8	2,9				9,8			5,3	2,0						
T12-DC	T13-T13B	2.841,00	41.607,82				2	1.829	275	11.50	16									3,56	0,33	21-2-1800	0,60	1,00	5,80				0,20	120																																

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja	A- Separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón HM-20	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d- Garbanillo S15, e- hormigón HM-20	Reforzamiento f- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d- Garbanillo S15, f- Suela adecuada procedente excavación (<150mm) c/95% PN, g- Luchero modif.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT- ang (º)	HT- DMH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama- rñonera (m3)	Relevo cama rñonera (m3)	Relevo rñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo rñonera suelo seleccionado (m3)	Relevo rñonera grabaciado (m3)	Relevo cama- rñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo S15	Relevo cobertura. e- HM-20	Relevo cobertura. f- Suelo adecuado excavación (<150mm) c/95% PN	Relevo cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (consumo actual 0%, e- porcentaje teórico 5%)	Cinta liberada (m3)	Manto escollera a- 0.5m, ancho-30m (m3)
TI2-DC	TI3-TI3B	2.937.00	41.703.82				2	1.829	275	11.50	16						4.05	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1				13.9	5.3	2.0									
TI2-DC	TI3-TI3B	2.938.00	41.704.82				2	1.829	275	11.50	16						4.05	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9		7.1				13.9	5.3	2.0									
TI2-DC	TI3-TI3B	2.939.00	41.705.82				2	1.829	275	11.50	16						4.02	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9		7.1				13.6	5.3	2.0									
TI2-DC	TI3-TI3B	2.940.00	41.706.82				2	1.829	275	11.50	16						3.98	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1				13.3	5.3	2.0									
TI2-DC	TI3-TI3B	2.941.00	41.707.82				2	1.829	275	11.50	16						3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9		7.1				13.0	5.3	2.0									
TI2-DC	TI3-TI3B	2.942.00	41.708.82				2	1.829	275	11.50	16						3.92	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.8	27.8	27.8	10.0	2.9	7.1	12.7	2.9		7.1				12.7	5.3	2.0									
TI2-DC	TI3-TI3B	2.943.00	41.709.82				2	1.829	275	11.50	16						3.89	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.6	27.6	27.6	10.0	2.9	7.1	12.5	2.9		7.1				12.5	5.3	2.0									
TI2-DC	TI3-TI3B	2.944.00	41.710.82				2	1.829	275	11.50	16						3.87	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9		7.1				12.3	5.3	2.0									
TI2-DC	TI3-TI3B	2.945.00	41.711.82				2	1.829	275	11.50	16						3.85	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9		7.1				12.1	5.3	2.0									
TI2-DC	TI3-TI3B	2.946.00	41.712.82				2	1.829	275	11.50	16						3.83	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9		7.1				12.0	5.3	2.0									
TI2-DC	TI3-TI3B	2.947.00	41.713.82				2	1.829	275	11.50	16						3.82	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9		7.1				11.9	5.3	2.0									
TI2-DC	TI3-TI3B	2.948.00	41.714.82				2	1.829	275	11.50	16						3.83	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9		7.1				12.0	5.3	2.0									
TI2-DC	TI3-TI3B	2.949.00	41.715.82				2	1.829	275	11.50	16						3.85	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9		7.1				12.1	5.3	2.0									
TI2-DC	TI3-TI3B	2.950.00	41.716.82				2	1.829	275	11.50	16						3.86	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9		7.1				12.2	5.3	2.0									
TI2-DC	TI3-TI3B	2.951.00	41.717.82				2	1.829	275	11.50	16						3.87	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9		7.1				12.3	5.3	2.0									
TI2-DC	TI3-TI3B	2.952.00	41.718.82				2	1.829	275	11.50	16						3.88	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.6	27.6	27.6	10.0	2.9	7.1	12.5	2.9		7.1				12.5	5.3	2.0									
TI2-DC	TI3-TI3B	2.953.00	41.719.82				2	1.829	275	11.50	16						3.90	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9		7.1				12.6	5.3	2.0									
TI2-DC	TI3-TI3B	2.954.00	41.720.82				2	1.829	275	11.50	16						3.91	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	27.8	27.8	27.8	10.0	2.9	7.1	12.7	2.9		7.1				12.7	5.3	2.0									
TI2-DC	TI3-TI3B	2.955.00	41.721.82				2	1.829	275	11.50	16						3.95	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	28.1	28.1	28.1	10.0	2.9	7.1	13.0	2.9		7.1				13.0	5.3	2.0									
TI2-DC	TI3-TI3B	2.956.00	41.722.82				2	1.829	275	11.50	16						3.99	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	28.4	28.4	28.4	10.0	2.9	7.1	13.3	2.9		7.1				13.3	5.3	2.0									
TI2-DC	TI3-TI3B	2.957.00	41.723.82				2	1.829	275	11.50	16						4.02	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9		7.1				13.6	5.3	2.0									
TI2-DC	TI3-TI3B	2.958.00	41.724.82				2	1.829	275	11.50	16						4.07	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9		7.1				14.0	5.3	2.0									
TI2-DC	TI3-TI3B	2.959.00	41.725.82				2	1.829	275	11.50	16						4.11	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	29.5	29.5	29.5	10.0	2.9	7.1	14.4	2.9		7.1				14.4	5.3	2.0									
TI2-DC	TI3-TI3B	2.960.00	41.726.82				2	1.829	275	11.50	16						4.16	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9		7.1				14.8	5.3	2.0									
TI2-DC	TI3-TI3B	2.961.00	41.727.82				2	1.829	275	11.50	16						4.17	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9		7.1				14.8	5.3	2.0									
TI2-DC	TI3-TI3B	2.962.00	41.728.82				2	1.829	275	11.50	16						4.12	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	29.5	29.5	29.5	10.0	2.9	7.1	14.4	2.9		7.1				14.4	5.3	2.0									
TI2-DC	TI3-TI3B	2.963.00	41.729.82				2	1.829	275	11.50	16						4.12	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	29.5	29.5	29.5	10.0	2.9	7.1	14.4	2.9		7.1				14.4	5.3	2.0									
TI2-DC	TI3-TI3B	2.964.00	41.730.82				2	1.829	275	11.50	16						4.12	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	29.9	29.9	29.9	10.0	2.9	7.1	14.8	2.9		7.1				14.8	5.3	2.0									
TI2-DC	TI3-TI3B	2.965.00	41.731.82			Apoyo arqueta	2	1.829	275	11.50	16						4.19	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	10.0	30.2	30.2	30.2	10.4	3.2	7.2	14.7	3.2	7.2	14.7				14.7	5.3	2.0									
TI2-DC	TI3-TI3B	2.966.																																																										

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN ext (mm)	Acero tipo S-	espe sor adigada (mm)	PN Tubería valvulas (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº valvulas de segua	DN Desagüe	Tipo de válvula	Arqueta rotera tipo	Conex. DN 800 mm peso tromba (m)	Conex. DN 800 mm peso tromba - Acero-esposar tubería (mm)	Altura de excavación a TN (m)	Total HW	A- Separación tubo-bald	S ₂ -Separación entre tuberías	B- Ancho inferior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	Ang. Apoyo	IQ2-Declinamiento cobertura a metro (m)	IQ3-Profundidad mínima s/case (m)	H4-Altura de la boma desde fondo	Cama de 800g g-a cama metaloid granular + arena	Relleno rítonera c- Suulo selecciona C 95% PN, <- 30 mm. g-Gabarrillo S15	Relleno rítonera c- Suulo selecciona C 75% PN, <- 30 mm. g-Gabarrillo S15	% Excavable con empleo puntual de martillo	% Excavable (apale con empleo de martillo	H1 ang(m)	H1+H2(m)	Largo (m)	Excavación Impropial (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable (apale con empleo de martillo	Relleno Cama-rítonera (m³)	Relleno c.cma (m³)	Relleno (moner es(m²))	Relleno cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo (H=20)(m³)	Relleno rítonera suelo selecciona (m³)	Relleno rítonera graballado (m³)	Relleno cama-rítonera H=20(m³)	Relleno cobertura c- Suulo selecciona C 95% PN, <- 30 mm	Relleno cobertura d-Gabarrillo S15	Relleno cobertura e- H4-20	Relleno cobertura f-Suulo adecuado procedente excavación (<150mm) 06% PN	Relleno cobertura g- Licho molli (m³)	Excedente de tierras (m³) (esporciones alival 0%, equiporcionamiento 5%)	Cinta labores (m)	Manto escollera<0.5m ancho=30m (m²)
T12.DC	T13-T13B	3.327,00	42.093,82				2	1.829	275	1150	16									3.53	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1							9.5	5.3	2.0					
T12.DC	T13-T13B	3.328,00	42.094,82				2	1.829	275	1150	16									3.53	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.6	24.6	24.6	10.0	2.9	7.1	9.5	2.9	7.1							9.5	5.3	2.0					
T12.DC	T13-T13B	3.329,00	42.095,82				2	1.829	275	1150	16									3.54	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.7	24.7	24.7	10.0	2.9	7.1	9.6	2.9	7.1							9.6	5.3	2.0					
T12.DC	T13-T13B	3.330,00	42.096,82				2	1.829	275	1150	16									3.55	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.8	24.8	24.8	10.0	2.9	7.1	9.7	2.9	7.1							9.7	5.3	2.0					
T12.DC	T13-T13B	3.331,00	42.097,82				2	1.829	275	1150	16									3.56	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	24.9	24.9	24.9	10.0	2.9	7.1	9.8	2.9	7.1							9.8	5.3	2.0					
T12.DC	T13-T13B	3.332,00	42.098,82				2	1.829	275	1150	16									3.57	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.0	25.0	25.0	10.0	2.9	7.1	9.9	2.9	7.1							9.9	5.3	2.0					
T12.DC	T13-T13B	3.333,00	42.099,82				2	1.829	275	1150	16									3.58	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.1	25.1	25.1	10.0	2.9	7.1	10.0	2.9	7.1							10.0	5.3	2.0					
T12.DC	T13-T13B	3.334,00	42.100,82				2	1.829	275	1150	16									3.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	25.2	25.2																					

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observacion	Nº tuberías s	DN ext (mm)	Acero tipo S-	espesor asignado (mm)	PM Tiempo g/a valvula (atm)	Nº ventosas por tuberia	DN ventosa (mm)	Nº valvulas de suape	DN Descarga	Tipo de valvula	Agueta rotura tipo	Conex. DN 800 mm paso hombre (m)	Conex. DN 800 impaso hombre - Acero-espor-lacuna (mm)	Altura de excavación ± Hn (m)	Total HW	A- Separación tubo-lad	S _y -Separación entre tuberías	B-Achto interior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	áng Apoyo	IQ-Documento cobertura minimo (m)	H3-Profundidad minima s/c cave (m)	H4- altura de la boma desde fondo	Cama de apoyo -a-cana material granular o arena -b-cama de hormon HM-20	Relinco rñones c- Suelo seleccionado C 95% PN <= 30 mm -d-Garbanillo S/15 -e-hormigon HM-20	Relinco cobertura c- Suelo seleccionado C 95% PN <= 30 mm -d-Garbanillo S/15 -f-Suela adecuada procedente excavación (-150mm 0.6% PH -g- Lecho modif.	% Escavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1 tang (m)	HH-DH+12 (m)	Long (m)	Excavación Inapazada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relinco cama-rñones (m3)	Relinco cama (m3)	Relinco rñones eq(m3)	Relleño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleño rñones garbanillo (m3)	Relleño cama+rñones HH-20(m3)	Relleño cobertura c- Suelo seleccionado C 95% PN <= 30 mm	Relleño cobertura d-Garbanillo S/15	Relleño cobertura e- HM-20:	Relleño cobertura f-Suelo adecuado procedente excavación (-150mm 0.6% PN	Relleño cobertura g- Lecho modif (m3)	Excedente de tierras (m) (espigamiento actual 0%, espigamiento licante 5%)	Cinta labores (m)	Manto escollera e-4.5m ancho-30m (m3)
T12.DC	T13B-BT	1230.00	43.636.82	Ventosa	VZS-200	Apoyo arqueta	2	1.626	275	10.00	16	1	200				2.00	S275-6.4	3.36	0.33	25-2-1600	0.60	1.00	5.40	0.25	120	0.30	2.00	b	d	a		100%	0.7	22	10	21.9	21.9	21.9	9.1	2.9	6.3	8.8	2.9	6.3			8.8				4.2	2.0							
T12.DC	T13B-BT	1231.00	43.637.82			Apoyo arqueta	2	1.626	275	10.00	16								3.36	0.33	25-2-1600	0.60	1.00	5.40	0.25	120	0.30	2.00	b	d	a		100%	0.7	22	10	21.7	21.7	21.7	9.1	2.9	6.3	8.6	2.9	6.3			8.6				4.2	2.0							
T12.DC	T13B-BT	1232.00	43.638.82			Apoyo arqueta	2	1.626	275	10.00	16								3.32	0.33	25-2-1600	0.60	1.00	5.40	0.25	120	0.30	2.00	b	d	a		100%	0.7	22	10	21.6	21.6	21.6	9.1	2.9	6.3	8.4	2.9	6.3			8.4				4.2	2.0							
T12.DC	T13B-BT	1233.00	43.639.82			Apoyo arqueta	2	1.626	275	10.00	16								3.32	0.33	25-2-1600	0.60	1.00	5.40	0.25	120	0.30	2.00	b	d	a		100%	0.7	22	10	21.6	21.6	21.6	9.1	2.9	6.3	8.5	2.9	6.3			8.5				4.2	2.0							
T12.DC	T13B-BT	1234.00	43.640.82			Apoyo arqueta	2	1.626	275	10.00	16								3.36	0.33	25-2-1600	0.60	1.00	5.40	0.25	120	0.30	2.00	b	d	a		100%	0.7	22	10	21.6	21.6	21.6	9.1	2.9	6.3	8.5	2.9	6.3			8.5				4.2	2.0							
T12.DC	T13B-BT	1235.00	43.641.82			Apoyo arqueta	2	1.626	275	10.00	16								3.36	0.33	25-2-1600	0.60	1.00	5.40	0.25	120	0.30	2.00	b	d	a		100%	0.7	22	10	21.9	21.9	21.9	9.1	2.9	6.3	8.7	2.9	6.3			8.7				4.2	2.0							
T12.DC	T13B-BT	1236.00	43.642.82				2	1.626	275	10.00	16								3.38	0.33	21-2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f		100%	0.6	21	10	22.0	22.0	22.0	8.8	2.6	6.2	9.2	2.6	6.2			9.2				4.2	2.0							
T12.DC	T13B-BT	1237.00	43.643.82				2	1.626	275	10.00	16								3.40	0.33	21-2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f		100%	0.6	21	10	22.2	22.2	22.2	8.8	2.6	6.2	9.4	2.6	6.2			9.4				4.2								

Agrupación		Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Apuesta	Observación	Nº tuberías s.	DN ext (mm)	Acero tipo S-	espe sor asignada (mm)	PN Tubería gó valvular (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº válvulas de segu e	DN Descarga	Tipo de válvula	Agueta rotera tipo	Conec. DN 800 mm peso trombe (n)	Conec. DN 800 mmo pso trombe + Acro-esposur laberón (mm)	Altura de excavación a TN (m)	Total HW	S- Separación entre tuberías	B-Achaz interior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	Anq Apoyo	IQ2-Docubimeto cobertura mínima (m)	IQ3-Profundidad mínima si case (m)	H4-Altura do la boma desda fondo	Cama de ripioy o-acma material granular y arena	b=Cama de barrigon IM20	Relleno ríonera c-Suolo seleccionado C'95% PN, <= 30 mm, g-Gabariello S15	Relleno ríonera c-Suolo seleccionado C'75% PN, <= 30 mm, g-Gabariello S15	% Excavable con empleo puntual de martillo	% Escavable /ipable con empleo de martillo	H1-Anq (m)	H1-HI+H2 (m)	Larg (m)	Excavación Impedimental (m²)	Excavación de bermas (m³)	Total excavación (m³)	Total excavaebl con empleo puntual de martillo	Total excavaebl /ipabl con empleo de martillo	Relleno Cama-ríonera (m³)	Relleno c ama (m³)	Relleno (ríonera sin(m)²)	Relleno cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(M3)	Relleno ríonera suelo seleccionado (m³)	Relleno ríonera grabado (m³)	Relleno cama-ríonera HM-20(M3)	Ralleno cobertura c-Suolo seleccionad C'95% PN, <= 30 mm	Relleno cobertura f-Gabariello S15	Relleno coberturas -e HM-20	Relleno cobertura f-Suolo aduso procedente excavación (-Santo aduco procedente excavación (>-150mm)<65% PN	Relleno cobertura g-Lucho moil (m³)	Excedente de terras (m³)(aportaciones alval 0%, expporcionamiento lecular %)	Otra Laberas (m)	Mento escafores<0,5m ancho>30m (m²)
T12.DC	T13B-BT	1.749,00	44.155,82	Ajustado	2	1.626	<275	1250	16												3.66	0.33	Zr12-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.2	24.2	24.2	8.8	2.6	6.2	11.4	2.6		6.2							11.4	4.2	2.0					
T12.DC	T13B-BT	1.750,00	44.156,82	Ajustado	2	1.626	<275	1250	16												3.66	0.33	Zr12-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.2	24.2	24.2	8.8	2.6	6.2	11.4	2.6		6.2							11.4	4.2	2.0					
T12.DC	T13B-BT	1.751,00	44.157,82	Ajustado	2	1.626	<275	1250	16												3.66	0.33	Zr12-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.2	24.2	24.2	8.8	2.6	6.2	11.4	2.6		6.2							11.4	4.2	2.0					
T12.DC	T13B-BT	1.752,00	44.158,82	Ajustado	2	1.626	<275	1250	16												3.66	0.33	Zr12-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.3	24.3	24.3	8.8	2.6	6.2	11.4	2.6		6.2							11.4	4.2	2.0					
T12.DC	T13B-BT	1.753,00	44.159,82	Ajustado	2	1.626	<275	1250	16												3.66	0.33	Zr12-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.2	24.2	24.2	8.8	2.6	6.2	11.4	2.6		6.2							11.4	4.2	2.0					
T12.DC	T13B-BT	1.754,00	44.160,82	Ajustado	2	1.626	<275	1250	16												3.66	0.33	Zr12-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.2	24.2	24.2	8.8	2.6	6.2	11.4	2.6		6.2							11.4	4.2	2.0					
T12.DC	T13B-BT	1.755,00	44.161,82	Ajustado	2	1.626	<275	1250	16												3.68	0.33	Zr12-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.3	24.3	24.3	8.8	2.6	6.2	11.5	2.6		6.2							11.5	4.2	2.0					
T12.DC	T13B-BT	1.756,00	44.162,82	Ajustado	2	1.626	<275	1250	16												3.68	0.33	Zr12-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0																								

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Apuesta	Observación	Nº tuberías	DN ext (mm)	Acero tipo S-	espe sor asignada (mm)	PN Tubería gJ valvulas (atm)	Nº ventosas por tubería	DN ventosa (mm)	Nº valvulas de segu	DN Desagüe	Tipo de válvula	Agueta rotera tipo	Conec. DN 800 mm peso tromba (m)	Conec. DN 800 mm peso tromba + Acero+espesor lámina (mm)	Altura de excavación a TN (m)	Talud HW	A- Separación tubo-bald	S ₂ -Separación entre tuberías	B-Achso inferior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	any Apoyo	IQ2-Docubimiento cobertura a metro (m)	IQ3-Profundidad mínima s/case (m)	H4-Altura de la boma desde fondo	Cama de 1890g p-a cama material granular + arena	b-Cama de barrigon H4.20	Relevo rítonera c-Suelo seleccionado O' 95% PN, <= 30 mm. g-Gabachillo S15 - e-homopon HM.20	Relevo rítonera c-Suelo seleccionado O' 75% PN, <= 30 mm. g-Gabachillo S15 - e-homopon HM.20	Relevo rítonera c-Suelo seleccionado O' 65% PN, g-Lado mób.	% Excavable con empleo puntual de martillo	% Excavable /ipable con empleo de martillo	H1-long (m)	H1-H+H2 (m)	Long (m)	Excavación longitudinal (m²)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable /ipable con empleo de martillo	Relleno Cama-rítonera (m³)	Relleno c ama (m³)	Relleno (riñoner)en(m³)	Relleno cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relleno rítonera suelo seleccionado (m³)	Relleno rítonera grabado (m³)	Relleno cama-rítonera HM-20(m³)	Relleno cobertura c- Suelo seleccionado C' 95% PN, <= 30 mm	Relleno cobertura d-Gabachillo S15	Relleno cobertur - e- H4.20	Relleno cobertura f-Suelo adecuado procedente excavación (f-Suelo o/mó 05% PN, espigamiento local 5%)	Relleno cobertura g- Licho móvil (m³)	Excedente de terras (m³) (espigamiento alval 0%, espigamiento local 5%)	Otra Labores (m)	Manto escollera-s/dsm ancho=30m
T12.DC	T13B-BT	1.878.00	44.284.82	Ajustado			2	1.626	275	1250	16									1.82	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	10	25.5	25.5	25.5	8.8	2.6	6.2	12.7	2.6			6.2		12.7	4.2	2.0											
T12.DC	T13B-BT	1.879.00	44.285.82	Ajustado			2	1.626	275	1250	16									1.81	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	10	25.4	25.4	25.4	8.8	2.6	6.2	12.6	2.6			12.6		12.6	4.2	2.0											
T12.DC	T13B-BT	1.880.00	44.286.82	Ajustado			2	1.626	275	1250	16									1.81	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	10	25.4	25.4	25.4	8.8	2.6	6.2	12.6	2.6			12.6		12.6	4.2	2.0											
T12.DC	T13B-BT	1.880.50	44.287.32	Ajustado			2	1.626	275	1250	16									1.81	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.5	12.7	12.7	12.7	4.4	1.3	6.1	6.3	1.3			6.3	3.1	2.1	1.0												
T12.DC	T13B-BT	1.881.00	44.287.82	Ajustado			2	1.626	275	1250	16									1.81	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	10	25.4	25.4	25.4	8.8	2.6	6.2	12.7	2.6			12.7		12.7	4.2	2.0											
T12.DC	T13B-BT	1.882.00	44.288.82	Ajustado			2	1.626	275	1250	16									1.82	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	10	25.5	25.5	25.5	8.8	2.6	6.2	12.7	2.6			12.7		12.7	4.2	2.0											
T12.DC	T13B-BT	1.883.00	44.289.82	Ajustado			2	1.626	275	1250	16									1.83	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	10	25.5	25.5	25.5	8.8	2.6	6.2	12.7	2.6			12.7		12.7	4.2	2.0											
T12.DC	T13B-BT	1.884.00	44.290.82	Ajustado			2	1.626	275	1250	16									1.84	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	10	25.6	25.6	25.6	8.8	2.6	6.2	12.8	2.6			12.8		12.8													

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Agrupación		Tramo		P. K. Tramo		P. K. Acumulado		Elemento		Arqueta		Observación		Nº tuberías		Acero tipo S		espesor adoptado (mm)		PN (limpieza vial/metro (dm)		Nº vertederos por tubería		DN vertical (mm)		Nº valvulas de sague		DN Desagüe		Tipo de válvula		Aquella rotura tipo		Conex. DN 800 mm paso hombre (m)		Conex. DN 800 mm paso hombre, Acero espesor lateral (mm)		Altura de excavación a TH (m)		Taldud HW		A- separación tubo salud		S ₂ - Separación entre tuberías		B- Ancho interior (m)		Borne X1		Borne X2		H1- Cama apoyo (m)		Ang. Apoyo		H2- Recubrimiento cobertura mínimo (m)		H3- Profundidad mínima 4' cave (m)		H4- altura de la boma desde fondo		Cama de apoyo a- cama material granular o arena b- cama de hormigón HM-20		Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d- Gabarito S15, e- bornapom HM-20		Rehabilitación f- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d- Gabarito S15, f- Suela adecuada pendiente excavación (<150mm) C/65% PN, g- Lecho mod.		Expos. (m. escalón (n)		% Excavable con empleo puntual de martillo		% Escavable ripable con empleo de martillo		H1- ang (m)		H1- DN-H2 (m)		Long (m)		Excavación tapazonal (m3)		Excavación de bermas (m3)		Total excavación (m3)		Total excavable con empleo puntual de martillo		Total excavable ripable con empleo de martillo		Relevo cama+riñones (m3)		Relevo cama (m3)		Relevo riñones (m3)		Relevo cobertura (m3)		Cama apoyo granular (m3)		Cama apoyo HM-20(m3)		Relevo riñones suelo seleccionado (m3)		Relevo riñones grabaciolo (m3)		Relevo riñones suelo seleccionado (m3)		Relevo cobertura d-Gabarito S15		Relevo cobertura e- HM-20		Relevo cobertura f- Suela adecuada excavación (<150mm) C/65% PN		Relevo cobertura g- Lecho mod (m3)		Excedente de tierra (m3) (consumo actual 0%, e- conjunto vertical 5%)		Cinta liberata (m3)		Manto escollera a-0.5m, ancho-30m (m3)	
T12-DC	T13B-BT	6.508.00	48.914.82											2	1.626	275	10.00	16																4.63	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.1	32.1	32.1	8.8	2.6	6.2	19.3	2.6			6.2				19.3	4.2	2.0																																																				
T12-DC	T13B-BT	6.509.00	48.915.82											2	1.626	275	10.00	16																	4.62	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.0	32.0	32.0	8.8	2.6	6.2	19.2	2.6			6.2				19.2	4.2	2.0																																																			
T12-DC	T13B-BT	6.510.00	48.916.82											2	1.626	275	10.00	16																	4.61	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.9	31.9	31.9	8.8	2.6	6.2	19.1	2.6			6.2				19.1	4.2	2.0																																																			
T12-DC	T13B-BT	6.511.00	48.917.82											2	1.626	275	10.00	16																	4.60	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.9	31.9	31.9	8.8	2.6	6.2	19.0	2.6			6.2				19.0	4.2	2.0																																																			
T12-DC	T13B-BT	6.512.00	48.918.82											2	1.626	275	10.00	16																	4.59	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.8	31.8	31.8	8.8	2.6	6.2	19.0	2.6			6.2				19.0	4.2	2.0																																																			
T12-DC	T13B-BT	6.513.00	48.919.82											2	1.626	275	10.00	16																	4.58	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.7	31.7	31.7	8.8	2.6	6.2	18.9	2.6			6.2				18.9	4.2	2.0																																																			
T12-DC	T13B-BT	6.514.00	48.920.82											2	1.626	275	10.00	16																	4.57	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.6	31.6	31.6	8.8	2.6	6.2	18.8	2.6			6.2				18.8	4.2	2.0																																																			
T12-DC	T13B-BT	6.515.00	48.921.82											2	1.626	275	10.00	16																	4.55	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.5	31.5	31.5	8.8	2.6	6.2	18.7	2.6			6.2				18.7	4.2	2.0																																																			
T12-DC	T13B-BT	6.516.00	48.922.82											2	1.626	275	10.00	16																	4.54	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.4	31.4	31.4	8.8	2.6	6.2	18.5	2.6			6.2				18.5	4.2	2.0																																																			
T12-DC	T13B-BT	6.517.00	48.923.82											2	1.626	275	10.00	16																	4.51	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.2	31.2	31.2	8.8	2.6	6.2	18.3	2.6			6.2				18.3	4.2	2.0																																																			
T12-DC	T13B-BT	6.518.00	48.924.82											2	1.626	275	10.00	16																	4.49	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.0	31.0	31.0	8.8	2.6	6.2	18.2	2.6			6.2				18.2	4.2	2.0																																																			
T12-DC	T13B-BT	6.519.00	48.925.82											2	1.626	275	10.00	16																	4.47	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.8	30.8	30.8	8.8	2.6	6.2	18.0	2.6			6.2				18.0	4.2	2.0																																																			
T12-DC	T13B-BT	6.520.00	48.926.82											2	1.626	275	10.00	16																	4.46	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.7	30.7	30.7	8.8	2.6	6.2	17.9	2.6			6.2				17.9	4.2	2.0																																																			
T12-DC	T13B-BT	6.521.00	48.927.82											2	1.626	275	10.00	16																	4.44	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.6	30.6	30.6	8.8	2.6	6.2	17.8	2.6			6.2				17.8	4.2	2.0																																																			
T12-DC	T13B-BT	6.522.00	48.928.82											2	1.626	275	10.00	16																	4.43	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.4	30.4	30.4	8.8	2.6	6.2</																																																														

Agrupación		Tramo	P.K. Tramo	P.K. Acumulado		Elemento	Arqueta	Observación	Nº tuberías	DN ext (mm)	Acero tipo S-	eje por ardigado (mm)	PN Tubería ej valvulas (atm)	Nº verticos por tubería	DN vertical (mm)	Nº valvulas de agua	DN Desagüe	Tipo de válvula	Arqueta rotura tipo	Conec. DN 800 mm peso tromba (n)	Conec. DN 800 mm peso tromba - Acero espesor tubería (mm)	Altura de excavación a TN (m)	Talud RV	A- Separación tubo-lado	S _y -Separación entre tuberías	B- Ancho inferior (m)	Berna X1	Berna X2	H1-Cama apoyo (m)	Anq. Apoyo	IQ2-Decremento cobertura mínima (m)	H3-Profundidad mínima s/case (m)	H4-Altura de la berm desde fondo	Cama de 690pp g-cama material granular + arena b-cama de barrigon H420	Relleno interior c-Suelo seleccionado O' 95% PN, <= 30 mm. g-Gabarrillo S15. e-horripion H420	Relleno cobertura c-Suelo seleccionado O'75% PN, <= 30 mm. g-Gabarrillo S15. e-horripion H420 procedente excavación (<-150mm) O'65% PN, g-Lucho móvil	% Excavable con empleo puntual de martillo	% Excavable /ipable con empleo de martillo	H1-Ancho (m)	H1+D+N2 (m)	Long (m)	Excavación longitudinal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable /ipable con empleo de martillo	Relleno cama-rifonera (m³)	Relleno c.cana (m³)	Relleno rífonera(s)m²	Relleno cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo RH-20(m³)	Relleno rífonera suelo seleccionado (m³)	Relleno rífonera giratorio (m³)	Relleno cama-rifonera HH-20(m³)	Relleno cobertura c-Suelo seleccionada C' 95% PN, <= 30 mm	Relleno cobertura e-Gabarrillo S15	Relleno coberturas = H420:	Relleno cobertura f-Suelto adecuado procedente excavación (<-Suelto 05% PN, >-expojuntion lecura %)	Relleno cobertura g-Lucho móvil (m³)	Excedente de tierras (m³) (expojuntion alaval 0%, expojuntion lecura %)	Cinta laberas (m)	Manto escollera<-55cm ancho=30m (m²)
T12.DC	T13B-BT	6.891.00	49.299.82			Apoyo arqueta	2	1.626	275	10.00	16											3.71	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	33.8	33.8	33.8	12.2	3.1	9.1	17.6	3.1	9.1		17.6					4.0	2.0							
T12.DC	T13B-BT	6.894.00	49.300.82			Apoyo arqueta	2	1.626	275	10.00	16											3.75	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.2	34.2	34.2	12.2	3.1	9.1	18.0	3.1	9.1		18.0					4.0	2.0							
T12.DC	T13B-BT	6.895.00	49.301.82			Apoyo arqueta	2	1.626	275	10.00	16											3.76	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.5	34.5	34.5	12.2	3.1	9.1	18.3	3.1	9.1		18.3					4.0	2.0							
T12.DC	T13B-BT	6.896.00	49.302.82			Apoyo arqueta	2	1.626	275	10.00	16											3.76	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.5	34.5	34.5	12.2	3.1	9.1	18.2	3.1	9.1		18.2					4.0	2.0							
T12.DC	T13B-BT	6.897.00	49.303.82			Apoyo arqueta	2	1.626	275	10.00	16											3.76	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.5	34.5	34.5	12.2	3.1	9.1	18.2	3.1	9.1		18.2					4.0	2.0							
T12.DC	T13B-BT	6.898.00	49.304.82			Apoyo arqueta	2	1.626	275	10.00	16											3.76	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.4	34.4	34.4	12.2	3.1	9.1	18.2	3.1	9.1		18.2					4.0	2.0							
T12.DC	T13B-BT	6.899.00	49.305.82			Apoyo arqueta	2	1.626	275	10.00	16											3.76	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.4	34.4	34.4	12.2	3.1	9.1	18.2	3.1	9.1		18.2					4.0	2.0							
T12.DC	T13B-BT	6.900.00	49.306.82			Apoyo arqueta	2	1.626	275	10.00	16											3.76	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.4	34.4	34.4	12.2	3.1	9.1	18.2	3.1	9.1		18.2					4.0	2.0							
T12.DC	T13B-BT	6.901.00	49.307.82			Apoyo arqueta	2	1.626	275	10.00	16											3.76	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.5	34.5	34.5	12.2	3.1	9.1	18.2	3.1	9.1		18.2					4.0	2.0							
T12.DC	T13B-BT	6.902.00	49.308.82			Apoyo arqueta	2	1.626	275	10.00	16											3.77	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.5	34.5	34.5	12.2	3.1	9.1	18.3	3.1	9.1		18.3					4.0	2.0							
T12.DC	T13B-BT	6.903.00	49.309.82			Apoyo arqueta	2	1.626	275	10.00	16											3.77	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.6	34.6	34.6	12.2	3.1	9.1	18.3	3.1	9.1		18.3					4.0	2.0							
T12.DC	T13B-BT	6.904.00	49.310.82			Apoyo arqueta	2	1.626	275	10.00	16											3.78	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	34.7	34.7	34.7	12.2	3.1	9.1	18.5	3.1	9.1		18.5					4.0	2.0							
T12.DC	T13B-BT	6.905.00	49.311.82			Apoyo arqueta	2	1.626	275	10.00	16											3.82	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	35.2	35.2	35.2	12.2	3.1	9.1	18.9	3.1	9.1		18.9					4.0	2.0							
T12.DC	T13B-BT	6.906.00	49.312.82			Apoyo arqueta	2	1.626	275	10.00	16											3.85	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	35.6	35.6	35.6	12.2	3.1	9.1	19.4	3.1	9.1		19.4					4.0	2.0							
T12.DC	T13B-BT	6.907.00	49.313.82			Apoyo arqueta	2	1.626	275	10.00	16											3.88	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	36.1	36.1	36.1	12.2	3.1	9.1	19.8	3.1	9.1		19.8					4.0	2.0							
T12.DC	T13B-BT	6.908.00	49.314.82			Apoyo arqueta	2	1.626	275	10.00	16											3.92	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	36.5	36.5	36.5	12.2	3.1	9.1	20.3	3.1	9.1		20.3					4.0	2.0							
T12.DC	T13B-BT	6.909.00	49.315.82			Apoyo arqueta	2	1.626	275	10.00	16											4.00	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	37.0	37.0	37.0	12.2	3.1	9.1	20.8	3.1	9.1		20.8					4.0	2.0							
T12.DC	T13B-BT	6.910.00	49.316.82			Apoyo arqueta	2	1.626	275	10.00	16											4.00	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	37.5	37.5	37.5	12.2	3.1	9.1	21.3	3.1	9.1		21.3					4.0	2.0							
T12.DC	T13B-BT	6.911.00	49.317.82			Apoyo arqueta	2	1.626	275	10.00	16											4.03	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	38.0	38.0	38.0	12.2	3.1	9.1	21.8	3.1	9.1		21.8					4.0	2.0							
T12.DC	T13B-BT	6.912.00	49.318.82			Apoyo arqueta	2	1.626	275	10.00	16											4.07	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	38.5	38.5	38.5	12.2	3.1	9.1	22.3	3.1	9.1		22.3					4.0	2.0							
T12.DC	T13B-BT	6.913.00	49.319.82			Apoyo arqueta	2	1.626	275	10.00	16											4.10	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	39.0	39.0	39.0	12.2	3.1	9.1	22.7	3.1	9.1		22.7					4.0	2.0							
T12.DC	T13B-BT	6.914.00	49.320.82			Apoyo arqueta	2	1.626	275	10.00	16											4.14	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	39.5	39.5	39.5	12.2	3.1	9.1	23.2	3.1	9.1		23.2					4.0	2.0							
T12.DC	T13B-BT	6.915.00	49.321.82			Apoyo arqueta	2	1.626	275	10.00	16											4.17	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	39.9	39.9	39.9	12.2	3.1	9.1	23.7	3.1	9.1		23.7					4.0	2.0							
T12.DC	T13B-BT	6.916.00	49.322.82			Apoyo arqueta	2	1.626	275	10.00	16											4.21	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	40.5	40.5	40.5	12.2	3.1	9.1	24.3	3.1	9.1		24.3					4.0	2.0							
T12.DC	T13B-BT	6.917.00	49.323.82			Apoyo arqueta	2	1.626	275	10.00	16											4.26	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	41.1	41.1	41.1	12.2	3.1	9.1	24.9	3.1	9.1		24.9					4.0	2.0							
T12.DC	T13B-BT	6.918.00	49.324.82			Apoyo arqueta	2	1.626	275	10.00	16											4.31	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	41.6	41.6	41.6	12.2	3.1	9.1	25.5	3.1	9.1		25.5					4.0	2.0							
T12.DC	T13B-BT	6.919.00	49.325.82			Apoyo arqueta	2	1.626	275	10.00	16											4.36	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	42.5	42.5	42.5	12.2	3.1	9.1	26.3	3.1	9.1		26.3					4.0	2.0							
T12.DC	T13B-BT	6.920.00	49.326.82			Apoyo arqueta	2	1.626	275	10.00	16											4.40	1.00	25-2-1600	0.60	1.00	5.40		0.25	120	0.30																																

[illegible]

Agrupación		Tramo		P.K. Tramo		P.K. Acumulado		Elemento		Aguata		Observación		Nº tuberías		DN ext (mm)		Acero tipo S.		espesor asignado (mm)		PN Tubería de valvulería (atm)		Nº verticales por tubería		DN vertical (mm)		Nº valvulas de segge		DN Desagüe		Tipo de valvula		Aguata tipo		Conex. DN 800 mm peso hombre (m)		Conex. DN 800 mm peso hombre - Acero-espesor tubería (mm)		Altura de excavación a TN (m)		Total HW		A.- separación tubo-lado		S.- Separación entre tuberías		B.- Ancho interior (m)		Berna X1		Berna X2		H1.- Cama apoyo (m)		any Apoyo		IQ2- Decremento cobertura en metro (m)		H3- Profundidad mínima s/ case (m)		H4.- altura de la boma desde fondo		Cama de 609g/g + cama material granular y arena		Relleno rítonera c.- Suale seleccionada C' 95% PN, <= 30 mm. g- Gabarrillo S/S		Relleno rítonera c.- Suale seleccionada C' 75% PN, <= 30 mm. g- Gabarrillo S/S		% Excavable con empleo puntual de martillo		% Excavable /apalo con empleo de martillo		H1-Larg (m)		H1+DNI+H2 (m)		Long (m)		Excavación Imponental (m²)		Excavación de bermas (m³)		Total excavación (m³)		Total excavable con empleo puntual de martillo		Total excavable /apalo con empleo de martillo		Relleno Cama-Ritona-as (m³)		Relleno c.cma (m³)		Relleno (monocapa)(m³)		Relleno cobertura (m³)		Cama apoyo granular (m³)		Cama apoyo HM-20(m³)		Relleno rítonera suelo seleccionado (m³)		Relleno rítonera graballado (m³)		Relleno cama-ritonera HM-20(m³)		Relleno cobertura c.- Suale seleccionada C' 95% PN, <= 30 mm		Relleno cobertura e-Gabarrillo S/S		Relleno coberturas = HM-20:		Relleno cobertura f-Suolo adecuado procedente excavación (<-150mm) 05% PN		Relleno cobertura g- Lecho móvil (m³)		Excedente de tierras (m³) (superfotano alaval 0%, exiporimanto lecular 5%)		Cinta Labores (m)		Mantenimiento<->S/m ancho->Zim (m²)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
T12.DC	BT.DC	351.00	49.685.55	2	1.930	275	13.00	16	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69	0.33	21.2-1900	0.60	1.00	6.00	0.20	120	0.30	1.50	a	c	f	100%	0.7	2.4	1.0	44.9	44.9	44.9	10.7	3.1	7.6	28.6	3.1	7.6	28.6	6.0	2.0	5.69

[illegible]

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= Separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= Altura de la boma desde fondo	Cama de apoyo a-cama material granulado o arena b-cama de hormigón HM-20	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Gabarrillo S/15, s-borneopn HM-20, 30 mm. e- HM-20. f- Suelo seleccionado C/95% PN, < 30 mm. g- HM-20. d-Gabarrillo S/15, f-Suelo seleccionado procedimiento excavación (<150mm) C/95% PN. g- Lecho modif.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (º)	HI=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c-arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera grabada (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura d-Gabarrillo S/15	Relleno cobertura c- HM-20	Relleno cobertura f-Suelo seleccionado < excavación (<150mm) C/95% PN	Relleno cobertura g- Lecho modif (m3)	Excedente de tierra (m3) (compensando nivel 0% e-superficie vertical 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-12/1/T14	DC-T17	900.00	51879.03				2	1.829	275	1150	16					4.06	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	29.1	29.1	29.1	10.0	2.9	7.1	13.9	2.9	7.1				13.9	5.3	2.0								
DC-12/1/T14	DC-T17	901.00	51880.03				2	1.829	275	1150	16					4.05	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	29.9	29.9	29.9	10.0	2.9	7.1	13.8	2.9	7.1				13.8	5.3	2.0								
DC-12/1/T14	DC-T17	902.00	51881.03				2	1.829	275	1150	16					4.03	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.8	28.8	28.8	10.0	2.9	7.1	13.7	2.9	7.1				13.7	5.3	2.0								
DC-12/1/T14	DC-T17	903.00	51882.03				2	1.829	275	1150	16					4.02	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.8	28.8	28.8	10.0	2.9	7.1	13.7	2.9	7.1				13.7	5.3	2.0								
DC-12/1/T14	DC-T17	904.00	51883.03				2	1.829	275	1150	16					4.04	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9	7.1				13.8	5.3	2.0								
DC-12/1/T14	DC-T17	905.00	51884.03				2	1.829	275	1150	16					4.05	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	29.0	29.0	29.0	10.0	2.9	7.1	13.9	2.9	7.1				13.9	5.3	2.0								
DC-12/1/T14	DC-T17	906.00	51885.03				2	1.829	275	1150	16					4.04	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.9	28.9	28.9	10.0	2.9	7.1	13.8	2.9	7.1				13.8	5.3	2.0								
DC-12/1/T14	DC-T17	907.00	51886.03				2	1.829	275	1150	16					4.02	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.7	28.7	28.7	10.0	2.9	7.1	13.6	2.9	7.1				13.6	5.3	2.0								
DC-12/1/T14	DC-T17	908.00	51887.03				2	1.829	275	1150	16					4.01	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.6	28.6	28.6	10.0	2.9	7.1	13.5	2.9	7.1				13.5	5.3	2.0								
DC-12/1/T14	DC-T17	909.00	51888.03				2	1.829	275	1150	16					3.99	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.5	28.5	28.5	10.0	2.9	7.1	13.4	2.9	7.1				13.4	5.3	2.0								
DC-12/1/T14	DC-T17	910.00	51889.03				2	1.829	275	1150	16					3.97	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.3	28.3	28.3	10.0	2.9	7.1	13.2	2.9	7.1				13.2	5.3	2.0								
DC-12/1/T14	DC-T17	911.00	51890.03				2	1.829	275	1150	16					3.96	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.2	28.2	28.2	10.0	2.9	7.1	13.1	2.9	7.1				13.1	5.3	2.0								
DC-12/1/T14	DC-T17	912.00	51891.03				2	1.829	275	1150	16					3.94	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.0	28.0	28.0	10.0	2.9	7.1	12.9	2.9	7.1				12.9	5.3	2.0								
DC-12/1/T14	DC-T17	913.00	51892.03				2	1.829	275	1150	16					3.92	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.9	27.9	27.9	10.0	2.9	7.1	12.8	2.9	7.1				12.8	5.3	2.0								
DC-12/1/T14	DC-T17	914.00	51893.03				2	1.829	275	1150	16					3.91	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.7	27.7	27.7	10.0	2.9	7.1	12.6	2.9	7.1				12.6	5.3	2.0								
DC-12/1/T14	DC-T17	915.00	51894.03				2	1.829	275	1150	16					3.89	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.6	27.6	27.6	10.0	2.9	7.1	12.5	2.9	7.1				12.5	5.3	2.0								
DC-12/1/T14	DC-T17	916.00	51895.03				2	1.829	275	1150	16					3.87	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.5	27.5	27.5	10.0	2.9	7.1	12.4	2.9	7.1				12.4	5.3	2.0								
DC-12/1/T14	DC-T17	917.00	51896.03				2	1.829	275	1150	16					3.85	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1				12.2	5.3	2.0								
DC-12/1/T14	DC-T17	917.25	51896.29				2	1.829	275	1150	16					3.85	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1				12.2	5.3	2.0								
DC-12/1/T14	DC-T17	918.00	51897.03				2	1.829	275	1150	16					3.85	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9	7.1				12.1	5.3	2.0								
DC-12/1/T14	DC-T17	919.00	51898.03				2	1.829	275	1150	16					3.85	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1				12.2	5.3	2.0								
DC-12/1/T14	DC-T17	920.00	51899.03				2	1.829	275	1150	16					3.85	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1				12.2	5.3	2.0								
DC-12/1/T14	DC-T17	921.00	51900.03				2	1.829	275	1150	16					3.85	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1				12.2	5.3	2.0								
DC-12/1/T14	DC-T17	922.00	51901.03				2	1.829	275	1150	16					3.85	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1				12.2	5.3	2.0								
DC-12/1/T14	DC-T17	923.00	51902.03				2	1.829	275	1150	16					3.85	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1				12.2	5.3	2.0								
DC-12/1/T14	DC-T17	924.00	51903.03				2	1.829	275	1150	16					3.86	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1				12.2	5.3	2.0								
DC-12/1/T14	DC-T17	925.00	51904.03				2	1.829	275	1150	16					3.93	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	28.0	28.0	28.0	10.0	2.9	7.1	12.9	2.9	7.1				12.9	5.3	2.0								
DC-12/1/T14	DC-T17	926.00	51905.03				2	1.829	275	1150	16					4.22	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	29.1	29.1	29.1	10.0	2.9	7.1	14.0	2.9	7.1				14.0	5.3	2.0								
DC-12/1/T14	DC-T17	927.00	51906.03				2	1.829	275	1150	16					4.21	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1				15.2	5.3	2.0								
DC-12/1/T14	DC-T17	928.00	51907.03				2	1.829	275	1150	16					4.35	0.33	212-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10.0	31.5	31.5	31.5	10.0	2.9	7.1	16.4	2.9															

Agregación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verticos por tubería	Nº valvulas de sagüe	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja	A- Separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15, s-borrompi HM-20 Relaciones b-c: Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15, f-suelo adecuado procedente excavación (<150mm) c/65% PN, g- Lector modif.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m2)	Relleno c-ama (m2)	Relleno riñonera(s)m2)	Relleno cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo HM-20(m2)	Relleno riñonera suelo seleccionado (m2)	Relleno riñonera grabaciado (m2)	Relleno cama+riñonera HM-20(m2)	Relleno cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Reelleno cobertura. d-Garbanillo 5/15	Reelleno cobertura. e- HM-20	Reelleno cobertura. f-Suelo adecuado procedente excavación (<150mm) c/65% PN	Reelleno cobertura. g- Lector modif (m2)	Excedente de tierra (m2) (consumo actual 0%, espolvoreo lateral 5%)	Cinta liberada (m)	Manto escollera a 45.5m. ancho-30m (m2)
DC-121/H14	DC-117	1.802.00	52.781.03				2	1.829	275	11.50	16					4.17	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1							14.9	5.3	2.0						
DC-121/H14	DC-117	1.803.00	52.782.03				2	1.829	275	11.50	16					4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1							15.2	5.3	2.0						
DC-121/H14	DC-117	1.804.00	52.783.03				2	1.829	275	11.50	16					4.25	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.7	30.7	30.7	10.0	2.9	7.1	15.6	2.9	7.1							15.6	5.3	2.0						
DC-121/H14	DC-117	1.805.00	52.784.03				2	1.829	275	11.50	16					4.29	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.0	31.0	31.0	10.0	2.9	7.1	15.9	2.9	7.1							15.9	5.3	2.0						
DC-121/H14	DC-117	1.806.00	52.785.03				2	1.829	275	11.50	16					4.28	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9	7.1							15.8	5.3	2.0						
DC-121/H14	DC-117	1.807.00	52.786.03				2	1.829	275	11.50	16					4.27	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1							15.7	5.3	2.0						
DC-121/H14	DC-117	1.808.00	52.787.03				2	1.829	275	11.50	16					4.28	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9	7.1							15.8	5.3	2.0						
DC-121/H14	DC-117	1.809.00	52.788.03				2	1.829	275	11.50	16					4.29	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.0	31.0	31.0	10.0	2.9	7.1	15.9	2.9	7.1							15.9	5.3	2.0						
DC-121/H14	DC-117	1.810.00	52.789.03				2	1.829	275	11.50	16					4.28	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9	7.1							15.8	5.3	2.0						
DC-121/H14	DC-117	1.811.00	52.790.03				2	1.829	275	11.50	16					4.26	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1							15.7	5.3	2.0						
DC-121/H14	DC-117	1.812.00	52.791.03				2	1.829	275	11.50	16					4.25	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.7	30.7	30.7	10.0	2.9	7.1	15.6	2.9	7.1							15.6	5.3	2.0						
DC-121/H14	DC-117	1.813.00	52.792.03				2	1.829	275	11.50	16					4.24	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.4	2.9	7.1							15.4	5.3	2.0						
DC-121/H14	DC-117	1.814.00	52.793.03				2	1.829	275	11.50	16					4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1							15.3	5.3	2.0						
DC-121/H14	DC-117	1.815.00	52.794.03				2	1.829	275	11.50	16					4.21	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.3	30.3	30.3	10.0	2.9	7.1	15.2	2.9	7.1							15.2	5.3	2.0						
DC-121/H14	DC-117	1.816.00	52.795.03				2	1.829	275	11.50	16					4.20	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1							15.1	5.3	2.0						
DC-121/H14	DC-117	1.817.00	52.796.03				2	1.829	275	11.50	16					4.19	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	15.0	2.9	7.1							15.0	5.3	2.0						
DC-121/H14	DC-117	1.818.00	52.797.03				2	1.829	275	11.50	16					4.17	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.0	30.0	30.0	10.0	2.9	7.1	14.9	2.9	7.1							14.9	5.3	2.0						
DC-121/H14	DC-117	1.819.00	52.798.03				2	1.829	275	11.50	16					4.18	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.1	30.1	30.1	10.0	2.9	7.1	14.9	2.9	7.1							14.9	5.3	2.0						
DC-121/H14	DC-117	1.820.00	52.799.03				2	1.829	275	11.50	16					4.19	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.2	30.2	30.2	10.0	2.9	7.1	15.1	2.9	7.1							15.1	5.3	2.0						
DC-121/H14	DC-117	1.821.00	52.800.03				2	1.829	275	11.50	16					4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1							15.4	5.3	2.0						
DC-121/H14	DC-117	1.822.00	52.801.03				2	1.829	275	11.50	16					4.29	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.0	31.0	31.0	10.0	2.9	7.1	15.9	2.9	7.1							15.9	5.3	2.0						
DC-121/H14	DC-117	1.823.00	52.802.03				2	1.829	275	11.50	16					4.34	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.4	31.4	31.4	10.0	2.9	7.1	16.3	2.9	7.1							16.3	5.3	2.0						
DC-121/H14	DC-117	1.824.00	52.803.03				2	1.829	275	11.50	16					4.39	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	31.8	31.8	31.8	10.0	2.9	7.1	16.7	2.9	7.1							16.7	5.3	2.0						
DC-121/H14	DC-117	1.825.00	52.804.03				2	1.829	275	11.50	16					4.45	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	32.4	32.4	32.4	10.0	2.9	7.1	17.3	2.9	7.1							17.3	5.3	2.0						
DC-121/H14	DC-117	1.826.00	52.805.03				2	1.829	275	11.50	16					4.54	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	33.2	33.2	33.2	10.0	2.9	7.1	18.1	2.9	7.1							18.1	5.3	2.0						
DC-121/H14	DC-117	1.827.00	52.806.03				2	1.829	275	11.50	16					4.58	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	33.6	33.6	33.6	10.0	2.9	7.1	18.5	2.9	7.1							18.5	5.3	2.0						
DC-121/H14	DC-117	1.828.00	52.807.03				2	1.829	275	11.50	16					4.60	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	33.8	33.8	33.8	10.0	2.9	7.1	18.6	2.9	7.1							18.6	5.3	2.0						
DC-121/H14	DC-117	1.829.00	52.808.03				2	1.829	275	11.50	16					4.62	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.2	34.2	34.2	10.0	2.9	7.1	18.9	2.9	7.1							18.9	5.3	2.0						
DC-121/H14	DC-117	1.830.00	52.809.03				2	1.829	275	11.50	16					4.64	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.1																							

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sagüe	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A- Separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo: a- cama material granular o arena; b- cama de hormigón HM-20	Relaciones: c- Suelo seleccionado C/95% PN, < 30 mm; d- Gabiolas S/15; e- boronque HM-20; f- Relieve cobertura (- Suelo seleccionado C/95% PN, < 30 mm; e- HM-20; d- Gabiolas S/15; f- Suelo adecuado para excavación (-150mm) C/65% PN; g- Lecho mod.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1- ang (n)	H1- DN/Hz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama- rñonera (m2)	Relevo cama (m2)	Relevo rñonera(s)m2)	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M 20(m2)	Relevo rñonera suelo seleccionado (m2)	Relevo rñonera grabaciado (m2)	Relevo cama- rñonera HM-20(m2)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura d- Gabiolas S/15	Relevo cobertura e- HM-20	Relevo cobertura f- Suelo adecuado para excavación (-150mm) C/65% PN	Relevo cobertura g- Lecho mod (m2)	Excedente de tierra (m2) (compensado altura 0% e porcentaje lateral 5%)	Cinta liberada (m)	Manto escollera a 45.5m, ancho 30m (m2)
DC-12/1/14	DC-11/7	1930.00	52909.03				2	1.829	275	1150	16						3.83	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9	7.1							12.0	5.3	2.0					
DC-12/1/14	DC-11/7	1931.00	52910.03				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	12.0	2.9	7.1							11.9	5.3	2.0					
DC-12/1/14	DC-11/7	1932.00	52911.03				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9	7.1							11.9	5.3	2.0					
DC-12/1/14	DC-11/7	1933.00	52912.03				2	1.829	275	1150	16						3.81	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9	7.1							11.8	5.3	2.0					
DC-12/1/14	DC-11/7	1934.00	52913.03				2	1.829	275	1150	16						3.80	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9	7.1							11.8	5.3	2.0					
DC-12/1/14	DC-11/7	1935.00	52914.03				2	1.829	275	1150	16						3.81	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9	7.1							11.9	5.3	2.0					
DC-12/1/14	DC-11/7	1936.00	52915.03				2	1.829	275	1150	16						3.82	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9	7.1							11.9	5.3	2.0					
DC-12/1/14	DC-11/7	1937.00	52916.03				2	1.829	275	1150	16						3.83	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9	7.1							12.0	5.3	2.0					
DC-12/1/14	DC-11/7	1938.00	52917.03				2	1.829	275	1150	16						3.83	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.1	27.1	27.1	10.0	2.9	7.1	12.0	2.9	7.1							12.0	5.3	2.0					
DC-12/1/14	DC-11/7	1939.00	52918.03				2	1.829	275	1150	16						3.84	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9	7.1							12.1	5.3	2.0					
DC-12/1/14	DC-11/7	1940.00	52919.03				2	1.829	275	1150	16						3.84	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9	7.1							12.1	5.3	2.0					
DC-12/1/14	DC-11/7	1941.00	52920.03				2	1.829	275	1150	16						3.85	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9	7.1							12.1	5.3	2.0					
DC-12/1/14	DC-11/7	1942.00	52921.03				2	1.829	275	1150	16						3.86	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1							12.2	5.3	2.0					
DC-12/1/14	DC-11/7	1943.00	52922.03				2	1.829	275	1150	16						3.85	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1							12.2	5.3	2.0					
DC-12/1/14	DC-11/7	1944.00	52923.03				2	1.829	275	1150	16						3.85	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1							12.2	5.3	2.0					
DC-12/1/14	DC-11/7	1945.00	52924.03				2	1.829	275	1150	16						3.85	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1							12.2	5.3	2.0					
DC-12/1/14	DC-11/7	1946.00	52925.03				2	1.829	275	1150	16						3.86	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.3	27.3	27.3	10.0	2.9	7.1	12.2	2.9	7.1							12.2	5.3	2.0					
DC-12/1/14	DC-11/7	1947.00	52926.03				2	1.829	275	1150	16						3.86	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9	7.1							12.3	5.3	2.0					
DC-12/1/14	DC-11/7	1948.00	52927.03				2	1.829	275	1150	16						3.86	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9	7.1							12.3	5.3	2.0					
DC-12/1/14	DC-11/7	1949.00	52928.03				2	1.829	275	1150	16						3.87	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9	7.1							12.3	5.3	2.0					
DC-12/1/14	DC-11/7	1950.00	52929.03				2	1.829	275	1150	16						3.87	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.4	27.4	27.4	10.0	2.9	7.1	12.3	2.9	7.1							12.3	5.3	2.0					
DC-12/1/14	DC-11/7	1951.00	52930.03				2	1.829	275	1150	16						3.87	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.5	27.5	27.5	10.0	2.9	7.1	12.4	2.9	7.1							12.4	5.3	2.0					
DC-12/1/14	DC-11/7	1952.00	52931.03				2	1.829	275	1150	16						3.85	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.5	27.5	27.5	10.0	2.9	7.1	12.4	2.9	7.1							12.4	5.3	2.0					
DC-12/1/14	DC-11/7	1953.00	52932.03				2	1.829	275	1150	16						3.81	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9	7.1							11.9	5.3	2.0					
DC-12/1/14	DC-11/7	1954.00	52933.03				2	1.829	275	1150	16						3.78	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9	7.1							11.5	5.3	2.0					
DC-12/1/14	DC-11/7	1955.00	52934.03				2	1.829	275	1150	16						3.77	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9	7.1							11.5	5.3	2.0					
DC-12/1/14	DC-11/7	1956.00	52935.03				2	1.829	275	1150	16						3.81	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9	7.1							11.8	5.3	2.0					
DC-12/1/14	DC-11/7	1957.00	52936.03				2	1.829	275	1150	16						3.78	0.33	212-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9	7.1							11.6	5.3	2.0					
DC-12/1/14	DC-11/7	1958.00	52937.03				2	1.829	275	1																																																	

Agrupación	Tramo	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja concalcionada	A- Separación tubo salud	S- Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones: a-c: Suelo seleccionado C/95% PM, < 30 mm. d-Gabarrillo S/15, e-borneopm HM-20, Relación cobertura c- Suelo seleccionado C/95% PM, < 30 mm. e- HM-20. d-Gabarrillo S/15, f-Suelo adecuado para excavación (<150mm) c/65% PM, g- Lecho mod.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño c-ama (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera granular (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c- Suelo seleccionado C/95% PM, < 30 mm	Releño cobertura d-Gabarrillo S/15	Releño cobertura e- HM-20	Releño cobertura f-Suelo adecuado para excavación (<150mm) c/65% PM	Releño cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (compensación alvald 0%, e-spojaniento lateral 5%)	Cinta liberada (m3)	Manto escollera a-0.5m, ancho-30m (m3)
DC-12/1/14	DC-11/1	2316.00	53.295.03				2	1.829	275	1150	16						4.24	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.5	2.9	7.1							15.5	5.3	2.0						
DC-12/1/14	DC-11/1	2317.00	53.296.03				2	1.829	275	1150	16						4.24	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.5	2.9	7.1							15.5	5.3	2.0						
DC-12/1/14	DC-11/1	2318.00	53.297.03				2	1.829	275	1150	16						4.25	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.5	2.9	7.1							15.5	5.3	2.0						
DC-12/1/14	DC-11/1	2319.00	53.298.03				2	1.829	275	1150	16						4.25	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.7	30.7	30.7	10.0	2.9	7.1	15.6	2.9	7.1							15.6	5.3	2.0						
DC-12/1/14	DC-11/1	2320.00	53.299.03				2	1.829	275	1150	16						4.26	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.7	30.7	30.7	10.0	2.9	7.1	15.6	2.9	7.1							15.6	5.3	2.0						
DC-12/1/14	DC-11/1	2321.00	53.300.03				2	1.829	275	1150	16						4.26	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1							15.7	5.3	2.0						
DC-12/1/14	DC-11/1	2322.00	53.301.03				2	1.829	275	1150	16						4.26	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1							15.7	5.3	2.0						
DC-12/1/14	DC-11/1	2323.00	53.302.03				2	1.829	275	1150	16						4.27	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1							15.7	5.3	2.0						
DC-12/1/14	DC-11/1	2324.00	53.303.03				2	1.829	275	1150	16						4.27	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9	7.1							15.8	5.3	2.0						
DC-12/1/14	DC-11/1	2325.00	53.304.03				2	1.829	275	1150	16						4.28	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9	7.1							15.8	5.3	2.0						
DC-12/1/14	DC-11/1	2326.00	53.305.03				2	1.829	275	1150	16						4.28	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9	7.1							15.8	5.3	2.0						
DC-12/1/14	DC-11/1	2327.00	53.306.03				2	1.829	275	1150	16						4.27	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.9	30.9	30.9	10.0	2.9	7.1	15.8	2.9	7.1							15.8	5.3	2.0						
DC-12/1/14	DC-11/1	2328.00	53.307.03				2	1.829	275	1150	16						4.26	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.8	30.8	30.8	10.0	2.9	7.1	15.7	2.9	7.1							15.7	5.3	2.0						
DC-12/1/14	DC-11/1	2329.00	53.308.03				2	1.829	275	1150	16						4.25	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.7	30.7	30.7	10.0	2.9	7.1	15.6	2.9	7.1							15.6	5.3	2.0						
DC-12/1/14	DC-11/1	2330.00	53.309.03				2	1.829	275	1150	16						4.24	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.6	30.6	30.6	10.0	2.9	7.1	15.5	2.9	7.1							15.5	5.3	2.0						
DC-12/1/14	DC-11/1	2331.00	53.310.03				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1							15.4	5.3	2.0						
DC-12/1/14	DC-11/1	2332.00	53.311.03				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1							15.3	5.3	2.0						
DC-12/1/14	DC-11/1	2333.00	53.312.03				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1							15.3	5.3	2.0						
DC-12/1/14	DC-11/1	2334.00	53.313.03				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1							15.3	5.3	2.0						
DC-12/1/14	DC-11/1	2334.74	53.313.77				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.7	22.4	22.4	22.4	7.4	5.2	11.3	5.2	11.3	3.9	1.5							11.3	3.9	1.5					
DC-12/1/14	DC-11/1	2335.00	53.314.03				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.3	8.0	8.0	8.0	2.6	4.0	0.8	1.9							4.0	1.9	0.5								
DC-12/1/14	DC-11/1	2336.00	53.315.03				2	1.829	275	1150	16						4.22	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.4	30.4	30.4	10.0	2.9	7.1	15.3	2.9	7.1							15.3	5.3	2.0						
DC-12/1/14	DC-11/1	2337.00	53.316.03				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1							15.4	5.3	2.0						
DC-12/1/14	DC-11/1	2338.00	53.317.03				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1							15.4	5.3	2.0						
DC-12/1/14	DC-11/1	2339.00	53.318.03				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1							15.4	5.3	2.0						
DC-12/1/14	DC-11/1	2340.00	53.319.03				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1							15.4	5.3	2.0						
DC-12/1/14	DC-11/1	2341.00	53.320.03				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1							15.4	5.3	2.0						
DC-12/1/14	DC-11/1	2342.00	53.321.03				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	30.5	30.5	30.5	10.0	2.9	7.1	15.4	2.9	7.1							15.4	5.3	2.0						
DC-12/1/14	DC-11/1	2343.00	53.322.03				2	1.829	275	1150	16						4.23	0.33	21.2-1800	0.60	1.00	5.8																																					

Agregación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verticos por tubería	DN vertical (mm)	Nº valvulas de sagüe	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lateral (mm)	Altura de excavación a TH (m)	Talud HW	concretoado zapala	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borra X1	Borra X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la borra desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15, e-borromp HM-20	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S15, f-suela adecuada procedente excavación (<150mm) c/95% PN, g- Luchero mod.	Exposor (m, escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (n)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Releño cama+riñonera (m³)	Releño cama+riñonera (m³)	Releño cama+riñonera (m³)	Releño cama+riñonera HM-20(m³)	Releño cobertura c- Suela seleccionada C/95% PN, < 30 mm	Releño cobertura d-Gabarrillo S15	Releño cobertura e- HM-20	Releño cobertura f-Suela adecuada procedente excavación (<150mm) c/95% PN	Releño cobertura g- Luchero mod (m³)	Excedente de tierra (m³) (compensando nivel 0%, e-spojaniento lateral 5%)	Cinta liberata (m)	Manto escollera a 45.5m, ancho-30m (m³)
DC-12/1/14	DC-11/1	2.445.00	53.424.03				2	1.829	275	1150	16						3.75	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1					11.4	5.3	2.0			
DC-12/1/14	DC-11/1	2.446.00	53.425.03				2	1.829	275	1150	16						3.76	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1					11.4	5.3	2.0			
DC-12/1/14	DC-11/1	2.447.00	53.426.03				2	1.829	275	1150	16						3.77	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	26.6	26.6	26.6	10.0	2.9	7.1	11.5	2.9	7.1					11.5	5.3	2.0			
DC-12/1/14	DC-11/1	2.448.00	53.427.03				2	1.829	275	1150	16						3.78	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9	7.1					11.6	5.3	2.0			
DC-12/1/14	DC-11/1	2.449.00	53.428.03				2	1.829	275	1150	16						3.79	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	26.8	26.8	26.8	10.0	2.9	7.1	11.7	2.9	7.1					11.7	5.3	2.0			
DC-12/1/14	DC-11/1	2.450.00	53.429.03				2	1.829	275	1150	16						3.80	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9	7.1					11.8	5.3	2.0			
DC-12/1/14	DC-11/1	2.451.00	53.430.03				2	1.829	275	1150	16						3.81	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	26.9	26.9	26.9	10.0	2.9	7.1	11.8	2.9	7.1					11.8	5.3	2.0			
DC-12/1/14	DC-11/1	2.452.00	53.431.03				2	1.829	275	1150	16						3.82	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	27.0	27.0	27.0	10.0	2.9	7.1	11.9	2.9	7.1					11.9	5.3	2.0			
DC-12/1/14	DC-11/1	2.453.00	53.432.03				2	1.829	275	1150	16						3.79	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	26.7	26.7	26.7	10.0	2.9	7.1	11.6	2.9	7.1					11.6	5.3	2.0			
DC-12/1/14	DC-11/1	2.454.00	53.433.03				2	1.829	275	1150	16						3.76	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	26.5	26.5	26.5	10.0	2.9	7.1	11.4	2.9	7.1					11.4	5.3	2.0			
DC-12/1/14	DC-11/1	2.455.00	53.434.03			Apoyo arqueta	2	1.829	275	1150	16						3.73	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	26.3	26.3	26.3	10.4	3.2	7.2	10.8					10.8	5.3	2.0					
DC-12/1/14	DC-11/1	2.456.00	53.435.03			Apoyo arqueta	2	1.829	275	1150	16						3.71	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	26.1	26.1	26.1	10.4	3.2	7.2	10.6					10.6	5.3	2.0					
DC-12/1/14	DC-11/1	2.457.00	53.436.03			Apoyo arqueta	2	1.829	275	1150	16						3.68	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	25.8	25.8	25.8	10.4	3.2	7.2	10.3					10.3	5.3	2.0					
DC-12/1/14	DC-11/1	2.458.00	53.437.03			Apoyo arqueta	2	1.829	275	1150	16						3.65	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	25.6	25.6	25.6	10.4	3.2	7.2	10.2					10.2	5.3	2.0					
DC-12/1/14	DC-11/1	2.459.00	53.438.03			Apoyo arqueta	2	1.829	275	1150	16						3.63	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	25.4	25.4	25.4	10.4	3.2	7.2	10.0					10.0	5.3	2.0					
DC-12/1/14	DC-11/1	2.460.00	53.439.03	Vertosa	VZS-200	Apoyo arqueta	2	1.829	275	1150	16	1	200			2.10	SZ75x4.4	3.61	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	25.3	25.3	25.3	10.4	3.2	7.2	9.8					9.8	5.3	2.0				
DC-12/1/14	DC-11/1	2.461.00	53.440.03			Apoyo arqueta	2	1.829	275	1150	16						3.62	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	25.4	25.4	25.4	10.4	3.2	7.2	9.9					9.9	5.3	2.0					
DC-12/1/14	DC-11/1	2.462.00	53.441.03			Apoyo arqueta	2	1.829	275	1150	16						3.64	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	25.5	25.5	25.5	10.4	3.2	7.2	10.1					10.1	5.3	2.0					
DC-12/1/14	DC-11/1	2.463.00	53.442.03			Apoyo arqueta	2	1.829	275	1150	16						3.66	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	25.7	25.7	25.7	10.4	3.2	7.2	10.2					10.2	5.3	2.0					
DC-12/1/14	DC-11/1	2.464.00	53.443.03			Apoyo arqueta	2	1.829	275	1150	16						3.67	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	25.8	25.8	25.8	10.4	3.2	7.2	10.3					10.3	5.3	2.0					
DC-12/1/14	DC-11/1	2.465.00	53.444.03			Apoyo arqueta	2	1.829	275	1150	16						3.69	0.33	25.2-1800	0.60	1.00	5.80			0.25	120	0.30	2.00		b	d	d	100%	0.7	2.4	10	25.9	25.9	25.9	10.4	3.2	7.2	10.5					10.5	5.3	2.0					
DC-12/1/14	DC-11/1	2.466.00	53.445.03			Barranco	2	1.829	275	1150	16						3.71	0.33	26.2-1800	0.60	1.00	5.80			0.20	360	0.30	1.50		b	e	f	100%	0.7	2.3	10	26.1	26.1	26.1	10.0	11.0	11.0					11.0	5.3	2.0						
DC-12/1/14	DC-11/1	2.467.00	53.446.03			Barranco	2	1.829	275	1150	16						3.71	0.33	26.2-1800	0.60	1.00	5.80			0.20	360	0.30	1.50		b	e	f	100%	0.7	2.3	10	26.1	26.1	26.1	10.0	11.0	11.0					11.0	5.3	2.0						
DC-12/1/14	DC-11/1	2.468.00	53.447.03			Barranco	2	1.829	275	1150	16						3.71	0.33	26.2-1800	0.60	1.00	5.80			0.20	360	0.30	1.50		b	e	f	100%	0.7	2.3	10	26.1	26.1	26.1	10.0	11.0	11.0					11.0	5.3	2.0						
DC-12/1/14	DC-11/1	2.469.00	53.448.03			Barranco	2	1.829	275	1150	16						3.64	0.33	26.2-1800	0.60	1.00	5.80			0.20	360	0.30	1.50		b	e	f	100%	0.7	2.3	10	25.5	25.5	25.5	10.0	11.0	11.0					11.0	5.3	2.0						
DC-12/1/14	DC-11/1	2.470.00	53.449.03			Barranco	2	1.829	275	1150	16						3.57	0.33	26.2-1800	0.60	1.00	5.80			0.20	360	0.30	1.50		b	e	f	100%	0.7	2.3	10	25.0	25.0	25.0	10.0	9.9	9.9					9.9	5.3	2.0						
DC-12/1/14	DC-11/1	2.471.00	53.450.03			Barranco	2	1.829	275	1150	16						3.77	0.33	26.2-1800	0.60	1.00	5.80			0.20	360	0.30	1.50		b	e	f	100%	0.7	2.3	10	26.6	26.6	26.6	10.0	11.5	11.5					11.5	5.3	2.0						
DC-12/1/14	DC-11/1	2.472.00	53.451.03			Barranco	2	1.829	275	1150	16						3.80	0.33	26.2-1800	0.60	1.00	5.80			0.20	360	0.30	1.50		b	e	f	100%	0.7	2.3	10	26.9	26.9	26.9	10.0	11.8	11.8					11.8	5.3	2.0						
DC-12/1/14	DC-11/1	2.473.00	53.452.03				2	1.829	275	1150	16						3.84	0.33	21.2-1800	0.60	1.00	5.80			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	27.2	27.2	27.2	10.0	2.9	7.1	12.1	2.9	7.1					12.1	5.3	2.0			
DC-12/1/14	DC-11/1	2.474.00	53.453.03				2	1.829	275	1150	16						3.88	0.33	21.2-1800	0.60	1.00	5.80</																																	

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s' cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Gabarrillo 5/15. e-borrompi HM-20. f-Huella cobertura c: Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo 5/15. f-Suelo adecuado procedente excavación (<150mm) c/95% PN. g- Lecho mod.	Expos. (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	HI-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c: arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera grabarrillo (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c: Suelo seleccionado C/95% PN, < 30 mm	Relleno cobertura. d-Gabarrillo 5/15	Relleno cobertura. e- HM-20	Relleno cobertura. f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relleno cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0%, e-spojaniento vertical 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-12/1/14	DC-11/7	2.704.00	53.683.03				2	1.829	275	11.50	16				4.66	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.3	34.3	34.3	10.0	2.9	7.1	19.2	2.9	7.1					19.2	5.3	2.0								
DC-12/1/14	DC-11/7	2.705.00	53.684.03				2	1.829	275	11.50	16				4.67	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.4	34.4	34.4	10.0	2.9	7.1	19.3	2.9	7.1					19.3	5.3	2.0								
DC-12/1/14	DC-11/7	2.706.00	53.685.03				2	1.829	275	11.50	16				4.69	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.5	34.5	34.5	10.0	2.9	7.1	19.4	2.9	7.1					19.4	5.3	2.0								
DC-12/1/14	DC-11/7	2.707.00	53.686.03				2	1.829	275	11.50	16				4.70	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.6	34.6	34.6	10.0	2.9	7.1	19.5	2.9	7.1					19.5	5.3	2.0								
DC-12/1/14	DC-11/7	2.708.00	53.687.03				2	1.829	275	11.50	16				4.71	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.7	34.7	34.7	10.0	2.9	7.1	19.6	2.9	7.1					19.6	5.3	2.0								
DC-12/1/14	DC-11/7	2.709.00	53.688.03				2	1.829	275	11.50	16				4.72	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.8	34.8	34.8	10.0	2.9	7.1	19.7	2.9	7.1					19.7	5.3	2.0								
DC-12/1/14	DC-11/7	2.710.00	53.689.03				2	1.829	275	11.50	16				4.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.711.00	53.690.03				2	1.829	275	11.50	16				4.74	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.0	35.0	35.0	10.0	2.9	7.1	19.9	2.9	7.1					19.9	5.3	2.0								
DC-12/1/14	DC-11/7	2.712.00	53.691.03				2	1.829	275	11.50	16				4.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.1	35.1	35.1	10.0	2.9	7.1	20.0	2.9	7.1					20.0	5.3	2.0								
DC-12/1/14	DC-11/7	2.713.00	53.692.03				2	1.829	275	11.50	16				4.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.2	35.2	35.2	10.0	2.9	7.1	20.1	2.9	7.1					20.1	5.3	2.0								
DC-12/1/14	DC-11/7	2.714.00	53.693.03				2	1.829	275	11.50	16				4.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.2	35.2	35.2	10.0	2.9	7.1	20.1	2.9	7.1					20.1	5.3	2.0								
DC-12/1/14	DC-11/7	2.715.00	53.694.03				2	1.829	275	11.50	16				4.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.2	35.2	35.2	10.0	2.9	7.1	20.1	2.9	7.1					20.1	5.3	2.0								
DC-12/1/14	DC-11/7	2.716.00	53.695.03				2	1.829	275	11.50	16				4.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.1	35.1	35.1	10.0	2.9	7.1	20.0	2.9	7.1					20.0	5.3	2.0								
DC-12/1/14	DC-11/7	2.717.00	53.696.03				2	1.829	275	11.50	16				4.76	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.1	35.1	35.1	10.0	2.9	7.1	20.0	2.9	7.1					20.0	5.3	2.0								
DC-12/1/14	DC-11/7	2.718.00	53.697.03				2	1.829	275	11.50	16				4.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.0	35.0	35.0	10.0	2.9	7.1	20.0	2.9	7.1					20.0	5.3	2.0								
DC-12/1/14	DC-11/7	2.719.00	53.698.03				2	1.829	275	11.50	16				4.75	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.0	35.0	35.0	10.0	2.9	7.1	19.9	2.9	7.1					19.9	5.3	2.0								
DC-12/1/14	DC-11/7	2.720.00	53.699.03				2	1.829	275	11.50	16				4.74	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.0	35.0	35.0	10.0	2.9	7.1	19.9	2.9	7.1					19.9	5.3	2.0								
DC-12/1/14	DC-11/7	2.721.00	53.700.03				2	1.829	275	11.50	16				4.74	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	35.0	35.0	35.0	10.0	2.9	7.1	19.9	2.9	7.1					19.9	5.3	2.0								
DC-12/1/14	DC-11/7	2.722.00	53.701.03				2	1.829	275	11.50	16				4.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.723.00	53.702.03				2	1.829	275	11.50	16				4.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.724.00	53.703.03				2	1.829	275	11.50	16				4.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.725.00	53.704.03				2	1.829	275	11.50	16				4.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.726.00	53.705.03				2	1.829	275	11.50	16				4.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.727.00	53.706.03				2	1.829	275	11.50	16				4.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.728.00	53.707.03				2	1.829	275	11.50	16				4.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.729.00	53.708.03				2	1.829	275	11.50	16				4.73	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.730.00	53.709.03				2	1.829	275	11.50	16				4.74	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	34.9	34.9	34.9	10.0	2.9	7.1	19.8	2.9	7.1					19.8	5.3	2.0								
DC-12/1/14	DC-11/7	2.731.00	53.710.03				2	1.829	275	11.50	16				4.74	0.33	21.2-1800	0.60	1.00	5.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.1	35.1	35.1	10.0	2.9	7.1	19.9	2.9	7.1					19.9	5.3	2.0								
DC-12/1/14	DC-11/7	2.732.00	53.711.03				2	1.826	275	10.00	16				4.75	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.1	33.1	33.1	8.8	2.6	6.2	20.3	2.6	6.2					20.3	4.2	2.0								
DC-12/1/14	DC-11/7	2.733.00	53.712.03				2	1.826	275	10.00	16				4.75	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.1	33.1	33.1	8.8	2.6	6.2																		

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación zanja concalcionada zanja	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	HT- altura de la borma desde fondo	Cama de apoyo: a-cama material granular o arena; b-cama de hormigón (M40)	Rebavaciones: c- Suela seleccionada C/95% PN, < 30 mm; d-Gabarrillo 5/15; e-borrompi (M40); f-Malla excubadora (-5 Suela seleccionada C/95% PN, < 30 mm; e- M420; d-Gabarrillo 5/15; f-Suela adecuada procedente excavación (-150mm) C/65% PN; g- Luchto modif.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (m)	HT-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M40(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciolo (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura: d-Gabarrillo 5/15	Relevo cobertura: e- H420;	Relevo cobertura: f-Suelo adecuado procedente excavación (-150mm) C/65% PN	Relevo cobertura: g- Luchto modif (m3)	Excedente de tierra (m3) (compensación alvald 0% e-superavitario 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m (m3)
DC-12/1/T14	T17-T18	348.00	54.067.03				2	1.626	275	10.00	16				5.04	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.7	35.7	35.7	8.8	2.6	6.2	22.9	2.6		6.2			22.9	4.2	2.0									
DC-12/1/T14	T17-T18	349.00	54.068.03				2	1.626	275	10.00	16				5.00	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.4	35.4	35.4	8.8	2.6	6.2	22.6	2.6		6.2			22.6	4.2	2.0									
DC-12/1/T14	T17-T18	350.00	54.069.03			Acroquia de Luasia	2	1.626	275	10.00	16				4.97	0.33	26.2-1600	0.60	1.00	5.40			0.20	360	0.30	1.50	b	e	f	100%	0.6	2.1	1.0	35.1	35.1	35.1	8.8			8.8			22.2	4.2	2.0												
DC-12/1/T14	T17-T18	351.00	54.060.03			Acroquia de Luasia	2	1.626	275	10.00	16				4.93	0.33	26.2-1600	0.60	1.00	5.40			0.20	360	0.30	1.50	b	e	f	100%	0.6	2.1	1.0	34.7	34.7	34.7	8.8			8.8			21.9	4.2	2.0												
DC-12/1/T14	T17-T18	352.00	54.061.03			Acroquia de Luasia	2	1.626	275	10.00	16				4.90	0.33	26.2-1600	0.60	1.00	5.40			0.20	360	0.30	1.50	b	e	f	100%	0.6	2.1	1.0	34.4	34.4	34.4	8.8			8.8			21.6	4.2	2.0												
DC-12/1/T14	T17-T18	353.00	54.062.03			Acroquia de Luasia	2	1.626	275	10.00	16				4.82	0.33	26.2-1600	0.60	1.00	5.40			0.20	360	0.30	1.50	b	e	f	100%	0.6	2.1	1.0	32.1	32.1	32.1	8.8			8.8			19.3	4.2	2.0												
DC-12/1/T14	T17-T18	354.00	54.063.03			Acroquia de Luasia	2	1.626	275	10.00	16				4.76	0.33	26.2-1600	0.60	1.00	5.40			0.20	360	0.30	1.50	b	e	f	100%	0.6	2.1	1.0	33.3	33.3	33.3	8.8			8.8			20.4	4.2	2.0												
DC-12/1/T14	T17-T18	355.00	54.064.03			Acroquia de Luasia	2	1.626	275	10.00	16				4.89	0.33	26.2-1600	0.60	1.00	5.40			0.20	360	0.30	1.50	b	e	f	100%	0.6	2.1	1.0	34.4	34.4	34.4	8.8			8.8			21.5	4.2	2.0												
DC-12/1/T14	T17-T18	356.00	54.065.03			Acroquia de Luasia	2	1.626	275	10.00	16				4.91	0.33	26.2-1600	0.60	1.00	5.40			0.20	360	0.30	1.50	b	e	f	100%	0.6	2.1	1.0	34.6	34.6	34.6	8.8			8.8			21.8	4.2	2.0												
DC-12/1/T14	T17-T18	357.00	54.066.03			Acroquia de Luasia	2	1.626	275	10.00	16				4.93	0.33	26.2-1600	0.60	1.00	5.40			0.20	360	0.30	1.50	b	e	f	100%	0.6	2.1	1.0	34.8	34.8	34.8	8.8			8.8			21.9	4.2	2.0												
DC-12/1/T14	T17-T18	358.00	54.067.03				2	1.626	275	10.00	16				4.96	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.0	35.0	35.0	8.8	2.6	6.2	22.1	2.6		6.2			22.1	4.2	2.0									
DC-12/1/T14	T17-T18	359.00	54.068.03				2	1.626	275	10.00	16				4.98	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.2	35.2	35.2	8.8	2.6	6.2	22.3	2.6		6.2			22.3	4.2	2.0									
DC-12/1/T14	T17-T18	360.00	54.069.03				2	1.626	275	10.00	16				5.00	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.4	35.4	35.4	8.8	2.6	6.2	22.5	2.6		6.2			22.5	4.2	2.0									
DC-12/1/T14	T17-T18	361.00	54.070.03				2	1.626	275	10.00	16				5.03	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.6	35.6	35.6	8.8	2.6	6.2	22.6	2.6		6.2			22.6	4.2	2.0									
DC-12/1/T14	T17-T18	362.00	54.071.03				2	1.626	275	10.00	16				5.05	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.7	35.7	35.7	8.8	2.6	6.2	22.7	2.6		6.2			22.7	4.2	2.0									
DC-12/1/T14	T17-T18	363.00	54.072.03				2	1.626	275	10.00	16				5.07	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.9	35.9	35.9	8.8	2.6	6.2	23.1	2.6		6.2			23.1	4.2	2.0									
DC-12/1/T14	T17-T18	363.01	54.072.03				2	1.626	275	10.00	16				5.07	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.0	0.2	0.2	0.2	0.0	0.0	0.1	0.0		0.0	0.0				0.1	0.0	0.0								
DC-12/1/T14	T17-T18	364.00	54.073.03				2	1.626	275	10.00	16				5.07	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.8	35.8	35.8	8.7	2.6	6.2	23.0	2.6		6.2			23.0	4.2	2.0									
DC-12/1/T14	T17-T18	365.00	54.074.03				2	1.626	275	10.00	16				5.07	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.9	35.9	35.9	8.8	2.6	6.2	23.1	2.6		6.2			23.1	4.2	2.0									
DC-12/1/T14	T17-T18	366.00	54.075.03				2	1.626	275	10.00	16				5.07	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.9	35.9	35.9	8.8	2.6	6.2	23.1	2.6		6.2			23.1	4.2	2.0									
DC-12/1/T14	T17-T18	367.00	54.076.03				2	1.626	275	10.00	16				5.06	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.9	35.9	35.9	8.8	2.6	6.2	23.1	2.6		6.2			23.1	4.2	2.0									
DC-12/1/T14	T17-T18	368.00	54.077.03				2	1.626	275	10.00	16				5.06	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.8	35.8	35.8	8.8	2.6	6.2	23.0	2.6		6.2			23.0	4.2	2.0									
DC-12/1/T14	T17-T18	369.00	54.078.03				2	1.626	275	10.00	16				5.06	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.8	35.8	35.8	8.8	2.6	6.2	23.0	2.6		6.2			23.0	4.2	2.0									
DC-12/1/T14	T17-T18	370.00	54.079.03				2	1.626	275	10.00	16				5.05	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.8	35.8	35.8	8.8	2.6	6.2	23.0	2.6		6.2			23.0	4.2	2.0									
DC-12/1/T14	T17-T18	371.00	54.080.03				2	1.626	275	10.00	16				5.05	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.8	35.8	35.8	8.8	2.6	6.2	23.0	2.6		6.2			23.0	4.2	2.0									
DC-12/1/T14	T17-T18	372.00	54.081.03				2	1.626	275	10.00	16				5.05	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.7	35.7	35.7	8.8	2.6	6.2	22.9	2.6		6.2			22.9	4.2	2.0									
DC-12/1/T14	T17-T18	373.00	54.082.03				2	1.626	275	10.00	16				5.04	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.7	35.7	35.7	8.8	2.6	6.2	22.9	2.6		6.2			22.9	4.2	2.0									
DC-12/1/T14	T17-T18	374.00	54.083.03				2	1.626	275	10.00	16				5.04	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.7	35.7	35.7	8.8	2.6	6.2	22.9	2.6		6.2			22.9	4.2	2.0									
DC-12/1/T14	T17-T18	375.00	54.084.03				2	1.626	275	10.00	16				5.04	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.7	35.7	35.7	8.8	2.6	6.2	22.8	2.6		6.2			22.8	4.2	2.0									
DC-12/1/T14	T17-T18	376.00	54.085.03				2	1.626	275	10.00	16				5.03	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	35.6	35.6	35.6	8.8	2.6	6.2	22.8	2.6		6.2			22.8	4.2	2.0									
DC-12/1/T14	T17-T18	377.00	54.086.03				2	1.626	275	10.00	16				5.03	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30</																																

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Al-Altura de la zanja concalcionada	A- Separación tubo salud	S- Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15. e-borrompi HM-20. f- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S/15. f-Suela adecuada procedente excavación (<150mm) C/95% PN. g- Luchero modif.	Exposic (m. escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	H1-DH+H2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m³)	Releño c-arena (m³)	Releño riñonera(s)m²	Releño cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Releño riñonera suelo seleccionado C/95% PN, < 30 mm	Releño riñonera grabaciado (m³)	Releño cama+riñonera HM-20(m³)	Releño cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Releño cobertura. d-Gabarrillo S/15	Releño cobertura. e- HM-20	Releño cobertura. f-Suelo adecuado excavación (<150mm) C/95% PN	Releño cobertura. g- Luchero modif (m³)	Excedente de tierra (m³) (consumo actual 0%, espolvoreo vertical 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m (m³)
DC-12/1/T14	T17-T18	477.00	54186.03				2	1.626	275	10.00	16					4.82	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.7	33.7	33.7	8.8	2.6	6.2	20.9	2.6		6.2			20.9	4.2	2.0									
DC-12/1/T14	T17-T18	478.00	54187.03				2	1.626	275	10.00	16					4.82	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.7	33.7	33.7	8.8	2.6	6.2	20.9	2.6		6.2			20.9	4.2	2.0									
DC-12/1/T14	T17-T18	479.00	54188.03				2	1.626	275	10.00	16					4.82	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.7	33.7	33.7	8.8	2.6	6.2	20.9	2.6		6.2			20.9	4.2	2.0									
DC-12/1/T14	T17-T18	480.00	54189.03				2	1.626	275	10.00	16					4.81	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.7	33.7	33.7	8.8	2.6	6.2	20.9	2.6		6.2			20.9	4.2	2.0									
DC-12/1/T14	T17-T18	481.00	54190.03				2	1.626	275	10.00	16					4.81	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.7	33.7	33.7	8.8	2.6	6.2	20.9	2.6		6.2			20.9	4.2	2.0									
DC-12/1/T14	T17-T18	482.00	54191.03				2	1.626	275	10.00	16					4.81	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.7	33.7	33.7	8.8	2.6	6.2	20.9	2.6		6.2			20.9	4.2	2.0									
DC-12/1/T14	T17-T18	483.00	54192.03				2	1.626	275	10.00	16					4.81	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.7	33.7	33.7	8.8	2.6	6.2	20.9	2.6		6.2			20.9	4.2	2.0									
DC-12/1/T14	T17-T18	484.00	54193.03				2	1.626	275	10.00	16					4.81	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.7	33.7	33.7	8.8	2.6	6.2	20.9	2.6		6.2			20.9	4.2	2.0									
DC-12/1/T14	T17-T18	485.00	54194.03				2	1.626	275	10.00	16					4.80	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.6	33.6	33.6	8.8	2.6	6.2	20.8	2.6		6.2			20.8	4.2	2.0									
DC-12/1/T14	T17-T18	486.00	54195.03				2	1.626	275	10.00	16					4.80	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.6	33.6	33.6	8.8	2.6	6.2	20.8	2.6		6.2			20.8	4.2	2.0									
DC-12/1/T14	T17-T18	487.00	54196.03				2	1.626	275	10.00	16					4.80	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.6	33.6	33.6	8.8	2.6	6.2	20.8	2.6		6.2			20.8	4.2	2.0									
DC-12/1/T14	T17-T18	488.00	54197.03				2	1.626	275	10.00	16					4.80	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.6	33.6	33.6	8.8	2.6	6.2	20.8	2.6		6.2			20.8	4.2	2.0									
DC-12/1/T14	T17-T18	489.00	54198.03				2	1.626	275	10.00	16					4.80	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.6	33.6	33.6	8.8	2.6	6.2	20.8	2.6		6.2			20.8	4.2	2.0									
DC-12/1/T14	T17-T18	490.00	54199.03				2	1.626	275	10.00	16					4.80	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.6	33.6	33.6	8.8	2.6	6.2	20.8	2.6		6.2			20.8	4.2	2.0									
DC-12/1/T14	T17-T18	491.00	54200.03				2	1.626	275	10.00	16					4.80	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.6	33.6	33.6	8.8	2.6	6.2	20.8	2.6		6.2			20.8	4.2	2.0									
DC-12/1/T14	T17-T18	492.00	54201.03				2	1.626	275	10.00	16					4.79	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.5	33.5	33.5	8.8	2.6	6.2	20.7	2.6		6.2			20.7	4.2	2.0									
DC-12/1/T14	T17-T18	493.00	54202.03				2	1.626	275	10.00	16					4.79	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.5	33.5	33.5	8.8	2.6	6.2	20.7	2.6		6.2			20.7	4.2	2.0									
DC-12/1/T14	T17-T18	494.00	54203.03				2	1.626	275	10.00	16					4.79	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.5	33.5	33.5	8.8	2.6	6.2	20.7	2.6		6.2			20.7	4.2	2.0									
DC-12/1/T14	T17-T18	495.00	54204.03				2	1.626	275	10.00	16					4.79	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.5	33.5	33.5	8.8	2.6	6.2	20.7	2.6		6.2			20.7	4.2	2.0									
DC-12/1/T14	T17-T18	496.00	54205.03				2	1.626	275	10.00	16					4.79	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.5	33.5	33.5	8.8	2.6	6.2	20.7	2.6		6.2			20.7	4.2	2.0									
DC-12/1/T14	T17-T18	497.00	54206.03				2	1.626	275	10.00	16					4.79	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.5	33.5	33.5	8.8	2.6	6.2	20.7	2.6		6.2			20.7	4.2	2.0									
DC-12/1/T14	T17-T18	498.00	54207.03				2	1.626	275	10.00	16					4.79	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.5	33.5	33.5	8.8	2.6	6.2	20.7	2.6		6.2			20.7	4.2	2.0									
DC-12/1/T14	T17-T18	499.00	54208.03				2	1.626	275	10.00	16					4.78	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.5	33.5	33.5	8.8	2.6	6.2	20.7	2.6		6.2			20.7	4.2	2.0									
DC-12/1/T14	T17-T18	500.00	54209.03				2	1.626	275	10.00	16					4.78	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.4	33.4	33.4	8.8	2.6	6.2	20.6	2.6		6.2			20.6	4.2	2.0									
DC-12/1/T14	T17-T18	501.00	54210.03				2	1.626	275	10.00	16					4.78	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.4	33.4	33.4	8.8	2.6	6.2	20.6	2.6		6.2			20.6	4.2	2.0									
DC-12/1/T14	T17-T18	502.00	54211.03				2	1.626	275	10.00	16					4.78	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.4	33.4	33.4	8.8	2.6	6.2	20.6	2.6		6.2			20.6	4.2	2.0									
DC-12/1/T14	T17-T18	503.00	54212.03				2	1.626	275	10.00	16					4.78	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.4	33.4	33.4	8.8	2.6	6.2	20.6	2.6		6.2			20.6	4.2	2.0									
DC-12/1/T14	T17-T18	504.00	54213.03				2	1.626	275	10.00	16					4.78	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.4	33.4	33.4	8.8	2.6	6.2	20.6	2.6		6.2			20.6	4.2	2.0									
DC-12/1/T14	T17-T18	505.00	54214.03				2	1.626	275	10.00	16					4.78	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.4	33.4	33.4	8.8	2.6	6.2	20.6	2.6		6.2			20.6	4.2	2.0									
DC-12/1/T14	T17-T18	505.49	54214.52				2	1.626	275	10.00	16					4.78	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.5	16.5	16.5	16.5	4.3	1.3																			

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre, Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A-: separación tubo salud	S ₂ -: Separación entre tuberías	B-: Ancho interior (m)	Borne X1	Borne X2	H1-: Cama apoyo (m)	Ang. Apoyo	H2-: Recubrimiento cobertura mínimo (m)	H3-: Profundidad mínima s/ cave (m)	H4-: altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Gabarrillo S/15. e-borrompi HM-20 Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S/15. f-suelo adecuado para excavación (<150mm) c/95% PN. g- Lecho mod.	Exposor (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (n)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñones (m3)	Relevo c-ama (m3)	Relevo riñones(s/m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñones suelo seleccionado (m3)	Relevo riñones grabaciolo (m3)	Relevo cama+riñones HM-20(m3)	Relevo cobertura c-: Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d-Gabarrillo S/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suelo adecuado para excavación (<150mm) c/95% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0%, e-superficie vertical 5%)	Cinta liberata (m3)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-121/H14	H17-118	606.00	54.315.03			Apoyo arqueta	2	1.626	275	10.00	16				3.41	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	22.3	22.3	22.3	9.1	2.9	6.3	9.1		6.3		9.1				4.2	2.0								
DC-121/H14	H17-118	607.00	54.316.03			Apoyo arqueta	2	1.626	275	10.00	16				3.38	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	22.0	22.0	22.0	9.1	2.9	6.3	8.9		6.3		8.9				4.2	2.0								
DC-121/H14	H17-118	608.00	54.317.03			Apoyo arqueta	2	1.626	275	10.00	16				3.36	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	21.9	21.9	21.9	9.1	2.9	6.3	8.7		6.3		8.7				4.2	2.0								
DC-121/H14	H17-118	609.00	54.318.03			Apoyo arqueta	2	1.626	275	10.00	16				3.42	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	21.8	21.8	21.8	9.1	2.9	6.3	8.6		6.3		8.6				4.2	2.0								
DC-121/H14	H17-118	610.00	54.319.03	Verticosa	VZS-200	Apoyo arqueta	2	1.626	275	10.00	16			2.00	3.33	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	21.7	21.7	21.7	9.1	2.9	6.3	8.6		6.3		8.6				4.2	2.0								
DC-121/H14	H17-118	611.00	54.320.03			Apoyo arqueta	2	1.626	275	10.00	16				3.34	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	21.7	21.7	21.7	9.1	2.9	6.3	8.6		6.3		8.6				4.2	2.0								
DC-121/H14	H17-118	612.00	54.321.03			Apoyo arqueta	2	1.626	275	10.00	16				3.34	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	21.8	21.8	21.8	9.1	2.9	6.3	8.6		6.3		8.6				4.2	2.0								
DC-121/H14	H17-118	613.00	54.322.03			Apoyo arqueta	2	1.626	275	10.00	16				3.35	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	21.8	21.8	21.8	9.1	2.9	6.3	8.7		6.3		8.7				4.2	2.0								
DC-121/H14	H17-118	614.00	54.323.03			Apoyo arqueta	2	1.626	275	10.00	16				3.35	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	21.9	21.9	21.9	9.1	2.9	6.3	8.7		6.3		8.7				4.2	2.0								
DC-121/H14	H17-118	615.00	54.324.03			Apoyo arqueta	2	1.626	275	10.00	16				3.36	0.33	25-2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	d	a	100%	0.7	2.2	1.0	21.9	21.9	21.9	9.1	2.9	6.3	8.7		6.3		8.7				4.2	2.0								
DC-121/H14	H17-118	616.00	54.325.03			Apoyo arqueta	2	1.626	275	10.00	16				3.36	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.9	21.9	21.9	8.8	2.6	6.2	9.1	2.6		6.2				9.1	4.2	2.0								
DC-121/H14	H17-118	617.00	54.326.03				2	1.626	275	10.00	16				3.37	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.0	22.0	22.0	8.8	2.6	6.2	9.2	2.6		6.2				9.2	4.2	2.0								
DC-121/H14	H17-118	618.00	54.327.03				2	1.626	275	10.00	16				3.38	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.0	22.0	22.0	8.8	2.6	6.2	9.2	2.6		6.2				9.2	4.2	2.0								
DC-121/H14	H17-118	619.00	54.328.03				2	1.626	275	10.00	16				3.38	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.1	22.1	22.1	8.8	2.6	6.2	9.3	2.6		6.2				9.3	4.2	2.0								
DC-121/H14	H17-118	620.00	54.329.03				2	1.626	275	10.00	16				3.39	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.1	22.1	22.1	8.8	2.6	6.2	9.3	2.6		6.2				9.3	4.2	2.0								
DC-121/H14	H17-118	621.00	54.330.03				2	1.626	275	10.00	16				3.39	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.2	22.2	22.2	8.8	2.6	6.2	9.3	2.6		6.2				9.3	4.2	2.0								
DC-121/H14	H17-118	622.00	54.331.03				2	1.626	275	10.00	16				3.40	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.2	22.2	22.2	8.8	2.6	6.2	9.4	2.6		6.2				9.4	4.2	2.0								
DC-121/H14	H17-118	623.00	54.332.03				2	1.626	275	10.00	16				3.41	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.3	22.3	22.3	8.8	2.6	6.2	9.5	2.6		6.2				9.5	4.2	2.0								
DC-121/H14	H17-118	624.00	54.333.03				2	1.626	275	10.00	16				3.42	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.3	22.3	22.3	8.8	2.6	6.2	9.5	2.6		6.2				9.5	4.2	2.0								
DC-121/H14	H17-118	625.00	54.334.03				2	1.626	275	10.00	16				3.42	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.4	22.4	22.4	8.8	2.6	6.2	9.6	2.6		6.2				9.6	4.2	2.0								
DC-121/H14	H17-118	626.00	54.335.03				2	1.626	275	10.00	16				3.43	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.4	22.4	22.4	8.8	2.6	6.2	9.6	2.6		6.2				9.6	4.2	2.0								
DC-121/H14	H17-118	627.00	54.336.03				2	1.626	275	10.00	16				3.44	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.5	22.5	22.5	8.8	2.6	6.2	9.7	2.6		6.2				9.7	4.2	2.0								
DC-121/H14	H17-118	628.00	54.337.03				2	1.626	275	10.00	16				3.44	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.5	22.5	22.5	8.8	2.6	6.2	9.7	2.6		6.2				9.7	4.2	2.0								
DC-121/H14	H17-118	629.00	54.338.03				2	1.626	275	10.00	16				3.44	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.5	22.5	22.5	8.8	2.6	6.2	9.7	2.6		6.2				9.7	4.2	2.0								
DC-121/H14	H17-118	630.00	54.339.03				2	1.626	275	10.00	16				3.42	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.4	22.4	22.4	8.8	2.6	6.2	9.6	2.6		6.2				9.6	4.2	2.0								
DC-121/H14	H17-118	631.00	54.340.03				2	1.626	275	10.00	16				3.41	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.3	22.3	22.3	8.8	2.6	6.2	9.5	2.6		6.2				9.5	4.2	2.0								
DC-121/H14	H17-118	632.00	54.341.03				2	1.626	275	10.00	16				3.40	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.2	22.2	22.2	8.8	2.6	6.2	9.4	2.6		6.2				9.4	4.2	2.0								
DC-121/H14	H17-118	633.00	54.342.03				2	1.626	275	10.00	16				3.39	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.2	22.2	22.2	8.8	2.6	6.2	9.3	2.6		6.2				9.3	4.2	2.0								
DC-121/H14	H17-118	634.00	54.343.03				2	1.626	275	10.00	16				3.39	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.1	22.1	22.1	8.8	2.6	6.2	9.3	2.6		6.2				9.3	4.2	2.0								
DC-121/H14	H17-118	635.00	54.344.03				2	1.626	275	10.00	16				3.39	0.33	21-2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.1	22.1	22.1	8.8	2.6	6.2	9.3	2.6		6.2				9.3	4.2	2.0								
DC-121/H14	H17-118	636.00	54.345.03				2	1.62																																																

Agrupación	Tamaño	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A-: separación tubo salud	S ₂ -: Separación entre tuberías	B-: Ancho interior (m)	Borne X1	Borne X2	H1-: Cama apoyo (m)	Ang. Apoyo	H2-: Recubrimiento cobertura mínima (m)	H3-: Profundidad mínima s/ cave (m)	H4-: altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Reforzamientos c-: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompi (M40)	Reforzamientos d-: Suela seleccionada C/95% PN, < 30 mm. e-M420. d-Garbanillo 5/15. f-Suela adecuada procedente excavación (<150mm) c/95% PN. g- Lecho modif.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	H1-DH+H2 (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M40(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera (M40(m3)	Relevo cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo 5/15	Relevo cobertura. e- H4/20	Relevo cobertura. f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relevo cobertura. g- Lecho modif (m3)	Excedente de tierra (m3) (compensación altura 0%, e-superficies verticales 5%)	Cinta liberada (m3)	Manto escollera a 0.5m. ancho 30m. (m3)
DC-12/1/T14	T17-T18	995.00	54.704.03			2	1.626	275	10.00	16				3.39	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.1	22.1	22.1	8.8	2.6	6.2	9.3	2.6		6.2			9.3	4.2	2.0										
DC-12/1/T14	T17-T18	996.00	54.705.03			2	1.626	275	10.00	16				3.38	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.0	22.0	22.0	8.8	2.6	6.2	9.2	2.6		6.2			9.2	4.2	2.0										
DC-12/1/T14	T17-T18	997.00	54.706.03			2	1.626	275	10.00	16				3.37	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.9	21.9	21.9	8.8	2.6	6.2	9.1	2.6		6.2			9.1	4.2	2.0										
DC-12/1/T14	T17-T18	998.00	54.707.03			2	1.626	275	10.00	16				3.35	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.8	21.8	21.8	8.8	2.6	6.2	9.0	2.6		6.2			9.0	4.2	2.0										
DC-12/1/T14	T17-T18	999.00	54.708.03			2	1.626	275	10.00	16				3.35	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.8	21.8	21.8	8.8	2.6	6.2	9.0	2.6		6.2			9.0	4.2	2.0										
DC-12/1/T14	T17-T18	1000.00	54.709.03			2	1.626	275	10.00	16				3.37	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.0	22.0	22.0	8.8	2.6	6.2	9.2	2.6		6.2			9.2	4.2	2.0										
DC-12/1/T14	T17-T18	1001.00	54.710.03			2	1.626	275	10.00	16				3.40	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.2	22.2	22.2	8.8	2.6	6.2	9.4	2.6		6.2			9.4	4.2	2.0										
DC-12/1/T14	T17-T18	1002.00	54.711.03			2	1.626	275	10.00	16				3.43	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.4	22.4	22.4	8.8	2.6	6.2	9.6	2.6		6.2			9.6	4.2	2.0										
DC-12/1/T14	T17-T18	1003.00	54.712.03			2	1.626	275	10.00	16				3.45	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.6	22.6	22.6	8.8	2.6	6.2	9.8	2.6		6.2			9.8	4.2	2.0										
DC-12/1/T14	T17-T18	1004.00	54.713.03			2	1.626	275	10.00	16				3.48	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.8	22.8	22.8	8.8	2.6	6.2	10.0	2.6		6.2			10.0	4.2	2.0										
DC-12/1/T14	T17-T18	1005.00	54.714.03			2	1.626	275	10.00	16				3.51	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.0	23.0	23.0	8.8	2.6	6.2	10.2	2.6		6.2			10.2	4.2	2.0										
DC-12/1/T14	T17-T18	1006.00	54.715.03			2	1.626	275	10.00	16				3.53	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.2	23.2	23.2	8.8	2.6	6.2	10.4	2.6		6.2			10.4	4.2	2.0										
DC-12/1/T14	T17-T18	1007.00	54.716.03			2	1.626	275	10.00	16				3.56	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.4	23.4	23.4	8.8	2.6	6.2	10.6	2.6		6.2			10.6	4.2	2.0										
DC-12/1/T14	T17-T18	1008.00	54.717.03			2	1.626	275	10.00	16				3.58	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.6	23.6	23.6	8.8	2.6	6.2	10.8	2.6		6.2			10.8	4.2	2.0										
DC-12/1/T14	T17-T18	1009.00	54.718.03			2	1.626	275	10.00	16				3.60	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.8	23.8	23.8	8.8	2.6	6.2	11.0	2.6		6.2			11.0	4.2	2.0										
DC-12/1/T14	T17-T18	1010.00	54.719.03			2	1.626	275	10.00	16				3.62	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.9	23.9	23.9	8.8	2.6	6.2	11.1	2.6		6.2			11.1	4.2	2.0										
DC-12/1/T14	T17-T18	1011.00	54.720.03			2	1.626	275	10.00	16				3.65	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.1	24.1	24.1	8.8	2.6	6.2	11.3	2.6		6.2			11.3	4.2	2.0										
DC-12/1/T14	T17-T18	1012.00	54.721.03			2	1.626	275	10.00	16				3.67	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.3	24.3	24.3	8.8	2.6	6.2	11.5	2.6		6.2			11.5	4.2	2.0										
DC-12/1/T14	T17-T18	1013.00	54.722.03			2	1.626	275	10.00	16				3.69	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.5	24.5	24.5	8.8	2.6	6.2	11.7	2.6		6.2			11.7	4.2	2.0										
DC-12/1/T14	T17-T18	1014.00	54.723.03			2	1.626	275	10.00	16				3.72	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.7	24.7	24.7	8.8	2.6	6.2	11.9	2.6		6.2			11.9	4.2	2.0										
DC-12/1/T14	T17-T18	1015.00	54.724.03			2	1.626	275	10.00	16				3.74	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.9	24.9	24.9	8.8	2.6	6.2	12.0	2.6		6.2			12.0	4.2	2.0										
DC-12/1/T14	T17-T18	1016.00	54.725.03			2	1.626	275	10.00	16				3.76	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.0	25.0	25.0	8.8	2.6	6.2	12.2	2.6		6.2			12.2	4.2	2.0										
DC-12/1/T14	T17-T18	1017.00	54.726.03			2	1.626	275	10.00	16				3.79	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.2	25.2	25.2	8.8	2.6	6.2	12.4	2.6		6.2			12.4	4.2	2.0										
DC-12/1/T14	T17-T18	1018.00	54.727.03			2	1.626	275	10.00	16				3.81	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.4	25.4	25.4	8.8	2.6	6.2	12.6	2.6		6.2			12.6	4.2	2.0										
DC-12/1/T14	T17-T18	1019.00	54.728.03			2	1.626	275	10.00	16				3.83	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.6	25.6	25.6	8.8	2.6	6.2	12.8	2.6		6.2			12.8	4.2	2.0										
DC-12/1/T14	T17-T18	1020.00	54.729.03			2	1.626	275	10.00	16				3.86	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.8	25.8	25.8	8.8	2.6	6.2	13.0	2.6		6.2			13.0	4.2	2.0										
DC-12/1/T14	T17-T18	1021.00	54.730.03			2	1.626	275	10.00	16				3.95	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.5	26.5	26.5	8.8	2.6	6.2	13.7	2.6		6.2			13.7	4.2	2.0										
DC-12/1/T14	T17-T18	1022.00	54.731.03			2	1.626	275	10.00	16				4.00	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.9	26.9	26.9	8.8	2.6	6.2	14.1	2.6		6.2			14.1	4.2	2.0										
DC-12/1/T14	T17-T18	1023.00	54.732.03			2	1.626	275	10.00	16				4.05	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.3	27.3	27.3	8.8	2.6	6.2	14.5	2.6		6.2			14.5	4.2	2.0										
DC-12/1/T14	T17-T18	1024.00	54.733.03			2	1.626	275	10.00	16				4.11	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.8	27.8	27.8	8.8	2.6	6.2	15.0	2.6		6.2			15.0	4.2	2.0										
DC-12/1/T14	T17-T18	1025.00	54.734.03			2	1.626	275	10.00	16				4.17	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.3																								

Agrupación	Tramo	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN del (mm)	Acero tipo S	espesor adoptado (mm)	PN (límite valores de dim)	Nº verticos por tubería	DN vertical (mm)	Nº válvulas de sague	DN Desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre, Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Taldud HW	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	R ₁ -R ₂ -R ₃ -R ₄ -R ₅ -R ₆ -R ₇ -R ₈ -R ₉ -R ₁₀ -R ₁₁ -R ₁₂ -R ₁₃ -R ₁₄ -R ₁₅ -R ₁₆ -R ₁₇ -R ₁₈ -R ₁₉ -R ₂₀ -R ₂₁ -R ₂₂ -R ₂₃ -R ₂₄ -R ₂₅ -R ₂₆ -R ₂₇ -R ₂₈ -R ₂₉ -R ₃₀ -R ₃₁ -R ₃₂ -R ₃₃ -R ₃₄ -R ₃₅ -R ₃₆ -R ₃₇ -R ₃₈ -R ₃₉ -R ₄₀ -R ₄₁ -R ₄₂ -R ₄₃ -R ₄₄ -R ₄₅ -R ₄₆ -R ₄₇ -R ₄₈ -R ₄₉ -R ₅₀ -R ₅₁ -R ₅₂ -R ₅₃ -R ₅₄ -R ₅₅ -R ₅₆ -R ₅₇ -R ₅₈ -R ₅₉ -R ₆₀ -R ₆₁ -R ₆₂ -R ₆₃ -R ₆₄ -R ₆₅ -R ₆₆ -R ₆₇ -R ₆₈ -R ₆₉ -R ₇₀ -R ₇₁ -R ₇₂ -R ₇₃ -R ₇₄ -R ₇₅ -R ₇₆ -R ₇₇ -R ₇₈ -R ₇₉ -R ₈₀ -R ₈₁ -R ₈₂ -R ₈₃ -R ₈₄ -R ₈₅ -R ₈₆ -R ₈₇ -R ₈₈ -R ₈₉ -R ₉₀ -R ₉₁ -R ₉₂ -R ₉₃ -R ₉₄ -R ₉₅ -R ₉₆ -R ₉₇ -R ₉₈ -R ₉₉ -R ₁₀₀ -R ₁₀₁ -R ₁₀₂ -R ₁₀₃ -R ₁₀₄ -R ₁₀₅ -R ₁₀₆ -R ₁₀₇ -R ₁₀₈ -R ₁₀₉ -R ₁₁₀ -R ₁₁₁ -R ₁₁₂ -R ₁₁₃ -R ₁₁₄ -R ₁₁₅ -R ₁₁₆ -R ₁₁₇ -R ₁₁₈ -R ₁₁₉ -R ₁₂₀ -R ₁₂₁ -R ₁₂₂ -R ₁₂₃ -R ₁₂₄ -R ₁₂₅ -R ₁₂₆ -R ₁₂₇ -R ₁₂₈ -R ₁₂₉ -R ₁₃₀ -R ₁₃₁ -R ₁₃₂ -R ₁₃₃ -R ₁₃₄ -R ₁₃₅ -R ₁₃₆ -R ₁₃₇ -R ₁₃₈ -R ₁₃₉ -R ₁₄₀ -R ₁₄₁ -R ₁₄₂ -R ₁₄₃ -R ₁₄₄ -R ₁₄₅ -R ₁₄₆ -R ₁₄₇ -R ₁₄₈ -R ₁₄₉ -R ₁₅₀ -R ₁₅₁ -R ₁₅₂ -R ₁₅₃ -R ₁₅₄ -R ₁₅₅ -R ₁₅₆ -R ₁₅₇ -R ₁₅₈ -R ₁₅₉ -R ₁₆₀ -R ₁₆₁ -R ₁₆₂ -R ₁₆₃ -R ₁₆₄ -R ₁₆₅ -R ₁₆₆ -R ₁₆₇ -R ₁₆₈ -R ₁₆₉ -R ₁₇₀ -R ₁₇₁ -R ₁₇₂ -R ₁₇₃ -R ₁₇₄ -R ₁₇₅ -R ₁₇₆ -R ₁₇₇ -R ₁₇₈ -R ₁₇₉ -R ₁₈₀ -R ₁₈₁ -R ₁₈₂ -R ₁₈₃ -R ₁₈₄ -R ₁₈₅ -R ₁₈₆ -R ₁₈₇ -R ₁₈₈ -R ₁₈₉ -R ₁₉₀ -R ₁₉₁ -R ₁₉₂ -R ₁₉₃ -R ₁₉₄ -R ₁₉₅ -R ₁₉₆ -R ₁₉₇ -R ₁₉₈ -R ₁₉₉ -R ₂₀₀ -R ₂₀₁ -R ₂₀₂ -R ₂₀₃ -R ₂₀₄ -R ₂₀₅ -R ₂₀₆ -R ₂₀₇ -R ₂₀₈ -R ₂₀₉ -R ₂₁₀ -R ₂₁₁ -R ₂₁₂ -R ₂₁₃ -R ₂₁₄ -R ₂₁₅ -R ₂₁₆ -R ₂₁₇ -R ₂₁₈ -R ₂₁₉ -R ₂₂₀ -R ₂₂₁ -R ₂₂₂ -R ₂₂₃ -R ₂₂₄ -R ₂₂₅ -R ₂₂₆ -R ₂₂₇ -R ₂₂₈ -R ₂₂₉ -R ₂₃₀ -R ₂₃₁ -R ₂₃₂ -R ₂₃₃ -R ₂₃₄ -R ₂₃₅ -R ₂₃₆ -R ₂₃₇ -R ₂₃₈ -R ₂₃₉ -R ₂₄₀ -R ₂₄₁ -R ₂₄₂ -R ₂₄₃ -R ₂₄₄ -R ₂₄₅ -R ₂₄₆ -R ₂₄₇ -R ₂₄₈ -R ₂₄₉ -R ₂₅₀ -R ₂₅₁ -R ₂₅₂ -R ₂₅₃ -R ₂₅₄ -R ₂₅₅ -R ₂₅₆ -R ₂₅₇ -R ₂₅₈ -R ₂₅₉ -R ₂₆₀ -R ₂₆₁ -R ₂₆₂ -R ₂₆₃ -R ₂₆₄ -R ₂₆₅ -R ₂₆₆ -R ₂₆₇ -R ₂₆₈ -R ₂₆₉ -R ₂₇₀ -R ₂₇₁ -R ₂₇₂ -R ₂₇₃ -R ₂₇₄ -R ₂₇₅ -R ₂₇₆ -R ₂₇₇ -R ₂₇₈ -R ₂₇₉ -R ₂₈₀ -R ₂₈₁ -R ₂₈₂ -R ₂₈₃ -R ₂₈₄ -R ₂₈₅ -R ₂₈₆ -R ₂₈₇ -R ₂₈₈ -R ₂₈₉ -R ₂₉₀ -R ₂₉₁ -R ₂₉₂ -R ₂₉₃ -R ₂₉₄ -R ₂₉₅ -R ₂₉₆ -R ₂₉₇ -R ₂₉₈ -R ₂₉₉ -R ₃₀₀ -R ₃₀₁ -R ₃₀₂ -R ₃₀₃ -R ₃₀₄ -R ₃₀₅ -R ₃₀₆ -R ₃₀₇ -R ₃₀₈ -R ₃₀₉ -R ₃₁₀ -R ₃₁₁ -R ₃₁₂ -R ₃₁₃ -R ₃₁₄ -R ₃₁₅ -R ₃₁₆ -R ₃₁₇ -R ₃₁₈ -R ₃₁₉ -R ₃₂₀ -R ₃₂₁ -R ₃₂₂ -R ₃₂₃ -R ₃₂₄ -R ₃₂₅ -R ₃₂₆ -R ₃₂₇ -R ₃₂₈ -R ₃₂₉ -R ₃₃₀ -R ₃₃₁ -R ₃₃₂ -R ₃₃₃ -R ₃₃₄ -R ₃₃₅ -R ₃₃₆ -R ₃₃₇ -R ₃₃₈ -R ₃₃₉ -R ₃₄₀ -R ₃₄₁ -R ₃₄₂ -R ₃₄₃ -R ₃₄₄ -R ₃₄₅ -R ₃₄₆ -R ₃₄₇ -R ₃₄₈ -R ₃₄₉ -R ₃₅₀ -R ₃₅₁ -R ₃₅₂ -R ₃₅₃ -R ₃₅₄ -R ₃₅₅ -R ₃₅₆ -R ₃₅₇ -R ₃₅₈ -R ₃₅₉ -R ₃₆₀ -R ₃₆₁ -R ₃₆₂ -R ₃₆₃ -R ₃₆₄ -R ₃₆₅ -R ₃₆₆ -R ₃₆₇ -R ₃₆₈ -R ₃₆₉ -R ₃₇₀ -R ₃₇₁ -R ₃₇₂ -R ₃₇₃ -R ₃₇₄ -R ₃₇₅ -R ₃₇₆ -R ₃₇₇ -R ₃₇₈ -R ₃₇₉ -R ₃₈₀ -R ₃₈₁ -R ₃₈₂ -R ₃₈₃ -R ₃₈₄ -R ₃₈₅ -R ₃₈₆ -R ₃₈₇ -R ₃₈₈ -R ₃₈₉ -R ₃₉₀ -R ₃₉₁ -R ₃₉₂ -R ₃₉₃ -R ₃₉₄ -R ₃₉₅ -R ₃₉₆ -R ₃₉₇ -R ₃₉₈ -R ₃₉₉ -R ₄₀₀ -R ₄₀₁ -R ₄₀₂ -R ₄₀₃ -R ₄₀₄ -R ₄₀₅ -R ₄₀₆ -R ₄₀₇ -R ₄₀₈ -R ₄₀₉ -R ₄₁₀ -R ₄₁₁ -R ₄₁₂ -R ₄₁₃ -R ₄₁₄ -R ₄₁₅ -R ₄₁₆ -R ₄₁₇ -R ₄₁₈ -R ₄₁₉ -R ₄₂₀ -R ₄₂₁ -R ₄₂₂ -R ₄₂₃ -R ₄₂₄ -R ₄₂₅ -R ₄₂₆ -R ₄₂₇ -R ₄₂₈ -R ₄₂₉ -R ₄₃₀ -R ₄₃₁ -R ₄₃₂ -R ₄₃₃ -R ₄₃₄ -R ₄₃₅ -R ₄₃₆ -R ₄₃₇ -R ₄₃₈ -R ₄₃₉ -R ₄₄₀ -R ₄₄₁ -R ₄₄₂ -R ₄₄₃ -R ₄₄₄ -R ₄₄₅ -R ₄₄₆ -R ₄₄₇ -R ₄₄₈ -R ₄₄₉ -R ₄₅₀ -R ₄₅₁ -R ₄₅₂ -R ₄₅₃ -R ₄₅₄ -R ₄₅₅ -R ₄₅₆ -R ₄₅₇ -R ₄₅₈ -R ₄₅₉ -R ₄₆₀ -R ₄₆₁ -R ₄₆₂ -R ₄₆₃ -R ₄₆₄ -R ₄₆₅ -R ₄₆₆ -R ₄₆₇ -R ₄₆₈ -R ₄₆₉ -R ₄₇₀ -R ₄₇₁ -R ₄₇₂ -R ₄₇₃ -R ₄₇₄ -R ₄₇₅ -R ₄₇₆ -R ₄₇₇ -R ₄₇₈ -R ₄₇₉ -R ₄₈₀ -R ₄₈₁ -R ₄₈₂ -R ₄₈₃ -R ₄₈₄ -R ₄₈₅ -R ₄₈₆ -R ₄₈₇ -R ₄₈₈ -R ₄₈₉ -R ₄₉₀ -R ₄₉₁ -R ₄₉₂ -R ₄₉₃ -R ₄₉₄ -R ₄₉₅ -R ₄₉₆ -R ₄₉₇ -R ₄₉₈ -R ₄₉₉ -R ₅₀₀ -R ₅₀₁ -R ₅₀₂ -R ₅₀₃ -R ₅₀₄ -R ₅₀₅ -R ₅₀₆ -R ₅₀₇ -R ₅₀₈ -R ₅₀₉ -R ₅₁₀ -R ₅₁₁ -R ₅₁₂ -R ₅₁₃ -R ₅₁₄ -R ₅₁₅ -R ₅₁₆ -R ₅₁₇ -R ₅₁₈ -R ₅₁₉ -R ₅₂₀ -R ₅₂₁ -R ₅₂₂ -R ₅₂₃ -R ₅₂₄ -R ₅₂₅ -R ₅₂₆ -R ₅₂₇ -R ₅₂₈ -R ₅₂₉ -R ₅₃₀ -R ₅₃₁ -R ₅₃₂ -R ₅₃₃ -R ₅₃₄ -R ₅₃₅ -R ₅₃₆ -R ₅₃₇ -R ₅₃₈ -R ₅₃₉ -R ₅₄₀ -R ₅₄₁ -R ₅₄₂ -R ₅₄₃ -R ₅₄₄ -R ₅₄₅ -R ₅₄₆ -R ₅₄₇ -R ₅₄₈ -R ₅₄₉ -R ₅₅₀ -R ₅₅₁ -R ₅₅₂ -R ₅₅₃ -R ₅₅₄ -R ₅₅₅ -R ₅₅₆ -R ₅₅₇ -R ₅₅₈ -R ₅₅₉ -R ₅₆₀ -R ₅₆₁ -R ₅₆₂ -R ₅₆₃ -R ₅₆₄ -R ₅₆₅ -R ₅₆₆ -R ₅₆₇ -R ₅₆₈ -R ₅₆₉ -R ₅₇₀ -R ₅₇₁ -R ₅₇₂ -R ₅₇₃ -R ₅₇₄ -R ₅₇₅ -R ₅₇₆ -R ₅₇₇ -R ₅₇₈ -R ₅₇₉ -R ₅₈₀ -R ₅₈₁ -R ₅₈₂ -R ₅₈₃ -R ₅₈₄ -R ₅₈₅ -R ₅₈₆ -R ₅₈₇ -R ₅₈₈ -R ₅₈₉ -R ₅₉₀ -R ₅₉₁ -R ₅₉₂ -R ₅₉₃ -R ₅₉₄ -R ₅₉₅ -R ₅₉₆ -R ₅₉₇ -R ₅₉₈ -R ₅₉₉ -R ₆₀₀ -R ₆₀₁ -R ₆₀₂ -R ₆₀₃ -R ₆₀₄ -R ₆₀₅ -R ₆₀₆ -R ₆₀₇ -R ₆₀₈ -R ₆₀₉ -R ₆₁₀ -R ₆₁₁ -R ₆₁₂ -R ₆₁₃ -R ₆₁₄ -R ₆₁₅ -R ₆₁₆ -R ₆₁₇ -R ₆₁₈ -R ₆₁₉ -R ₆₂₀ -R ₆₂₁ -R ₆₂₂ -R ₆₂₃ -R ₆₂₄ -R ₆₂₅ -R ₆₂₆ -R ₆₂₇ -R ₆₂₈ -R ₆₂₉ -R ₆₃₀ -R ₆₃₁ -R ₆₃₂ -R ₆₃₃ -R ₆₃₄ -R ₆₃₅ -R ₆₃₆ -R ₆₃₇ -R ₆₃₈ -R ₆₃₉ -R ₆₄₀ -R ₆₄₁ -R ₆₄₂ -R ₆₄₃ -R ₆₄₄ -R ₆₄₅ -R ₆₄₆ -R ₆₄₇ -R ₆₄₈ -R ₆₄₉ -R ₆₅₀ -R ₆₅₁ -R ₆₅₂ -R ₆₅₃ -R ₆₅₄ -R ₆₅₅ -R ₆₅₆ -R ₆₅₇ -R ₆₅₈ -R ₆₅₉ -R ₆₆₀ -R ₆₆₁ -R ₆₆₂ -R ₆₆₃ -R ₆₆₄ -R ₆₆₅ -R ₆₆₆ -R ₆₆₇ -R ₆₆₈ -R ₆₆₉ -R ₆₇₀ -R ₆₇₁ -R ₆₇₂ -R ₆₇₃ -R ₆₇₄ -R ₆₇₅ -R ₆₇₆ -R ₆₇₇ -R ₆₇₈ -R ₆₇₉ -R ₆₈₀ -R ₆₈₁ -R ₆₈₂ -R ₆₈₃ -R ₆₈₄ -R ₆₈₅ -R ₆₈₆ -R ₆₈₇ -R ₆₈₈ -R ₆₈₉ -R ₆₉₀ -R ₆₉₁ -R ₆₉₂ -R ₆₉₃ -R ₆₉₄ -R ₆₉₅ -R ₆₉₆ -R ₆₉₇ -R ₆₉₈ -R ₆₉₉ -R ₇₀₀ -R ₇₀₁ -R ₇₀₂ -R ₇₀₃ -R ₇₀₄ -R ₇₀₅ -R ₇₀₆ -R ₇₀₇ -R ₇₀₈ -R ₇₀₉ -R ₇₁₀ -R ₇₁₁ -R ₇₁₂ -R ₇₁₃ -R ₇₁₄ -R ₇₁₅ -R ₇₁₆ -R ₇₁₇ -R ₇₁₈ -R ₇₁₉ -R ₇₂₀ -R ₇₂₁ -R ₇₂₂ -R ₇₂₃ -R ₇₂₄ -R ₇₂₅ -R ₇₂₆ -R ₇₂₇ -R ₇₂₈ -R ₇₂₉ -R ₇₃₀ -R ₇₃₁ -R ₇₃₂ -R ₇₃₃ -R ₇₃₄ -R ₇₃₅ -R ₇₃₆ -R ₇₃₇ -R ₇₃₈ -R ₇₃₉ -R ₇₄₀ -R ₇₄₁ -R ₇₄₂ -R ₇₄₃ -R ₇₄₄ -R ₇₄₅ -R ₇₄₆ -R ₇₄₇ -R ₇₄₈ -R ₇₄₉ -R ₇₅₀ -R ₇₅₁ -R ₇₅₂ -R ₇₅₃ -R ₇₅₄ -R ₇₅₅ -R ₇₅₆ -R ₇₅₇ -R ₇₅₈ -R ₇₅₉ -R ₇₆₀ -R ₇₆₁ -R ₇₆₂ -R ₇₆₃ -R ₇₆₄ -R ₇₆₅ -R ₇₆₆ -R ₇₆₇ -R ₇₆₈ -R ₇₆₉ -R ₇₇₀ -R ₇₇₁ -R ₇₇₂ -R ₇₇₃ -R ₇₇₄ -R ₇₇₅ -R ₇₇₆ -R ₇₇₇ -R ₇₇₈ -R ₇₇₉ -R ₇₈₀ -R ₇₈₁ -R ₇₈₂ -R ₇₈₃ -R ₇₈₄ -R ₇₈₅ -R ₇₈₆ -R ₇₈₇ -R ₇₈₈ -R ₇₈₉ -R ₇₉₀ -R ₇₉₁ -R ₇₉₂ -R ₇₉₃ -R ₇₉₄ -R ₇₉₅ -R ₇₉₆ -R ₇₉₇ -R ₇₉₈ -R ₇₉₉ -R ₈₀₀ -R ₈₀₁ -R ₈₀₂ -R ₈₀₃ -R ₈₀₄ -R ₈₀₅ -R ₈₀₆ -R ₈₀₇ -R ₈₀₈ -R ₈₀₉ -R ₈₁₀ -R ₈₁₁ -R ₈₁₂ -R ₈₁₃ -R ₈₁₄ -R ₈₁₅ -R ₈₁₆ -R ₈₁₇ -R ₈₁₈ -R ₈₁₉ -R ₈₂₀ -R ₈₂₁ -R ₈₂₂ -R ₈₂₃ -R ₈₂₄ -R ₈₂₅ -R ₈₂₆ -R ₈₂₇ -R ₈₂₈ -R ₈₂₉ -R ₈₃₀ -R ₈₃₁ -R ₈₃₂ -R ₈₃₃ -R ₈₃₄ -R ₈₃₅ -R ₈₃₆ -R ₈₃₇ -R ₈₃₈ -R ₈₃₉ -R ₈₄₀ -R ₈₄₁ -R ₈₄₂ -R ₈₄₃ -R ₈₄₄ -R ₈₄₅ -R ₈₄₆ -R ₈₄₇ -R ₈₄₈ -R ₈₄₉ -R ₈₅₀ -R ₈₅₁ -R ₈₅₂ -R ₈₅₃ -R ₈₅₄ -R ₈₅₅ -R ₈₅₆ -R ₈₅₇ -R ₈₅₈ -R ₈₅₉ -R ₈₆₀ -R ₈₆₁ -R ₈₆₂ -R ₈₆₃ -R ₈₆₄ -R ₈₆₅ -R ₈₆₆ -R ₈₆₇ -R ₈₆₈ -R ₈₆₉ -R ₈₇₀ -R ₈₇₁ -R ₈₇₂ -R ₈₇₃ -R ₈₇₄ -R ₈₇₅ -R ₈₇₆ -R ₈₇₇ -R ₈₇₈ -R ₈₇₉ -R ₈₈₀ -R ₈₈₁ -R ₈₈₂ -R ₈₈₃ -R ₈₈₄ -R ₈₈₅ -R ₈₈₆ -R ₈₈₇ -R ₈₈₈ -R ₈₈₉ -R ₈₉₀ -R ₈₉₁ -R ₈₉₂ -R ₈₉₃ -R ₈₉₄ -R ₈₉₅ -R ₈₉₆ -R ₈₉₇ -R ₈₉₈ -R ₈₉₉ -R ₉₀₀ -R ₉₀₁ -R ₉₀₂ -R ₉₀₃ -R ₉₀₄ -R ₉₀₅ -R ₉₀₆ -R ₉₀₇ -R ₉₀₈ -R ₉₀₉ -R ₉₁₀ -R ₉₁₁ -R ₉₁₂ -R ₉₁₃ -R ₉₁₄ -R ₉₁₅ -R ₉₁₆ -R ₉₁₇ -R ₉₁₈ -R ₉₁₉ -R ₉₂₀ -R ₉₂₁ -R ₉₂₂ -R ₉₂₃ -R ₉₂₄ -R ₉₂₅ -R ₉₂₆ -R ₉₂₇ -R ₉₂₈ -R ₉₂₉ -R ₉₃₀ -R ₉₃₁ -R ₉₃₂ -R ₉₃₃ -R ₉₃₄ -R ₉₃₅ -R ₉₃₆ -R ₉₃₇ -R ₉₃₈ -R ₉₃₉ -R ₉₄₀ -R ₉₄₁ -R ₉₄₂ -R ₉₄₃ -R ₉₄₄ -R ₉₄₅ -R ₉₄₆ -R ₉₄₇ -R ₉₄₈ -R ₉₄₉ -R ₉₅₀ -R ₉₅₁ -R ₉₅₂ -R ₉₅₃ -R ₉₅₄ -R ₉₅₅ -R ₉₅₆ -R ₉₅₇ -R ₉₅₈ -R ₉₅₉ -R ₉₆₀ -R ₉₆₁ -R ₉₆₂ -R ₉₆₃ -R ₉₆₄ -R ₉₆₅ -R ₉₆₆ -R ₉₆₇ -R ₉₆₈ -R ₉₆₉ -R ₉₇₀ -R ₉₇₁ -R ₉₇₂ -R ₉₇₃ -R ₉₇₄ -R ₉₇₅ -R ₉₇₆ -R ₉₇₇ -R ₉₇₈ -R ₉₇₉ -R ₉₈₀ -R ₉₈₁ -R ₉₈₂ -R ₉₈₃ -R ₉₈₄ -R ₉₈₅ -R ₉₈₆ -R ₉₈₇ -R ₉₈₈ -R ₉₈₉ -R ₉₉₀ -R ₉₉₁ -R ₉₉₂ -R ₉₉₃ -R ₉₉₄ -R ₉₉₅ -R ₉₉₆ -R ₉₉₇ -R ₉₉₈ -R ₉₉₉ -R ₁₀₀₀ -R ₁₀₀₁ -R ₁₀₀₂ -R ₁₀₀₃ -R ₁₀₀₄ -R ₁₀₀₅ -R ₁₀₀₆ -R ₁₀₀₇ -R ₁₀₀₈ -R ₁₀₀₉ -R ₁₀₁₀ -R ₁₀₁₁ -R ₁₀₁₂ -R ₁₀₁₃ -R ₁₀₁₄ -R ₁₀₁₅ -R ₁₀₁₆ -R ₁₀₁₇ -R ₁₀₁₈ -R ₁₀₁₉ -R ₁₀₂₀ -R ₁₀₂₁ -R ₁₀₂₂ -R ₁₀₂₃ -R ₁₀₂₄ -R ₁₀₂₅ -R ₁₀₂₆ -R ₁₀₂₇ -R ₁₀₂₈ -R ₁₀₂₉ -R ₁₀₃₀ -R ₁₀₃₁ -R ₁₀₃₂ -R ₁₀₃₃ -R ₁₀₃₄ -R ₁₀₃₅ -R ₁₀₃₆ -R ₁₀₃₇ -R ₁₀₃₈ -R ₁₀₃₉ -R ₁₀₄₀ -R ₁₀₄₁ -R ₁₀₄₂ -R ₁₀₄₃ -R ₁₀₄₄ -R ₁₀₄₅ -R ₁₀₄₆ -R ₁₀₄₇ -R ₁₀₄₈ -R ₁₀₄₉ -R ₁₀₅₀ -R ₁₀₅₁ -R ₁₀₅₂ -R ₁₀₅₃ -R ₁₀₅₄ -R ₁₀₅₅ -R ₁₀₅₆ -R ₁₀₅₇ -R ₁₀₅₈ -R ₁₀₅₉ -R ₁₀₆₀ -R ₁₀₆₁ -R ₁₀₆₂ -R ₁₀₆₃ -R ₁₀₆₄ -R ₁₀₆₅ -R ₁₀₆₆ -R ₁₀₆₇ -R ₁₀₆₈ -R ₁₀₆₉ -R ₁₀₇₀ -R ₁₀₇₁ -R ₁₀₇₂ -R ₁₀₇₃ -R ₁₀₇₄ -R ₁₀₇₅ -R ₁₀₇₆ -R ₁₀₇₇ -R ₁₀₇₈ -R ₁₀₇₉ -R ₁₀₈₀ -R ₁₀₈₁ -R ₁₀₈₂ -R ₁₀₈₃ -R ₁₀₈₄ -R ₁₀₈₅ -R ₁₀₈₆ -R ₁₀₈₇ -R ₁₀₈₈ -R ₁₀₈₉ -R ₁₀₉₀ -R ₁₀₉₁ -R ₁₀₉₂ -R ₁₀₉₃ -R ₁₀₉₄ -R ₁₀₉₅ -R ₁₀₉₆ -R ₁₀₉₇ -R ₁₀₉₈ -R ₁₀₉₉ -R ₁₁₀₀ -R ₁₁₀₁ -R ₁₁₀₂ -R ₁₁₀₃ -R ₁₁₀₄ -R ₁₁₀₅ -R ₁₁₀₆ -R ₁₁₀₇ -R ₁₁₀₈ -R ₁₁₀₉ -R ₁₁₁₀ -R ₁₁₁₁ -R ₁₁₁₂ -R ₁₁₁₃ -R ₁₁₁₄ -R ₁₁₁₅ -R ₁₁₁₆ -R ₁₁₁₇ -R ₁₁₁₈ -R ₁₁₁₉ -R ₁₁₂₀ -R ₁₁₂₁ -R ₁₁₂₂ -R ₁₁₂₃ -R ₁₁₂₄ -R ₁₁₂₅ -R ₁₁₂₆ -R ₁₁₂₇ -R ₁₁₂₈ -R ₁₁₂₉ -R ₁₁₃₀ -R ₁₁₃₁ -R ₁₁₃₂ -R ₁₁₃₃ -R ₁₁₃₄ -R ₁₁₃₅ -R ₁₁₃₆ -R ₁₁₃₇ -R ₁₁₃₈ -R ₁₁₃₉ -R ₁₁₄₀ -R ₁₁₄₁ -R ₁₁₄₂ -R ₁₁₄₃ -R ₁₁₄₄ -R ₁₁₄₅ -R ₁₁₄₆ -R ₁₁₄₇ -R ₁₁₄₈ -R ₁₁₄₉ -R ₁₁₅₀ -R ₁₁₅₁ -R ₁₁₅₂ -R ₁₁₅₃ -R ₁₁₅₄ -R ₁₁₅₅ -R ₁₁₅₆ -R _{1157</}
------------	-------	-------------	-----------------	----------	---------	-------------	-------------	-------------	--------------	-----------------------	----------------------------	-------------------------	------------------	----------------------	------------	-----------------	--------------------	---------------------------------	---	-------------------------------	-----------	--------------------------	--	-----------------------	----------	----------	--------------------	------------	--	------------------------------------	-----------------------------------	--	---

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Desague	Tipo de válvula	Agueta rotura tipo	Altura de excavación a TH (m)	Talud HW	Altura de excavación a TH (m)	A-: separación tubo salud	S ₂ :- Separación entre tuberías	B-:Ancho interior (m)	Borne X1	Borne X2	H1-:Cama apoyo (m)	Ang. Apoyo	H2-:Recubrimiento cobertura mínima (m)	H3-:Profundidad mínima s/ cave (m)	H4-: altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rebavaciones c-: Suela seleccionada C/95% PN, <= 30 mm. d-Garbanillo 5/15. e-bornopon HM-20. f-: Suela seleccionada C/95% PN, <= 30 mm. g- HM-20. d-Garbanillo 5/15. f-Suela adecuada procedente excavación (<=150mm) c/95% PN. g- Lecho mod.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño cama (m3)	Releño riñonera(s)m3	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM 20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera granbaillo (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura. d-Garbanillo 5/15	Releño cobertura. e- HM20	Releño cobertura. f-Suelo adecuado procedente excavación (<=150mm) c/95% PN	Releño cobertura. g- Lecho modif (m3)	Excedente de tierra (m3) (consumo actual 0%, e-superfornio vertical 5%)	Cinta liberada (m3)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-12/1/14	117-118	1.255.00	54.964.03				2	1.626	275	10.00	16		3.54	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.3	23.3	23.3	8.8	2.6	6.2	10.5	2.6			6.2		10.5	4.2	2.0									
DC-12/1/14	117-118	1.256.00	54.965.03				2	1.626	275	10.00	16		3.55	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.4	23.4	23.4	8.8	2.6	6.2	10.6	2.6			6.2		10.6	4.2	2.0									
DC-12/1/14	117-118	1.257.00	54.966.03				2	1.626	275	10.00	16		3.56	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.4	23.4	23.4	8.8	2.6	6.2	10.6	2.6			6.2		10.6	4.2	2.0									
DC-12/1/14	117-118	1.258.00	54.967.03				2	1.626	275	10.00	16		3.61	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.8	23.8	23.8	8.8	2.6	6.2	11.0	2.6			6.2		11.0	4.2	2.0									
DC-12/1/14	117-118	1.259.00	54.968.03				2	1.626	275	10.00	16		3.66	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.2	24.2	24.2	8.8	2.6	6.2	11.4	2.6			6.2		11.4	4.2	2.0									
DC-12/1/14	117-118	1.260.00	54.969.03				2	1.626	275	10.00	16		3.71	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.6	24.6	24.6	8.8	2.6	6.2	11.8	2.6			6.2		11.8	4.2	2.0									
DC-12/1/14	117-118	1.261.00	54.970.03				2	1.626	275	10.00	16		3.75	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.0	25.0	25.0	8.8	2.6	6.2	12.2	2.6			6.2		12.2	4.2	2.0									
DC-12/1/14	117-118	1.262.00	54.971.03				2	1.626	275	10.00	16		3.76	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.0	25.0	25.0	8.8	2.6	6.2	12.2	2.6			6.2		12.2	4.2	2.0									
DC-12/1/14	117-118	1.263.00	54.972.03				2	1.626	275	10.00	16		3.76	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.0	25.0	25.0	8.8	2.6	6.2	12.2	2.6			6.2		12.2	4.2	2.0									
DC-12/1/14	117-118	1.264.00	54.973.03				2	1.626	275	10.00	16		3.85	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.0	25.0	25.0	8.8	2.6	6.2	12.2	2.6			6.2		12.2	4.2	2.0									
DC-12/1/14	117-118	1.265.00	54.974.03				2	1.626	275	10.00	16		3.77	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.1	25.1	25.1	8.8	2.6	6.2	12.2	2.6			6.2		12.2	4.2	2.0									
DC-12/1/14	117-118	1.266.00	54.975.03				2	1.626	275	10.00	16		3.77	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.1	25.1	25.1	8.8	2.6	6.2	12.3	2.6			6.2		12.3	4.2	2.0									
DC-12/1/14	117-118	1.267.00	54.976.03				2	1.626	275	10.00	16		3.78	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.2	25.2	25.2	8.8	2.6	6.2	12.4	2.6			6.2		12.4	4.2	2.0									
DC-12/1/14	117-118	1.268.00	54.977.03				2	1.626	275	10.00	16		3.79	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.2	25.2	25.2	8.8	2.6	6.2	12.4	2.6			6.2		12.4	4.2	2.0									
DC-12/1/14	117-118	1.269.00	54.978.03				2	1.626	275	10.00	16		3.80	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.4	25.4	25.4	8.8	2.6	6.2	12.5	2.6			6.2		12.5	4.2	2.0									
DC-12/1/14	117-118	1.270.00	54.979.03				2	1.626	275	10.00	16		3.82	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.5	25.5	25.5	8.8	2.6	6.2	12.7	2.6			6.2		12.7	4.2	2.0									
DC-12/1/14	117-118	1.271.00	54.980.03				2	1.626	275	10.00	16		3.84	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.6	25.6	25.6	8.8	2.6	6.2	12.8	2.6			6.2		12.8	4.2	2.0									
DC-12/1/14	117-118	1.272.00	54.981.03				2	1.626	275	10.00	16		3.85	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.7	25.7	25.7	8.8	2.6	6.2	12.9	2.6			6.2		12.9	4.2	2.0									
DC-12/1/14	117-118	1.273.00	54.982.03				2	1.626	275	10.00	16		3.85	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.7	25.7	25.7	8.8	2.6	6.2	12.9	2.6			6.2		12.9	4.2	2.0									
DC-12/1/14	117-118	1.274.00	54.983.03				2	1.626	275	10.00	16		3.86	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.8	25.8	25.8	8.8	2.6	6.2	13.0	2.6			6.2		13.0	4.2	2.0									
DC-12/1/14	117-118	1.275.00	54.984.03				2	1.626	275	10.00	16		3.87	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.9	25.9	25.9	8.8	2.6	6.2	13.1	2.6			6.2		13.1	4.2	2.0									
DC-12/1/14	117-118	1.276.00	54.985.03				2	1.626	275	10.00	16		3.88	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.0	26.0	26.0	8.8	2.6	6.2	13.2	2.6			6.2		13.2	4.2	2.0									
DC-12/1/14	117-118	1.276.59	54.985.62				2	1.626	275	10.00	16		3.89	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.6	15.4	15.4	15.4	5.2	1.5	1.7	7.8	1.5			3.7		7.8	4.2	2.0									
DC-12/1/14	117-118	1.277.00	54.986.03				2	1.626	275	10.00	16		3.89	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.4	10.7	10.7	10.7	2.6	1.0	2.5	5.4	1.0			2.5		5.4	1.7	0.8									
DC-12/1/14	117-118	1.278.00	54.987.03				2	1.626	275	10.00	16		3.92	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.3	26.3	26.3	8.8	2.6	6.2	13.5	2.6			6.2		13.5	4.2	2.0									
DC-12/1/14	117-118	1.279.00	54.988.03				2	1.626	275	10.00	16		3.95	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.5	26.5	26.5	8.8	2.6	6.2	13.7	2.6			6.2		13.7	4.2	2.0									
DC-12/1/14	117-118	1.280.00	54.989.03				2	1.626	275	10.00	16		3.97	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.7	26.7	26.7	8.8	2.6	6.2	13.9	2.6			6.2		13.9	4.2	2.0									
DC-12/1/14	117-118	1.281.00	54.990.03				2	1.626	275	10.00	16		3.98	0.33	21.2-1600	0.60	1.00	5.40			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.8	26.8	26.8	8.8	2.6	6.2	14.0	2.6			6.2		14.0	4.2	2.0									
DC-12/1/14	117-118	1.282.00	54.991.03			Apoyo arqueta	2	1.626	275	10.00	16		4.00	0.33	25.2-1600	0.60	1.00	5.40			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	26.9	26.9	26.9	9.1	2.9	6.3	13.8		2.9		6.3		13.8	4.2	2.0									
DC-12/1/14	117-118	1.283.00	54.992.03			Apoyo arqueta	2	1.626	275	10.00	16		3.98	0.33	25.2-1600	0.60	1.00	5.40			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.2	1.0	26.7	26.7	26.7	9.1	2.9	6.3	13.6		2.9		6.3		13.6	4.2	2.0									
DC-12/1/14	117-118	1.284.00	54.993.03			Apoyo arqueta	2	1.626	275	10.00	16		3.96	0.33	25.2-1600	0.60	1.00	5.40																																					

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S=Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima 4' cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Rebavados laterales c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15. e-borrompió (M4.20) f-Hidroexcavadora (- Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d-Gabarrillo S15. f-Suelo adecuado procedente excavación (-150mm) c/95% PN. g- Lecho mod.	Expos. (m. escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera granitica (m3)	Relleno cama+riñonera (M4.20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Reelleno cobertura. d-Gabarrillo S15	Reelleno cobertura. e- H4.20	Reelleno cobertura. f-Suelo adecuado procedente excavación (-150mm) c/95% PN	Reelleno cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0%, e-superavitario 5%)	Cinta liberata (m3)	Manto escollera a 0.5m. ancho 30m. (m3)
DC-121/T14	T17-T18	1508.00	55.217.03				2	1.626	275	10.00	16						4.66	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.4	32.4	32.4	8.8	2.6	6.2	19.6	2.6		6.2			19.4	4.2	2.0									
DC-121/T14	T17-T18	1509.00	55.218.03				2	1.626	275	10.00	16						4.65	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.3	32.3	32.3	8.8	2.6	6.2	19.5	2.6		6.2			19.5	4.2	2.0									
DC-121/T14	T17-T18	1510.00	55.219.03				2	1.626	275	10.00	16						4.64	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.2	32.2	32.2	8.8	2.6	6.2	19.4	2.6		6.2			19.4	4.2	2.0									
DC-121/T14	T17-T18	1511.00	55.220.03				2	1.626	275	10.00	16						4.63	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.2	32.2	32.2	8.8	2.6	6.2	19.4	2.6		6.2			19.4	4.2	2.0									
DC-121/T14	T17-T18	1512.00	55.221.03				2	1.626	275	10.00	16						4.62	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.1	32.1	32.1	8.8	2.6	6.2	19.3	2.6		6.2			19.3	4.2	2.0									
DC-121/T14	T17-T18	1513.00	55.222.03				2	1.626	275	10.00	16						4.61	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.0	32.0	32.0	8.8	2.6	6.2	19.2	2.6		6.2			19.2	4.2	2.0									
DC-121/T14	T17-T18	1514.00	55.223.03				2	1.626	275	10.00	16						4.60	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.9	31.9	31.9	8.8	2.6	6.2	19.1	2.6		6.2			19.1	4.2	2.0									
DC-121/T14	T17-T18	1514.56	55.223.99				2	1.626	275	10.00	16						4.60	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.6	17.9	17.9	17.9	4.9	1.4	3.5	10.7	1.4		3.5			10.7	2.4	1.1									
DC-121/T14	T17-T18	1515.00	55.224.03				2	1.626	275	10.00	16						4.59	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.4	14.0	14.0	14.0	3.9	1.1	2.7	8.4	1.1		2.7			8.4	1.9	0.9									
DC-121/T14	T17-T18	1516.00	55.225.03				2	1.626	275	10.00	16						4.58	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.8	31.8	31.8	8.8	2.6	6.2	18.9	2.6		6.2			18.9	4.2	2.0									
DC-121/T14	T17-T18	1517.00	55.226.03				2	1.626	275	10.00	16						4.58	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.7	31.7	31.7	8.8	2.6	6.2	18.9	2.6		6.2			18.9	4.2	2.0									
DC-121/T14	T17-T18	1518.00	55.227.03				2	1.626	275	10.00	16						4.57	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.6	31.6	31.6	8.8	2.6	6.2	18.8	2.6		6.2			18.8	4.2	2.0									
DC-121/T14	T17-T18	1519.00	55.228.03				2	1.626	275	10.00	16						4.56	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.5	31.5	31.5	8.8	2.6	6.2	18.7	2.6		6.2			18.7	4.2	2.0									
DC-121/T14	T17-T18	1520.00	55.229.03				2	1.626	275	10.00	16						4.55	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.4	31.4	31.4	8.8	2.6	6.2	18.6	2.6		6.2			18.6	4.2	2.0									
DC-121/T14	T17-T18	1521.00	55.230.03				2	1.626	275	10.00	16						4.54	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.4	31.4	31.4	8.8	2.6	6.2	18.6	2.6		6.2			18.6	4.2	2.0									
DC-121/T14	T17-T18	1522.00	55.231.03				2	1.626	275	10.00	16						4.53	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.3	31.3	31.3	8.8	2.6	6.2	18.5	2.6		6.2			18.5	4.2	2.0									
DC-121/T14	T17-T18	1523.00	55.232.03				2	1.626	275	10.00	16						4.52	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.2	31.2	31.2	8.8	2.6	6.2	18.4	2.6		6.2			18.4	4.2	2.0									
DC-121/T14	T17-T18	1524.00	55.233.03				2	1.626	275	10.00	16						4.51	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.1	31.1	31.1	8.8	2.6	6.2	18.3	2.6		6.2			18.3	4.2	2.0									
DC-121/T14	T17-T18	1525.00	55.234.03				2	1.626	275	10.00	16						4.50	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.0	31.0	31.0	8.8	2.6	6.2	18.2	2.6		6.2			18.2	4.2	2.0									
DC-121/T14	T17-T18	1526.00	55.235.03				2	1.626	275	10.00	16						4.49	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.9	30.9	30.9	8.8	2.6	6.2	18.1	2.6		6.2			18.1	4.2	2.0									
DC-121/T14	T17-T18	1527.00	55.236.03				2	1.626	275	10.00	16						4.47	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.8	30.8	30.8	8.8	2.6	6.2	18.0	2.6		6.2			18.0	4.2	2.0									
DC-121/T14	T17-T18	1528.00	55.237.03				2	1.626	275	10.00	16						4.46	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.7	30.7	30.7	8.8	2.6	6.2	17.9	2.6		6.2			17.9	4.2	2.0									
DC-121/T14	T17-T18	1529.00	55.238.03				2	1.626	275	10.00	16						4.44	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.6	30.6	30.6	8.8	2.6	6.2	17.8	2.6		6.2			17.8	4.2	2.0									
DC-121/T14	T17-T18	1530.00	55.239.03				2	1.626	275	10.00	16						4.43	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.5	30.5	30.5	8.8	2.6	6.2	17.8	2.6		6.2			17.8	4.2	2.0									
DC-121/T14	T17-T18	1531.00	55.240.03				2	1.626	275	10.00	16						4.42	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.4	30.4	30.4	8.8	2.6	6.2	17.6	2.6		6.2			17.6	4.2	2.0									
DC-121/T14	T17-T18	1532.00	55.241.03				2	1.626	275	10.00	16						4.41	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.3	30.3	30.3	8.8	2.6	6.2	17.5	2.6		6.2			17.5	4.2	2.0									
DC-121/T14	T17-T18	1533.00	55.242.03				2	1.626	275	10.00	16						4.41	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.3	30.3	30.3	8.8	2.6	6.2	17.5	2.6		6.2			17.5	4.2	2.0									
DC-121/T14	T17-T18	1534.00	55.243.03				2	1.626	275	10.00	16						4.40	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.2	30.2	30.2	8.8	2.6	6.2	17.4	2.6		6.2			17.4	4.2	2.0									
DC-121/T14	T17-T18	1535.00	55.244.03				2	1.626	275	10.00	16						4.37	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.0	30.0	30.0	8.8	2.6	6.2	17.2	2.6		6.2			17.2	4.2	2.0									
DC-121/T14	T17-T18	1536.00	55.245.03				2	1.626	275	10.00	16						4.34	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.7	29.7	29.7																					

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Al- altura de la boma desde fondo	Boma X1	Boma X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granulado o arena b-cama de hormigón M40-20	Rebavaciones a- Suela seleccionada C/95% PN, c- 30 mm. d-Gabarrillo S/15. e-bompejo M40-20	Rebavaciones a- Suela seleccionada C/95% PN, c- 30 mm. e- M40-20. d-Gabarrillo S/15. f-Suelo adecuado procedente excavación (<-150mm) c/95% PN. g- Lecho modif.	Exposici. mtr. escalón (m)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	H1-DHHz (m)	Long (m)	Excavación tapasocial (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cana+riñones (m3)	Rebello cana+riñones (m3)	Rebello cana+riñones (m3)	Rebello cana+riñones (m3)	Rebello cana+riñones (m3)	Rebello cana+riñones (m3)	Rebello cobertura c- Suelo seleccionado C/95% PN, c- 30 mm	Rebello cobertura d-Gabarrillo S/15	Rebello cobertura e- H4020	Rebello cobertura f-Suelo adecuado procedente excavación (<-150mm) c/95% PN	Rebello cobertura g- Lecho modif (m3)	Excedente de tierra (m3) (consumo actual 0%, c-espolvoreo terciario 5%)	Cinta liberada (m)	Manto escollera a-0.5m. ancho-30m. (m3)
DC-121/T14	T17-T18	1.636.00	55.345.03				2	1.626	275	10.00	16					4.04	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.2	27.2	27.2	8.8	2.6	6.2	14.4	2.6	6.2				14.4	4.2	2.0						
DC-121/T14	T17-T18	1.637.00	55.346.03				2	1.626	275	10.00	16					4.04	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.2	27.2	27.2	8.8	2.6	6.2	14.4	2.6	6.2				14.4	4.2	2.0						
DC-121/T14	T17-T18	1.638.00	55.347.03				2	1.626	275	10.00	16					4.03	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.2	27.2	27.2	8.8	2.6	6.2	14.4	2.6	6.2				14.4	4.2	2.0						
DC-121/T14	T17-T18	1.639.00	55.348.03				2	1.626	275	10.00	16					4.03	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.2	27.2	27.2	8.8	2.6	6.2	14.4	2.6	6.2				14.4	4.2	2.0						
DC-121/T14	T17-T18	1.640.00	55.349.03				2	1.626	275	10.00	16					4.03	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.2	27.2	27.2	8.8	2.6	6.2	14.3	2.6	6.2				14.3	4.2	2.0						
DC-121/T14	T17-T18	1.641.00	55.350.03				2	1.626	275	10.00	16					4.03	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.1	27.1	27.1	8.8	2.6	6.2	14.3	2.6	6.2				14.3	4.2	2.0						
DC-121/T14	T17-T18	1.642.00	55.351.03				2	1.626	275	10.00	16					4.02	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.1	27.1	27.1	8.8	2.6	6.2	14.3	2.6	6.2				14.3	4.2	2.0						
DC-121/T14	T17-T18	1.643.00	55.352.03				2	1.626	275	10.00	16					4.02	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.1	27.1	27.1	8.8	2.6	6.2	14.3	2.6	6.2				14.3	4.2	2.0						
DC-121/T14	T17-T18	1.644.00	55.353.03				2	1.626	275	10.00	16					4.02	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.1	27.1	27.1	8.8	2.6	6.2	14.3	2.6	6.2				14.3	4.2	2.0						
DC-121/T14	T17-T18	1.645.00	55.354.03				2	1.626	275	10.00	16					4.02	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.1	27.1	27.1	8.8	2.6	6.2	14.3	2.6	6.2				14.3	4.2	2.0						
DC-121/T14	T17-T18	1.646.00	55.355.03				2	1.626	275	10.00	16					4.01	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.0	27.0	27.0	8.8	2.6	6.2	14.2	2.6	6.2				14.2	4.2	2.0						
DC-121/T14	T17-T18	1.647.00	55.356.03				2	1.626	275	10.00	16					4.01	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.0	27.0	27.0	8.8	2.6	6.2	14.2	2.6	6.2				14.2	4.2	2.0						
DC-121/T14	T17-T18	1.648.00	55.357.03				2	1.626	275	10.00	16					4.01	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.0	27.0	27.0	8.8	2.6	6.2	14.2	2.6	6.2				14.2	4.2	2.0						
DC-121/T14	T17-T18	1.649.00	55.358.03				2	1.626	275	10.00	16					4.00	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.0	27.0	27.0	8.8	2.6	6.2	14.2	2.6	6.2				14.2	4.2	2.0						
DC-121/T14	T17-T18	1.650.00	55.359.03				2	1.626	275	10.00	16					4.00	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.9	26.9	26.9	8.8	2.6	6.2	14.1	2.6	6.2				14.1	4.2	2.0						
DC-121/T14	T17-T18	1.651.00	55.360.03				2	1.626	275	10.00	16					3.99	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.9	26.9	26.9	8.8	2.6	6.2	14.1	2.6	6.2				14.1	4.2	2.0						
DC-121/T14	T17-T18	1.652.00	55.361.03				2	1.626	275	10.00	16					3.99	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.9	26.9	26.9	8.8	2.6	6.2	14.1	2.6	6.2				14.1	4.2	2.0						
DC-121/T14	T17-T18	1.653.00	55.362.03				2	1.626	275	10.00	16					3.99	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.9	26.9	26.9	8.8	2.6	6.2	14.1	2.6	6.2				14.1	4.2	2.0						
DC-121/T14	T17-T18	1.654.00	55.363.03				2	1.626	275	10.00	16					3.99	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.8	26.8	26.8	8.8	2.6	6.2	14.0	2.6	6.2				14.0	4.2	2.0						
DC-121/T14	T17-T18	1.655.00	55.364.03				2	1.626	275	10.00	16					3.98	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.8	26.8	26.8	8.8	2.6	6.2	14.0	2.6	6.2				14.0	4.2	2.0						
DC-121/T14	T17-T18	1.656.00	55.365.03				2	1.626	275	10.00	16					3.92	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.3	26.3	26.3	8.8	2.6	6.2	13.5	2.6	6.2				13.5	4.2	2.0						
DC-121/T14	T17-T18	1.657.00	55.366.03				2	1.626	275	10.00	16					3.86	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.8	25.8	25.8	8.8	2.6	6.2	13.0	2.6	6.2				13.0	4.2	2.0						
DC-121/T14	T17-T18	1.658.94	55.367.96				2	1.626	275	10.00	16					3.83	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.9	23.9	23.9	23.9	8.2	2.4	5.8	11.9	2.4	5.8				11.9	3.9	1.9						
DC-121/T14	T17-T18	1.659.00	55.368.03				2	1.626	275	10.00	16					3.82	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.1	1.7	1.7	1.7	0.6	0.2	0.4	0.8	0.2	0.4				0.8	0.3	0.1						
DC-121/T14	T17-T18	1.660.00	55.369.03				2	1.626	275	10.00	16					3.82	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.5	25.5	25.5	8.8	2.6	6.2	12.7	2.6	6.2				12.7	4.2	2.0						
DC-121/T14	T17-T18	1.661.00	55.370.03				2	1.626	275	10.00	16					3.80	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.3	25.3	25.3	8.8	2.6	6.2	12.5	2.6	6.2				12.5	4.2	2.0						
DC-121/T14	T17-T18	1.662.00	55.371.03				2	1.626	275	10.00	16					3.81	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.4	25.4	25.4	8.8	2.6	6.2	12.6	2.6	6.2				12.6	4.2	2.0						
DC-121/T14	T17-T18	1.663.00	55.372.03				2	1.626	275	10.00	16					3.79	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.2	25.2	25.2	8.8	2.6	6.2	12.4	2.6	6.2				12.4	4.2	2.0						
DC-121/T14	T17-T18	1.664.00	55.373.03				2	1.626	275	10.00	16					3.76	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.0	25.0	25.0	8.8	2.6	6.2	12.2	2.6	6.2				12.2	4.2	2.0						
DC-121/T14	T17-T18	1.665.00	55.374.03				2	1.626	275	10.00	16					3.73	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.8	24.8	24.8	8.8	2.6	6.2	12.0	2.6	6.2				12.0	4.2	2.0						
DC-121/T14	T17-T18	1.666.00	55.375.03				2	1.626	275	10.00	16					3.69	0.33	21.2-1600	0.60	1.00	5.40	0.20																															

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verederos por tubería	DN veredero (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	HT- altura de la borra desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rebaldes laterales c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió HM-20	Rebaldes laterales c- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<150mm) c/6% PN. g- Lecho mod.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT-ang (m)	HT-DHxH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cama+riñonera (m3)	Rebello c-ama (m3)	Rebello riñonera(s)m3)	Rebello cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Rebello riñonera suelo seleccionado (m3)	Rebello riñonera grabaciolo (m3)	Rebello cama+riñonera HM-20(m3)	Rebello cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Rebello cobertura. d-Garbanillo 5/15	Rebello cobertura. e- HM-20	Rebello cobertura. f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Rebello cobertura. g- Lecho modif (m3)	Excedente de tierra (m3) (consumo actual 0%, e-superficies vertical 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-12/1/14	117-T18	1.743.00	55.472.03				2	1.626	275	10.00	16						4.42	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.1	32.1	32.1	8.8	2.6	6.2	19.3	2.6		6.2			19.3	4.2	2.0										
DC-12/1/14	117-T18	1.744.00	55.473.03				2	1.626	275	10.00	16						4.66	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.4	32.4	32.4	8.8	2.6	6.2	19.6	2.6		6.2			19.6	4.2	2.0										
DC-12/1/14	117-T18	1.745.00	55.474.03				2	1.626	275	10.00	16						4.70	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.8	32.8	32.8	8.8	2.6	6.2	20.0	2.6		6.2			20.0	4.2	2.0										
DC-12/1/14	117-T18	1.746.00	55.475.03				2	1.626	275	10.00	16						4.71	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.8	32.8	32.8	8.8	2.6	6.2	20.0	2.6		6.2			20.0	4.2	2.0										
DC-12/1/14	117-T18	1.747.00	55.476.03				2	1.626	275	10.00	16						4.72	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.9	32.9	32.9	8.8	2.6	6.2	20.1	2.6		6.2			20.1	4.2	2.0										
DC-12/1/14	117-T18	1.748.00	55.477.03				2	1.626	275	10.00	16						4.72	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.9	32.9	32.9	8.8	2.6	6.2	20.1	2.6		6.2			20.1	4.2	2.0										
DC-12/1/14	117-T18	1.749.00	55.478.03				2	1.626	275	10.00	16						4.68	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.5	32.5	32.5	8.8	2.6	6.2	19.7	2.6		6.2			19.7	4.2	2.0										
DC-12/1/14	117-T18	1.750.00	55.479.03				2	1.626	275	10.00	16						4.61	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.0	32.0	32.0	8.8	2.6	6.2	19.2	2.6		6.2			19.2	4.2	2.0										
DC-12/1/14	117-T18	1.771.00	55.480.03				2	1.626	275	10.00	16						4.55	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.5	31.5	31.5	8.8	2.6	6.2	18.7	2.6		6.2			18.7	4.2	2.0										
DC-12/1/14	117-T18	1.772.00	55.481.03				2	1.626	275	10.00	16						4.49	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.9	30.9	30.9	8.8	2.6	6.2	18.1	2.6		6.2			18.1	4.2	2.0										
DC-12/1/14	117-T18	1.773.00	55.482.03				2	1.626	275	10.00	16						4.42	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.4	30.4	30.4	8.8	2.6	6.2	17.6	2.6		6.2			17.6	4.2	2.0										
DC-12/1/14	117-T18	1.774.00	55.483.03				2	1.626	275	10.00	16						4.36	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.9	29.9	29.9	8.8	2.6	6.2	17.1	2.6		6.2			17.1	4.2	2.0										
DC-12/1/14	117-T18	1.775.00	55.484.03				2	1.626	275	10.00	16						4.30	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.4	29.4	29.4	8.8	2.6	6.2	16.6	2.6		6.2			16.6	4.2	2.0										
DC-12/1/14	117-T18	1.776.00	55.485.03				2	1.626	275	10.00	16						4.23	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.8	28.8	28.8	8.8	2.6	6.2	16.0	2.6		6.2			16.0	4.2	2.0										
DC-12/1/14	117-T18	1.777.00	55.486.03				2	1.626	275	10.00	16						4.23	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.8	28.8	28.8	8.8	2.6	6.2	16.0	2.6		6.2			16.0	4.2	2.0										
DC-12/1/14	117-T18	1.778.00	55.487.03				2	1.626	275	10.00	16						4.27	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.1	29.1	29.1	8.8	2.6	6.2	16.3	2.6		6.2			16.3	4.2	2.0										
DC-12/1/14	117-T18	1.779.00	55.488.03				2	1.626	275	10.00	16						4.30	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.4	29.4	29.4	8.8	2.6	6.2	16.5	2.6		6.2			16.5	4.2	2.0										
DC-12/1/14	117-T18	1.780.00	55.489.03				2	1.626	275	10.00	16						4.32	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.6	29.6	29.6	8.8	2.6	6.2	16.8	2.6		6.2			16.8	4.2	2.0										
DC-12/1/14	117-T18	1.781.00	55.490.03				2	1.626	275	10.00	16						4.35	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.8	29.8	29.8	8.8	2.6	6.2	17.0	2.6		6.2			17.0	4.2	2.0										
DC-12/1/14	117-T18	1.782.00	55.491.03				2	1.626	275	10.00	16						4.38	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.0	30.0	30.0	8.8	2.6	6.2	17.2	2.6		6.2			17.2	4.2	2.0										
DC-12/1/14	117-T18	1.783.00	55.492.03				2	1.626	275	10.00	16						4.41	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.3	30.3	30.3	8.8	2.6	6.2	17.5	2.6		6.2			17.5	4.2	2.0										
DC-12/1/14	117-T18	1.784.00	55.493.03				2	1.626	275	10.00	16						4.44	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.5	30.5	30.5	8.8	2.6	6.2	17.7	2.6		6.2			17.7	4.2	2.0										
DC-12/1/14	117-T18	1.785.00	55.494.03				2	1.626	275	10.00	16						4.47	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.8	30.8	30.8	8.8	2.6	6.2	18.0	2.6		6.2			18.0	4.2	2.0										
DC-12/1/14	117-T18	1.786.00	55.495.03				2	1.626	275	10.00	16						4.49	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.0	31.0	31.0	8.8	2.6	6.2	18.2	2.6		6.2			18.2	4.2	2.0										
DC-12/1/14	117-T18	1.787.00	55.496.03				2	1.626	275	10.00	16						4.46	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.7	30.7	30.7	8.8	2.6	6.2	17.9	2.6		6.2			17.9	4.2	2.0										
DC-12/1/14	117-T18	1.788.00	55.497.03				2	1.626	275	10.00	16						4.43	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.4	30.4	30.4	8.8	2.6	6.2	17.6	2.6		6.2			17.6	4.2	2.0										
DC-12/1/14	117-T18	1.789.00	55.498.03				2	1.626	275	10.00	16						4.40	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.2	30.2	30.2	8.8	2.6	6.2	17.4	2.6		6.2			17.4	4.2	2.0										
DC-12/1/14	117-T18	1.790.00	55.499.03				2	1.626	275	10.00	16						4.37	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.8	29.8	29.8	8.8	2.6	6.2	17.2	2.6		6.2			17.2	4.2	2.0										
DC-12/1/14	117-T18	1.791.00	55.500.03				2	1.626	275	10.00	16						4.31	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.4	29.4	29.4	8.8	2.6	6.2	16.6	2.6		6.2			16.6	4.2	2.0										
DC-12/1/14	117-T18	1.792.00	55.501.03				2	1.626	275	10.00	16						4.26	0.33	212-1600	0.60	1.00	5.40		0.20	120	0.30	1.50																																

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rebavados laterales c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió HM-20	Rebavados laterales c- Suela seleccionada C/95% PN, < 30 mm. e-MH-20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<150mm) c/65% PN. g- Lecho mod.	Exposic (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	H1-DHxH2 (m)	Long (m)	Excavación tapasocial (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cama+riñonera (m3)	Rebello c-ama (m3)	Rebello riñonera(s)m3)	Rebello cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Rebello riñonera suelo seleccionado (m3)	Rebello riñonera grabaciado (m3)	Rebello cama+riñonera HM-20(m3)	Rebello cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Rebello cobertura. d-Garbanillo 5/15	Rebello cobertura. e- HM-20	Rebello cobertura. f-Suelo adecuado procedente excavación (<150mm) c/65% PN	Rebello cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0%, e-spojaniento vertical 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-121/T14	T17-T18	1.890.00	55.599.03				2	1.626	275	10.00	16				4.31	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.4	29.4	29.4	8.8	2.6	6.2	16.6	2.6		6.2						16.6	4.2	2.0							
DC-121/T14	T17-T18	1.891.00	55.600.03				2	1.626	275	10.00	16				4.30	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.4	29.4	29.4	8.8	2.6	6.2	16.6	2.6		6.2						16.6	4.2	2.0							
DC-121/T14	T17-T18	1.892.00	55.601.03				2	1.626	275	10.00	16				4.30	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.4	29.4	29.4	8.8	2.6	6.2	16.6	2.6		6.2						16.6	4.2	2.0							
DC-121/T14	T17-T18	1.893.00	55.602.03				2	1.626	275	10.00	16				4.29	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.3	29.3	29.3	8.8	2.6	6.2	16.5	2.6		6.2						16.5	4.2	2.0							
DC-121/T14	T17-T18	1.894.00	55.603.03				2	1.626	275	10.00	16				4.29	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.3	29.3	29.3	8.8	2.6	6.2	16.5	2.6		6.2						16.5	4.2	2.0							
DC-121/T14	T17-T18	1.895.00	55.604.03				2	1.626	275	10.00	16				4.29	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.3	29.3	29.3	8.8	2.6	6.2	16.5	2.6		6.2						16.5	4.2	2.0							
DC-121/T14	T17-T18	1.896.00	55.605.03				2	1.626	275	10.00	16				4.28	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.2	29.2	29.2	8.8	2.6	6.2	16.4	2.6		6.2						16.4	4.2	2.0							
DC-121/T14	T17-T18	1.897.00	55.606.03				2	1.626	275	10.00	16				4.28	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.2	29.2	29.2	8.8	2.6	6.2	16.4	2.6		6.2						16.4	4.2	2.0							
DC-121/T14	T17-T18	1.898.00	55.607.03				2	1.626	275	10.00	16				4.28	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.2	29.2	29.2	8.8	2.6	6.2	16.4	2.6		6.2						16.4	4.2	2.0							
DC-121/T14	T17-T18	1.899.00	55.608.03				2	1.626	275	10.00	16				4.21	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.7	28.7	28.7	8.8	2.6	6.2	15.9	2.6		6.2						16.5	4.2	2.0							
DC-121/T14	T17-T18	1.900.00	55.609.03				2	1.626	275	10.00	16				4.09	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.7	27.7	27.7	8.8	2.6	6.2	14.9	2.6		6.2						14.9	4.2	2.0							
DC-121/T14	T17-T18	1.901.00	55.610.03				2	1.626	275	10.00	16				3.97	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.7	26.7	26.7	8.8	2.6	6.2	13.9	2.6		6.2						13.9	4.2	2.0							
DC-121/T14	T17-T18	1.902.00	55.611.03				2	1.626	275	10.00	16				3.85	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.7	25.7	25.7	8.8	2.6	6.2	12.9	2.6		6.2						12.9	4.2	2.0							
DC-121/T14	T17-T18	1.903.00	55.612.03				2	1.626	275	10.00	16				3.73	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.7	24.7	24.7	8.8	2.6	6.2	11.9	2.6		6.2						11.9	4.2	2.0							
DC-121/T14	T17-T18	1.904.00	55.613.03				2	1.626	275	10.00	16				3.61	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.8	23.8	23.8	8.8	2.6	6.2	11.0	2.6		6.2						11.0	4.2	2.0							
DC-121/T14	T17-T18	1.905.00	55.614.03				2	1.626	275	10.00	16				3.48	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.8	22.8	22.8	8.8	2.6	6.2	10.0	2.6		6.2						10.0	4.2	2.0							
DC-121/T14	T17-T18	1.906.00	55.615.03				2	1.626	275	10.00	16				3.49	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.9	22.9	22.9	8.8	2.6	6.2	10.1	2.6		6.2						10.1	4.2	2.0							
DC-121/T14	T17-T18	1.907.00	55.616.03				2	1.626	275	10.00	16				3.53	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.2	23.2	23.2	8.8	2.6	6.2	10.4	2.6		6.2						10.4	4.2	2.0							
DC-121/T14	T17-T18	1.908.00	55.617.03				2	1.626	275	10.00	16				3.40	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.8	22.8	22.8	8.8	2.6	6.2	10.9	2.6		6.2						10.9	4.2	2.0							
DC-121/T14	T17-T18	1.909.00	55.618.03				2	1.626	275	10.00	16				3.69	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.5	24.5	24.5	8.8	2.6	6.2	11.7	2.6		6.2						11.7	4.2	2.0							
DC-121/T14	T17-T18	1.910.00	55.619.03				2	1.626	275	10.00	16				3.85	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.7	25.7	25.7	8.8	2.6	6.2	12.9	2.6		6.2						12.9	4.2	2.0							
DC-121/T14	T17-T18	1.911.00	55.620.03				2	1.626	275	10.00	16				3.97	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.7	26.7	26.7	8.8	2.6	6.2	13.9	2.6		6.2						13.9	4.2	2.0							
DC-121/T14	T17-T18	1.912.00	55.621.03				2	1.626	275	10.00	16				4.10	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.7	27.7	27.7	8.8	2.6	6.2	14.9	2.6		6.2						14.9	4.2	2.0							
DC-121/T14	T17-T18	1.913.00	55.622.03				2	1.626	275	10.00	16				4.19	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.5	28.5	28.5	8.8	2.6	6.2	15.7	2.6		6.2						15.7	4.2	2.0							
DC-121/T14	T17-T18	1.914.00	55.623.03				2	1.626	275	10.00	16				4.21	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.6	28.6	28.6	8.8	2.6	6.2	15.8	2.6		6.2						15.8	4.2	2.0							
DC-121/T14	T17-T18	1.915.00	55.624.03				2	1.626	275	10.00	16				4.19	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.5	28.5	28.5	8.8	2.6	6.2	15.7	2.6		6.2						15.7	4.2	2.0							
DC-121/T14	T17-T18	1.916.00	55.625.03				2	1.626	275	10.00	16				4.18	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.4	28.4	28.4	8.8	2.6	6.2	15.6	2.6		6.2						15.6	4.2	2.0							
DC-121/T14	T17-T18	1.917.00	55.626.03				2	1.626	275	10.00	16				4.14	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.1	28.1	28.1	8.8	2.6	6.2	15.3	2.6		6.2						15.3	4.2	2.0							
DC-121/T14	T17-T18	1.918.00	55.627.03				2	1.626	275	10.00	16				4.11	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.8	27.8	27.8	8.8	2.6	6.2	15.0	2.6		6.2						15.0	4.2	2.0							
DC-121/T14	T17-T18	1.919.00	55.628.03				2	1.626	275	10.00	16				4.29	0.33	21.2-1600																																								

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A-: Separación entre laboras	B-: Ancho interior (m)	Borne X1	Borne X2	H1-: Cama apoyo (m)	Ang. Apoyo	H2-: Recubrimiento cobertura mínima (m)	H3-: Profundidad mínima s/ cave (m)	H4-: Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Relleno/cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm. d-Gabarrillo S15, <borrompió (M40)	Relleno/cobertura e-: Suelo seleccionado C/95% PN, <= 30 mm. e-M420. d-Gabarrillo S15, f-Suelo adecuado procedente excavación (<150mm) c/95% PN. g- Lecho mod.	Exposic (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	H1-DH+H2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c-ama (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M40(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera grabado(s) (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura. d-Gabarrillo S15	Relleno cobertura. e- HM20	Relleno cobertura. f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relleno cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumible a nivel 0%, e-superficie vertical 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-121/T14	T17-T18	2019.00	55.728.03				2	1.626	275	10.00	16					4.34	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.7	29.7	29.7	8.8	2.6	6.2	16.9	2.6		6.2			16.9	4.2	2.0										
DC-121/T14	T17-T18	2020.00	55.729.03				2	1.626	275	10.00	16					4.34	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.7	29.7	29.7	8.8	2.6	6.2	16.9	2.6		6.2			16.9	4.2	2.0										
DC-121/T14	T17-T18	2021.00	55.730.03				2	1.626	275	10.00	16					4.35	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.8	29.8	29.8	8.8	2.6	6.2	17.0	2.6		6.2			17.0	4.2	2.0										
DC-121/T14	T17-T18	2022.00	55.731.03				2	1.626	275	10.00	16					4.36	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.9	29.9	29.9	8.8	2.6	6.2	17.0	2.6		6.2			17.0	4.2	2.0										
DC-121/T14	T17-T18	2023.00	55.732.03				2	1.626	275	10.00	16					4.36	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.9	29.9	29.9	8.8	2.6	6.2	17.1	2.6		6.2			17.1	4.2	2.0										
DC-121/T14	T17-T18	2024.00	55.733.03				2	1.626	275	10.00	16					4.37	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.0	30.0	30.0	8.8	2.6	6.2	17.2	2.6		6.2			17.2	4.2	2.0										
DC-121/T14	T17-T18	2025.00	55.734.03				2	1.626	275	10.00	16					4.38	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.0	30.0	30.0	8.8	2.6	6.2	17.2	2.6		6.2			17.2	4.2	2.0										
DC-121/T14	T17-T18	2026.00	55.735.03				2	1.626	275	10.00	16					4.38	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.1	30.1	30.1	8.8	2.6	6.2	17.3	2.6		6.2			17.3	4.2	2.0										
DC-121/T14	T17-T18	2027.00	55.736.03				2	1.626	275	10.00	16					4.39	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.1	30.1	30.1	8.8	2.6	6.2	17.3	2.6		6.2			17.3	4.2	2.0										
DC-121/T14	T17-T18	2028.00	55.737.03				2	1.626	275	10.00	16					4.39	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.2	30.2	30.2	8.8	2.6	6.2	17.3	2.6		6.2			17.3	4.2	2.0										
DC-121/T14	T17-T18	2029.00	55.738.03				2	1.626	275	10.00	16					4.40	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.2	30.2	30.2	8.8	2.6	6.2	17.4	2.6		6.2			17.4	4.2	2.0										
DC-121/T14	T17-T18	2030.00	55.739.03				2	1.626	275	10.00	16					4.41	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.3	30.3	30.3	8.8	2.6	6.2	17.5	2.6		6.2			17.5	4.2	2.0										
DC-121/T14	T17-T18	2031.00	55.740.03				2	1.626	275	10.00	16					4.42	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.3	30.3	30.3	8.8	2.6	6.2	17.5	2.6		6.2			17.5	4.2	2.0										
DC-121/T14	T17-T18	2032.00	55.741.03				2	1.626	275	10.00	16					4.42	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.4	30.4	30.4	8.8	2.6	6.2	17.6	2.6		6.2			17.6	4.2	2.0										
DC-121/T14	T17-T18	2033.00	55.742.03				2	1.626	275	10.00	16					4.43	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.5	30.5	30.5	8.8	2.6	6.2	17.7	2.6		6.2			17.7	4.2	2.0										
DC-121/T14	T17-T18	2034.00	55.743.03				2	1.626	275	10.00	16					4.44	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.5	30.5	30.5	8.8	2.6	6.2	17.7	2.6		6.2			17.7	4.2	2.0										
DC-121/T14	T17-T18	2035.00	55.744.03				2	1.626	275	10.00	16					4.44	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.6	30.6	30.6	8.8	2.6	6.2	17.8	2.6		6.2			17.8	4.2	2.0										
DC-121/T14	T17-T18	2036.00	55.745.03				2	1.626	275	10.00	16					4.45	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.6	30.6	30.6	8.8	2.6	6.2	17.8	2.6		6.2			17.8	4.2	2.0										
DC-121/T14	T17-T18	2037.00	55.746.03				2	1.626	275	10.00	16					4.46	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.7	30.7	30.7	8.8	2.6	6.2	17.9	2.6		6.2			17.9	4.2	2.0										
DC-121/T14	T17-T18	2038.00	55.747.03				2	1.626	275	10.00	16					4.47	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.8	30.8	30.8	8.8	2.6	6.2	18.0	2.6		6.2			18.0	4.2	2.0										
DC-121/T14	T17-T18	2039.00	55.748.03				2	1.626	275	10.00	16					4.48	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.8	30.8	30.8	8.8	2.6	6.2	18.0	2.6		6.2			18.0	4.2	2.0										
DC-121/T14	T17-T18	2040.00	55.749.03				2	1.626	275	10.00	16					4.48	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.9	30.9	30.9	8.8	2.6	6.2	18.1	2.6		6.2			18.1	4.2	2.0										
DC-121/T14	T17-T18	2041.00	55.750.03				2	1.626	275	10.00	16					4.49	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.9	30.9	30.9	8.8	2.6	6.2	18.1	2.6		6.2			18.1	4.2	2.0										
DC-121/T14	T17-T18	2042.00	55.751.03				2	1.626	275	10.00	16					4.50	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.0	31.0	31.0	8.8	2.6	6.2	18.2	2.6		6.2			18.2	4.2	2.0										
DC-121/T14	T17-T18	2043.00	55.752.03				2	1.626	275	10.00	16					4.51	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.1	31.1	31.1	8.8	2.6	6.2	18.3	2.6		6.2			18.3	4.2	2.0										
DC-121/T14	T17-T18	2044.00	55.753.03				2	1.626	275	10.00	16					4.51	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.2	31.2	31.2	8.8	2.6	6.2	18.3	2.6		6.2			18.3	4.2	2.0										
DC-121/T14	T17-T18	2045.00	55.754.03				2	1.626	275	10.00	16					4.53	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.3	31.3	31.3	8.8	2.6	6.2	18.5	2.6		6.2			18.5	4.2	2.0										
DC-121/T14	T17-T18	2046.00	55.755.03				2	1.626	275	10.00	16					4.54	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.4	31.4	31.4	8.8	2.6	6.2	18.6	2.6		6.2			18.6	4.2	2.0										
DC-121/T14	T17-T18	2047.00	55.756.03				2	1.626	275	10.00	16					4.55	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.5	31.5	31.5	8.8	2.6	6.2	18.7	2.6		6.2			18.7	4.2	2.0										
DC-121/T14	T17-T18	2048.00	55.757.03				2	1.626	275	10.00	16					4.57	0.33	21.2-1600	0.60	1.00	5.40	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.6	31.6	31.6	8.8	2.6	6.2	18.8	2.6		6.2			18.8	4.2	2.0										
DC-121/T14	T17-T18	2049.00	55.758.03				2	1.626	275	10.00	16					4.58	0.33	21.2-1600	0.60	1.00																																					

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor Lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= Separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Reforzamientos c- Suela seleccionada C/95% PN, c= 30 mm. d-Gabarrillo S/15, e-borrompió HM-20	Reforzamientos f- Suela seleccionada C/95% PN, f= 30 mm. e- HM-20. d-Gabarrillo S/15, f-suela adecuada procedente excavación (<150mm) c/95% PN, g- Luchero modif.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT-long (m)	HT-DHxH2 (m)	Long (m)	Excavación tapasocial (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, c= 30 mm	Relevo cobertura d-Gabarrillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f-Suelo adecuado excavación (<150mm) c/95% PN	Relevo cobertura g- Luchero modif (m3)	Excedente de tierra (m3) (consumo actual 0%, e-superavitario 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-12/1/14	117-T18	2.405.00	56.114.03				2	1.626	275	10.00	16					4.43	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.1	32.1	32.1	8.8	2.6	6.2	19.3	2.6		6.2			19.3	4.2	2.0										
DC-12/1/14	117-T18	2.406.00	56.115.03				2	1.626	275	10.00	16					4.68	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.6	32.6	32.6	8.8	2.6	6.2	19.7	2.6		6.2			19.7	4.2	2.0										
DC-12/1/14	117-T18	2.407.00	56.116.03				2	1.626	275	10.00	16					4.73	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	33.0	33.0	33.0	8.8	2.6	6.2	20.2	2.6		6.2			20.2	4.2	2.0										
DC-12/1/14	117-T18	2.408.00	56.117.03				2	1.626	275	10.00	16					4.57	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.6	31.6	31.6	8.8	2.6	6.2	18.8	2.6		6.2			18.8	4.2	2.0										
DC-12/1/14	117-T18	2.409.00	56.118.03				2	1.626	275	10.00	16					4.29	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.3	29.3	29.3	8.8	2.6	6.2	16.5	2.6		6.2			16.5	4.2	2.0										
DC-12/1/14	117-T18	2.410.00	56.119.03				2	1.626	275	10.00	16					3.90	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.1	26.1	26.1	8.8	2.6	6.2	13.3	2.6		6.2			13.3	4.2	2.0										
DC-12/1/14	117-T18	2.411.00	56.120.03				2	1.626	275	10.00	16					3.57	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.5	23.5	23.5	8.8	2.6	6.2	10.7	2.6		6.2			10.7	4.2	2.0										
DC-12/1/14	117-T18	2.412.00	56.121.03				2	1.626	275	10.00	16					3.33	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.7	21.7	21.7	8.8	2.6	6.2	8.9	2.6		6.2			8.9	4.2	2.0										
DC-12/1/14	117-T18	2.413.00	56.122.03				2	1.626	275	10.00	16					3.39	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.2	22.2	22.2	8.8	2.6	6.2	9.4	2.6		6.2			9.4	4.2	2.0										
DC-12/1/14	117-T18	2.414.00	56.123.03				2	1.626	275	10.00	16					3.46	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.7	22.7	22.7	8.8	2.6	6.2	9.9	2.6		6.2			9.9	4.2	2.0										
DC-12/1/14	117-T18	2.415.00	56.124.03				2	1.626	275	10.00	16					3.53	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.2	23.2	23.2	8.8	2.6	6.2	10.4	2.6		6.2			10.4	4.2	2.0										
DC-12/1/14	117-T18	2.416.00	56.125.03				2	1.626	275	10.00	16					3.60	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.8	23.8	23.8	8.8	2.6	6.2	11.0	2.6		6.2			11.0	4.2	2.0										
DC-12/1/14	117-T18	2.417.00	56.126.03				2	1.626	275	10.00	16					3.67	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.3	24.3	24.3	8.8	2.6	6.2	11.5	2.6		6.2			11.5	4.2	2.0										
DC-12/1/14	117-T18	2.418.00	56.127.03				2	1.626	275	10.00	16					3.73	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	24.8	24.8	24.8	8.8	2.6	6.2	12.0	2.6		6.2			12.0	4.2	2.0										
DC-12/1/14	117-T18	2.419.00	56.128.03				2	1.626	275	10.00	16					3.80	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.3	25.3	25.3	8.8	2.6	6.2	12.5	2.6		6.2			12.5	4.2	2.0										
DC-12/1/14	117-T18	2.420.00	56.129.03				2	1.626	275	10.00	16					3.86	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	25.8	25.8	25.8	8.8	2.6	6.2	13.0	2.6		6.2			13.0	4.2	2.0										
DC-12/1/14	117-T18	2.421.00	56.130.03				2	1.626	275	10.00	16					3.92	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.3	26.3	26.3	8.8	2.6	6.2	13.5	2.6		6.2			13.5	4.2	2.0										
DC-12/1/14	117-T18	2.422.00	56.131.03				2	1.626	275	10.00	16					3.99	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	26.8	26.8	26.8	8.8	2.6	6.2	14.0	2.6		6.2			14.0	4.2	2.0										
DC-12/1/14	117-T18	2.423.00	56.132.03				2	1.626	275	10.00	16					4.02	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.1	27.1	27.1	8.8	2.6	6.2	14.2	2.6		6.2			14.2	4.2	2.0										
DC-12/1/14	117-T18	2.424.00	56.133.03				2	1.626	275	10.00	16					4.08	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	27.6	27.6	27.6	8.8	2.6	6.2	14.8	2.6		6.2			14.8	4.2	2.0										
DC-12/1/14	117-T18	2.425.00	56.134.03				2	1.626	275	10.00	16					4.14	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.0	28.0	28.0	8.8	2.6	6.2	15.2	2.6		6.2			15.2	4.2	2.0										
DC-12/1/14	117-T18	2.426.00	56.135.03				2	1.626	275	10.00	16					4.20	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	28.6	28.6	28.6	8.8	2.6	6.2	15.7	2.6		6.2			15.7	4.2	2.0										
DC-12/1/14	117-T18	2.427.00	56.136.03				2	1.626	275	10.00	16					4.25	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	29.0	29.0	29.0	8.8	2.6	6.2	16.2	2.6		6.2			16.2	4.2	2.0										
DC-12/1/14	117-T18	2.427.54	56.136.57				2	1.626	275	10.00	16					4.28	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.5	15.8	15.8	15.8	8.8	2.6	6.2	8.9	1.4		6.2			8.9	1.9	0.9										
DC-12/1/14	117-T18	2.428.00	56.137.03				2	1.626	275	10.00	16					4.31	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.5	13.5	13.5	13.5	4.0	1.2	2.9	7.6	1.2		2.9			7.6	1.9	0.9										
DC-12/1/14	117-T18	2.429.00	56.138.03				2	1.626	275	10.00	16					4.38	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.1	30.1	30.1	8.8	2.6	6.2	17.2	2.6		6.2			17.2	4.2	2.0										
DC-12/1/14	117-T18	2.430.00	56.139.03				2	1.626	275	10.00	16					4.47	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	30.8	30.8	30.8	8.8	2.6	6.2	18.0	2.6		6.2			18.0	4.2	2.0										
DC-12/1/14	117-T18	2.431.00	56.140.03				2	1.626	275	10.00	16					4.55	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	31.5	31.5	31.5	8.8	2.6	6.2	18.7	2.6		6.2			18.7	4.2	2.0										
DC-12/1/14	117-T18	2.432.00	56.141.03				2	1.626	275	10.00	16					4.62	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.0	32.0	32.0	8.8	2.6	6.2	19.2	2.6		6.2			19.2	4.2	2.0										
DC-12/1/14	117-T18	2.433.00	56.142.03				2	1.626	275	10.00	16					4.69	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	32.6	32.6	32.6	8.8	2.6	6.2	19.8	2.6		6.2															

[illegible]

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Rebavados laterales c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió (M4.20)	Rebavados laterales c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió (M4.20)	Rebavados laterales c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. f-Suela adecuada procedente excavación (<150mm) c/6% PN. g- Luchero modif.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	H1-DHxH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cama+riñonera (m3)	Rebello cama+riñonera (m3)	Rebello cama (m3)	Rebello riñonera(s)m3)	Rebello cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo (M 20)(m3)	Rebello riñonera suelo seleccionado (m3)	Rebello riñonera grabaciado (m3)	Rebello cama+riñonera (M4.20)(m3)	Rebello cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Rebello cobertura. d-Garbanillo 5/15	Rebello cobertura. e- H4.20	Rebello cobertura. f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Rebello cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (consumo actual 0%, e-superficies verticales 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho 30m. (m3)
DC-12/1/T14	T17-T18	2.661.00	56.370.03			Apoyo arqueta	2	1.626	275	10.00	16				3.57	0.33	25.2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	b	c	d	e	100%	0.7	2.2	1.0	23.6	23.6	23.6	9.1	2.9	6.3	10.4		6.3	10.4			4.2	2.0											
DC-12/1/T14	T17-T18	2.662.00	56.371.03			Apoyo arqueta	2	1.626	275	10.00	16				3.57	0.33	25.2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	b	c	d	e	100%	0.7	2.2	1.0	23.0	23.0	23.0	9.1	2.9	6.3	9.9		6.3	9.9			4.2	2.0											
DC-12/1/T14	T17-T18	2.663.00	56.372.03			Apoyo arqueta	2	1.626	275	10.00	16				3.53	0.33	25.2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	b	c	d	e	100%	0.7	2.2	1.0	23.2	23.2	23.2	9.1	2.9	6.3	10.1		6.3	10.1			4.2	2.0											
DC-12/1/T14	T17-T18	2.664.00	56.373.03			Apoyo arqueta	2	1.626	275	10.00	16				3.55	0.33	25.2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	b	c	d	e	100%	0.7	2.2	1.0	23.4	23.4	23.4	9.1	2.9	6.3	10.3		6.3	10.3			4.2	2.0											
DC-12/1/T14	T17-T18	2.665.00	56.374.03			Apoyo arqueta	2	1.626	275	10.00	16				3.58	0.33	25.2-1600	0.60	1.00	5.40		0.25	120	0.30	2.00	b	b	c	d	e	100%	0.7	2.2	1.0	23.6	23.6	23.6	9.1	2.9	6.3	10.4		6.3	10.4			4.2	2.0											
DC-12/1/T14	T17-T18	2.666.00	56.375.03				2	1.626	275	10.00	16				3.60	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	23.8	23.8	23.8	8.8	2.6	6.2	11.0	2.6	6.2	11.0			4.2	2.0											
DC-12/1/T14	T17-T18	2.667.00	56.376.03				2	1.626	275	10.00	16				3.62	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	23.9	23.9	23.9	8.8	2.6	6.2	11.1	2.6	6.2	11.1			4.2	2.0											
DC-12/1/T14	T17-T18	2.668.00	56.377.03				2	1.626	275	10.00	16				3.64	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	24.0	24.0	24.0	8.8	2.6	6.2	11.2	2.6	6.2	11.2			4.2	2.0											
DC-12/1/T14	T17-T18	2.669.00	56.378.03				2	1.626	275	10.00	16				3.65	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	24.2	24.2	24.2	8.8	2.6	6.2	11.4	2.6	6.2	11.4			4.2	2.0											
DC-12/1/T14	T17-T18	2.670.00	56.379.03				2	1.626	275	10.00	16				3.67	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	24.3	24.3	24.3	8.8	2.6	6.2	11.5	2.6	6.2	11.5			4.2	2.0											
DC-12/1/T14	T17-T18	2.671.00	56.380.03				2	1.626	275	10.00	16				3.68	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	24.4	24.4	24.4	8.8	2.6	6.2	11.6	2.6	6.2	11.6			4.2	2.0											
DC-12/1/T14	T17-T18	2.672.00	56.381.03				2	1.626	275	10.00	16				3.70	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	24.6	24.6	24.6	8.8	2.6	6.2	11.7	2.6	6.2	11.7			4.2	2.0											
DC-12/1/T14	T17-T18	2.673.00	56.382.03				2	1.626	275	10.00	16				3.72	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	24.7	24.7	24.7	8.8	2.6	6.2	11.9	2.6	6.2	11.9			4.2	2.0											
DC-12/1/T14	T17-T18	2.674.00	56.383.03				2	1.626	275	10.00	16				3.73	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	24.8	24.8	24.8	8.8	2.6	6.2	12.0	2.6	6.2	12.0			4.2	2.0											
DC-12/1/T14	T17-T18	2.675.00	56.384.03				2	1.626	275	10.00	16				3.75	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	24.9	24.9	24.9	8.8	2.6	6.2	12.1	2.6	6.2	12.1			4.2	2.0											
DC-12/1/T14	T17-T18	2.676.00	56.385.03				2	1.626	275	10.00	16				3.76	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	25.0	25.0	25.0	8.8	2.6	6.2	12.2	2.6	6.2	12.2			4.2	2.0											
DC-12/1/T14	T17-T18	2.677.00	56.386.03				2	1.626	275	10.00	16				3.78	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	25.2	25.2	25.2	8.8	2.6	6.2	12.4	2.6	6.2	12.4			4.2	2.0											
DC-12/1/T14	T17-T18	2.678.00	56.387.03				2	1.626	275	10.00	16				3.79	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	25.3	25.3	25.3	8.8	2.6	6.2	12.5	2.6	6.2	12.5			4.2	2.0											
DC-12/1/T14	T17-T18	2.679.00	56.388.03				2	1.626	275	10.00	16				3.81	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	25.4	25.4	25.4	8.8	2.6	6.2	12.6	2.6	6.2	12.6			4.2	2.0											
DC-12/1/T14	T17-T18	2.680.00	56.389.03				2	1.626	275	10.00	16				3.83	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	25.5	25.5	25.5	8.8	2.6	6.2	12.7	2.6	6.2	12.7			4.2	2.0											
DC-12/1/T14	T17-T18	2.681.00	56.390.03				2	1.626	275	10.00	16				3.84	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	25.7	25.7	25.7	8.8	2.6	6.2	12.9	2.6	6.2	12.9			4.2	2.0											
DC-12/1/T14	T17-T18	2.682.00	56.391.03				2	1.626	275	10.00	16				3.86	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	25.8	25.8	25.8	8.8	2.6	6.2	13.0	2.6	6.2	13.0			4.2	2.0											
DC-12/1/T14	T17-T18	2.683.00	56.392.03				2	1.626	275	10.00	16				3.87	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	25.9	25.9	25.9	8.8	2.6	6.2	13.1	2.6	6.2	13.1			4.2	2.0											
DC-12/1/T14	T17-T18	2.684.00	56.393.03				2	1.626	275	10.00	16				3.89	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	26.0	26.0	26.0	8.8	2.6	6.2	13.2	2.6	6.2	13.2			4.2	2.0											
DC-12/1/T14	T17-T18	2.685.00	56.394.03				2	1.626	275	10.00	16				3.90	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	26.2	26.2	26.2	8.8	2.6	6.2	13.4	2.6	6.2	13.4			4.2	2.0											
DC-12/1/T14	T17-T18	2.686.00	56.395.03				2	1.626	275	10.00	16				3.91	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	26.2	26.2	26.2	8.8	2.6	6.2	13.4	2.6	6.2	13.4			4.2	2.0											
DC-12/1/T14	T17-T18	2.687.00	56.396.03				2	1.626	275	10.00	16				3.91	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	26.2	26.2	26.2	8.8	2.6	6.2	13.4	2.6	6.2	13.4			4.2	2.0											
DC-12/1/T14	T17-T18	2.688.00	56.397.03				2	1.626	275	10.00	16				3.92	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	26.3	26.3	26.3	8.8	2.6	6.2	13.4	2.6	6.2	13.4			4.2	2.0											
DC-12/1/T14	T17-T18	2.689.00	56.398.03				2	1.626	275	10.00	16				3.92	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f		100%	0.6	2.1	1.0	26.3	26.3	26.3	8.8	2.6	6.2	13.4	2.6	6.2	13.4			4.2	2.0											
DC-12/1/T14	T17-T18	2.690.00	56.399.03				2	1.626	275	10.00	16				3.92	0.33	21.2-1600	0.60	1.00	5.40		0.20	120	0.30	1.50	a	a	c	f																														

[illegible]

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre, Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= separación tubo salud	S ₂ = Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang. Apoyo	H2=Recurvimiento cobertura mínimo (m)	H3=Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Carra de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Rebarbetones c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15, e-bornopig (M20)	Rebarbetones c- Suela seleccionada C/95% PN, < 30 mm. e- M20. d-Gabarrillo S/15, f-suelo adecuado para excavación (<150mm) c/95% PN, g- Luchero modif.	Exposici. mtr. escalón (n)	% Escarable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1=ang (n)	H1=DNH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello camu+riñonera (m2)	Rebello camu+riñonera (m2)	Rebello camu+riñonera (m2)	Carra apoyo granular (m2)	Carra apoyo (M20)(m2)	Rebello riñonera+ suelo seleccionado (m2)	Rebello riñonera grabaciado (m2)	Rebello camu+riñonera (M20)(m2)	Rebello cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Rebello cobertura d-Gabarrillo S/15	Rebello cobertura e- M20	Rebello cobertura f-Suelo adecuado para excavación (<150mm) c/95% PN	Rebello cobertura g- Luchero modif (m2)	Excedente de bermas (m2) (consumo actual 0%, c=aparijento lateral 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m2)
DC-12/1/T14	T18-T19	337.00	57.276.03				1	1.829	275	11.50	16				4.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	20.8	20.8	20.8	20.8	6.1	1.6	4.5	12.1	1.6	4.5					12.1	2.7	1.0						
DC-12/1/T14	T18-T19	338.00	57.277.03				1	1.829	275	11.50	16				4.55	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	20.5	20.5	20.5	20.5	6.1	1.6	4.5	11.9	1.6	4.5					11.9	2.7	1.0						
DC-12/1/T14	T18-T19	339.00	57.278.03				1	1.829	275	11.50	16				4.49	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	20.2	6.1	1.6	4.5	11.5	1.6	4.5					11.5	2.7	1.0						
DC-12/1/T14	T18-T19	340.00	57.279.03				1	1.829	275	11.50	16				4.42	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	19.8	19.8	19.8	19.8	6.1	1.6	4.5	11.1	1.6	4.5					11.1	2.7	1.0						
DC-12/1/T14	T18-T19	341.00	57.280.03				1	1.829	275	11.50	16				4.42	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	19.8	19.8	19.8	19.8	6.1	1.6	4.5	11.1	1.6	4.5					11.1	2.7	1.0						
DC-12/1/T14	T18-T19	342.00	57.281.03				1	1.829	275	11.50	16				4.46	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	19.4	19.4	19.4	19.4	6.1	1.6	4.5	10.7	1.6	4.5					10.7	2.7	1.0						
DC-12/1/T14	T18-T19	343.00	57.282.03				1	1.829	275	11.50	16				4.45	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	19.9	19.9	19.9	19.9	6.1	1.6	4.5	11.3	1.6	4.5					11.3	2.7	1.0						
DC-12/1/T14	T18-T19	344.00	57.283.03				1	1.829	275	11.50	16				4.43	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	19.8	19.8	19.8	19.8	6.1	1.6	4.5	11.2	1.6	4.5					11.2	2.7	1.0						
DC-12/1/T14	T18-T19	345.00	57.284.03				1	1.829	275	11.50	16				4.36	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	19.4	19.4	19.4	19.4	6.1	1.6	4.5	10.8	1.6	4.5					10.8	2.7	1.0						
DC-12/1/T14	T18-T19	346.00	57.285.03				1	1.829	275	11.50	16				4.35	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	19.4	19.4	19.4	19.4	6.1	1.6	4.5	10.7	1.6	4.5					10.7	2.7	1.0						
DC-12/1/T14	T18-T19	347.00	57.286.03				1	1.829	275	11.50	16				4.40	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	19.7	19.7	19.7	19.7	6.1	1.6	4.5	11.0	1.6	4.5					11.0	2.7	1.0						
DC-12/1/T14	T18-T19	348.00	57.287.03				1	1.829	275	11.50	16				4.46	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	20.0	20.0	20.0	20.0	6.1	1.6	4.5	11.4	1.6	4.5					11.4	2.7	1.0						
DC-12/1/T14	T18-T19	349.00	57.288.03				1	1.829	275	11.50	16				4.53	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	20.4	20.4	20.4	20.4	6.1	1.6	4.5	11.8	1.6	4.5					11.8	2.7	1.0						
DC-12/1/T14	T18-T19	350.00	57.289.03				1	1.829	275	11.50	16				4.60	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	20.9	20.9	20.9	20.9	6.1	1.6	4.5	12.2	1.6	4.5					12.2	2.7	1.0						
DC-12/1/T14	T18-T19	351.00	57.290.03				1	1.829	275	11.50	16				4.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.2	21.2	21.2	21.2	6.1	1.6	4.5	12.5	1.6	4.5					12.5	2.7	1.0						
DC-12/1/T14	T18-T19	352.00	57.291.03				1	1.829	275	11.50	16				4.71	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.5	21.5	21.5	21.5	6.1	1.6	4.5	12.8	1.6	4.5					12.8	2.7	1.0						
DC-12/1/T14	T18-T19	353.00	57.292.03				1	1.829	275	11.50	16				4.73	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.6	21.6	21.6	21.6	6.1	1.6	4.5	13.0	1.6	4.5					13.0	2.7	1.0						
DC-12/1/T14	T18-T19	354.00	57.293.03				1	1.829	275	11.50	16				4.77	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.9	21.9	21.9	21.9	6.1	1.6	4.5	13.2	1.6	4.5					13.2	2.7	1.0						
DC-12/1/T14	T18-T19	355.00	57.294.03				1	1.829	275	11.50	16				4.77	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.9	21.9	21.9	21.9	6.1	1.6	4.5	13.2	1.6	4.5					13.2	2.7	1.0						
DC-12/1/T14	T18-T19	356.00	57.295.03				1	1.829	275	11.50	16				4.74	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.7	21.7	21.7	21.7	6.1	1.6	4.5	13.1	1.6	4.5					13.1	2.7	1.0						
DC-12/1/T14	T18-T19	357.00	57.296.03				1	1.829	275	11.50	16				4.75	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.8	21.8	21.8	21.8	6.1	1.6	4.5	13.1	1.6	4.5					13.1	2.7	1.0						
DC-12/1/T14	T18-T19	358.00	57.297.03				1	1.829	275	11.50	16				4.77	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.9	21.9	21.9	21.9	6.1	1.6	4.5	13.2	1.6	4.5					13.2	2.7	1.0						
DC-12/1/T14	T18-T19	358.66	57.297.69				1	1.829	275	11.50	16				4.77	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	0.7	14.5	14.5	14.5	14.5	10	3.0	8.7	1.0	8.7	1.0	4.5				8.7	1.0	0.3						
DC-12/1/T14	T18-T19	359.00	57.298.03				1	1.829	275	11.50	16				4.76	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	0.3	7.4	7.4	7.4	7.4	2.1	0.5	1.5	4.5	0.5	1.5					4.5	0.9	0.3						
DC-12/1/T14	T18-T19	360.00	57.299.03				1	1.829	275	11.50	16				4.73	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.6	21.6	21.6	21.6	6.1	1.6	4.5	13.0	1.6	4.5					13.0	2.7	1.0						
DC-12/1/T14	T18-T19	361.00	57.300.03				1	1.829	275	11.50	16				4.70	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.5	21.5	21.5	21.5	6.1	1.6	4.5	12.8	1.6	4.5					12.8	2.7	1.0						
DC-12/1/T14	T18-T19	362.00	57.301.03				1	1.829	275	11.50	16				4.66	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	21.2	21.2	21.2	21.2	6.1	1.6	4.5	12.6	1.6	4.5					12.6	2.7	1.0						
DC-12/1/T14	T18-T19	363.00	57.302.03				1	1.829	275	11.50	16				4.69	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	20.9	20.9	20.9	20.9	6.1	1.6	4.5	12.4	1.6	4.5					12.4	2.7	1.0						
DC-12/1/T14	T18-T19	364.00	57.303.03				1	1.829	275	11.50	16				4.58	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	1.0	20.7	20.7	20.7	20.7	6.1	1.6	4.5	12.1	1.6	4.5					12.1	2.7	1.0						
DC-12/1/T14	T18-T19	365.00	57.304.03				1	1.829	275	11.50	16				4.57	0.33	21-1-1800	0.60	3.00																																					

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Rebavilaciones a: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 515. c-bombopu (M4.20)	Rebavilaciones b: Suela seleccionada C/95% PN, < 30 mm. e-M4.20. d-Garbanillo 515. f-Suelo adecuado procedente excavación (<150mm c/95% PN. g- Luchero modif.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	HI-DHHz (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m³)	Relevo cama (m³)	Relevo riñonera(s)m²)	Relevo cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo M4.20(m³)	Relevo riñonera suelo seleccionado (m³)	Relevo riñonera grabanillo (m³)	Relevo cama+riñonera (M4.20(m³)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo 515	Relevo cobertura. e- M4.20	Relevo cobertura. f-Suelo adecuado procedente excavación (<150mm c/95% PN	Relevo cobertura. g- Luchero modif (m³)	Excedente de tierra (m³) (consumo suelo 0% c-spojamiento terreno 5%)	Cinta liberada (m)	Manto escollera a=0.5m. ancho=30m. (m³)
DC-121/T14	T18-T19	461.00	57.400.03				1	1.829	275	11.50	16				4.32	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.5	9.6	9.6	9.6	3.1	0.8	2.3	5.3	0.8	2.3				5.3	1.3	0.5									
DC-121/T14	T18-T19	462.00	57.401.03				1	1.829	275	11.50	16				4.32	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.5	19.2	19.2	19.2	6.1	1.6	4.5	10.5	1.6	4.5				10.5	2.7	1.0									
DC-121/T14	T18-T19	463.00	57.402.03				1	1.829	275	11.50	16				4.31	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	19.1	19.1	19.1	6.1	1.6	4.5	10.4	1.6	4.5				10.4	2.7	1.0									
DC-121/T14	T18-T19	464.00	57.403.03				1	1.829	275	11.50	16				4.30	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	19.0	19.0	19.0	6.1	1.6	4.5	10.4	1.6	4.5				10.4	2.7	1.0									
DC-121/T14	T18-T19	465.00	57.404.03				1	1.829	275	11.50	16				4.28	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	18.9	18.9	18.9	6.1	1.6	4.5	10.3	1.6	4.5				10.3	2.7	1.0									
DC-121/T14	T18-T19	466.00	57.405.03				1	1.829	275	11.50	16				4.26	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	18.8	18.8	18.8	6.1	1.6	4.5	10.2	1.6	4.5				10.2	2.7	1.0									
DC-121/T14	T18-T19	467.00	57.406.03				1	1.829	275	11.50	16				4.24	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	18.7	18.7	18.7	6.1	1.6	4.5	10.1	1.6	4.5				10.1	2.7	1.0									
DC-121/T14	T18-T19	468.00	57.407.03				1	1.829	275	11.50	16				4.23	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	18.6	18.6	18.6	6.1	1.6	4.5	10.0	1.6	4.5				10.0	2.7	1.0									
DC-121/T14	T18-T19	469.00	57.408.03				1	1.829	275	11.50	16				4.20	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	18.5	18.5	18.5	6.1	1.6	4.5	9.8	1.6	4.5				9.8	2.7	1.0									
DC-121/T14	T18-T19	470.00	57.409.03				1	1.829	275	11.50	16				4.17	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	18.3	18.3	18.3	6.1	1.6	4.5	9.6	1.6	4.5				9.6	2.7	1.0									
DC-121/T14	T18-T19	471.00	57.410.03				1	1.829	275	11.50	16				4.13	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	18.1	18.1	18.1	6.1	1.6	4.5	9.4	1.6	4.5				9.4	2.7	1.0									
DC-121/T14	T18-T19	472.00	57.411.03				1	1.829	275	11.50	16				4.09	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.9	17.9	17.9	6.1	1.6	4.5	9.2	1.6	4.5				9.2	2.7	1.0									
DC-121/T14	T18-T19	473.00	57.412.03				1	1.829	275	11.50	16				4.07	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.8	17.8	17.8	6.1	1.6	4.5	9.1	1.6	4.5				9.1	2.7	1.0									
DC-121/T14	T18-T19	474.00	57.413.03				1	1.829	275	11.50	16				4.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.7	17.7	17.7	6.1	1.6	4.5	9.0	1.6	4.5				9.0	2.7	1.0									
DC-121/T14	T18-T19	475.00	57.414.03				1	1.829	275	11.50	16				4.05	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.6	17.6	17.6	6.1	1.6	4.5	8.9	1.6	4.5				8.9	2.7	1.0									
DC-121/T14	T18-T19	476.00	57.415.03				1	1.829	275	11.50	16				4.05	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.6	17.6	17.6	6.1	1.6	4.5	9.0	1.6	4.5				9.0	2.7	1.0									
DC-121/T14	T18-T19	477.00	57.416.03				1	1.829	275	11.50	16				4.10	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.9	17.9	17.9	6.1	1.6	4.5	9.2	1.6	4.5				9.2	2.7	1.0									
DC-121/T14	T18-T19	478.00	57.417.03				1	1.829	275	11.50	16				4.10	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.9	17.9	17.9	6.1	1.6	4.5	9.3	1.6	4.5				9.3	2.7	1.0									
DC-121/T14	T18-T19	479.00	57.418.03				1	1.829	275	11.50	16				4.11	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	18.0	18.0	18.0	6.1	1.6	4.5	9.4	1.6	4.5				9.4	2.7	1.0									
DC-121/T14	T18-T19	479.50	57.418.53				1	1.829	275	11.50	16				4.11	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.5	9.0	9.0	9.0	3.1	0.8	2.3	4.6	0.8	2.3				4.6	1.3	0.5									
DC-121/T14	T18-T19	480.00	57.419.03				1	1.829	275	11.50	16				4.11	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	0.5	9.0	9.0	9.0	3.1	0.8	2.3	4.6	0.8	2.3				4.6	1.3	0.5									
DC-121/T14	T18-T19	481.00	57.420.03				1	1.829	275	11.50	16				4.02	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6	4.5				8.8	2.7	1.0									
DC-121/T14	T18-T19	482.00	57.421.03				1	1.829	275	11.50	16				3.91	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.8	16.8	16.8	6.1	1.6	4.5	8.2	1.6	4.5				8.2	2.7	1.0									
DC-121/T14	T18-T19	483.00	57.422.03				1	1.829	275	11.50	16				3.81	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.3	16.3	16.3	6.1	1.6	4.5	7.6	1.6	4.5				7.6	2.7	1.0									
DC-121/T14	T18-T19	484.00	57.423.03				1	1.829	275	11.50	16				3.69	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	15.6	15.6	15.6	6.1	1.6	4.5	7.0	1.6	4.5				7.0	2.7	1.0									
DC-121/T14	T18-T19	485.00	57.424.03				1	1.829	275	11.50	16				3.57	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6	4.5				6.3	2.7	1.0									
DC-121/T14	T18-T19	486.00	57.425.03				1	1.829	275	11.50	16				3.51	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	14.6	14.6	14.6	6.1	1.6	4.5	5.9	1.6	4.5				5.9	2.7	1.0									
DC-121/T14	T18-T19	487.00	57.426.03				1	1.829	275	11.50	16				3.52	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	14.7	14.7	14.7	6.1	1.6	4.5	6.0	1.6	4.5				6.0	2.7	1.0									
DC-121/T14	T18-T19	488.00	57.427.03				1	1.829	275	11.50	16				3.54	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	14.8	14.8	14.8	6.1	1.6	4.5	6.1	1.6	4.5				6.1	2.7	1.0									
DC-121/T14	T18-T19	489.00	57.428.03				1	1.829	275	11.50	16				3.55	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6	4.5				6.2	2.7	1.0									
DC-121/T14	T18-T19	490.00	57.429.03				1	1.829	275	11.50	16				3.57	0.33	21-1-1800																																								

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A=separación entre labrías	S ₂ =Separación entre labrías	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang Apoyo	H2=Recubrimiento cobertura mínimo (m)	H3=Profundidad mínima s/ cave (m)	H4=altura de la boma desde fondo	Carra de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rebavaciones a-c: Suela seleccionada C/95% PN, <= 30 mm. d-Garbanillo 515. c-borrompió HM-20 Rebavaciones b-c: Suela seleccionada C/95% PN, <= 30 mm. e- HM-20. d-Garbanillo 515. f-Suela adecuada procedente excavación (<=150mm) c/95% PN. g- Luchero modif.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1=ang (n)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño cama (m3)	Releño riñonera(s)m3	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Releño riñonera suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura d-Garbanillo 515	Releño cobertura c- HM-20	Releño cobertura f-Suela adecuada procedente excavación (<=150mm) c/95% PN	Releño cobertura g- Luchero modif (m3)	Excedente de tierra (m3) (consumible a nivel 0%, c+aproveitamiento 5%)	Cinta labrías (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-121/T14	T18-T19	718.00	57.657.03				1	1.829	275	11.50	16				3.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5			6.3	2.7	1.0						
DC-121/T14	T18-T19	719.00	57.658.03				1	1.829	275	11.50	16				3.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5			6.3	2.7	1.0						
DC-121/T14	T18-T19	720.00	57.659.03				1	1.829	275	11.50	16				3.57	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5			6.3	2.7	1.0						
DC-121/T14	T18-T19	721.00	57.660.03				1	1.829	275	11.50	16				3.58	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5			6.3	2.7	1.0						
DC-121/T14	T18-T19	722.00	57.661.03				1	1.829	275	11.50	16				3.58	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.0	15.0	15.0	6.1	1.6	4.5	6.4	1.6		4.5			6.4	2.7	1.0						
DC-121/T14	T18-T19	722.24	57.661.27				1	1.829	275	11.50	16				3.58	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.2	3.7	3.7	1.5	0.4	1.1	1.6	0.4		1.6			0.2	0.2								
DC-121/T14	T18-T19	723.00	57.662.03				1	1.829	275	11.50	16				3.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.8	11.4	11.4	11.4	4.6	1.2	3.4	4.8	1.2		3.4	4.8	2.0	0.8								
DC-121/T14	T18-T19	724.00	57.663.03				1	1.829	275	11.50	16				3.60	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5			6.4	2.7	1.0						
DC-121/T14	T18-T19	725.00	57.664.03				1	1.829	275	11.50	16				3.60	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0						
DC-121/T14	T18-T19	726.00	57.665.03				1	1.829	275	11.50	16				3.60	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0						
DC-121/T14	T18-T19	727.00	57.666.03				1	1.829	275	11.50	16				3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0						
DC-121/T14	T18-T19	728.00	57.667.03				1	1.829	275	11.50	16				3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0						
DC-121/T14	T18-T19	729.00	57.668.03				1	1.829	275	11.50	16				3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0						
DC-121/T14	T18-T19	730.00	57.669.03				1	1.829	275	11.50	16				3.62	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.2	15.2	15.2	6.1	1.6	4.5	6.6	1.6		4.5			6.6	2.7	1.0						
DC-121/T14	T18-T19	731.00	57.670.03				1	1.829	275	11.50	16				3.63	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5			6.6	2.7	1.0						
DC-121/T14	T18-T19	732.00	57.671.03				1	1.829	275	11.50	16				3.63	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5			6.6	2.7	1.0						
DC-121/T14	T18-T19	733.00	57.672.03				1	1.829	275	11.50	16				3.63	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5			6.6	2.7	1.0						
DC-121/T14	T18-T19	734.00	57.673.03				1	1.829	275	11.50	16				3.63	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5			6.6	2.7	1.0						
DC-121/T14	T18-T19	735.00	57.674.03				1	1.829	275	11.50	16				3.64	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6		4.5			6.7	2.7	1.0						
DC-121/T14	T18-T19	736.00	57.675.03				1	1.829	275	11.50	16				3.64	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6		4.5			6.7	2.7	1.0						
DC-121/T14	T18-T19	737.00	57.676.03				1	1.829	275	11.50	16				3.64	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.3	15.3	15.3	6.1	1.6	4.5	6.7	1.6		4.5			6.7	2.7	1.0						
DC-121/T14	T18-T19	738.00	57.677.03				1	1.829	275	11.50	16				3.65	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6		4.5			6.7	2.7	1.0						
DC-121/T14	T18-T19	739.00	57.678.03				1	1.829	275	11.50	16				3.65	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6		4.5			6.7	2.7	1.0						
DC-121/T14	T18-T19	740.00	57.679.03				1	1.829	275	11.50	16				3.65	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6		4.5			6.7	2.7	1.0						
DC-121/T14	T18-T19	741.00	57.680.03				1	1.829	275	11.50	16				3.66	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.8	1.6		4.5			6.8	2.7	1.0						
DC-121/T14	T18-T19	742.00	57.681.03				1	1.829	275	11.50	16				3.67	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.5	15.5	15.5	6.1	1.6	4.5	6.8	1.6		4.5			6.8	2.7	1.0						
DC-121/T14	T18-T19	743.00	57.682.03				1	1.829	275	11.50	16				3.68	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.5	15.5	15.5	6.1	1.6	4.5	6.9	1.6		4.5			6.9	2.7	1.0						
DC-121/T14	T18-T19	744.00	57.683.03				1	1.829	275	11.50	16				3.69	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6		4.5			6.9	2.7	1.0						
DC-121/T14	T18-T19	745.00	57.684.03				1	1.829	275	11.50	16				3.70	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.7	15.7	15.7	6.1	1.6	4.5	7.0	1.6		4.5			7.0	2.7	1.0						
DC-121/T14	T18-T19	746.00	57.685.03				1	1.829	275	11.50	16				3.72	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.7	15.7	15.7	6.1	1.6	4.5	7.1	1.6		4.5			7.1	2.7	1.0						
DC-121/T14	T18-T19	747.00	57.686.03				1	1.829	275	11.50	16				3.73	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	15.8	15.8	15.8	6.1	1.6	4.5	7.2	1.6		4.5			7.2	2.7	1.0						
DC-121/T14	T18-T19	748.00	57.687.03				1	1.829	275	11.50</																																											

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Reforzamiento a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 515. b-hormigón (M40-20) Reforcedor a-c: Suela seleccionada C/95% PN, < 30 mm. e- M40-20. d-Garbanillo 515. f-Suela adecuada procedente excavación (<150mm) c/6% PN. g- Luchero modif.	Exposici. (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (n)	HI=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño c-arena (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M40(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera grabaciado (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura d-Garbanillo 515	Releño cobertura c- H4/20	Releño cobertura f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Releño cobertura g- Luchero modif (m3)	Excedente de tierra (m3) (consumible a nivel 0%, c-espolvoreo 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-121/T14	T18-T19	975.00	57914.03				1	1.829	275	1150	16				4.20	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.5	18.5	18.5	6.1	1.6	4.5	9.8	1.6	4.5			9.8	2.7	1.0										
DC-121/T14	T18-T19	976.00	57915.03				1	1.829	275	1150	16				4.19	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.4	18.4	18.4	6.1	1.6	4.5	9.7	1.6	4.5			9.7	2.7	1.0										
DC-121/T14	T18-T19	977.00	57916.03				1	1.829	275	1150	16				4.18	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.3	18.3	18.3	6.1	1.6	4.5	9.7	1.6	4.5			9.7	2.7	1.0										
DC-121/T14	T18-T19	978.00	57917.03				1	1.829	275	1150	16				4.17	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.3	18.3	18.3	6.1	1.6	4.5	9.6	1.6	4.5			9.6	2.7	1.0										
DC-121/T14	T18-T19	979.00	57918.03				1	1.829	275	1150	16				4.16	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.2	18.2	18.2	6.1	1.6	4.5	9.6	1.6	4.5			9.6	2.7	1.0										
DC-121/T14	T18-T19	980.00	57919.03				1	1.829	275	1150	16				4.19	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.4	18.4	18.4	6.1	1.6	4.5	9.8	1.6	4.5			9.8	2.7	1.0										
DC-121/T14	T18-T19	981.00	57920.03				1	1.829	275	1150	16				4.23	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.6	18.6	18.6	6.1	1.6	4.5	10.0	1.6	4.5			10.0	2.7	1.0										
DC-121/T14	T18-T19	982.00	57921.03				1	1.829	275	1150	16				4.26	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.8	18.8	18.8	6.1	1.6	4.5	10.2	1.6	4.5			10.2	2.7	1.0										
DC-121/T14	T18-T19	983.00	57922.03				1	1.829	275	1150	16				4.21	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.5	18.5	18.5	6.1	1.6	4.5	9.8	1.6	4.5			9.8	2.7	1.0										
DC-121/T14	T18-T19	984.00	57923.03				1	1.829	275	1150	16				4.16	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.2	18.2	18.2	6.1	1.6	4.5	9.6	1.6	4.5			9.6	2.7	1.0										
DC-121/T14	T18-T19	985.00	57924.03				1	1.829	275	1150	16				4.12	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	18.0	18.0	18.0	6.1	1.6	4.5	9.3	1.6	4.5			9.3	2.7	1.0										
DC-121/T14	T18-T19	986.00	57925.03				1	1.829	275	1150	16				4.03	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5			8.9	2.7	1.0										
DC-121/T14	T18-T19	987.00	57926.03				1	1.829	275	1150	16				3.94	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	17.0	17.0	17.0	6.1	1.6	4.5	8.3	1.6	4.5			8.3	2.7	1.0										
DC-121/T14	T18-T19	988.00	57927.03				1	1.829	275	1150	16				3.86	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	16.6	16.6	16.6	6.1	1.6	4.5	7.9	1.6	4.5			7.9	2.7	1.0										
DC-121/T14	T18-T19	989.00	57928.03				1	1.829	275	1150	16				3.89	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	16.5	16.5	16.5	6.1	1.6	4.5	7.9	1.6	4.5			7.9	2.7	1.0										
DC-121/T14	T18-T19	990.00	57929.03				1	1.829	275	1150	16				3.84	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	16.4	16.4	16.4	6.1	1.6	4.5	7.8	1.6	4.5			7.8	2.7	1.0										
DC-121/T14	T18-T19	991.00	57930.03				1	1.829	275	1150	16				3.79	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.5	1.6	4.5			7.5	2.7	1.0										
DC-121/T14	T18-T19	992.00	57931.03				1	1.829	275	1150	16				3.74	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.9	15.9	15.9	6.1	1.6	4.5	7.2	1.6	4.5			7.2	2.7	1.0										
DC-121/T14	T18-T19	993.00	57932.03				1	1.829	275	1150	16				3.69	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6	4.5			6.9	2.7	1.0										
DC-121/T14	T18-T19	994.00	57933.03				1	1.829	275	1150	16				3.65	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6	4.5			6.7	2.7	1.0										
DC-121/T14	T18-T19	995.00	57934.03				1	1.829	275	1150	16				3.63	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6	4.5			6.6	2.7	1.0										
DC-121/T14	T18-T19	996.00	57935.03				1	1.829	275	1150	16				3.63	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6	4.5			6.6	2.7	1.0										
DC-121/T14	T18-T19	997.00	57936.03				1	1.829	275	1150	16				3.62	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6	4.5			6.6	2.7	1.0										
DC-121/T14	T18-T19	998.00	57937.03				1	1.829	275	1150	16				3.64	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.3	15.3	15.3	6.1	1.6	4.5	6.7	1.6	4.5			6.7	2.7	1.0										
DC-121/T14	T18-T19	999.00	57938.03				1	1.829	275	1150	16				3.65	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6	4.5			6.7	2.7	1.0										
DC-121/T14	T18-T19	1000.00	57939.03				1	1.829	275	1150	16				3.65	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6	4.5			6.7	2.7	1.0										
DC-121/T14	T18-T19	1001.00	57940.03				1	1.829	275	1150	16				3.66	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.4	15.4	15.4	6.1	1.6	4.5	6.8	1.6	4.5			6.8	2.7	1.0										
DC-121/T14	T18-T19	1002.00	57941.03				1	1.829	275	1150	16				3.66	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.5	15.5	15.5	6.1	1.6	4.5	6.8	1.6	4.5			6.8	2.7	1.0										
DC-121/T14	T18-T19	1003.00	57942.03				1	1.829	275	1150	16				3.67	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.5	15.5	15.5	6.1	1.6	4.5	6.8	1.6	4.5			6.8	2.7	1.0										
DC-121/T14	T18-T19	1004.00	57943.03				1	1.829	275	1150	16				3.69	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6	4.5			6.9	2.7	1.0										
DC-121/T14	T18-T19	1005.00	57944.03				1	1.829	275	1150	16				3.70	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.0	15.6	15.6	15.6	6.1	1.6	4.5	7.0	1.6	4.5			7.0	2.7	1.0										
DC-121/T14	T18-T19	1006.00	57945.03				1	1.829	275	1150	16				3.71	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	150	a	c	f	100%	0.7	2.3	1.																								

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adoptado (mm)	PN (limbaje valvuleta (dm)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concrecionado zapaja	A= separación tubo salud	S ₂ = Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang Apoyo	H2=Recurvimiento cobertura mínimo (m)	H3=Profundidad mínima s/ cave (m)	H4= altura de la boma fondo	Carra de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Requisitos para c- Suela seleccionada C/95% PN, <= 30 mm. d-Garbanillo S/15, <borrompió (M40)	Requisitos para e- Suela seleccionada C/95% PN, <= 30 mm. e- M40. d-Garbanillo S/15, <Suela adecuada para excavación (<=150mm) c/95% PN, g- Lecho mod.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1=ang (n)	HI=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Carra apoyo granular (m3)	Carra apoyo M40(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera (M40(m3)	Relevo cobertura c- Suela seleccionada C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- M40;	Relevo cobertura. f-Suela adecuada para excavación (<=150mm) c/95% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0%, e-spojaniento 5%)	Cinta liberata (m)	Manto escollera a 0.5m. ancho=30m (m3)
DC-121/T14	T18-T19	1.612.00	58.551.03				1	1.829	275	11.50	16								3.58	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5						6.3	2.7	1.0						
DC-121/T14	T18-T19	1.613.00	58.552.03				1	1.829	275	11.50	16								3.57	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5					6.3	2.7	1.0							
DC-121/T14	T18-T19	1.614.00	58.553.03				1	1.829	275	11.50	16								3.57	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5					6.3	2.7	1.0							
DC-121/T14	T18-T19	1.615.00	58.554.03				1	1.829	275	11.50	16								3.57	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5					6.3	2.7	1.0							
DC-121/T14	T18-T19	1.616.00	58.555.03				1	1.829	275	11.50	16								3.60	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5					6.5	2.7	1.0							
DC-121/T14	T18-T19	1.617.00	58.556.03				1	1.829	275	11.50	16								3.64	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.618.00	58.557.03				1	1.829	275	11.50	16								3.66	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.4	15.4	15.4	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.619.00	58.558.03				1	1.829	275	11.50	16								3.65	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6		4.5					6.7	2.7	1.0							
DC-121/T14	T18-T19	1.620.00	58.559.03				1	1.829	275	11.50	16								3.63	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.621.00	58.560.03				1	1.829	275	11.50	16								3.61	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5					6.5	2.7	1.0							
DC-121/T14	T18-T19	1.622.00	58.561.03				1	1.829	275	11.50	16								3.60	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5					6.4	2.7	1.0							
DC-121/T14	T18-T19	1.623.00	58.562.03				1	1.829	275	11.50	16								3.59	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5					6.4	2.7	1.0							
DC-121/T14	T18-T19	1.624.00	58.563.03				1	1.829	275	11.50	16								3.58	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.4	1.6		4.5					6.4	2.7	1.0							
DC-121/T14	T18-T19	1.625.00	58.564.03				1	1.829	275	11.50	16								3.57	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5					6.3	2.7	1.0							
DC-121/T14	T18-T19	1.626.00	58.565.03				1	1.829	275	11.50	16								3.58	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5					6.4	2.7	1.0							
DC-121/T14	T18-T19	1.627.00	58.566.03				1	1.829	275	11.50	16								3.59	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5					6.4	2.7	1.0							
DC-121/T14	T18-T19	1.628.00	58.567.03				1	1.829	275	11.50	16								3.60	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5					6.5	2.7	1.0							
DC-121/T14	T18-T19	1.629.00	58.568.03				1	1.829	275	11.50	16								3.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5					6.5	2.7	1.0							
DC-121/T14	T18-T19	1.630.00	58.569.03				1	1.829	275	11.50	16								3.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.631.00	58.570.03				1	1.829	275	11.50	16								3.63	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.632.00	58.571.03				1	1.829	275	11.50	16								3.63	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.633.00	58.572.03				1	1.829	275	11.50	16								3.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.634.00	58.573.03				1	1.829	275	11.50	16								3.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.635.00	58.574.03				1	1.829	275	11.50	16								3.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.636.00	58.575.03				1	1.829	275	11.50	16								3.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.6	1.6		4.5					6.6	2.7	1.0							
DC-121/T14	T18-T19	1.637.00	58.576.03				1	1.829	275	11.50	16								3.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5					6.5	2.7	1.0							
DC-121/T14	T18-T19	1.638.00	58.577.03				1	1.829	275	11.50	16								3.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5					6.5	2.7	1.0							
DC-121/T14	T18-T19	1.639.00	58.578.03				1	1.829	275	11.50	16								3.61	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5					6.5	2.7	1.0							
DC-121/T14	T18-T19	1.640.00	58.579.03				1	1.829	275	11.50	16								3.61	0.33	21-1																																									

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena: b-cama de hormigón (M40)	R1=Valvulerías c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15. e-bornopig (M40) f-Malla excubatoria c- Suela seleccionada C/95% PN, < 30 mm. e- M40. d-Garbanillo S/15. f-Suelo adecuado procedente excavación (<150mm) c/6% PN. g- Lecho mod.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (n)	HI=DNH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m2)	Relevo cama (m2)	Relevo riñonera(s)m2)	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M40(m2)	Relevo riñonera suelo seleccionado (m2)	Relevo riñonera grabatación (m2)	Relevo cama+riñonera (M40+20m2)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- H4/20	Relevo cobertura. f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Relevo cobertura. g- Lecho mod (m2)	Excedente de tierra (m2) (consumible a nivel 0%, e-superficie 5%)	Cinta liberata (m)	Manto escollera a 0.5m. ancho=30m. (m2)
DC-12/1/T14	T18-T19	1.997.00	58.936.03				1	1.829	275	11.50	16						4.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.7	17.7	17.7	6.1	1.6	4.5	9.0	1.6	4.5					9.0	2.7	1.0								
DC-12/1/T14	T18-T19	1.998.00	58.937.03				1	1.829	275	11.50	16						4.07	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.7	17.7	17.7	6.1	1.6	4.5	9.1	1.6	4.5					9.1	2.7	1.0								
DC-12/1/T14	T18-T19	1.999.00	58.938.03				1	1.829	275	11.50	16						4.09	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.8	17.8	17.8	6.1	1.6	4.5	9.2	1.6	4.5					9.2	2.7	1.0								
DC-12/1/T14	T18-T19	2.000.00	58.939.03				1	1.829	275	11.50	16						4.10	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.9	17.9	17.9	6.1	1.6	4.5	9.2	1.6	4.5					9.2	2.7	1.0								
DC-12/1/T14	T18-T19	2.001.00	58.940.03				1	1.829	275	11.50	16						4.11	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.0	18.0	18.0	6.1	1.6	4.5	9.3	1.6	4.5					9.3	2.7	1.0								
DC-12/1/T14	T18-T19	2.002.00	58.941.03				1	1.829	275	11.50	16						4.12	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.0	18.0	18.0	6.1	1.6	4.5	9.4	1.6	4.5					9.4	2.7	1.0								
DC-12/1/T14	T18-T19	2.003.00	58.942.03				1	1.829	275	11.50	16						4.13	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.1	18.1	18.1	6.1	1.6	4.5	9.4	1.6	4.5					9.4	2.7	1.0								
DC-12/1/T14	T18-T19	2.004.00	58.943.03				1	1.829	275	11.50	16						4.14	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.1	18.1	18.1	6.1	1.6	4.5	9.5	1.6	4.5					9.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.005.00	58.944.03				1	1.829	275	11.50	16						4.15	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.2	18.2	18.2	6.1	1.6	4.5	9.5	1.6	4.5					9.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.006.00	58.945.03				1	1.829	275	11.50	16						4.17	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.3	18.3	18.3	6.1	1.6	4.5	9.7	1.6	4.5					9.7	2.7	1.0								
DC-12/1/T14	T18-T19	2.007.00	58.946.03				1	1.829	275	11.50	16						4.19	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.4	18.4	18.4	6.1	1.6	4.5	9.8	1.6	4.5					9.8	2.7	1.0								
DC-12/1/T14	T18-T19	2.008.00	58.947.03				1	1.829	275	11.50	16						4.21	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.5	18.5	18.5	6.1	1.6	4.5	9.9	1.6	4.5					9.9	2.7	1.0								
DC-12/1/T14	T18-T19	2.009.00	58.948.03				1	1.829	275	11.50	16						4.23	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.6	18.6	18.6	6.1	1.6	4.5	10.0	1.6	4.5					10.0	2.7	1.0								
DC-12/1/T14	T18-T19	2.010.00	58.949.03				1	1.829	275	11.50	16						4.25	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.8	18.8	18.8	6.1	1.6	4.5	10.1	1.6	4.5					10.1	2.7	1.0								
DC-12/1/T14	T18-T19	2.011.00	58.950.03				1	1.829	275	11.50	16						4.27	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.9	18.9	18.9	6.1	1.6	4.5	10.2	1.6	4.5					10.2	2.7	1.0								
DC-12/1/T14	T18-T19	2.012.00	58.951.03				1	1.829	275	11.50	16						4.29	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.0	19.0	19.0	6.1	1.6	4.5	10.3	1.6	4.5					10.3	2.7	1.0								
DC-12/1/T14	T18-T19	2.013.00	58.952.03				1	1.829	275	11.50	16						4.31	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.1	19.1	19.1	6.1	1.6	4.5	10.4	1.6	4.5					10.4	2.7	1.0								
DC-12/1/T14	T18-T19	2.014.00	58.953.03				1	1.829	275	11.50	16						4.32	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.2	19.2	19.2	6.1	1.6	4.5	10.5	1.6	4.5					10.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.015.00	58.954.03				1	1.829	275	11.50	16						4.34	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.3	19.3	19.3	6.1	1.6	4.5	10.7	1.6	4.5					10.7	2.7	1.0								
DC-12/1/T14	T18-T19	2.016.00	58.955.03				1	1.829	275	11.50	16						4.36	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.4	19.4	19.4	6.1	1.6	4.5	10.8	1.6	4.5					10.8	2.7	1.0								
DC-12/1/T14	T18-T19	2.017.00	58.956.03				1	1.829	275	11.50	16						4.38	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.5	19.5	19.5	6.1	1.6	4.5	10.9	1.6	4.5					10.9	2.7	1.0								
DC-12/1/T14	T18-T19	2.018.00	58.957.03				1	1.829	275	11.50	16						4.40	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.7	19.7	19.7	6.1	1.6	4.5	11.0	1.6	4.5					11.0	2.7	1.0								
DC-12/1/T14	T18-T19	2.019.00	58.958.03				1	1.829	275	11.50	16						4.40	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.6	19.6	19.6	6.1	1.6	4.5	11.0	1.6	4.5					11.0	2.7	1.0								
DC-12/1/T14	T18-T19	2.020.00	58.959.03				1	1.829	275	11.50	16						4.40	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.6	19.6	19.6	6.1	1.6	4.5	11.0	1.6	4.5					11.0	2.7	1.0								
DC-12/1/T14	T18-T19	2.021.00	58.960.03				1	1.829	275	11.50	16						4.39	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.6	19.6	19.6	6.1	1.6	4.5	11.0	1.6	4.5					11.0	2.7	1.0								
DC-12/1/T14	T18-T19	2.022.00	58.961.03				1	1.829	275	11.50	16						4.39	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.6	19.6	19.6	6.1	1.6	4.5	10.9	1.6	4.5					10.9	2.7	1.0								
DC-12/1/T14	T18-T19	2.023.00	58.962.03				1	1.829	275	11.50	16						4.39	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.6	19.6	19.6	6.1	1.6	4.5	10.9	1.6	4.5					10.9	2.7	1.0								
DC-12/1/T14	T18-T19	2.024.00	58.963.03				1	1.829	275	11.50	16						4.39	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.6	19.6	19.6	6.1	1.6	4.5	10.9	1.6	4.5					10.9	2.7	1.0								
DC-12/1/T14	T18-T19	2.025.00	58.964.03				1	1.829	275	11.50	16						4.38	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.6	19.6	19.6	6.1	1.6	4.5	10.9	1.6	4.5					10.9	2.7	1.0								
DC-12/1/T14	T18-T19	2.026.00	58.965.03				1	1.829	275	11.50	16						4.38	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.5	19.5	19.5</																					

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= separación entre laboras	S ₂ = Separación entre laboras	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang Apoyo	H2=Recubrimiento cobertura mínimo (m)	H3=Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Carra de apoyo a-cama material granular o arena: b-cama de hormigón HM-20	Rebavaciones a: Suela seleccionada C/95% PN, c= 30 mm. d-Gabarrillo S15. e-borncap HM-20. f=Rebavaciones a: Suela seleccionada C/95% PN, c= 30 mm. e- HM-20. d-Gabarrillo S15. f-Suela adecuada procedente excavación (<=150mm) c/6% PN. g- Luchero mod.	Exposor (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1=ang (n)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Releño cama+riñonera (m3)	Releño cama (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM 20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera granular (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c- Suelo seleccionado C/95% PN, c= 30 mm	Releño cobertura d-Gabarrillo S15	Releño cobertura e- HM20	Releño cobertura f-Suelo adecuado procedente excavación (<=150mm) c/6% PN	Releño cobertura g- Luchero mod (m3)	Excedente de tierra (m3) (consumible a nivel 0% e-superfornio 5%)	Cinta laboras (m)	Manto escollera a=0.5m. ancho=30m. (m3)
DC-12/1/T14	T18-T19	2124.00	59063.03				1	1.829	275	1150	16				3.64	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.7	1.6		4.5			4.7	2.7	1.0								
DC-12/1/T14	T18-T19	2125.00	59064.03				1	1.829	275	1150	16				3.63	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5			4.6	2.7	1.0								
DC-12/1/T14	T18-T19	2126.00	59065.03				1	1.829	275	1150	16				3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0								
DC-12/1/T14	T18-T19	2127.00	59066.03				1	1.829	275	1150	16				3.60	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0								
DC-12/1/T14	T18-T19	2128.00	59067.03				1	1.829	275	1150	16				3.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5			6.4	2.7	1.0								
DC-12/1/T14	T18-T19	2129.00	59068.03				1	1.829	275	1150	16				3.58	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.4	1.6		4.5			6.4	2.7	1.0								
DC-12/1/T14	T18-T19	2130.00	59069.03				1	1.829	275	1150	16				3.57	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5			6.3	2.7	1.0								
DC-12/1/T14	T18-T19	2131.00	59070.03				1	1.829	275	1150	16				3.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5			6.3	2.7	1.0								
DC-12/1/T14	T18-T19	2132.00	59071.03				1	1.829	275	1150	16				3.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6		4.5			6.2	2.7	1.0								
DC-12/1/T14	T18-T19	2133.00	59072.03				1	1.829	275	1150	16				3.57	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5			6.3	2.7	1.0								
DC-12/1/T14	T18-T19	2134.00	59073.03				1	1.829	275	1150	16				3.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5			6.4	2.7	1.0								
DC-12/1/T14	T18-T19	2135.00	59074.03				1	1.829	275	1150	16				3.63	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5			6.6	2.7	1.0								
DC-12/1/T14	T18-T19	2136.00	59075.03				1	1.829	275	1150	16				3.67	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.5	15.5	15.5	6.1	1.6	4.5	6.8	1.6		4.5			6.8	2.7	1.0								
DC-12/1/T14	T18-T19	2137.00	59076.03				1	1.829	275	1150	16				3.71	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.7	15.7	15.7	6.1	1.6	4.5	7.1	1.6		4.5			7.1	2.7	1.0								
DC-12/1/T14	T18-T19	2138.00	59077.03				1	1.829	275	1150	16				3.75	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.9	15.9	15.9	6.1	1.6	4.5	7.3	1.6		4.5			7.3	2.7	1.0								
DC-12/1/T14	T18-T19	2139.00	59078.03				1	1.829	275	1150	16				3.78	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	16.1	16.1	16.1	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0								
DC-12/1/T14	T18-T19	2140.00	59079.03				1	1.829	275	1150	16				3.82	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	16.3	16.3	16.3	6.1	1.6	4.5	7.6	1.6		4.5			7.6	2.7	1.0								
DC-12/1/T14	T18-T19	2141.00	59080.03				1	1.829	275	1150	16				3.85	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	16.5	16.5	16.5	6.1	1.6	4.5	7.8	1.6		4.5			7.8	2.7	1.0								
DC-12/1/T14	T18-T19	2142.00	59081.03				1	1.829	275	1150	16				3.89	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	16.7	16.7	16.7	6.1	1.6	4.5	8.0	1.6		4.5			8.0	2.7	1.0								
DC-12/1/T14	T18-T19	2143.00	59082.03				1	1.829	275	1150	16				3.92	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	16.9	16.9	16.9	6.1	1.6	4.5	8.2	1.6		4.5			8.2	2.7	1.0								
DC-12/1/T14	T18-T19	2144.00	59083.03				1	1.829	275	1150	16				3.96	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	17.1	17.1	17.1	6.1	1.6	4.5	8.4	1.6		4.5			8.4	2.7	1.0								
DC-12/1/T14	T18-T19	2145.00	59084.03				1	1.829	275	1150	16				3.99	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	17.3	17.3	17.3	6.1	1.6	4.5	8.6	1.6		4.5			8.6	2.7	1.0								
DC-12/1/T14	T18-T19	2146.00	59085.03				1	1.829	275	1150	16				4.03	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6		4.5			8.8	2.7	1.0								
DC-12/1/T14	T18-T19	2147.00	59086.03				1	1.829	275	1150	16				4.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	17.7	17.7	17.7	6.1	1.6	4.5	9.0	1.6		4.5			9.0	2.7	1.0								
DC-12/1/T14	T18-T19	2148.00	59087.03				1	1.829	275	1150	16				4.10	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	17.9	17.9	17.9	6.1	1.6	4.5	9.2	1.6		4.5			9.2	2.7	1.0								
DC-12/1/T14	T18-T19	2149.00	59088.03				1	1.829	275	1150	16				4.13	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	18.1	18.1	18.1	6.1	1.6	4.5	9.4	1.6		4.5			9.4	2.7	1.0								
DC-12/1/T14	T18-T19	2150.00	59089.03				1	1.829	275	1150	16				4.17	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	18.3	18.3	18.3	6.1	1.6	4.5	9.6	1.6		4.5			9.6	2.7	1.0								
DC-12/1/T14	T18-T19	2151.00	59090.03				1	1.829	275	1150	16				4.20	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	18.5	18.5	18.5	6.1	1.6	4.5	9.8	1.6		4.5			9.8	2.7	1.0								
DC-12/1/T14	T18-T19	2152.00	59091.03				1	1.829	275	1150	16				4.24	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	18.7	18.7	18.7	6.1	1.6	4.5	10.0	1.6		4.5			10.0	2.7	1.0								
DC-12/1/T14	T18-T19	2152.79	59091.82				1	1.829	275	1150	16				4.26	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	0.8	14.9	14.9	14.9	4.8	1.3	3.6	8.1	1.3	3.6	8.1	2.1	0.8											
DC-12/1/T14	T18-T19	2153.00	59092.03				1	1.829	275	1150	16				4.27	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	0.2	3.9	3.9	3.9	1.3	0.3	0.9	2.1	0.3	0.9	2.1													

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquelarrotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón HM-20	Relaciones: c- Suelo seleccionado C/95% PN, < 30 mm. d- Gabarillo S/15. e- bornapaso HM-20. f- Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d- Gabarillo S/15. f- Suelo adecuado para excavación (<150mm) C/95% PN. g- Lecho mod.	Exposic (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1- ang (n)	H1- DN/Hz (n)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama- rñonera (m³)	Relevo cama (m³)	Relevo rñonera(s)m	Relevo cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relevo rñonera suelo seleccionado (m³)	Relevo rñonera grabaciado (m³)	Relevo cama- rñonera HM-20(m³)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura d- Gabarillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f- Suelo adecuado para excavación (<150mm) C/95% PN	Relevo cobertura g- Lecho mod (m³)	Excedente de tierra (m³) (consumo actual 0%, e- conjunto tierra 5%)	Cinta liberata (m³)	Manto escollera a- 0.5m. ancho-30m. (m³)
DC-12/1/T14	T18-T19	2.252.00	59.191.03				1	1.829	275	11.50	16						3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5					4.5	2.7	1.0							
DC-12/1/T14	T18-T19	2.253.00	59.192.03				1	1.829	275	11.50	16						3.60	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.254.00	59.193.03				1	1.829	275	11.50	16						3.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.255.00	59.194.03				1	1.829	275	11.50	16						3.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.0	15.0	15.0	6.1	1.6	4.5	6.4	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.256.00	59.195.03				1	1.829	275	11.50	16						3.58	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.257.00	59.196.03				1	1.829	275	11.50	16						3.57	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.258.00	59.197.03				1	1.829	275	11.50	16						3.57	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.259.00	59.198.03				1	1.829	275	11.50	16						3.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.260.00	59.199.03				1	1.829	275	11.50	16						3.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.261.00	59.200.03				1	1.829	275	11.50	16						3.55	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.262.00	59.201.03				1	1.829	275	11.50	16						3.54	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.8	14.8	14.8	6.1	1.6	4.5	6.1	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.263.00	59.202.03				1	1.829	275	11.50	16						3.55	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.8	14.8	14.8	6.1	1.6	4.5	6.2	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.264.00	59.203.03				1	1.829	275	11.50	16						3.55	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.265.00	59.204.03				1	1.829	275	11.50	16						3.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.266.00	59.205.03				1	1.829	275	11.50	16						3.54	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.267.00	59.206.03				1	1.829	275	11.50	16						3.57	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.268.00	59.207.03				1	1.829	275	11.50	16						3.57	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.269.00	59.208.03				1	1.829	275	11.50	16						3.58	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.270.00	59.209.03				1	1.829	275	11.50	16						3.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.0	15.0	15.0	6.1	1.6	4.5	6.4	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.271.00	59.210.03				1	1.829	275	11.50	16						3.60	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.272.00	59.211.03				1	1.829	275	11.50	16						3.60	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.273.00	59.212.03				1	1.829	275	11.50	16						3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.274.00	59.213.03				1	1.829	275	11.50	16						3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.275.00	59.214.03				1	1.829	275	11.50	16						3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.276.00	59.215.03				1	1.829	275	11.50	16						3.62	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.2	15.2	15.2	6.1	1.6	4.5	6.6	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.277.00	59.216.03				1	1.829	275	11.50	16						3.63	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.278.00	59.217.03				1	1.829	275	11.50	16						3.64	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.3	15.3	15.3	6.1	1.6	4.5	6.7	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.279.00	59.218.03				1	1.829	275	11.50	16						3.64	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.3	15.3	15.3	6.1	1.6	4.5	6.7	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.280.00	59.219.03				1	1.829	275	11.50	16						3.65	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	10.0	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6		4.5				4.5	2.7	1.0								
DC-12/1/T14	T18-T19	2.281.00	59.220.03				1	1.829	275	11.50	16						3.65	0.33	21-1-1800	0.60	3.00																																						

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquelarrotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja concalcada	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	HT- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	HT- altura de la borra desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón M40	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d- Garbanillo S15. e- bornapom M40.20 f- Suela seleccionada C/95% PN, < 30 mm. e- M40.20. d- Garbanillo S15. f- Suela adecuada procedente excavación (<150mm) c/95% PN. g- Lecho mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	HT- ang (n)	HT- DHZ (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama- rñonera (m3)	Relevo cama (m3)	Relevo rñonera (m3)	Relevo rñonera (m3)	Cama apoyo granular (m3)	Cama apoyo M40 (m3)	Relevo rñonera suelo seleccionado (m3)	Relevo rñonera grabaciado (m3)	Relevo cama- rñonera M40 (m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d- Garbanillo S15	Relevo cobertura. e- M40.20	Relevo cobertura. f- Suelo adecuado excavación (<150mm) c/95% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensación a nivel 0%, e- conjunto lateral 5%)	Cinta liberada (m)	Manto escollera a- 0.5m. ancho-30m. (m3)
DC-121/T14	T18-T19	2382.00	59321.03				1	1.829	275	1150	16						4.48	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	21.4	21.4	21.4	6.1	1.6	4.5	12.7	1.6		4.5				12.7	2.7	1.0								
DC-121/T14	T18-T19	2383.00	59322.03				1	1.829	275	1150	16						4.46	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	21.2	21.2	21.2	6.1	1.6	4.5	12.5	1.6		4.5			12.5	2.7	1.0									
DC-121/T14	T18-T19	2384.00	59323.03				1	1.829	275	1150	16						4.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	20.9	20.9	20.9	6.1	1.6	4.5	12.2	1.6		4.5			12.2	2.7	1.0									
DC-121/T14	T18-T19	2385.00	59324.03				1	1.829	275	1150	16						4.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	20.6	20.6	20.6	6.1	1.6	4.5	12.0	1.6		4.5			12.0	2.7	1.0									
DC-121/T14	T18-T19	2386.00	59325.03				1	1.829	275	1150	16						4.51	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	20.3	20.3	20.3	6.1	1.6	4.5	11.7	1.6		4.5			11.7	2.7	1.0									
DC-121/T14	T18-T19	2387.00	59326.03				1	1.829	275	1150	16						4.47	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	20.1	20.1	20.1	6.1	1.6	4.5	11.4	1.6		4.5			11.4	2.7	1.0									
DC-121/T14	T18-T19	2388.00	59327.03				1	1.829	275	1150	16						4.44	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	19.9	19.9	19.9	6.1	1.6	4.5	11.2	1.6		4.5			11.2	2.7	1.0									
DC-121/T14	T18-T19	2389.00	59328.03				1	1.829	275	1150	16						4.39	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	19.6	19.6	19.6	6.1	1.6	4.5	10.9	1.6		4.5			10.9	2.7	1.0									
DC-121/T14	T18-T19	2390.00	59329.03				1	1.829	275	1150	16						4.36	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	19.4	19.4	19.4	6.1	1.6	4.5	10.7	1.6		4.5			10.7	2.7	1.0									
DC-121/T14	T18-T19	2391.00	59330.03				1	1.829	275	1150	16						4.33	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	19.3	19.3	19.3	6.1	1.6	4.5	10.6	1.6		4.5			10.6	2.7	1.0									
DC-121/T14	T18-T19	2392.00	59331.03				1	1.829	275	1150	16						4.32	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	19.2	19.2	19.2	6.1	1.6	4.5	10.5	1.6		4.5			10.5	2.7	1.0									
DC-121/T14	T18-T19	2393.00	59332.03				1	1.829	275	1150	16						4.31	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	19.1	19.1	19.1	6.1	1.6	4.5	10.5	1.6		4.5			10.5	2.7	1.0									
DC-121/T14	T18-T19	2394.00	59333.03				1	1.829	275	1150	16						4.29	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	19.0	19.0	19.0	6.1	1.6	4.5	10.3	1.6		4.5			10.3	2.7	1.0									
DC-121/T14	T18-T19	2395.00	59334.03				1	1.829	275	1150	16						4.26	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	18.8	18.8	18.8	6.1	1.6	4.5	10.2	1.6		4.5			10.2	2.7	1.0									
DC-121/T14	T18-T19	2396.00	59335.03				1	1.829	275	1150	16						4.22	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	18.6	18.6	18.6	6.1	1.6	4.5	9.9	1.6		4.5			9.9	2.7	1.0									
DC-121/T14	T18-T19	2397.00	59336.03				1	1.829	275	1150	16						4.18	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	18.3	18.3	18.3	6.1	1.6	4.5	9.7	1.6		4.5			9.7	2.7	1.0									
DC-121/T14	T18-T19	2398.00	59337.03				1	1.829	275	1150	16						4.13	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	18.1	18.1	18.1	6.1	1.6	4.5	9.4	1.6		4.5			9.4	2.7	1.0									
DC-121/T14	T18-T19	2399.00	59338.03				1	1.829	275	1150	16						4.09	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	17.8	17.8	17.8	6.1	1.6	4.5	9.2	1.6		4.5			9.2	2.7	1.0									
DC-121/T14	T18-T19	2400.00	59339.03				1	1.829	275	1150	16						4.04	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	17.6	17.6	17.6	6.1	1.6	4.5	8.9	1.6		4.5			8.9	2.7	1.0									
DC-121/T14	T18-T19	2401.00	59340.03				1	1.829	275	1150	16						4.00	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	17.3	17.3	17.3	6.1	1.6	4.5	8.7	1.6		4.5			8.7	2.7	1.0									
DC-121/T14	T18-T19	2402.00	59341.03				1	1.829	275	1150	16						3.96	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	17.1	17.1	17.1	6.1	1.6	4.5	8.5	1.6		4.5			8.5	2.7	1.0									
DC-121/T14	T18-T19	2403.00	59342.03				1	1.829	275	1150	16						3.92	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	16.9	16.9	16.9	6.1	1.6	4.5	8.2	1.6		4.5			8.2	2.7	1.0									
DC-121/T14	T18-T19	2404.00	59343.03				1	1.829	275	1150	16						3.87	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	16.7	16.7	16.7	6.1	1.6	4.5	8.0	1.6		4.5			8.0	2.7	1.0									
DC-121/T14	T18-T19	2405.00	59344.03				1	1.829	275	1150	16						3.83	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	16.4	16.4	16.4	6.1	1.6	4.5	7.7	1.6		4.5			7.7	2.7	1.0									
DC-121/T14	T18-T19	2406.00	59345.03				1	1.829	275	1150	16						3.78	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	16.1	16.1	16.1	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0									
DC-121/T14	T18-T19	2407.00	59346.03				1	1.829	275	1150	16						3.77	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	16.0	16.0	16.0	6.1	1.6	4.5	7.4	1.6		4.5			7.4	2.7	1.0									
DC-121/T14	T18-T19	2408.00	59347.03				1	1.829	275	1150	16						3.77	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	16.0	16.0	16.0	6.1	1.6	4.5	7.4	1.6		4.5			7.4	2.7	1.0									
DC-121/T14	T18-T19	2409.00	59348.03				1	1.829	275	1150	16						3.76	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	16.0	16.0	16.0	6.1	1.6	4.5	7.4	1.6		4.5			7.4	2.7	1.0									
DC-121/T14	T18-T19	2410.00	59349.03				1	1.829	275	1150	16						3.76	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	16.0	16.0	16.0	6.1	1.6	4.5	7.3	1.6		4.5			7.3	2.7	1.0									
DC-121/T14	T18-T19	2411.00	59350.03				1	1.829	275	1150	16						3.76	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10.0	16.0	16.0	16.0	6.1	1.6	4.5	7.3	1.6		4.5			7.3	2.7	1.0									
DC-121/T14	T1																																																										

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquelarrotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang Apoyo	H2=Recubrimiento cobertura mínimo (m)	H3=Profundidad mínima s' cave (m)	H4=Altura de la boma desde fondo	Carra de apoyo a-cama material granular o arena: b-cama de hormigón (M20)	Rebavilladura: c= Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15, <bornapeño (M20) 30 mm. e- M20. d-Gabarrillo S15, <bornapeño C/95% PN, < 30 mm. e- M20. d-Gabarrillo S15, <Suela seleccionada precedente excavación (<150mm) C/95% PN. g- Luchero modif.	Exposici(m. escalón(n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1=ang (º)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera (M20(m3)	Relevo cobertura c- Suela seleccionada C/95% PN, < 30 mm	Relevo cobertura d-Gabarrillo S15	Relevo cobertura e- H4/20	Relevo cobertura f-Suela adecuado precedente excavación (<150mm) C/95% PN	Relevo cobertura g- Luchero modif (m3)	Excedente de tierra (m3) (consumo actual 0%, e+aprovechamiento 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-12/1/T14	T18-T19	2512.00	59451.03				1	1.829	275	1150	16						4.02	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	17.4	17.4	17.4	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0								
DC-12/1/T14	T18-T19	2513.00	59452.03				1	1.829	275	1150	16						4.04	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5					8.9	2.7	1.0								
DC-12/1/T14	T18-T19	2514.00	59453.03				1	1.829	275	1150	16						4.05	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	17.6	17.6	17.6	6.1	1.6	4.5	9.0	1.6	4.5					9.0	2.7	1.0								
DC-12/1/T14	T18-T19	2515.00	59454.03				1	1.829	275	1150	16						4.07	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	17.7	17.7	17.7	6.1	1.6	4.5	9.1	1.6	4.5					9.1	2.7	1.0								
DC-12/1/T14	T18-T19	2516.00	59455.03				1	1.829	275	1150	16						4.09	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	17.8	17.8	17.8	6.1	1.6	4.5	9.2	1.6	4.5					9.2	2.7	1.0								
DC-12/1/T14	T18-T19	2517.00	59456.03				1	1.829	275	1150	16						4.10	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	17.9	17.9	17.9	6.1	1.6	4.5	9.3	1.6	4.5					9.3	2.7	1.0								
DC-12/1/T14	T18-T19	2518.00	59457.03				1	1.829	275	1150	16						4.12	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.0	18.0	18.0	6.1	1.6	4.5	9.4	1.6	4.5					9.4	2.7	1.0								
DC-12/1/T14	T18-T19	2519.00	59458.03				1	1.829	275	1150	16						4.14	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.1	18.1	18.1	6.1	1.6	4.5	9.5	1.6	4.5					9.5	2.7	1.0								
DC-12/1/T14	T18-T19	2520.00	59459.03				1	1.829	275	1150	16						4.16	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.2	18.2	18.2	6.1	1.6	4.5	9.6	1.6	4.5					9.6	2.7	1.0								
DC-12/1/T14	T18-T19	2521.00	59460.03				1	1.829	275	1150	16						4.17	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.3	18.3	18.3	6.1	1.6	4.5	9.7	1.6	4.5					9.7	2.7	1.0								
DC-12/1/T14	T18-T19	2522.00	59461.03				1	1.829	275	1150	16						4.19	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.4	18.4	18.4	6.1	1.6	4.5	9.8	1.6	4.5					9.8	2.7	1.0								
DC-12/1/T14	T18-T19	2523.00	59462.03				1	1.829	275	1150	16						4.21	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.5	18.5	18.5	6.1	1.6	4.5	9.9	1.6	4.5					9.9	2.7	1.0								
DC-12/1/T14	T18-T19	2524.00	59463.03				1	1.829	275	1150	16						4.22	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.6	18.6	18.6	6.1	1.6	4.5	10.0	1.6	4.5					10.0	2.7	1.0								
DC-12/1/T14	T18-T19	2525.00	59464.03				1	1.829	275	1150	16						4.24	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.7	18.7	18.7	6.1	1.6	4.5	10.0	1.6	4.5					10.0	2.7	1.0								
DC-12/1/T14	T18-T19	2526.00	59465.03				1	1.829	275	1150	16						4.26	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.8	18.8	18.8	6.1	1.6	4.5	10.1	1.6	4.5					10.1	2.7	1.0								
DC-12/1/T14	T18-T19	2527.00	59466.03				1	1.829	275	1150	16						4.27	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	18.9	18.9	18.9	6.1	1.6	4.5	10.2	1.6	4.5					10.2	2.7	1.0								
DC-12/1/T14	T18-T19	2528.00	59467.03				1	1.829	275	1150	16						4.29	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	19.0	19.0	19.0	6.1	1.6	4.5	10.3	1.6	4.5					10.3	2.7	1.0								
DC-12/1/T14	T18-T19	2529.00	59468.03				1	1.829	275	1150	16						4.31	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	19.1	19.1	19.1	6.1	1.6	4.5	10.4	1.6	4.5					10.4	2.7	1.0								
DC-12/1/T14	T18-T19	2530.00	59469.03				1	1.829	275	1150	16						4.32	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	19.2	19.2	19.2	6.1	1.6	4.5	10.5	1.6	4.5					10.5	2.7	1.0								
DC-12/1/T14	T18-T19	2531.00	59470.03				1	1.829	275	1150	16						4.34	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	19.3	19.3	19.3	6.1	1.6	4.5	10.6	1.6	4.5					10.6	2.7	1.0								
DC-12/1/T14	T18-T19	2532.00	59471.03				1	1.829	275	1150	16						4.36	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	19.4	19.4	19.4	6.1	1.6	4.5	10.7	1.6	4.5					10.7	2.7	1.0								
DC-12/1/T14	T18-T19	2533.00	59472.03				1	1.829	275	1150	16						4.38	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	19.5	19.5	19.5	6.1	1.6	4.5	10.8	1.6	4.5					10.8	2.7	1.0								
DC-12/1/T14	T18-T19	2534.00	59473.03				1	1.829	275	1150	16						4.40	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	19.6	19.6	19.6	6.1	1.6	4.5	10.9	1.6	4.5					10.9	2.7	1.0								
DC-12/1/T14	T18-T19	2535.00	59474.03				1	1.829	275	1150	16						4.49	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	20.2	20.2	20.2	6.1	1.6	4.5	11.5	1.6	4.5					11.5	2.7	1.0								
DC-12/1/T14	T18-T19	2536.00	59475.03				1	1.829	275	1150	16						4.53	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	20.4	20.4	20.4	6.1	1.6	4.5	11.8	1.6	4.5					11.8	2.7	1.0								
DC-12/1/T14	T18-T19	2537.00	59476.03				1	1.829	275	1150	16						4.54	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	20.5	20.5	20.5	6.1	1.6	4.5	11.8	1.6	4.5					11.8	2.7	1.0								
DC-12/1/T14	T18-T19	2538.00	59477.03				1	1.829	275	1150	16						4.55	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	20.6	20.6	20.6	6.1	1.6	4.5	11.8	1.6	4.5					11.8	2.7	1.0								
DC-12/1/T14	T18-T19	2539.00	59478.03				1	1.829	275	1150	16						4.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	20.7	20.7	20.7	6.1	1.6	4.5	11.9	1.6	4.5					11.9	2.7	1.0								
DC-12/1/T14	T18-T19	2540.00	59479.03				1	1.829	275	1150	16						4.51	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	20.3	20.3	20.3	6.1	1.6	4.5	11.7	1.6	4.5					11.7	2.7	1.0								
DC-12/1/T14	T18-T19	2541.00	59480.03				1	1.829	275	1150	16						4.53	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	20.4	20.4	20.4	6.1	1.6	4.5	11.8	1.6	4.5					11.8	2.7	1.0								
DC-12/																																																										

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= separación entre labias	S= Separación entre labias	B= Ancho interior (m)	Borne X1	Borne X2	HT= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	HT: altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Relleno/cobertura c= Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15, < bormopig (M20)	Malla/cobertura e= Suela seleccionada C/95% PN, < 30 mm. e- M20. d-Garbanillo S/15, < Suela adecuada procedente excavación (<150mm) c/95% PN. g- Luchero modif.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT= ang (n)	HT=DNH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m2)	Relleno c/arena (m2)	Relleno riñonera(s)m2)	Relleno cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M20(m2)	Relleno riñonera suelo seleccionado (m2)	Relleno riñonera grabada(s) (m2)	Relleno cama+riñonera HM-20(m2)	Relleno cobertura c= Suela seleccionada C/95% PN, < 30 mm	Relleno cobertura d-Garbanillo S/15	Relleno cobertura e= H2/20	Relleno cobertura f= Suela adecuada procedente excavación (<150mm) c/95% PN	Relleno cobertura g= Luchero modif (m2)	Excedente de tierra (m2) (consumo actual 0%, c=aproveitamiento 5%)	Cinta laberina (m)	Manto escollera a=0.5m, ancho=30m (m2)
DC-12/1/T14	T18-T19	2441.00	59580.03				1	1.829	275	1150	16						4.12	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.0	18.0	18.0	6.1	1.6	4.5	9.3	1.6		4.5				9.3	2.7	1.0									
DC-12/1/T14	T18-T19	2442.00	59581.03				1	1.829	275	1150	16						4.11	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.9	17.9	17.9	6.1	1.6	4.5	9.3	1.6		4.5			9.3	2.7	1.0										
DC-12/1/T14	T18-T19	2443.00	59582.03				1	1.829	275	1150	16						4.09	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.9	17.9	17.9	6.1	1.6	4.5	9.2	1.6		4.5			9.2	2.7	1.0										
DC-12/1/T14	T18-T19	2444.00	59583.03				1	1.829	275	1150	16						4.08	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.8	17.8	17.8	6.1	1.6	4.5	9.1	1.6		4.5			9.1	2.7	1.0										
DC-12/1/T14	T18-T19	2445.00	59584.03				1	1.829	275	1150	16						4.07	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.7	17.7	17.7	6.1	1.6	4.5	9.1	1.6		4.5			9.1	2.7	1.0										
DC-12/1/T14	T18-T19	2446.00	59585.03				1	1.829	275	1150	16						4.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.7	17.7	17.7	6.1	1.6	4.5	9.0	1.6		4.5			9.0	2.7	1.0										
DC-12/1/T14	T18-T19	2447.00	59586.03				1	1.829	275	1150	16						4.05	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.6	17.6	17.6	6.1	1.6	4.5	9.0	1.6		4.5			9.0	2.7	1.0										
DC-12/1/T14	T18-T19	2448.00	59587.03				1	1.829	275	1150	16						4.04	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.6	17.6	17.6	6.1	1.6	4.5	8.9	1.6		4.5			8.9	2.7	1.0										
DC-12/1/T14	T18-T19	2449.00	59588.03				1	1.829	275	1150	16						4.03	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6		4.5			8.8	2.7	1.0										
DC-12/1/T14	T18-T19	2450.00	59589.03				1	1.829	275	1150	16						3.91	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.4	17.4	17.4	6.1	1.6	4.5	8.8	1.6		4.5			8.8	2.7	1.0										
DC-12/1/T14	T18-T19	2451.00	59590.03				1	1.829	275	1150	16						4.01	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.4	17.4	17.4	6.1	1.6	4.5	8.7	1.6		4.5			8.7	2.7	1.0										
DC-12/1/T14	T18-T19	2452.00	59591.03				1	1.829	275	1150	16						4.00	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.3	17.3	17.3	6.1	1.6	4.5	8.6	1.6		4.5			8.6	2.7	1.0										
DC-12/1/T14	T18-T19	2453.00	59592.03				1	1.829	275	1150	16						3.98	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.2	17.2	17.2	6.1	1.6	4.5	8.6	1.6		4.5			8.6	2.7	1.0										
DC-12/1/T14	T18-T19	2454.00	59593.03				1	1.829	275	1150	16						3.97	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.2	17.2	17.2	6.1	1.6	4.5	8.5	1.6		4.5			8.5	2.7	1.0										
DC-12/1/T14	T18-T19	2455.00	59594.03				1	1.829	275	1150	16						3.96	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.1	17.1	17.1	6.1	1.6	4.5	8.4	1.6		4.5			8.4	2.7	1.0										
DC-12/1/T14	T18-T19	2456.00	59595.03				1	1.829	275	1150	16						3.95	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.0	17.0	17.0	6.1	1.6	4.5	8.4	1.6		4.5			8.4	2.7	1.0										
DC-12/1/T14	T18-T19	2457.00	59596.03				1	1.829	275	1150	16						3.94	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.0	17.0	17.0	6.1	1.6	4.5	8.3	1.6		4.5			8.3	2.7	1.0										
DC-12/1/T14	T18-T19	2458.00	59597.03				1	1.829	275	1150	16						3.93	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	16.9	16.9	16.9	6.1	1.6	4.5	8.2	1.6		4.5			8.2	2.7	1.0										
DC-12/1/T14	T18-T19	2459.00	59598.03				1	1.829	275	1150	16						3.91	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	16.8	16.8	16.8	6.1	1.6	4.5	8.2	1.6		4.5			8.2	2.7	1.0										
DC-12/1/T14	T18-T19	2460.00	59599.03				1	1.829	275	1150	16						3.90	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	16.8	16.8	16.8	6.1	1.6	4.5	8.1	1.6		4.5			8.1	2.7	1.0										
DC-12/1/T14	T18-T19	2461.00	59600.03				1	1.829	275	1150	16						3.89	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	16.7	16.7	16.7	6.1	1.6	4.5	8.0	1.6		4.5			8.0	2.7	1.0										
DC-12/1/T14	T18-T19	2462.00	59601.03				1	1.829	275	1150	16						3.88	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	16.6	16.6	16.6	6.1	1.6	4.5	8.0	1.6		4.5			8.0	2.7	1.0										
DC-12/1/T14	T18-T19	2463.00	59602.03				1	1.829	275	1150	16						3.89	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	16.7	16.7	16.7	6.1	1.6	4.5	8.1	1.6		4.5			8.1	2.7	1.0										
DC-12/1/T14	T18-T19	2464.00	59603.03				1	1.829	275	1150	16						3.94	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.0	17.0	17.0	6.1	1.6	4.5	8.3	1.6		4.5			8.3	2.7	1.0										
DC-12/1/T14	T18-T19	2465.00	59604.03				1	1.829	275	1150	16						3.98	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.2	17.2	17.2	6.1	1.6	4.5	8.6	1.6		4.5			8.6	2.7	1.0										
DC-12/1/T14	T18-T19	2466.00	59605.03				1	1.829	275	1150	16						4.03	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6		4.5			8.8	2.7	1.0										
DC-12/1/T14	T18-T19	2467.00	59606.03				1	1.829	275	1150	16						4.07	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.7	17.7	17.7	6.1	1.6	4.5	9.1	1.6		4.5			9.1	2.7	1.0										
DC-12/1/T14	T18-T19	2468.00	59607.03				1	1.829	275	1150	16						4.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.6	17.6	17.6	6.1	1.6	4.5	9.0	1.6		4.5			9.0	2.7	1.0										
DC-12/1/T14	T18-T19	2469.00	59608.03				1	1.829	275	1150	16						4.16	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.2	18.2	18.2	6.1	1.6	4.5	9.6	1.6		4.5			9.6	2.7	1.0										
DC-12/1/T14	T18-T19	2470.00	59609.03				1	1.829	275	1150	16						4.20	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.5	18.5	18.5	6.1	1.6	4.5	9.8	1.6		4.5			9.8	2.7	1.0										
DC-12/1/T14	T18-T19	2471.00	59610.03				1	1.829	275	1150	16						4.24	0.33	21-1-1800																																								

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón HM-20	Relaciones: c- Suelo seleccionado C/95% PN, < 30 mm. d- Gabcarrillo S/15, < bompom HM-20. Relación: e- Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d- Gabcarrillo S/15, < Suelo adecuado para excavación (<150mm) C/95% PN, g- Lecho mod.	Exposici. mlt. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1- ang (n)	HI-DHHz (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura d-Gabcarrillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f-Suelo adecuado para excavación (<150mm) C/95% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (compensación alval 0%, e- conjunto tierra 5%)	Cinta liberada (m3)	Manto escollera a- 0.5m, ancho-30m (m3)
DC-12/1/14	118-119	2.770.00	59.709.03				1	1.829	275	11.50	16						4.99	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.3	23.3	23.3	6.1	1.6	4.5	14.6	1.6	4.5					14.6	2.7	1.0									
DC-12/1/14	118-119	2.771.00	59.710.03				1	1.829	275	11.50	16						4.99	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.3	23.3	23.3	6.1	1.6	4.5	14.6	1.6	4.5					14.6	2.7	1.0									
DC-12/1/14	118-119	2.772.00	59.711.03				1	1.829	275	11.50	16						5.00	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.3	23.3	23.3	6.1	1.6	4.5	14.7	1.6	4.5					14.7	2.7	1.0									
DC-12/1/14	118-119	2.773.00	59.712.03				1	1.829	275	11.50	16						5.00	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.3	23.3	23.3	6.1	1.6	4.5	14.7	1.6	4.5					14.7	2.7	1.0									
DC-12/1/14	118-119	2.774.00	59.713.03				1	1.829	275	11.50	16						5.01	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.4	23.4	23.4	6.1	1.6	4.5	14.7	1.6	4.5					14.7	2.7	1.0									
DC-12/1/14	118-119	2.775.00	59.714.03				1	1.829	275	11.50	16						5.02	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.4	23.4	23.4	6.1	1.6	4.5	14.7	1.6	4.5					14.7	2.7	1.0									
DC-12/1/14	118-119	2.776.00	59.715.03				1	1.829	275	11.50	16						5.02	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.4	23.4	23.4	6.1	1.6	4.5	14.8	1.6	4.5					14.8	2.7	1.0									
DC-12/1/14	118-119	2.777.00	59.716.03				1	1.829	275	11.50	16						5.02	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.5	23.5	23.5	6.1	1.6	4.5	14.8	1.6	4.5					14.8	2.7	1.0									
DC-12/1/14	118-119	2.778.00	59.717.03				1	1.829	275	11.50	16						5.03	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.5	23.5	23.5	6.1	1.6	4.5	14.8	1.6	4.5					14.8	2.7	1.0									
DC-12/1/14	118-119	2.779.00	59.718.03				1	1.829	275	11.50	16						5.03	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.5	23.5	23.5	6.1	1.6	4.5	14.9	1.6	4.5					14.9	2.7	1.0									
DC-12/1/14	118-119	2.780.00	59.719.03				1	1.829	275	11.50	16						5.03	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.5	23.5	23.5	6.1	1.6	4.5	14.9	1.6	4.5					14.9	2.7	1.0									
DC-12/1/14	118-119	2.781.00	59.720.03				1	1.829	275	11.50	16						5.04	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.6	23.6	23.6	6.1	1.6	4.5	14.9	1.6	4.5					14.9	2.7	1.0									
DC-12/1/14	118-119	2.781.05	59.720.08				1	1.829	275	11.50	16						5.04	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.1	1.2	1.2	1.2	0.3	0.1	0.2	0.8	0.1			0.8					0.1	0.1								
DC-12/1/14	118-119	2.782.00	59.721.03				1	1.829	275	11.50	16						5.04	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	0.9	22.4	22.4	22.4	5.8	1.5	4.3	14.2	1.5	4.3					14.2	2.5	0.9									
DC-12/1/14	118-119	2.783.00	59.722.03				1	1.829	275	11.50	16						5.05	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.6	23.6	23.6	6.1	1.6	4.5	15.0	1.6	4.5					15.0	2.7	1.0									
DC-12/1/14	118-119	2.784.00	59.723.03				1	1.829	275	11.50	16						5.05	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.7	23.7	23.7	6.1	1.6	4.5	15.0	1.6	4.5					15.0	2.7	1.0									
DC-12/1/14	118-119	2.785.00	59.724.03				1	1.829	275	11.50	16						5.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.7	23.7	23.7	6.1	1.6	4.5	15.0	1.6	4.5					15.0	2.7	1.0									
DC-12/1/14	118-119	2.786.00	59.725.03				1	1.829	275	11.50	16						5.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.7	23.7	23.7	6.1	1.6	4.5	15.1	1.6	4.5					15.1	2.7	1.0									
DC-12/1/14	118-119	2.787.00	59.726.03				1	1.829	275	11.50	16						5.07	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.8	23.8	23.8	6.1	1.6	4.5	15.1	1.6	4.5					15.1	2.7	1.0									
DC-12/1/14	118-119	2.788.00	59.727.03				1	1.829	275	11.50	16						5.07	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.8	23.8	23.8	6.1	1.6	4.5	15.1	1.6	4.5					15.1	2.7	1.0									
DC-12/1/14	118-119	2.789.00	59.728.03				1	1.829	275	11.50	16						5.08	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.8	23.8	23.8	6.1	1.6	4.5	15.2	1.6	4.5					15.2	2.7	1.0									
DC-12/1/14	118-119	2.790.00	59.729.03				1	1.829	275	11.50	16						5.09	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.9	23.9	23.9	6.1	1.6	4.5	15.2	1.6	4.5					15.2	2.7	1.0									
DC-12/1/14	118-119	2.791.00	59.730.03				1	1.829	275	11.50	16						5.09	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.9	23.9	23.9	6.1	1.6	4.5	15.3	1.6	4.5					15.3	2.7	1.0									
DC-12/1/14	118-119	2.792.00	59.731.03				1	1.829	275	11.50	16						5.10	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.0	24.0	24.0	6.1	1.6	4.5	15.3	1.6	4.5					15.3	2.7	1.0									
DC-12/1/14	118-119	2.793.00	59.732.03				1	1.829	275	11.50	16						5.11	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.0	24.0	24.0	6.1	1.6	4.5	15.4	1.6	4.5					15.4	2.7	1.0									
DC-12/1/14	118-119	2.794.00	59.733.03				1	1.829	275	11.50	16						5.12	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.1	24.1	24.1	6.1	1.6	4.5	15.4	1.6	4.5					15.4	2.7	1.0									
DC-12/1/14	118-119	2.795.00	59.734.03				1	1.829	275	11.50	16						5.12	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.1	24.1	24.1	6.1	1.6	4.5	15.4	1.6	4.5					15.4	2.7	1.0									
DC-12/1/14	118-119	2.796.00	59.735.03				1	1.829	275	11.50	16						5.13	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.1	24.1	24.1	6.1	1.6	4.5	15.5	1.6	4.5					15.5	2.7	1.0									
DC-12/1/14	118-119	2.797.00	59.736.03				1	1.829	275	11.50	16						5.13	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.2	24.2	24.2	6.1	1.6	4.5	15.5	1.6	4.5					15.5	2.7	1.0									
DC-12/1/14	118-119	2.798.00	59.737.03				1	1.829	275	11.50	16						5.14	0.33	21-1-1800	0.60	3.00			0.20	120	0																																	

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= separación entre labrías	S= Separación entre labrías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena: b-cama de hormigón HM-20	Rebavilaciones a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S15, <borbopig HM-20	Rebavilaciones b-c: Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S15, <Suela adecuada procedente excavación (<=150mm) c/95% PN. g- Luchero modif.	Exposici. (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (n)	HI=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c/ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suela seleccionada (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c-: Suela seleccionada C/95% PN, <= 30 mm	Relevo cobertura d-Garbanillo S15	Relevo cobertura c- HM-20	Relevo cobertura f-Suela adecuada procedente excavación (<=150mm) c/95% PN	Relevo cobertura g- Luchero modif (m3)	Excedente de tierras (m3) (consumo actual 0%, c/espallamiento 5%)	Cinta labrías (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-121/T14	T18-T19	2998.00	59837.03				1	1.829	275	1150	16						3.70	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.7	15.7	15.7	6.1	1.6	4.5	7.0	1.6		4.5		7.0	2.7	1.0											
DC-121/T14	T18-T19	2999.00	59838.03				1	1.829	275	1150	16						3.69	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6		4.5		6.9	2.7	1.0											
DC-121/T14	T18-T19	2900.00	59839.03				1	1.829	275	1150	16						3.67	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.5	15.5	15.5	6.1	1.6	4.5	6.8	1.6		4.5		6.8	2.7	1.0											
DC-121/T14	T18-T19	2901.00	59840.03				1	1.829	275	1150	16						3.65	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6		4.5		6.7	2.7	1.0											
DC-121/T14	T18-T19	2902.00	59841.03				1	1.829	275	1150	16						3.63	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5		6.6	2.7	1.0											
DC-121/T14	T18-T19	2903.00	59842.03				1	1.829	275	1150	16						3.61	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5		6.5	2.7	1.0											
DC-121/T14	T18-T19	2904.00	59843.03				1	1.829	275	1150	16						3.60	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5		6.4	2.7	1.0											
DC-121/T14	T18-T19	2905.00	59844.03				1	1.829	275	1150	16						3.58	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5		6.3	2.7	1.0											
DC-121/T14	T18-T19	2906.00	59845.03				1	1.829	275	1150	16						3.56	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6		4.5		6.2	2.7	1.0											
DC-121/T14	T18-T19	2907.00	59846.03				1	1.829	275	1150	16						3.54	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.8	14.8	14.8	6.1	1.6	4.5	6.1	1.6		4.5		6.1	2.7	1.0											
DC-121/T14	T18-T19	2908.00	59847.03				1	1.829	275	1150	16						3.52	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.7	14.7	14.7	6.1	1.6	4.5	6.0	1.6		4.5		6.0	2.7	1.0											
DC-121/T14	T18-T19	2909.00	59848.03				1	1.829	275	1150	16						3.53	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.7	14.7	14.7	6.1	1.6	4.5	6.1	1.6		4.5		6.1	2.7	1.0											
DC-121/T14	T18-T19	2910.00	59849.03				1	1.829	275	1150	16						3.54	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.8	14.8	14.8	6.1	1.6	4.5	6.1	1.6		4.5		6.1	2.7	1.0											
DC-121/T14	T18-T19	2911.00	59850.03				1	1.829	275	1150	16						3.55	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.8	14.8	14.8	6.1	1.6	4.5	6.2	1.6		4.5		6.2	2.7	1.0											
DC-121/T14	T18-T19	2912.00	59851.03				1	1.829	275	1150	16						3.56	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6		4.5		6.2	2.7	1.0											
DC-121/T14	T18-T19	2913.00	59852.03				1	1.829	275	1150	16						3.57	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5		6.3	2.7	1.0											
DC-121/T14	T18-T19	2914.00	59853.03				1	1.829	275	1150	16						3.58	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.4	1.6		4.5		6.4	2.7	1.0											
DC-121/T14	T18-T19	2915.00	59854.03				1	1.829	275	1150	16						3.59	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5		6.4	2.7	1.0											
DC-121/T14	T18-T19	2916.00	59855.03				1	1.829	275	1150	16						3.61	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5		6.5	2.7	1.0											
DC-121/T14	T18-T19	2917.00	59856.03				1	1.829	275	1150	16						3.62	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5		6.5	2.7	1.0											
DC-121/T14	T18-T19	2918.00	59857.03				1	1.829	275	1150	16						3.63	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.6	1.6		4.5		6.6	2.7	1.0											
DC-121/T14	T18-T19	2919.00	59858.03				1	1.829	275	1150	16						3.64	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.3	15.3	15.3	6.1	1.6	4.5	6.7	1.6		4.5		6.7	2.7	1.0											
DC-121/T14	T18-T19	2920.00	59859.03				1	1.829	275	1150	16						3.65	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.4	15.4	15.4	6.1	1.6	4.5	6.7	1.6		4.5		6.7	2.7	1.0											
DC-121/T14	T18-T19	2921.00	59860.03				1	1.829	275	1150	16						3.66	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.5	15.5	15.5	6.1	1.6	4.5	6.8	1.6		4.5		6.8	2.7	1.0											
DC-121/T14	T18-T19	2922.00	59861.03				1	1.829	275	1150	16						3.67	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.5	15.5	15.5	6.1	1.6	4.5	6.9	1.6		4.5		6.9	2.7	1.0											
DC-121/T14	T18-T19	2923.00	59862.03				1	1.829	275	1150	16						3.69	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6		4.5		6.9	2.7	1.0											
DC-121/T14	T18-T19	2924.00	59863.03				1	1.829	275	1150	16						3.70	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	7.0	1.6		4.5		7.0	2.7	1.0											
DC-121/T14	T18-T19	2925.00	59864.03				1	1.829	275	1150	16						3.71	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.7	15.7	15.7	6.1	1.6	4.5	7.0	1.6		4.5		7.0	2.7	1.0											
DC-121/T14	T18-T19	2926.00	59865.03				1	1.829	275	1150	16						3.72	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.8	15.8	15.8	6.1	1.6	4.5	7.1	1.6		4.5		7.1	2.7	1.0											
DC-121/T14	T18-T19	2927.00	59866.03				1	1.829	275	1150	16						3.73	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.8	15.8	15.8	6.1	1.6	4.5	7.2	1.6		4.5		7.2	2.7	1.0											
DC-121/T14	T18-T19	2928.00	59867.03				1	1.829	275	1150	16						3.74	0.33	21-1-1800	0.60	3.00		0.20	120	0.30	150		a	c	f	100%	0.7	2.3	10	15.9	15.9	15.9	6.1	1.6	4.5	7.2	1.6		4.5		7.2													

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A-: separación tubo salud	S ₂ -: Separación entre tuberías	B-: Ancho interior (m)	Borne X1	Borne X2	H1-: Cama apoyo (m)	Ang. Apoyo	H2-: Recubrimiento cobertura mínimo (m)	H3-: Profundidad mínima s/ cave (m)	H4-: altura de la boma desde fondo	Cama de apoyo a-: cama material granular o arena b-: cama de hormigón HM-20	Rebavado laterales c-: Suela seleccionada C/95% PN, < 30 mm. d-: Garbanillo S15. e-: hormigón HM-20	Rebavado laterales c-: Suela seleccionada C/95% PN, < 30 mm. e-: HM-20. d-: Garbanillo S15. f-: Suela adecuada procedente excavación (<=150mm) c/65% PN. g-: Luchero modif.	Exposici. (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (n)	H1-DH+H2 (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño cama (m3)	Releño riñonera(s)m3	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera grabaciado (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura. d-Garbanillo S15	Releño cobertura. e- HM-20	Releño cobertura. f-Suelo adecuado procedente excavación (<=150mm) c/65% PN	Releño cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (compensado altura 0%+ espolvoreado 5%)	Cinta liberada (m)	Manto escollera a-0.5m. ancho-30m. (m3)
DC-121/T14	T18-T19	3.800.00	60.739.03				1	1.829	275	11.50	16						3.57	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	14.9	14.9	14.9	6.1	1.6	4.5	6.3	1.6		4.5				6.3	2.7	1.0									
DC-121/T14	T18-T19	3.801.00	60.740.03				1	1.829	275	11.50	16						3.58	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.4	1.6		4.5			6.4	2.7	1.0										
DC-121/T14	T18-T19	3.802.00	60.741.03				1	1.829	275	11.50	16						3.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5			6.4	2.7	1.0										
DC-121/T14	T18-T19	3.803.00	60.742.03				1	1.829	275	11.50	16						3.60	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0										
DC-121/T14	T18-T19	3.804.00	60.743.03				1	1.829	275	11.50	16						3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0										
DC-121/T14	T18-T19	3.805.00	60.744.03				1	1.829	275	11.50	16						3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.2	15.2	15.2	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0										
DC-121/T14	T18-T19	3.806.00	60.745.03				1	1.829	275	11.50	16						3.62	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.5	1.6		4.5			6.5	2.7	1.0										
DC-121/T14	T18-T19	3.807.00	60.746.03				1	1.829	275	11.50	16						3.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.1	15.1	15.1	6.1	1.6	4.5	6.4	1.6		4.5			6.4	2.7	1.0										
DC-121/T14	T18-T19	3.808.00	60.747.03				1	1.829	275	11.50	16						3.58	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.0	15.0	15.0	6.1	1.6	4.5	6.3	1.6		4.5			6.3	2.7	1.0										
DC-121/T14	T18-T19	3.809.00	60.748.03				1	1.829	275	11.50	16						3.56	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6		4.5			6.2	2.7	1.0										
DC-121/T14	T18-T19	3.810.00	60.749.03				1	1.829	275	11.50	16						3.54	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	14.8	14.8	14.8	6.1	1.6	4.5	6.1	1.6		4.5			6.1	2.7	1.0										
DC-121/T14	T18-T19	3.811.00	60.750.03				1	1.829	275	11.50	16						3.51	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	14.6	14.6	14.6	6.1	1.6	4.5	6.0	1.6		4.5			6.0	2.7	1.0										
DC-121/T14	T18-T19	3.812.00	60.751.03				1	1.829	275	11.50	16						3.48	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	14.5	14.5	14.5	6.1	1.6	4.5	5.8	1.6		4.5			5.8	2.7	1.0										
DC-121/T14	T18-T19	3.813.00	60.752.03				1	1.829	275	11.50	16						3.53	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	14.7	14.7	14.7	6.1	1.6	4.5	6.1	1.6		4.5			6.1	2.7	1.0										
DC-121/T14	T18-T19	3.814.00	60.753.03				1	1.829	275	11.50	16						3.61	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	14.9	14.9	14.9	6.1	1.6	4.5	6.2	1.6		4.5			6.2	2.7	1.0										
DC-121/T14	T18-T19	3.815.00	60.754.03				1	1.829	275	11.50	16						3.68	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.5	15.5	15.5	6.1	1.6	4.5	6.9	1.6		4.5			6.9	2.7	1.0										
DC-121/T14	T18-T19	3.816.00	60.755.03				1	1.829	275	11.50	16						3.71	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.7	15.7	15.7	6.1	1.6	4.5	7.1	1.6		4.5			7.1	2.7	1.0										
DC-121/T14	T18-T19	3.817.00	60.756.03				1	1.829	275	11.50	16						3.68	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6		4.5			6.9	2.7	1.0										
DC-121/T14	T18-T19	3.818.00	60.757.03				1	1.829	275	11.50	16						3.68	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6		4.5			6.9	2.7	1.0										
DC-121/T14	T18-T19	3.819.00	60.758.03				1	1.829	275	11.50	16						3.69	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6		4.5			6.9	2.7	1.0										
DC-121/T14	T18-T19	3.820.00	60.759.03				1	1.829	275	11.50	16						3.69	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6		4.5			6.9	2.7	1.0										
DC-121/T14	T18-T19	3.821.00	60.760.03				1	1.829	275	11.50	16						3.69	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6		4.5			6.9	2.7	1.0										
DC-121/T14	T18-T19	3.822.00	60.761.03				1	1.829	275	11.50	16						3.69	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	6.9	1.6		4.5			6.9	2.7	1.0										
DC-121/T14	T18-T19	3.823.00	60.762.03				1	1.829	275	11.50	16						3.69	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	7.0	1.6		4.5			7.0	2.7	1.0										
DC-121/T14	T18-T19	3.824.00	60.763.03				1	1.829	275	11.50	16						3.69	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	7.0	1.6		4.5			7.0	2.7	1.0										
DC-121/T14	T18-T19	3.825.00	60.764.03				1	1.829	275	11.50	16						3.70	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.6	15.6	15.6	6.1	1.6	4.5	7.0	1.6		4.5			7.0	2.7	1.0										
DC-121/T14	T18-T19	3.826.00	60.765.03				1	1.829	275	11.50	16						3.70	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.7	15.7	15.7	6.1	1.6	4.5	7.0	1.6		4.5			7.0	2.7	1.0										
DC-121/T14	T18-T19	3.827.00	60.766.03				1	1.829	275	11.50	16						3.70	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.7	15.7	15.7	6.1	1.6	4.5	7.0	1.6		4.5			7.0	2.7	1.0										
DC-121/T14	T18-T19	3.828.00	60.767.03				1	1.829	275	11.50	16						3.70	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.7	15.7	15.7	6.1	1.6	4.5	7.0	1.6		4.5			7.0	2.7	1.0										
DC-121/T14	T18-T19	3.829.00	60.768.03				1	1.829	275	11.50	16						3.70	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10	15.7	15.7	15.7	6.1	1.6	4.5	7.0	1.6		4.5			7.0	2.7	1.0										
DC-121/T14	T18-T19	3.830.00	60.769.03				1	1.829	27																																																		

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desague	Tipo de válvula	Aquelarrotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concretoado zapala	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Rebavilamientos c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15, s-borncapón (M20)	Rebavilamientos c- Suela seleccionada C/95% PN, < 30 mm. e- M20. d-Gabarrillo S15, f-Suela adecuada procedente excavación (<150mm) c/6% PN, g- Luchero modif.	Exposici. (m, escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (n)	HD-H4Hz (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cama+riñonera (m3)	Rebello c-ama (m3)	Rebello riñonera(s)m3)	Rebello cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo (M20)(m3)	Rebello riñonera suelo seleccionada (m3)	Rebello riñonera grabaciado (m3)	Rebello cama+riñonera (M20)(m3)	Rebello cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Rebello cobertura d-Gabarrillo S15	Rebello cobertura c- H420:	Rebello cobertura f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Rebello cobertura g- Luchero modif (m3)	Excedente de tierra (m3) (consumible a nivel 0%, c-espolvoreo vertical 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho 30m (m3)
DC-12/1/T14	T18-T19	3.930.00	60.869.03				1	1.829	275	11.50	16						4.51	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.3	20.3	20.3	20.3	6.1	1.6	4.5	11.7	1.6		4.5				11.7	2.7	1.0								
DC-12/1/T14	T18-T19	3.931.00	60.870.03				1	1.829	275	11.50	16						4.52	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.4	20.4	20.4	20.4	6.1	1.6	4.5	11.7	1.6		4.5				11.7	2.7	1.0								
DC-12/1/T14	T18-T19	3.932.00	60.871.03				1	1.829	275	11.50	16						4.53	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.5	20.5	20.5	20.5	6.1	1.6	4.5	11.8	1.6		4.5				11.8	2.7	1.0								
DC-12/1/T14	T18-T19	3.933.00	60.872.03				1	1.829	275	11.50	16						4.54	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.5	20.5	20.5	20.5	6.1	1.6	4.5	11.8	1.6		4.5				11.8	2.7	1.0								
DC-12/1/T14	T18-T19	3.934.00	60.873.03				1	1.829	275	11.50	16						4.55	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.6	20.6	20.6	20.6	6.1	1.6	4.5	11.9	1.6		4.5				11.9	2.7	1.0								
DC-12/1/T14	T18-T19	3.935.00	60.874.03				1	1.829	275	11.50	16						4.56	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.6	20.6	20.6	20.6	6.1	1.6	4.5	12.0	1.6		4.5				12.0	2.7	1.0								
DC-12/1/T14	T18-T19	3.936.00	60.875.03				1	1.829	275	11.50	16						4.57	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.7	20.7	20.7	20.7	6.1	1.6	4.5	12.0	1.6		4.5				12.0	2.7	1.0								
DC-12/1/T14	T18-T19	3.937.00	60.876.03				1	1.829	275	11.50	16						4.58	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.7	20.7	20.7	20.7	6.1	1.6	4.5	12.1	1.6		4.5				12.1	2.7	1.0								
DC-12/1/T14	T18-T19	3.938.00	60.877.03				1	1.829	275	11.50	16						4.59	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.8	20.8	20.8	20.8	6.1	1.6	4.5	12.1	1.6		4.5				12.1	2.7	1.0								
DC-12/1/T14	T18-T19	3.939.00	60.878.03				1	1.829	275	11.50	16						4.60	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.8	20.8	20.8	20.8	6.1	1.6	4.5	12.2	1.6		4.5				12.2	2.7	1.0								
DC-12/1/T14	T18-T19	3.940.00	60.879.03				1	1.829	275	11.50	16						4.60	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.9	20.9	20.9	20.9	6.1	1.6	4.5	12.2	1.6		4.5				12.2	2.7	1.0								
DC-12/1/T14	T18-T19	3.941.00	60.880.03				1	1.829	275	11.50	16						4.61	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.9	20.9	20.9	20.9	6.1	1.6	4.5	12.2	1.6		4.5				12.2	2.7	1.0								
DC-12/1/T14	T18-T19	3.942.00	60.881.03				1	1.829	275	11.50	16						4.61	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.9	20.9	20.9	20.9	6.1	1.6	4.5	12.2	1.6		4.5				12.2	2.7	1.0								
DC-12/1/T14	T18-T19	3.943.00	60.882.03				1	1.829	275	11.50	16						4.61	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.9	20.9	20.9	20.9	6.1	1.6	4.5	12.3	1.6		4.5				12.3	2.7	1.0								
DC-12/1/T14	T18-T19	3.944.00	60.883.03				1	1.829	275	11.50	16						4.61	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.9	20.9	20.9	20.9	6.1	1.6	4.5	12.3	1.6		4.5				12.3	2.7	1.0								
DC-12/1/T14	T18-T19	3.945.00	60.884.03				1	1.829	275	11.50	16						4.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.0	21.0	21.0	21.0	6.1	1.6	4.5	12.3	1.6		4.5				12.3	2.7	1.0								
DC-12/1/T14	T18-T19	3.946.00	60.885.03				1	1.829	275	11.50	16						4.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.0	21.0	21.0	21.0	6.1	1.6	4.5	12.3	1.6		4.5				12.3	2.7	1.0								
DC-12/1/T14	T18-T19	3.947.00	60.886.03				1	1.829	275	11.50	16						4.62	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.0	21.0	21.0	21.0	6.1	1.6	4.5	12.3	1.6		4.5				12.3	2.7	1.0								
DC-12/1/T14	T18-T19	3.948.00	60.887.03				1	1.829	275	11.50	16						4.63	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.0	21.0	21.0	21.0	6.1	1.6	4.5	12.4	1.6		4.5				12.4	2.7	1.0								
DC-12/1/T14	T18-T19	3.949.00	60.888.03				1	1.829	275	11.50	16						4.63	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.0	21.0	21.0	21.0	6.1	1.6	4.5	12.4	1.6		4.5				12.4	2.7	1.0								
DC-12/1/T14	T18-T19	3.950.00	60.889.03				1	1.829	275	11.50	16						4.63	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.0	21.0	21.0	21.0	6.1	1.6	4.5	12.4	1.6		4.5				12.4	2.7	1.0								
DC-12/1/T14	T18-T19	3.951.00	60.890.03				1	1.829	275	11.50	16						4.63	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.1	21.1	21.1	21.1	6.1	1.6	4.5	12.4	1.6		4.5				12.4	2.7	1.0								
DC-12/1/T14	T18-T19	3.952.00	60.891.03				1	1.829	275	11.50	16						4.64	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.1	21.1	21.1	21.1	6.1	1.6	4.5	12.4	1.6		4.5				12.4	2.7	1.0								
DC-12/1/T14	T18-T19	3.953.00	60.892.03				1	1.829	275	11.50	16						4.64	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.1	21.1	21.1	21.1	6.1	1.6	4.5	12.5	1.6		4.5				12.5	2.7	1.0								
DC-12/1/T14	T18-T19	3.954.00	60.893.03				1	1.829	275	11.50	16						4.64	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.1	21.1	21.1	21.1	6.1	1.6	4.5	12.5	1.6		4.5				12.5	2.7	1.0								
DC-12/1/T14	T18-T19	3.955.00	60.894.03				1	1.829	275	11.50	16						4.65	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.1	21.1	21.1	21.1	6.1	1.6	4.5	12.5	1.6		4.5				12.5	2.7	1.0								
DC-12/1/T14	T18-T19	3.956.00	60.895.03				1	1.829	275	11.50	16						4.65	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.2	21.2	21.2	21.2	6.1	1.6	4.5	12.5	1.6		4.5				12.5	2.7	1.0								
DC-12/1/T14	T18-T19	3.957.00	60.896.03				1	1.829	275	11.50	16						4.65	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	21.2	21.2	21.2	21.2	6.1	1.6	4.5	12.5	1.6		4.5				12.5	2.7	1.0								
DC-12/1/T14	T18-T19	3.958.00	60.897.03				1	1.829	275	11.50	16						4.66	0.33	21-1-1800	0.60		3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0</																									

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre. Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granulado o arena b-cama de hormigón HM-20	Relaciones a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Gabarrillo S15. s-borneopq HM-20. Relación cobertura a-c: Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S15. f-Suelo adecuado procedente excavación (<150mm) c/6% PN. g- Lecho modif.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (n)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m³)	Relevo cama (m³)	Relevo riñonera(s)m³	Relevo cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo M 20(m³)	Relevo riñonera suelo seleccionado (m³)	Relevo riñonera grabada (m³)	Relevo cama+riñonera HM-20(m³)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura d-Gabarrillo S15	Relevo cobertura e- HM-20	Relevo cobertura f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Relevo cobertura g- Lecho modif (m³)	Excedente de tierra (m³) (compensado a nivel 0%, e-superficie interior 5%)	Cinta liberada (m³)	Manto escollera a 0.5m. ancho-30m (m³)
DC-121/T14	T18-T19	4.579.00	61.518.03				1	1.829	275	11.50	16						4.52	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.4	20.4	20.4	6.1	1.6	4.5	11.7	1.6		4.5			11.7	2.7	1.0									
DC-121/T14	T18-T19	4.580.00	61.519.03				1	1.829	275	11.50	16						4.50	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.6	1.6		4.5			11.6	2.7	1.0									
DC-121/T14	T18-T19	4.581.00	61.520.03				1	1.829	275	11.50	16						4.47	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	20.1	20.1	20.1	6.1	1.6	4.5	11.4	1.6		4.5			11.4	2.7	1.0									
DC-121/T14	T18-T19	4.582.00	61.521.03				1	1.829	275	11.50	16						4.45	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.9	19.9	19.9	6.1	1.6	4.5	11.3	1.6		4.5			11.3	2.7	1.0									
DC-121/T14	T18-T19	4.583.00	61.522.03				1	1.829	275	11.50	16						4.43	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.8	19.8	19.8	6.1	1.6	4.5	11.1	1.6		4.5			11.1	2.7	1.0									
DC-121/T14	T18-T19	4.584.00	61.523.03				1	1.829	275	11.50	16						4.40	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.7	19.7	19.7	6.1	1.6	4.5	11.0	1.6		4.5			11.0	2.7	1.0									
DC-121/T14	T18-T19	4.585.00	61.524.03				1	1.829	275	11.50	16						4.38	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.5	19.5	19.5	6.1	1.6	4.5	10.8	1.6		4.5			10.8	2.7	1.0									
DC-121/T14	T18-T19	4.586.00	61.525.03				1	1.829	275	11.50	16						4.35	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.4	19.4	19.4	6.1	1.6	4.5	10.7	1.6		4.5			10.7	2.7	1.0									
DC-121/T14	T18-T19	4.587.00	61.526.03				1	1.829	275	11.50	16						4.32	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.2	19.2	19.2	6.1	1.6	4.5	10.5	1.6		4.5			10.5	2.7	1.0									
DC-121/T14	T18-T19	4.588.00	61.527.03				1	1.829	275	11.50	16						4.30	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	19.1	19.1	19.1	6.1	1.6	4.5	10.4	1.6		4.5			10.4	2.7	1.0									
DC-121/T14	T18-T19	4.589.00	61.528.03				1	1.829	275	11.50	16						4.27	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.9	18.9	18.9	6.1	1.6	4.5	10.2	1.6		4.5			10.2	2.7	1.0									
DC-121/T14	T18-T19	4.590.00	61.529.03				1	1.829	275	11.50	16						4.25	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.7	18.7	18.7	6.1	1.6	4.5	10.1	1.6		4.5			10.1	2.7	1.0									
DC-121/T14	T18-T19	4.591.00	61.530.03				1	1.829	275	11.50	16						4.22	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.6	18.6	18.6	6.1	1.6	4.5	9.9	1.6		4.5			9.9	2.7	1.0									
DC-121/T14	T18-T19	4.592.00	61.531.03				1	1.829	275	11.50	16						4.19	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.4	18.4	18.4	6.1	1.6	4.5	9.8	1.6		4.5			9.8	2.7	1.0									
DC-121/T14	T18-T19	4.593.00	61.532.03				1	1.829	275	11.50	16						4.18	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.3	18.3	18.3	6.1	1.6	4.5	9.7	1.6		4.5			9.7	2.7	1.0									
DC-121/T14	T18-T19	4.594.00	61.533.03				1	1.829	275	11.50	16						4.17	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.3	18.3	18.3	6.1	1.6	4.5	9.6	1.6		4.5			9.6	2.7	1.0									
DC-121/T14	T18-T19	4.595.00	61.534.03				1	1.829	275	11.50	16						4.16	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.3	18.3	18.3	6.1	1.6	4.5	9.6	1.6		4.5			9.6	2.7	1.0									
DC-121/T14	T18-T19	4.596.00	61.535.03				1	1.829	275	11.50	16						4.16	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.2	18.2	18.2	6.1	1.6	4.5	9.6	1.6		4.5			9.6	2.7	1.0									
DC-121/T14	T18-T19	4.597.00	61.536.03				1	1.829	275	11.50	16						4.15	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.2	18.2	18.2	6.1	1.6	4.5	9.5	1.6		4.5			9.5	2.7	1.0									
DC-121/T14	T18-T19	4.598.00	61.537.03				1	1.829	275	11.50	16						4.15	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.2	18.2	18.2	6.1	1.6	4.5	9.5	1.6		4.5			9.5	2.7	1.0									
DC-121/T14	T18-T19	4.599.00	61.538.03				1	1.829	275	11.50	16						4.14	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.1	18.1	18.1	6.1	1.6	4.5	9.5	1.6		4.5			9.5	2.7	1.0									
DC-121/T14	T18-T19	4.600.00	61.539.03				1	1.829	275	11.50	16						4.15	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.2	18.2	18.2	6.1	1.6	4.5	9.5	1.6		4.5			9.5	2.7	1.0									
DC-121/T14	T18-T19	4.601.00	61.540.03				1	1.829	275	11.50	16						4.16	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.2	18.2	18.2	6.1	1.6	4.5	9.6	1.6		4.5			9.6	2.7	1.0									
DC-121/T14	T18-T19	4.602.00	61.541.03				1	1.829	275	11.50	16						4.17	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.3	18.3	18.3	6.1	1.6	4.5	9.6	1.6		4.5			9.6	2.7	1.0									
DC-121/T14	T18-T19	4.603.00	61.542.03				1	1.829	275	11.50	16						4.18	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.3	18.3	18.3	6.1	1.6	4.5	9.7	1.6		4.5			9.7	2.7	1.0									
DC-121/T14	T18-T19	4.604.00	61.543.03				1	1.829	275	11.50	16						4.19	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.4	18.4	18.4	6.1	1.6	4.5	9.7	1.6		4.5			9.7	2.7	1.0									
DC-121/T14	T18-T19	4.605.00	61.544.03				1	1.829	275	11.50	16						4.20	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.5	18.5	18.5	6.1	1.6	4.5	9.8	1.6		4.5			9.8	2.7	1.0									
DC-121/T14	T18-T19	4.606.00	61.545.03				1	1.829	275	11.50	16						4.21	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.5	18.5	18.5	6.1	1.6	4.5	9.8	1.6		4.5			9.8	2.7	1.0									
DC-121/T14	T18-T19	4.607.00	61.546.03				1	1.829	275	11.50	16						4.22	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.6	18.6	18.6	6.1	1.6	4.5	9.9	1.6		4.5			9.9	2.7	1.0									
DC-121/T14	T18-T19	4.608.00	61.547.03				1	1.829	275	11.50	16						4.22	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	18.6	18.6	18.6	6.1	1.6	4.5	10.0	1.6		4.5			10.0	2.7	1.0									
DC-121/T14	T18-T19	4.609.00	61.548.03				1	1.829																																																		

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre. Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones a-c: Suelo seleccionado C/95% PM, < 30 mm. d-Gabarrillo S15. s-borneopq HM-20. Relación cobertura a-c: Suelo seleccionado C/95% PM, < 30 mm. e- HM-20. d-Gabarrillo S15. f-Suelo adecuado para excavación (<150mm) c/95% PM. g- Lecho mod.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (n)	H1-DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleño cama+riñonera (m2)	Relleño cama (m2)	Relleño riñonera(s)m2)	Relleño cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo HM-20(m2)	Relleño riñonera suelo seleccionado (m2)	Relleño riñonera grabaciado (m2)	Relleño cama+riñonera HM-20(m2)	Relleño cobertura c- Suelo seleccionado C/95% PM, < 30 mm	Relleño cobertura. d-Gabarrillo S15	Relleño cobertura. e- HM-20	Relleño cobertura. f-Suelo adecuado para excavación (<150mm) c/95% PM	Relleño cobertura. g- Lecho mod (m2)	Excedente de tierra (m2) (consumo actual 0%, c-espojaneto teórico 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m2)
DC-12/1/14	T18-T19	4.835.00	61.774.03				1	1.829	275	11.50	16				4.01	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.4	17.4	17.4	6.1	1.6	4.5	8.7	1.6	4.5			8.7	2.7	1.0									
DC-12/1/14	T18-T19	4.836.00	61.775.03				1	1.829	275	11.50	16				4.02	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.4	17.4	17.4	6.1	1.6	4.5	8.8	1.6	4.5			8.8	2.7	1.0									
DC-12/1/14	T18-T19	4.837.00	61.776.03				1	1.829	275	11.50	16				4.03	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6	4.5			8.8	2.7	1.0									
DC-12/1/14	T18-T19	4.838.00	61.777.03				1	1.829	275	11.50	16				4.02	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6	4.5			8.8	2.7	1.0									
DC-12/1/14	T18-T19	4.839.00	61.778.03				1	1.829	275	11.50	16				4.04	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5			8.9	2.7	1.0									
DC-12/1/14	T18-T19	4.840.00	61.779.03				1	1.829	275	11.50	16				4.05	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.6	17.6	17.6	6.1	1.6	4.5	8.9	1.6	4.5			8.9	2.7	1.0									
DC-12/1/14	T18-T19	4.841.00	61.780.03				1	1.829	275	11.50	16				4.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.6	17.6	17.6	6.1	1.6	4.5	9.0	1.6	4.5			9.0	2.7	1.0									
DC-12/1/14	T18-T19	4.842.00	61.781.03				1	1.829	275	11.50	16				4.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.7	17.7	17.7	6.1	1.6	4.5	9.0	1.6	4.5			9.0	2.7	1.0									
DC-12/1/14	T18-T19	4.843.00	61.782.03				1	1.829	275	11.50	16				4.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.7	17.7	17.7	6.1	1.6	4.5	9.0	1.6	4.5			9.0	2.7	1.0									
DC-12/1/14	T18-T19	4.844.00	61.783.03				1	1.829	275	11.50	16				4.07	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.7	17.7	17.7	6.1	1.6	4.5	9.1	1.6	4.5			9.1	2.7	1.0									
DC-12/1/14	T18-T19	4.845.00	61.784.03				1	1.829	275	11.50	16				4.08	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.8	17.8	17.8	6.1	1.6	4.5	9.1	1.6	4.5			9.1	2.7	1.0									
DC-12/1/14	T18-T19	4.846.00	61.785.03				1	1.829	275	11.50	16				4.08	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.8	17.8	17.8	6.1	1.6	4.5	9.1	1.6	4.5			9.1	2.7	1.0									
DC-12/1/14	T18-T19	4.847.00	61.786.03				1	1.829	275	11.50	16				4.09	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.8	17.8	17.8	6.1	1.6	4.5	9.2	1.6	4.5			9.2	2.7	1.0									
DC-12/1/14	T18-T19	4.848.00	61.787.03				1	1.829	275	11.50	16				4.10	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.9	17.9	17.9	6.1	1.6	4.5	9.2	1.6	4.5			9.2	2.7	1.0									
DC-12/1/14	T18-T19	4.849.00	61.788.03				1	1.829	275	11.50	16				4.10	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.9	17.9	17.9	6.1	1.6	4.5	9.2	1.6	4.5			9.2	2.7	1.0									
DC-12/1/14	T18-T19	4.850.00	61.789.03				1	1.829	275	11.50	16				4.11	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	17.9	17.9	17.9	6.1	1.6	4.5	9.3	1.6	4.5			9.3	2.7	1.0									
DC-12/1/14	T18-T19	4.851.00	61.790.03				1	1.829	275	11.50	16				4.11	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.0	18.0	18.0	6.1	1.6	4.5	9.3	1.6	4.5			9.3	2.7	1.0									
DC-12/1/14	T18-T19	4.852.00	61.791.03				1	1.829	275	11.50	16				4.12	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.0	18.0	18.0	6.1	1.6	4.5	9.4	1.6	4.5			9.4	2.7	1.0									
DC-12/1/14	T18-T19	4.853.00	61.792.03				1	1.829	275	11.50	16				4.12	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.1	18.1	18.1	6.1	1.6	4.5	9.4	1.6	4.5			9.4	2.7	1.0									
DC-12/1/14	T18-T19	4.854.00	61.793.03				1	1.829	275	11.50	16				4.13	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.1	18.1	18.1	6.1	1.6	4.5	9.4	1.6	4.5			9.4	2.7	1.0									
DC-12/1/14	T18-T19	4.855.00	61.794.03				1	1.829	275	11.50	16				4.14	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.1	18.1	18.1	6.1	1.6	4.5	9.5	1.6	4.5			9.5	2.7	1.0									
DC-12/1/14	T18-T19	4.856.00	61.795.03				1	1.829	275	11.50	16				4.15	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.2	18.2	18.2	6.1	1.6	4.5	9.5	1.6	4.5			9.5	2.7	1.0									
DC-12/1/14	T18-T19	4.857.00	61.796.03				1	1.829	275	11.50	16				4.15	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.2	18.2	18.2	6.1	1.6	4.5	9.5	1.6	4.5			9.5	2.7	1.0									
DC-12/1/14	T18-T19	4.858.00	61.797.03				1	1.829	275	11.50	16				4.16	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.2	18.2	18.2	6.1	1.6	4.5	9.6	1.6	4.5			9.6	2.7	1.0									
DC-12/1/14	T18-T19	4.859.00	61.798.03				1	1.829	275	11.50	16				4.17	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.3	18.3	18.3	6.1	1.6	4.5	9.6	1.6	4.5			9.6	2.7	1.0									
DC-12/1/14	T18-T19	4.860.00	61.799.03				1	1.829	275	11.50	16				4.17	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.3	18.3	18.3	6.1	1.6	4.5	9.6	1.6	4.5			9.6	2.7	1.0									
DC-12/1/14	T18-T19	4.861.00	61.800.03				1	1.829	275	11.50	16				4.18	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.3	18.3	18.3	6.1	1.6	4.5	9.7	1.6	4.5			9.7	2.7	1.0									
DC-12/1/14	T18-T19	4.862.00	61.801.03				1	1.829	275	11.50	16				4.18	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.4	18.4	18.4	6.1	1.6	4.5	9.7	1.6	4.5			9.7	2.7	1.0									
DC-12/1/14	T18-T19	4.863.00	61.802.03				1	1.829	275	11.50	16				4.19	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.4	18.4	18.4	6.1	1.6	4.5	9.8	1.6	4.5			9.8	2.7	1.0									
DC-12/1/14	T18-T19	4.864.00	61.803.03				1	1.829	275	11.50	16				4.20	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.5	18.5	18.5	6.1	1.6	4.5	9.8	1.6	4.5			9.8	2.7	1.0									
DC-12/1/14	T18-T19	4.865.00	61.804.03				1	1.829	275	11.50	16				4.21	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	a	c	f	100%	0.7	2.3	10	18.6	18.6	18.6	6.1	1.6	4.5	9.9	1.6	4.5														

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concrecionado zapala	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la borra desde fondo	Cama de apoyo a-cama material granulado o arena b-cama de hormigón HM-20	Rehabilitación c- Suela seleccionada C/95% PN, c= 30 mm d-Gabarrillo S15, e-borripap HM-20 Rehabilitación f- Suela seleccionada C/95% PN, c= 30 mm e- HM-20, d-Gabarrillo S15, f-Suela adecuada procedente excavación (<150mm) C/65 % PN, g- Lecho modif.	Exposici. (m, escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (º)	H1-DHxH2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m³)	Relleno c arena (m³)	Relleno riñonera(s)m³	Relleno cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relleno riñonera suelo seleccionado (m³)	Relleno riñonera granitica (m³)	Relleno cama+riñonera HM-20(m³)	Relleno cobertura c- Suelo seleccionado C/95% PN, c= 30 mm	Reelleno cobertura d-Gabarrillo S15	Reelleno cobertura c- HM-20	Reelleno cobertura f-Suelo adecuado procedente excavación (<150mm) C/65 % PN	Reelleno cobertura g- Lecho modif (m³)	Excedente de tierra (m³) (consumible a nivel 0%, e-superavitario 5%)	Cinta liberata (m)	Manto escollera a 0.5m, ancho-30m (m³)
DC-121/T14	T18-T19	5.352.00	62.291.03				1	1.829	275	11.50	16						5.21	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.7	24.7	24.7	6.1	1.6	4.5	16.0	1.6		4.5			16.0	2.7	1.0										
DC-121/T14	T18-T19	5.353.00	62.292.03				1	1.829	275	11.50	16						5.18	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.5	24.5	24.5	6.1	1.6	4.5	15.8	1.6		4.5			15.8	2.7	1.0										
DC-121/T14	T18-T19	5.354.00	62.293.03				1	1.829	275	11.50	16						5.14	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.2	24.2	24.2	6.1	1.6	4.5	15.6	1.6		4.5			15.6	2.7	1.0										
DC-121/T14	T18-T19	5.355.00	62.294.03				1	1.829	275	11.50	16						5.10	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	24.0	24.0	24.0	6.1	1.6	4.5	15.3	1.6		4.5			15.3	2.7	1.0										
DC-121/T14	T18-T19	5.356.00	62.295.03				1	1.829	275	11.50	16						5.06	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.7	23.7	23.7	6.1	1.6	4.5	15.1	1.6		4.5			15.1	2.7	1.0										
DC-121/T14	T18-T19	5.357.00	62.296.03				1	1.829	275	11.50	16						5.02	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.5	23.5	23.5	6.1	1.6	4.5	14.8	1.6		4.5			14.8	2.7	1.0										
DC-121/T14	T18-T19	5.358.00	62.297.03				1	1.829	275	11.50	16						4.98	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.2	23.2	23.2	6.1	1.6	4.5	14.6	1.6		4.5			14.6	2.7	1.0										
DC-121/T14	T18-T19	5.359.00	62.298.03				1	1.829	275	11.50	16						4.94	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	23.0	23.0	23.0	6.1	1.6	4.5	14.3	1.6		4.5			14.3	2.7	1.0										
DC-121/T14	T18-T19	5.360.00	62.299.03				1	1.829	275	11.50	16						4.91	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.7	22.7	22.7	6.1	1.6	4.5	14.1	1.6		4.5			14.1	2.7	1.0										
DC-121/T14	T18-T19	5.361.00	62.300.03				1	1.829	275	11.50	16						4.87	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	a	c	f	100%	0.7	2.3	1.0	22.5	22.5	22.5	6.1	1.6	4.5	13.8	1.6		4.5			13.8	2.7	1.0										
DC-121/T14	T18-T19	5.362.00	62.301.03				1	1.829	275	11.50	16						4.85	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.4	22.4	22.4	6.1	1.6	4.5	13.8	1.6		4.5			13.8	2.7	1.0										
DC-121/T14	T18-T19	5.363.00	62.302.03				1	1.829	275	11.50	16						4.85	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.4	22.4	22.4	6.1	1.6	4.5	13.7	1.6		4.5			13.7	2.7	1.0										
DC-121/T14	T18-T19	5.364.00	62.303.03				1	1.829	275	11.50	16						4.85	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.4	22.4	22.4	6.1	1.6	4.5	13.7	1.6		4.5			13.7	2.7	1.0										
DC-121/T14	T18-T19	5.365.00	62.304.03				1	1.829	275	11.50	16						4.85	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.4	22.4	22.4	6.3	1.8	4.6	13.6	1.8	1.8	4.6			13.5	2.7	1.0										
DC-121/T14	T18-T19	5.366.00	62.305.03				1	1.829	275	11.50	16						4.84	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.4	22.4	22.4	6.3	1.8	4.6	13.5	1.6		4.5			13.5	2.7	1.0										
DC-121/T14	T18-T19	5.367.00	62.306.03				1	1.829	275	11.50	16						4.84	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.3	22.3	22.3	6.3	1.8	4.6	13.4	1.8	1.8	4.6			13.4	2.7	1.0										
DC-121/T14	T18-T19	5.368.00	62.307.03				1	1.829	275	11.50	16						4.84	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.3	22.3	22.3	6.3	1.8	4.6	13.4	1.8	1.8	4.6			13.4	2.7	1.0										
DC-121/T14	T18-T19	5.369.00	62.308.03				1	1.829	275	11.50	16						4.84	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.3	22.3	22.3	6.3	1.8	4.6	13.4	1.8	1.8	4.6			13.4	2.7	1.0										
DC-121/T14	T18-T19	5.370.00	62.309.03	Vertenosa	V15-200		1	1.829	275	11.50	16					3.30	S275-6.4	4.84	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.3	22.3	22.3	6.3	1.8	4.6	13.4	1.8	1.8	4.6			13.4	2.7	1.0									
DC-121/T14	T18-T19	5.371.00	62.310.03				1	1.829	275	11.50	16						4.84	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.3	22.3	22.3	6.3	1.8	4.6	13.4	1.8	1.8	4.6			13.4	2.7	1.0										
DC-121/T14	T18-T19	5.372.00	62.311.03				1	1.829	275	11.50	16						4.85	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.4	22.4	22.4	6.3	1.8	4.6	13.5	1.8	1.8	4.6			13.5	2.7	1.0										
DC-121/T14	T18-T19	5.373.00	62.312.03				1	1.829	275	11.50	16						4.85	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.4	22.4	22.4	6.3	1.8	4.6	13.5	1.8	1.8	4.6			13.5	2.7	1.0										
DC-121/T14	T18-T19	5.374.00	62.313.03				1	1.829	275	11.50	16						4.86	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.4	22.4	22.4	6.3	1.8	4.6	13.6	1.8	1.8	4.6			13.6	2.7	1.0										
DC-121/T14	T18-T19	5.375.00	62.314.03				1	1.829	275	11.50	16						4.86	0.33	25-1-1800	0.60	3.00			0.25	120	0.30	2.00	b	d	d	100%	0.7	2.4	1.0	22.5	22.5	22.5	6.3	1.8	4.6	13.6	1.8	1.8	4.6			13.6	2.7	1.0										
DC-121/T14	T18-T19	5.376.00	62.315.03				1	1.829	275	11.50	16						4.85	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.4	22.4	22.4	6.1	1.6	4.5	13.7	1.6		4.5			13.7	2.7	1.0										
DC-121/T14	T18-T19	5.377.00	62.316.03				1	1.829	275	11.50	16						4.84	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.3	22.3	22.3	6.1	1.6	4.5	13.7	1.6		4.5			13.7	2.7	1.0										
DC-121/T14	T18-T19	5.378.00	62.317.03				1	1.829	275	11.50	16						4.83	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.3	22.3	22.3	6.1	1.6	4.5	13.6	1.6		4.5			13.6	2.7	1.0										
DC-121/T14	T18-T19	5.379.00	62.318.03				1	1.829	275	11.50	16						4.82	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.2	22.2	22.2	6.1	1.6	4.5	13.6	1.6		4.5			13.6	2.7	1.0										
DC-121/T14	T18-T19	5.380.00	62.319.03				1	1.829	275	11.50	16						4.82	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.2	22.2	22.2	6.1	1.6	4.5	13.5	1.6		4.5			13.5	2.7	1.0										
DC-121/T14	T18-T19	5.381.00	62.320.03				1	1.829	275	11.50	16						4.81	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	22.1	22.1	22.1	6.1	1.6	4.5	13.4	1.6																	

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A= separación tubo salud	S ₂ = Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Relaciones: a-c= Suela seleccionada C/95% PN, <= 30 mm. d-Gabarrillo S15, <bornapego M40.20. Relación cobertura a-c= Suela seleccionada C/95% PN, <= 30 mm. e- M40.20. d-Gabarrillo S15, <Suela adecuada procedente excavación (<=150mm) c/95% PN. g- Lecho modif.	Exposic. (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	H1=DNH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m2)	Relevo c/ama (m2)	Relevo riñonera(s)m2)	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo M40(m2)	Relevo riñonera+ suelo seleccionado (m2)	Relevo riñonera grabaciado (m2)	Relevo cama+riñonera HM-20(m2)	Relevo cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Gabarrillo S15	Relevo cobertura. e- H4/20	Relevo cobertura. f-Suelo adecuado a excavación (<=150mm) c/95% PN	Relevo cobertura. g- Lecho modif (m2)	Excedente de tierra (m2) (compensando nivel 0%, e+apojamiento lateral 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m2)
DC-12/1/T14	T19-120	1.00	62.550.03				1	1.524	275	10.50	16				4.73	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.2	20.2	20.2	5.0	1.3	3.7	13.5	1.3		3.7			13.5	1.9	1.0									
DC-12/1/T14	T19-120	2.00	62.551.03				1	1.524	275	10.50	16				4.68	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.0	20.0	20.0	5.0	1.3	3.7	13.2	1.3		3.7			13.2	1.9	1.0									
DC-12/1/T14	T19-120	3.00	62.552.03				1	1.524	275	10.50	16				4.67	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.9	19.9	19.9	5.0	1.3	3.7	13.2	1.3		3.7			13.2	1.9	1.0									
DC-12/1/T14	T19-120	4.00	62.553.03				1	1.524	275	10.50	16				4.67	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.9	19.9	19.9	5.0	1.3	3.7	13.1	1.3		3.7			13.1	1.9	1.0									
DC-12/1/T14	T19-120	5.00	62.554.03				1	1.524	275	10.50	16				4.69	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.0	20.0	20.0	5.0	1.3	3.7	13.3	1.3		3.7			13.3	1.9	1.0									
DC-12/1/T14	T19-120	6.00	62.555.03				1	1.524	275	10.50	16				4.72	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.1	20.1	20.1	5.0	1.3	3.7	13.4	1.3		3.7			13.4	1.9	1.0									
DC-12/1/T14	T19-120	7.00	62.556.03				1	1.524	275	10.50	16				4.66	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.8	19.8	19.8	5.0	1.3	3.7	13.1	1.3		3.7			13.1	1.9	1.0									
DC-12/1/T14	T19-120	8.00	62.557.03				1	1.524	275	10.50	16				4.65	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.8	19.8	19.8	5.0	1.3	3.7	13.0	1.3		3.7			13.0	1.9	1.0									
DC-12/1/T14	T19-120	9.00	62.558.03				1	1.524	275	10.50	16				4.64	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.7	19.7	19.7	5.0	1.3	3.7	13.0	1.3		3.7			13.0	1.9	1.0									
DC-12/1/T14	T19-120	10.00	62.559.03				1	1.524	275	10.50	16				4.63	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.6	19.6	19.6	5.0	1.3	3.7	12.9	1.3		3.7			12.9	1.9	1.0									
DC-12/1/T14	T19-120	11.00	62.560.03				1	1.524	275	10.50	16				4.62	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.6	19.6	19.6	5.0	1.3	3.7	12.8	1.3		3.7			12.8	1.9	1.0									
DC-12/1/T14	T19-120	12.00	62.561.03				1	1.524	275	10.50	16				4.62	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.6	19.6	19.6	5.0	1.3	3.7	12.8	1.3		3.7			12.8	1.9	1.0									
DC-12/1/T14	T19-120	13.00	62.562.03				1	1.524	275	10.50	16				4.61	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.5	19.5	19.5	5.0	1.3	3.7	12.8	1.3		3.7			12.8	1.9	1.0									
DC-12/1/T14	T19-120	14.00	62.563.03				1	1.524	275	10.50	16				4.60	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.5	19.5	19.5	5.0	1.3	3.7	12.7	1.3		3.7			12.7	1.9	1.0									
DC-12/1/T14	T19-120	15.00	62.564.03				1	1.524	275	10.50	16				4.59	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.4	19.4	19.4	5.0	1.3	3.7	12.7	1.3		3.7			12.7	1.9	1.0									
DC-12/1/T14	T19-120	16.00	62.565.03				1	1.524	275	10.50	16				4.58	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.3	19.3	19.3	5.0	1.3	3.7	12.6	1.3		3.7			12.6	1.9	1.0									
DC-12/1/T14	T19-120	17.00	62.566.03				1	1.524	275	10.50	16				4.56	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.2	19.2	19.2	5.0	1.3	3.7	12.5	1.3		3.7			12.5	1.9	1.0									
DC-12/1/T14	T19-120	18.00	62.567.03				1	1.524	275	10.50	16				4.57	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.3	19.3	19.3	5.0	1.3	3.7	12.6	1.3		3.7			12.6	1.9	1.0									
DC-12/1/T14	T19-120	19.00	62.568.03				1	1.524	275	10.50	16				4.58	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.2	19.2	19.2	5.0	1.3	3.7	12.4	1.3		3.7			12.4	1.9	1.0									
DC-12/1/T14	T19-120	20.00	62.569.03				1	1.524	275	10.50	16				4.58	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.4	19.4	19.4	5.0	1.3	3.7	12.6	1.3		3.7			12.6	1.9	1.0									
DC-12/1/T14	T19-120	21.00	62.570.03				1	1.524	275	10.50	16				4.59	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.4	19.4	19.4	5.0	1.3	3.7	12.7	1.3		3.7			12.7	1.9	1.0									
DC-12/1/T14	T19-120	22.00	62.571.03				1	1.524	275	10.50	16				4.58	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.4	19.4	19.4	5.0	1.3	3.7	12.6	1.3		3.7			12.6	1.9	1.0									
DC-12/1/T14	T19-120	23.00	62.572.03				1	1.524	275	10.50	16				4.58	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.3	19.3	19.3	5.0	1.3	3.7	12.6	1.3		3.7			12.6	1.9	1.0									
DC-12/1/T14	T19-120	24.00	62.573.03				1	1.524	275	10.50	16				4.57	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.3	19.3	19.3	5.0	1.3	3.7	12.6	1.3		3.7			12.6	1.9	1.0									
DC-12/1/T14	T19-120	25.00	62.574.03				1	1.524	275	10.50	16				4.57	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.3	19.3	19.3	5.0	1.3	3.7	12.6	1.3		3.7			12.6	1.9	1.0									
DC-12/1/T14	T19-120	26.00	62.575.03				1	1.524	275	10.50	16				4.56	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.3	19.3	19.3	5.0	1.3	3.7	12.5	1.3		3.7			12.5	1.9	1.0									
DC-12/1/T14	T19-120	27.00	62.576.03				1	1.524	275	10.50	16				4.56	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.2	19.2	19.2	5.0	1.3	3.7	12.5	1.3		3.7			12.5	1.9	1.0									
DC-12/1/T14	T19-120	28.00	62.577.03				1	1.524	275	10.50	16				4.57	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.2	19.2	19.2	5.0	1.3	3.7	12.5	1.3		3.7			12.5	1.9	1.0									
DC-12/1/T14	T19-120	29.00	62.578.03				1	1.524	275	10.50	16				4.55	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.2	19.2	19.2	5.0	1.3	3.7	12.4	1.3		3.7			12.4	1.9	1.0									
DC-12/1/T14	T19-120	30.00	62.579.03				1	1.524	275	10.50	16				4.54	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.1	19.1	19.1	5.0	1.3	3.7	12.4	1.3		3.7			12.4	1.9	1.0									
DC-12/1/T14	T19-120	31.00	62.580.03				1	1.524	275	10.50	16				4.54	0.33	21-1-1500	0.60	2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.1	19.1	19.1	5.0	1.3	3.7	12.4																	

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HI-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima 4' cave (m)	H4-Altura de la borma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón(HM-20	Relaciones: a-c: Suelo seleccionado C/95% PN, <= 30 mm. d-Garbanillo 5/15. e-borrompió HM-20. f-Huella cobertura a-c: Suelo seleccionado C/95% PN, <= 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suelo adecuado para excavación (<=150mm) c/65% PN. g- Lecho mod.	Exposici. (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HI-ang (m)	HI-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñones (m3)	Relevo c-ama (m3)	Relevo riñones(s/m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñones suelo seleccionado (m3)	Relevo riñones grabado (m3)	Relevo cama+riñones HM-20(m3)	Relevo cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo 5/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suelo adecuado para excavación (<=150mm) c/65% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumo a nivel 0%, e-superficie 5%)	Cinta liberada (m)	Manto escollera a=0.5m. ancho=30m. (m3)
DC-12/1/14	119-120	260.00	62.899.03				1	1.524	275	10.50	16				7.31	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	a	c	f	100%	0.6	2.0	1.0	37.6	2.4	40.0	40.0	5.0	1.3	3.7	33.2	1.3		3.7			33.2	1.9	1.0						
DC-12/1/14	119-120	261.00	62.810.03				1	1.524	275	10.50	16				7.27	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	a	c	f	100%	0.6	2.0	1.0	37.2	2.4	39.6	39.6	5.0	1.3	3.7	32.9	1.3		3.7			32.9	1.9	1.0						
DC-12/1/14	119-120	262.00	62.811.03				1	1.524	275	10.50	16				7.23	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	a	c	f	100%	0.6	2.0	1.0	36.9	2.3	39.2	39.2	5.0	1.3	3.7	32.5	1.3		3.7			32.5	1.9	1.0						
DC-12/1/14	119-120	263.00	62.812.03				1	1.524	275	10.50	16				7.18	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	a	c	f	100%	0.6	2.0	1.0	36.6	2.2	38.8	38.8	5.0	1.3	3.7	32.1	1.3		3.7			32.1	1.9	1.0						
DC-12/1/14	119-120	264.00	62.813.03				1	1.524	275	10.50	16				7.14	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	a	c	f	100%	0.6	2.0	1.0	36.2	2.2	38.4	38.4	5.0	1.3	3.7	31.7	1.3		3.7			31.7	1.9	1.0						
DC-12/1/14	119-120	265.00	62.814.03				1	1.524	275	10.50	16				6.96	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	a	c	f	100%	0.6	2.0	1.0	34.9	1.9	36.9	36.9	5.0	1.3	3.7	30.1	1.3		3.7			30.1	1.9	1.0						
DC-12/1/14	119-120	266.00	62.815.03				1	1.524	275	10.50	16				6.68	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	a	c	f	100%	0.6	2.0	1.0	32.9	1.6	34.5	34.5	5.0	1.3	3.7	27.8	1.3		3.7			27.8	1.9	1.0						
DC-12/1/14	119-120	267.00	62.816.03				1	1.524	275	10.50	16				6.41	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	a	c	f	100%	0.6	2.0	1.0	31.0	1.2	32.2	32.2	5.0	1.3	3.7	25.5	1.3		3.7			25.5	1.9	1.0						
DC-12/1/14	119-120	268.00	62.817.03				1	1.524	275	10.50	16				6.14	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	29.2	29.2	29.2	29.2	5.0	1.3	3.7	22.4	1.3		3.7			22.4	1.9	1.0						
DC-12/1/14	119-120	269.00	62.818.03				1	1.524	275	10.50	16				5.98	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	28.1	28.1	28.1	28.1	5.0	1.3	3.7	21.3	1.3		3.7			21.3	1.9	1.0						
DC-12/1/14	119-120	270.00	62.819.03				1	1.524	275	10.50	16				5.84	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	27.1	27.1	27.1	27.1	5.0	1.3	3.7	20.4	1.3		3.7			20.4	1.9	1.0						
DC-12/1/14	119-120	271.00	62.820.03				1	1.524	275	10.50	16				5.70	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	26.2	26.2	26.2	26.2	5.0	1.3	3.7	19.5	1.3		3.7			19.5	1.9	1.0						
DC-12/1/14	119-120	272.00	62.821.03				1	1.524	275	10.50	16				5.55	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.2	25.2	25.2	25.2	5.0	1.3	3.7	18.5	1.3		3.7			18.5	1.9	1.0						
DC-12/1/14	119-120	273.00	62.822.03				1	1.524	275	10.50	16				5.55	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.2	25.2	25.2	25.2	5.0	1.3	3.7	18.5	1.3		3.7			18.5	1.9	1.0						
DC-12/1/14	119-120	274.00	62.823.03				1	1.524	275	10.50	16				5.57	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.4	25.4	25.4	25.4	5.0	1.3	3.7	18.6	1.3		3.7			18.6	1.9	1.0						
DC-12/1/14	119-120	275.00	62.824.03				1	1.524	275	10.50	16				5.59	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.5	25.5	25.5	25.5	5.0	1.3	3.7	18.8	1.3		3.7			18.8	1.9	1.0						
DC-12/1/14	119-120	276.00	62.825.03				1	1.524	275	10.50	16				5.61	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.7	25.7	25.7	25.7	5.0	1.3	3.7	18.9	1.3		3.7			18.9	1.9	1.0						
DC-12/1/14	119-120	277.00	62.826.03				1	1.524	275	10.50	16				5.63	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.8	25.8	25.8	25.8	5.0	1.3	3.7	19.1	1.3		3.7			19.1	1.9	1.0						
DC-12/1/14	119-120	278.00	62.827.03				1	1.524	275	10.50	16				5.67	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.9	25.9	25.9	25.9	5.0	1.3	3.7	19.2	1.3		3.7			19.2	1.9	1.0						
DC-12/1/14	119-120	279.00	62.828.03				1	1.524	275	10.50	16				5.64	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.8	25.8	25.8	25.8	5.0	1.3	3.7	19.1	1.3		3.7			19.1	1.9	1.0						
DC-12/1/14	119-120	280.00	62.829.03				1	1.524	275	10.50	16				5.62	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.7	25.7	25.7	25.7	5.0	1.3	3.7	19.0	1.3		3.7			19.0	1.9	1.0						
DC-12/1/14	119-120	281.00	62.830.03				1	1.524	275	10.50	16				5.60	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.6	25.6	25.6	25.6	5.0	1.3	3.7	18.8	1.3		3.7			18.8	1.9	1.0						
DC-12/1/14	119-120	282.00	62.831.03				1	1.524	275	10.50	16				5.58	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.4	25.4	25.4	25.4	5.0	1.3	3.7	18.7	1.3		3.7			18.7	1.9	1.0						
DC-12/1/14	119-120	283.00	62.832.03				1	1.524	275	10.50	16				5.55	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.2	25.2	25.2	25.2	5.0	1.3	3.7	18.5	1.3		3.7			18.5	1.9	1.0						
DC-12/1/14	119-120	284.00	62.833.03				1	1.524	275	10.50	16				5.52	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	25.1	25.1	25.1	25.1	5.0	1.3	3.7	18.3	1.3		3.7			18.3	1.9	1.0						
DC-12/1/14	119-120	285.00	62.834.03				1	1.524	275	10.50	16				5.43	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	24.5	24.5	24.5	24.5	5.0	1.3	3.7	17.8	1.3		3.7			17.8	1.9	1.0						
DC-12/1/14	119-120	286.00	62.835.03				1	1.524	275	10.50	16				5.35	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	24.0	24.0	24.0	24.0	5.0	1.3	3.7	17.3	1.3		3.7			17.3	1.9	1.0						
DC-12/1/14	119-120	287.00	62.836.03				1	1.524	275	10.50	16				5.30	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	23.7	23.7	23.7	23.7	5.0	1.3	3.7	16.9	1.3		3.7			16.9	1.9	1.0						
DC-12/1/14	119-120	288.00	62.837.03				1	1.524	275	10.50	16				5.42	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.0	1.0	24.4	24.4	24.4	24.4	5.0	1.3	3.7	17.7	1.3		3.7			17.7	1.9							

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adoptado (mm)	PN (límite valvuleta (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación entre laboras	S ₂ =Separación entre laboras	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	H4: altura de la bermá desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones: c= Suelo seleccionado C/95% PN, <= 30 mm. d-Garbanillo S/15. e-hormigón HM-20. Relación cobertura c= Suelo seleccionado C/95% PN, <= 30 mm. e- HM-20. d-Garbanillo S/15. f-Suelo adecuado procedente excavación (<=150mm) c/6% PN. g- Lecho mod.	Exposici. mts. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	H1-DHxH2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleño cama+riñones (m³)	Relleño c-arena (m³)	Relleño riñones(s/m²)	Relleño cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relleño riñones suelo seleccionado (m³)	Relleño riñones granbanillo (m³)	Relleño cama+riñones HM-20(m³)	Relleño cobertura c= Suelo seleccionado C/95% PN, <= 30 mm	Relleño cobertura. d-Garbanillo S/15	Relleño cobertura. e- HM-20	Relleño cobertura. f-Suelo adecuado procedente excavación (<=150mm) c/6% PN	Relleño cobertura. g- Lecho mod (m³)	Excedente de bermas (m³) (acompañando a nivel 0%, e-espaldamiento vertical 5%)	Cinta labetas (m)	Manto escollera a=0.5m, ancho=30m. (m³)
DC-121/T14	T19-120	388.00	62.937.03				1	1.524	275	10.50	16								5.71	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	26.3	26.3	26.3	5.0	1.3	3.7	19.6	1.3		3.7						19.6	1.9	1.0						
DC-121/T14	T19-120	389.00	62.938.03				1	1.524	275	10.50	16								5.77	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	26.7	26.7	26.7	5.0	1.3	3.7	19.9	1.3		3.7				19.9	1.9	1.0								
DC-121/T14	T19-120	390.00	62.939.03				1	1.524	275	10.50	16								5.83	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	27.1	27.1	27.1	5.0	1.3	3.7	20.3	1.3		3.7				20.3	1.9	1.0								
DC-121/T14	T19-120	391.00	62.940.03				1	1.524	275	10.50	16								5.89	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	27.5	27.5	27.5	5.0	1.3	3.7	20.7	1.3		3.7				20.7	1.9	1.0								
DC-121/T14	T19-120	392.00	62.941.03				1	1.524	275	10.50	16								5.95	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	27.9	27.9	27.9	5.0	1.3	3.7	21.1	1.3		3.7				21.1	1.9	1.0								
DC-121/T14	T19-120	393.00	62.942.03				1	1.524	275	10.50	16								6.01	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.3	28.3	28.3	5.0	1.3	3.7	21.5	1.3		3.7				21.5	1.9	1.0								
DC-121/T14	T19-120	394.00	62.943.03				1	1.524	275	10.50	16								6.07	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.7	28.7	28.7	5.0	1.3	3.7	21.9	1.3		3.7				21.9	1.9	1.0								
DC-121/T14	T19-120	395.00	62.944.03				1	1.524	275	10.50	16								6.13	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	29.1	29.1	29.1	5.0	1.3	3.7	22.3	1.3		3.7				22.3	1.9	1.0								
DC-121/T14	T19-120	396.00	62.945.03				1	1.524	275	10.50	16								6.19	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	29.5	29.5	29.5	5.0	1.3	3.7	22.7	1.3		3.7				22.7	1.9	1.0								
DC-121/T14	T19-120	397.00	62.946.03				1	1.524	275	10.50	16								6.24	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	29.9	29.9	29.9	5.0	1.3	3.7	23.1	1.3		3.7				23.1	1.9	1.0								
DC-121/T14	T19-120	398.00	62.947.03				1	1.524	275	10.50	16								6.30	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	30.2	30.2	30.2	5.0	1.3	3.7	23.5	1.3		3.7				23.5	1.9	1.0								
DC-121/T14	T19-120	399.00	62.948.03				1	1.524	275	10.50	16								6.26	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	30.0	30.0	30.0	5.0	1.3	3.7	23.2	1.3		3.7				23.2	1.9	1.0								
DC-121/T14	T19-120	400.00	62.949.03				1	1.524	275	10.50	16								6.22	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	29.7	29.7	29.7	5.0	1.3	3.7	23.0	1.3		3.7				23.0	1.9	1.0								
DC-121/T14	T19-120	401.00	62.950.03				1	1.524	275	10.50	16								6.18	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	29.4	29.4	29.4	5.0	1.3	3.7	22.7	1.3		3.7				22.7	1.9	1.0								
DC-121/T14	T19-120	402.00	62.951.03				1	1.524	275	10.50	16								6.15	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	29.2	29.2	29.2	5.0	1.3	3.7	22.4	1.3		3.7				22.4	1.9	1.0								
DC-121/T14	T19-120	403.00	62.952.03				1	1.524	275	10.50	16								6.11	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.9	28.9	28.9	5.0	1.3	3.7	22.2	1.3		3.7				22.2	1.9	1.0								
DC-121/T14	T19-120	404.00	62.953.03				1	1.524	275	10.50	16								6.07	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.7	28.7	28.7	5.0	1.3	3.7	21.9	1.3		3.7				21.9	1.9	1.0								
DC-121/T14	T19-120	405.00	62.954.03				1	1.524	275	10.50	16								6.03	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.4	28.4	28.4	5.0	1.3	3.7	21.7	1.3		3.7				21.7	1.9	1.0								
DC-121/T14	T19-120	406.00	62.955.03				1	1.524	275	10.50	16								5.99	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.2	28.2	28.2	5.0	1.3	3.7	21.4	1.3		3.7				21.4	1.9	1.0								
DC-121/T14	T19-120	407.00	62.956.03				1	1.524	275	10.50	16								5.95	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	27.9	27.9	27.9	5.0	1.3	3.7	21.2	1.3		3.7				21.2	1.9	1.0								
DC-121/T14	T19-120	408.00	62.957.03				1	1.524	275	10.50	16								5.93	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	27.7	27.7	27.7	5.0	1.3	3.7	21.0	1.3		3.7				21.0	1.9	1.0								
DC-121/T14	T19-120	409.00	62.958.03				1	1.524	275	10.50	16								5.94	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	27.8	27.8	27.8	5.0	1.3	3.7	21.1	1.3		3.7				21.1	1.9	1.0								
DC-121/T14	T19-120	410.00	62.959.03				1	1.524	275	10.50	16								5.98	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.0	28.0	28.0	5.0	1.3	3.7	21.3	1.3		3.7				21.3	1.9	1.0								
DC-121/T14	T19-120	411.00	62.960.03				1	1.524	275	10.50	16								6.01	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.3	28.3	28.3	5.0	1.3	3.7	21.5	1.3		3.7				21.5	1.9	1.0								
DC-121/T14	T19-120	412.00	62.961.03				1	1.524	275	10.50	16								6.04	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.5	28.5	28.5	5.0	1.3	3.7	21.8	1.3		3.7				21.8	1.9	1.0								
DC-121/T14	T19-120	413.00	62.962.03				1	1.524	275	10.50	16								6.08	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	28.7	28.7	28.7	5.0	1.3	3.7	22.0	1.3		3.7				22.0	1.9	1.0								
DC-121/T14	T19-120	414.00	62.963.03				1	1.524	275	10.50	16								6.12	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	29.0	29.0	29.0	5.0	1.3	3.7	22.2	1.3		3.7				22.2	1.9	1.0								
DC-121/T14	T19-120	415.00	62.964.03				1	1.524	275	10.50	16								6.15	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	29.2	29.2	29.2	5.0	1.3	3.7	22.5	1.3		3.7				22.5	1.9	1.0								
DC-121/T14	T19-120	416.00	62.965.03				1	1.524	275	10.50	16								6.19	0.33	21-1-1500	0.60	2.70		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	29.5	29.5	29.5	5.0	1.3	3.7	22.7	1.3		3.7				22.7	1.9	1.0								
DC-121/T14	T19-120	417.00	62.966.03																																																									

Agrupación	Tamaño	P. K. tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº valvulas DN del (mm)	Acero tipo S	espesor adaptado (mm)	PN (límite valvulera (mm)	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. DN 800 mm (solo hombre (m)	Conex. DN 800 mm (solo hombre: Acero espesor lateral (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A-: separación tubo salud	S-: Separación entre tuberías	B-: Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo: a-cama material granulado o arena b-cama de hormigón (M20)	Rehabilitación: c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15. e- bompom (M20) f- Suela seleccionada C/95% PN, < 30 mm. g- M20. d-Gabarrillo S15. f-Suela adecuada para excavación (<150mm) c/95% PN. g- Luchero mod.	Exposici (m. escalón (n)	% Escavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1- ang (m)	H1-DH+H2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñones (m3)	Relevo c-ama (m3)	Relevo riñones(s/m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Relevo riñones a suelo seleccionado (m3)	Relevo riñones granular (m3)	Relevo cama+riñones M20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura: d-Gabarrillo S15	Relevo cobertura: e- H4/20	Relevo cobertura: f-Suelo adecuado para excavación (<150mm) c/95% PN	Relevo cobertura: g- Luchero mod (m3)	Excedente de tierra (m3) (compensación a nivel 0%, e-spojaamiento vertical 5%)	Cinta laberios (m3)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-121/H14	T19-120	509.00	63.058.03			Ajuste piezométrica	1	1.524	275	16.00	16									9.97	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	46.0	6.0	46.0	46.0	5.0	1.3	3.7	59.2	1.3	3.7	59.2	1.9	1.0											
DC-121/H14	T19-120	510.00	63.059.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.07	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.0	6.0	67.0	67.0	5.0	1.3	3.7	60.3	1.3	3.7	60.3	1.9	1.0											
DC-121/H14	T19-120	511.00	63.060.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.18	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.0	6.2	68.2	68.2	5.0	1.3	3.7	61.5	1.3	3.7	61.5	1.9	1.0											
DC-121/H14	T19-120	512.00	63.061.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.29	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	63.0	6.4	69.4	69.4	5.0	1.3	3.7	62.7	1.3	3.7	62.7	1.9	1.0											
DC-121/H14	T19-120	513.00	63.062.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.37	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	63.8	6.5	70.3	70.3	5.0	1.3	3.7	63.6	1.3	3.7	63.6	1.9	1.0											
DC-121/H14	T19-120	514.00	63.063.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.42	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	64.3	6.6	70.9	70.9	5.0	1.3	3.7	64.1	1.3	3.7	64.1	1.9	1.0											
DC-121/H14	T19-120	515.00	63.064.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.47	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	64.8	6.6	71.4	71.4	5.0	1.3	3.7	64.7	1.3	3.7	64.7	1.9	1.0											
DC-121/H14	T19-120	516.00	63.065.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.52	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	65.3	6.7	72.0	72.0	5.0	1.3	3.7	65.3	1.3	3.7	65.3	1.9	1.0											
DC-121/H14	T19-120	517.00	63.066.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.58	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	65.8	6.8	72.6	72.6	5.0	1.3	3.7	65.9	1.3	3.7	65.9	1.9	1.0											
DC-121/H14	T19-120	518.00	63.067.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.64	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	66.5	6.9	73.3	73.3	5.0	1.3	3.7	66.6	1.3	3.7	66.6	1.9	1.0											
DC-121/H14	T19-120	519.00	63.068.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.70	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	67.1	6.9	74.0	74.0	5.0	1.3	3.7	67.3	1.3	3.7	67.3	1.9	1.0											
DC-121/H14	T19-120	520.00	63.069.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.77	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	67.7	7.0	74.7	74.7	5.0	1.3	3.7	68.0	1.3	3.7	68.0	1.9	1.0											
DC-121/H14	T19-120	521.00	63.070.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.83	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	68.3	7.1	75.4	75.4	5.0	1.3	3.7	68.7	1.3	3.7	68.7	1.9	1.0											
DC-121/H14	T19-120	522.00	63.071.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.89	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	68.9	7.2	76.1	76.1	5.0	1.3	3.7	69.4	1.3	3.7	69.4	1.9	1.0											
DC-121/H14	T19-120	523.00	63.072.03			Ajuste piezométrica	1	1.524	275	16.00	16									10.95	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	69.4	7.3	76.8	76.8	5.0	1.3	3.7	70.1	1.3	3.7	70.1	1.9	1.0											
DC-121/H14	T19-120	524.00	63.073.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.02	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	70.2	7.4	77.5	77.5	5.0	1.3	3.7	70.8	1.3	3.7	70.8	1.9	1.0											
DC-121/H14	T19-120	525.00	63.074.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.08	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	70.8	7.4	78.3	78.3	5.0	1.3	3.7	71.5	1.3	3.7	71.5	1.9	1.0											
DC-121/H14	T19-120	526.00	63.075.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.14	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	71.4	7.5	79.0	79.0	5.0	1.3	3.7	72.2	1.3	3.7	72.2	1.9	1.0											
DC-121/H14	T19-120	527.00	63.076.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.17	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	71.9	7.6	79.5	79.5	5.0	1.3	3.7	72.8	1.3	3.7	72.8	1.9	1.0											
DC-121/H14	T19-120	528.00	63.077.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.19	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	71.9	7.6	79.5	79.5	5.0	1.3	3.7	72.8	1.3	3.7	72.8	1.9	1.0											
DC-121/H14	T19-120	529.00	63.078.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.20	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	72.1	7.6	79.7	79.7	5.0	1.3	3.7	72.9	1.3	3.7	72.9	1.9	1.0											
DC-121/H14	T19-120	530.00	63.079.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.21	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	72.2	7.6	79.8	79.8	5.0	1.3	3.7	73.0	1.3	3.7	73.0	1.9	1.0											
DC-121/H14	T19-120	531.00	63.080.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.22	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	72.2	7.6	79.9	79.9	5.0	1.3	3.7	73.1	1.3	3.7	73.1	1.9	1.0											
DC-121/H14	T19-120	532.00	63.081.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.22	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	72.3	7.6	79.9	79.9	5.0	1.3	3.7	73.2	1.3	3.7	73.2	1.9	1.0											
DC-121/H14	T19-120	533.00	63.082.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.23	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	72.3	7.6	80.0	80.0	5.0	1.3	3.7	73.3	1.3	3.7	73.3	1.9	1.0											
DC-121/H14	T19-120	534.00	63.083.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.23	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	72.3	7.6	80.0	80.0	5.0	1.3	3.7	73.3	1.3	3.7	73.3	1.9	1.0											
DC-121/H14	T19-120	535.00	63.084.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.24	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	72.4	7.6	79.8	79.8	5.0	1.3	3.7	73.0	1.3	3.7	73.0	1.9	1.0											
DC-121/H14	T19-120	536.00	63.085.03			Ajuste piezométrica	1	1.524	275	16.00	16									11.24	0.33	23-1-1500	0.60	2.70	1.00	3.00																																				

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Arco tipo S	espesor adaptado (mm)	PN (límite valedad (um)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. DN 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concentricado zanja	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granulado o arena b-cama de hormigón (M20)	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e- boronopel (M20) 30 mm. f- M20. g- Suela seleccionada C/95% PN, < 30 mm. e- M20. d-Garbanillo 5/15. f-Suela adecuada precedente excavación (<150mm) c/95% PN. g- Luchero modif.	Exposici. mlt. escalón (n)	% Escavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1- ang (m)	H1-DH+H2 (m)	Long (m)	Excavación tapazonada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cama+riñonera (m3)	Rebello c-ama (m3)	Rebello riñonera(s)m3)	Rebello cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Rebello riñonera suelo seleccionado (m3)	Rebello riñonera grabaciado (m3)	Rebello cama+riñonera (M20(m3)	Rebello cobertura c- Suela seleccionada C/95% PN, < 30 mm	Rebello cobertura. d-Garbanillo 5/15	Rebello cobertura. e- H4/20	Rebello cobertura. f-Suela adecuada precedente excavación (<150mm) c/95% PN	Rebello cobertura. g- Lecho modif (m3)	Excedente de tierra (m3) (compensado a nivel 0%, e-superficie vertical 5%)	Cinta laberios (m3)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-121/H14	H19-120	735.00	63.284.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.23	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.5	6.3	68.8	68.8	5.0	1.3	3.7	62.1	1.3		3.7			62.1	1.9	1.0								
DC-121/H14	H19-120	736.00	63.285.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.23	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.5	6.3	68.8	68.8	5.0	1.3	3.7	62.1	1.3		3.7			62.1	1.9	1.0								
DC-121/H14	H19-120	737.00	63.286.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.22	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.4	6.3	68.7	68.7	5.0	1.3	3.7	62.0	1.3		3.7			62.0	1.9	1.0								
DC-121/H14	H19-120	738.00	63.287.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.22	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.4	6.3	68.7	68.7	5.0	1.3	3.7	62.0	1.3		3.7			62.0	1.9	1.0								
DC-121/H14	H19-120	739.00	63.288.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.22	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.4	6.3	68.7	68.7	5.0	1.3	3.7	61.9	1.3		3.7			61.9	1.9	1.0								
DC-121/H14	H19-120	740.00	63.289.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.21	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.4	6.3	68.6	68.6	5.0	1.3	3.7	61.9	1.3		3.7			61.9	1.9	1.0								
DC-121/H14	H19-120	741.00	63.290.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.21	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.3	6.3	68.6	68.6	5.0	1.3	3.7	61.9	1.3		3.7			61.9	1.9	1.0								
DC-121/H14	H19-120	742.00	63.291.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.21	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.3	6.3	68.6	68.6	5.0	1.3	3.7	61.8	1.3		3.7			61.8	1.9	1.0								
DC-121/H14	H19-120	743.00	63.292.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.20	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.3	6.3	68.5	68.5	5.0	1.3	3.7	61.8	1.3		3.7			61.8	1.9	1.0								
DC-121/H14	H19-120	744.00	63.293.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.20	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.2	6.3	68.5	68.5	5.0	1.3	3.7	61.8	1.3		3.7			61.8	1.9	1.0								
DC-121/H14	H19-120	745.00	63.294.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.20	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.2	6.3	68.5	68.5	5.0	1.3	3.7	61.7	1.3		3.7			61.7	1.9	1.0								
DC-121/H14	H19-120	746.00	63.295.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.19	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.2	6.3	68.4	68.4	5.0	1.3	3.7	61.7	1.3		3.7			61.7	1.9	1.0								
DC-121/H14	H19-120	747.00	63.296.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.19	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.1	6.3	68.4	68.4	5.0	1.3	3.7	61.6	1.3		3.7			61.6	1.9	1.0								
DC-121/H14	H19-120	748.00	63.297.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.19	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.1	6.2	68.3	68.3	5.0	1.3	3.7	61.6	1.3		3.7			61.6	1.9	1.0								
DC-121/H14	H19-120	749.00	63.298.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.18	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.0	6.2	68.3	68.3	5.0	1.3	3.7	61.6	1.3		3.7			61.6	1.9	1.0								
DC-121/H14	H19-120	750.00	63.299.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.18	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.0	6.2	68.3	68.3	5.0	1.3	3.7	61.5	1.3		3.7			61.5	1.9	1.0								
DC-121/H14	H19-120	751.00	63.300.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.18	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.0	6.2	68.2	68.2	5.0	1.3	3.7	61.5	1.3		3.7			61.5	1.9	1.0								
DC-121/H14	H19-120	752.00	63.301.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.17	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	62.0	6.2	68.2	68.2	5.0	1.3	3.7	61.5	1.3		3.7			61.5	1.9	1.0								
DC-121/H14	H19-120	753.00	63.302.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.17	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.9	6.2	68.1	68.1	5.0	1.3	3.7	61.4	1.3		3.7			61.4	1.9	1.0								
DC-121/H14	H19-120	754.00	63.303.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.17	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.9	6.2	68.1	68.1	5.0	1.3	3.7	61.4	1.3		3.7			61.4	1.9	1.0								
DC-121/H14	H19-120	755.00	63.304.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.16	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.9	6.2	68.1	68.1	5.0	1.3	3.7	61.3	1.3		3.7			61.3	1.9	1.0								
DC-121/H14	H19-120	756.00	63.305.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.16	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.8	6.2	68.0	68.0	5.0	1.3	3.7	61.3	1.3		3.7			61.3	1.9	1.0								
DC-121/H14	H19-120	757.00	63.306.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.16	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.8	6.2	68.0	68.0	5.0	1.3	3.7	61.3	1.3		3.7			61.3	1.9	1.0								
DC-121/H14	H19-120	758.00	63.307.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.15	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.8	6.2	68.0	68.0	5.0	1.3	3.7	61.2	1.3		3.7			61.2	1.9	1.0								
DC-121/H14	H19-120	759.00	63.308.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.15	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.7	6.2	67.9	67.9	5.0	1.3	3.7	61.2	1.3		3.7			61.2	1.9	1.0								
DC-121/H14	H19-120	760.00	63.309.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.14	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.7	6.2	67.8	67.8	5.0	1.3	3.7	61.1	1.3		3.7			61.1	1.9	1.0								
DC-121/H14	H19-120	761.00	63.310.03			Ajuste piezométrica	1	1.524	275	16.00	16								10.13	0.33	23-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	b	e	f	100%	0.6	2.0	1.0	61.5	6.2	67.7	67.7	5.0	1.3	3.7	61.0	1.3		3.7			61.0	1.9									

Agrupación	Tamaño	P. K. tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN del (mm)	Acero tipo S	espesor adaptado (mm)	PN (límite valvuleta (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concrecionado zapla	A= separación tubo salud	S ₂ = Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	HI -Cama apoyo (m)	Ang. Apoyo	H2 -Recurvimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	HI -altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rehabilitación c= Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S15. e-borrompió HM-20. f-Microcobertura c= Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S15. f-Suela adecuada procedente excavación (<=150mm) C/6% PN. g- Lecho mod.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HI+ang (m)	HI+DN+H2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciolo (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c= Suela seleccionada C/95% PN, <= 30 mm	Relevo cobertura. d-Garbanillo S15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suela adecuada procedente excavación (<=150mm) C/6% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensando altura 0%, e-spojaniento 5%)	Excedente de tierra (m3) (compensando altura 0%, e-spojaniento 5%)	Cinta laberina (m3)	Manto escollera a=0.5m. ancho=30m. (m3)
DC-12/1/14	T19-120	865.00	63.414.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.49	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	33.0	1.6	34.6	34.6	5.0	1.3	3.7	27.9	1.3		3.7				27.9	1.9	1.0								
DC-12/1/14	T19-120	866.00	63.415.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.47	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	32.9	1.6	34.4	34.4	5.0	1.3	3.7	27.7	1.3		3.7			27.7	1.9	1.0									
DC-12/1/14	T19-120	867.00	63.416.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.66	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	32.7	1.5	34.3	34.3	5.0	1.3	3.7	27.5	1.3		3.7			27.5	1.9	1.0									
DC-12/1/14	T19-120	868.00	63.417.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.64	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	32.6	1.5	34.1	34.1	5.0	1.3	3.7	27.4	1.3		3.7			27.4	1.9	1.0									
DC-12/1/14	T19-120	869.00	63.418.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.62	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	32.5	1.5	34.0	34.0	5.0	1.3	3.7	27.3	1.3		3.7			27.3	1.9	1.0									
DC-12/1/14	T19-120	870.00	63.419.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.61	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	32.4	1.5	33.9	33.9	5.0	1.3	3.7	27.1	1.3		3.7			27.1	1.9	1.0									
DC-12/1/14	T19-120	871.00	63.420.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.59	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	32.3	1.5	33.7	33.7	5.0	1.3	3.7	27.0	1.3		3.7			27.0	1.9	1.0									
DC-12/1/14	T19-120	872.00	63.421.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.58	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	32.2	1.4	33.6	33.6	5.0	1.3	3.7	26.9	1.3		3.7			26.9	1.9	1.0									
DC-12/1/14	T19-120	873.00	63.422.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.56	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	32.1	1.4	33.5	33.5	5.0	1.3	3.7	26.8	1.3		3.7			26.8	1.9	1.0									
DC-12/1/14	T19-120	874.00	63.423.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.55	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	32.0	1.4	33.4	33.4	5.0	1.3	3.7	26.6	1.3		3.7			26.6	1.9	1.0									
DC-12/1/14	T19-120	875.00	63.424.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.53	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	31.9	1.4	33.2	33.2	5.0	1.3	3.7	26.5	1.3		3.7			26.5	1.9	1.0									
DC-12/1/14	T19-120	876.00	63.425.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.52	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	31.7	1.4	33.1	33.1	5.0	1.3	3.7	26.4	1.3		3.7			26.4	1.9	1.0									
DC-12/1/14	T19-120	877.00	63.426.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.50	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	31.6	1.3	33.0	33.0	5.0	1.3	3.7	26.2	1.3		3.7			26.2	1.9	1.0									
DC-12/1/14	T19-120	878.00	63.427.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.49	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	31.5	1.3	32.8	32.8	5.0	1.3	3.7	26.1	1.2		3.7			26.1	1.9	1.0									
DC-12/1/14	T19-120	879.00	63.428.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.47	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	31.4	1.3	32.7	32.7	5.0	1.3	3.7	26.0	1.3		3.7			26.0	1.9	1.0									
DC-12/1/14	T19-120	880.00	63.429.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.45	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	31.3	1.3	32.6	32.6	5.0	1.3	3.7	25.8	1.3		3.7			25.8	1.9	1.0									
DC-12/1/14	T19-120	881.00	63.430.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.44	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	31.2	1.2	32.4	32.4	5.0	1.3	3.7	25.7	1.3		3.7			25.7	1.9	1.0									
DC-12/1/14	T19-120	882.00	63.431.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.42	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	31.1	1.2	32.3	32.3	5.0	1.3	3.7	25.6	1.3		3.7			25.6	1.9	1.0									
DC-12/1/14	T19-120	883.00	63.432.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.42	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	31.0	1.2	32.2	32.2	5.0	1.3	3.7	25.4	1.3		3.7			25.4	1.9	1.0									
DC-12/1/14	T19-120	884.00	63.433.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.39	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	30.9	1.2	32.1	32.1	5.0	1.3	3.7	25.3	1.3		3.7			25.3	1.9	1.0									
DC-12/1/14	T19-120	885.00	63.434.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.38	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	30.8	1.2	31.9	31.9	5.0	1.3	3.7	25.2	1.3		3.7			25.2	1.9	1.0									
DC-12/1/14	T19-120	886.00	63.435.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.36	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	30.6	1.1	31.8	31.8	5.0	1.3	3.7	25.1	1.3		3.7			25.1	1.9	1.0									
DC-12/1/14	T19-120	887.00	63.436.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.36	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	30.5	1.1	31.7	31.7	5.0	1.3	3.7	24.9	1.3		3.7			24.9	1.9	1.0									
DC-12/1/14	T19-120	888.00	63.437.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.33	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	30.4	1.1	31.5	31.5	5.0	1.3	3.7	24.8	1.3		3.7			24.8	1.9	1.0									
DC-12/1/14	T19-120	889.00	63.438.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.31	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	30.3	1.1	31.4	31.4	5.0	1.3	3.7	24.7	1.3		3.7			24.7	1.9	1.0									
DC-12/1/14	T19-120	890.00	63.439.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.30	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.6	2.0	1.0	30.2	1.1	31.3	31.3	5.0	1.3	3.7	24.5	1.3		3.7			24.5	1.9	1.0									
DC-12/1/14	T19-120	891.00	63.440.03			Ajuste piezométrica	1	1.524	275	16.00	16									6.29	0.33	22-1-1500	0.60	2.70	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f																													

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adoptado (mm)	PN (límite valedad (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concrecionado zapala	A= separación tubo salud	S ₂ = Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Gabarrillo S/15. e-borrompió HM-20 Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. e-HM20. d-Gabarrillo S/15. f-Suelo adecuado para excavación (<150mm) c/95% PN. g- Lecho mod.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (m)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñones (m³)	Relevo c/ama (m³)	Relevo riñones(s/m)	Relevo cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relevo riñones suelo seleccionado (m³)	Relevo riñones grabado (m³)	Relevo cama+riñones HM-20(m³)	Relevo cobertura c: Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d-Gabarrillo S/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suelo adecuado para excavación (<150mm) c/95% PN	Relevo cobertura. g- Lecho mod (m³)	Excedente de tierra (m³) (consumo actual 0%, e-superficie 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m. (m³)
DC-12/1/T14	T19-T20	1.123.00	63.672.03				1	1.524	275	9.50	16								3.34	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	12.7	12.7	12.7	5.0	1.3	3.7	6.0	1.3		3.7		6.0	1.9	1.0										
DC-12/1/T14	T19-T20	1.124.00	63.673.03				1	1.524	275	9.50	16								3.35	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	12.8	12.8	12.8	5.0	1.3	3.7	6.1	1.3		3.7		6.1	1.9	1.0										
DC-12/1/T14	T19-T20	1.125.00	63.674.03				1	1.524	275	9.50	16								3.36	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	12.8	12.8	12.8	5.0	1.3	3.7	6.1	1.3		3.7		6.1	1.9	1.0										
DC-12/1/T14	T19-T20	1.126.00	63.675.03				1	1.524	275	9.50	16								3.36	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	12.9	12.9	12.9	5.0	1.3	3.7	6.1	1.3		3.7		6.1	1.9	1.0										
DC-12/1/T14	T19-T20	1.127.00	63.676.03				1	1.524	275	9.50	16								3.38	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	12.9	12.9	12.9	5.0	1.3	3.7	6.2	1.3		3.7		6.2	1.9	1.0										
DC-12/1/T14	T19-T20	1.128.00	63.677.03				1	1.524	275	9.50	16								3.41	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	13.1	13.1	13.1	5.0	1.3	3.7	6.4	1.3		3.7		6.4	1.9	1.0										
DC-12/1/T14	T19-T20	1.129.00	63.678.03				1	1.524	275	9.50	16								3.43	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	13.2	13.2	13.2	5.0	1.3	3.7	6.5	1.3		3.7		6.5	1.9	1.0										
DC-12/1/T14	T19-T20	1.130.00	63.679.03				1	1.524	275	9.50	16								3.45	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	13.3	13.3	13.3	5.0	1.3	3.7	6.6	1.3		3.7		6.6	1.9	1.0										
DC-12/1/T14	T19-T20	1.131.00	63.680.03				1	1.524	275	9.50	16								3.47	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	13.4	13.4	13.4	5.0	1.3	3.7	6.7	1.3		3.7		6.7	1.9	1.0										
DC-12/1/T14	T19-T20	1.132.00	63.681.03				1	1.524	275	9.50	16								3.50	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	13.5	13.5	13.5	5.0	1.3	3.7	6.8	1.3		3.7		6.8	1.9	1.0										
DC-12/1/T14	T19-T20	1.133.00	63.682.03				1	1.524	275	9.50	16								3.52	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	13.6	13.6	13.6	5.0	1.3	3.7	6.9	1.3		3.7		6.9	1.9	1.0										
DC-12/1/T14	T19-T20	1.134.00	63.683.03				1	1.524	275	9.50	16								3.55	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.1	1.3		3.7		7.1	1.9	1.0										
DC-12/1/T14	T19-T20	1.135.00	63.684.03				1	1.524	275	9.50	16								3.58	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.0	14.0	14.0	5.0	1.3	3.7	7.2	1.3		3.7		7.2	1.9	1.0										
DC-12/1/T14	T19-T20	1.136.00	63.685.03				1	1.524	275	9.50	16								3.62	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.4	1.2		3.7		7.4	1.9	1.0										
DC-12/1/T14	T19-T20	1.137.00	63.686.03				1	1.524	275	9.50	16								3.65	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.3	14.3	14.3	5.0	1.3	3.7	7.5	1.3		3.7		7.5	1.9	1.0										
DC-12/1/T14	T19-T20	1.138.00	63.687.03				1	1.524	275	9.50	16								3.68	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.4	14.4	14.4	5.0	1.3	3.7	7.7	1.3		3.7		7.7	1.9	1.0										
DC-12/1/T14	T19-T20	1.139.00	63.688.03				1	1.524	275	9.50	16								3.71	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.6	14.6	14.6	5.0	1.3	3.7	7.9	1.3		3.7		7.9	1.9	1.0										
DC-12/1/T14	T19-T20	1.140.00	63.689.03				1	1.524	275	9.50	16								3.74	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.8	14.8	14.8	5.0	1.3	3.7	8.0	1.3		3.7		8.0	1.9	1.0										
DC-12/1/T14	T19-T20	1.141.00	63.690.03				1	1.524	275	9.50	16								3.77	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.9	14.9	14.9	5.0	1.3	3.7	8.2	1.3		3.7		8.2	1.9	1.0										
DC-12/1/T14	T19-T20	1.142.00	63.691.03				1	1.524	275	9.50	16								3.80	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.1	15.1	15.1	5.0	1.3	3.7	8.3	1.3		3.7		8.3	1.9	1.0										
DC-12/1/T14	T19-T20	1.143.00	63.692.03				1	1.524	275	9.50	16								3.83	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.5	1.3		3.7		8.5	1.9	1.0										
DC-12/1/T14	T19-T20	1.144.00	63.693.03				1	1.524	275	9.50	16								3.86	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.4	15.4	15.4	5.0	1.3	3.7	8.6	1.3		3.7		8.6	1.9	1.0										
DC-12/1/T14	T19-T20	1.145.00	63.694.03				1	1.524	275	9.50	16								3.89	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.5	15.5	15.5	5.0	1.3	3.7	8.8	1.3		3.7		8.8	1.9	1.0										
DC-12/1/T14	T19-T20	1.146.00	63.695.03				1	1.524	275	9.50	16								3.92	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.7	15.7	15.7	5.0	1.3	3.7	9.0	1.3		3.7		9.0	1.9	1.0										
DC-12/1/T14	T19-T20	1.147.00	63.696.03				1	1.524	275	9.50	16								3.95	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.8	15.8	15.8	5.0	1.3	3.7	9.1	1.3		3.7		9.1	1.9	1.0										
DC-12/1/T14	T19-T20	1.148.00	63.697.03				1	1.524	275	9.50	16								3.98	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	16.0	16.0	16.0	5.0	1.3	3.7	9.3	1.3		3.7		9.3	1.9	1.0										
DC-12/1/T14	T19-T20	1.149.00	63.698.03				1	1.524	275	9.50	16								4.00	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	16.2	16.2	16.2	5.0	1.3	3.7	9.4	1.2		3.7		9.4	1.9	1.0										
DC-12/1/T14	T19-T20	1.150.00	63.699.03				1	1.524	275	9.50	16								4.04	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	16.3	16.3	16.3	5.0	1.3	3.7	9.6	1.3		3.7		9.6	1.9	1.0										
DC-12/1/T14	T19-T20	1.151.00	63.700.03				1	1.524	275	9.50	16								4.06	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	16.5	16.5	16.5	5.0	1.3	3.7	9.7	1.3		3.7		9.7	1.9	1.0										
DC-12/1/T14	T19-T20	1.152.00	63.701.03				1	1.524	275	9.50	16								4.09	0.33	21-1-1500	0.60	2.70				0.20	12																																	

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adaptado (mm)	PN (limpieza válvula (mm)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concretoado zapala	A= separación tubo salud	S ₂ = Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rebavaciones a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompió HM-20. f= Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S/15. f-Suela adecuada procedente excavación (<150mm) c/6% PN. g- Lecho mod.	Exposici. (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	HD=HDH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño c-arena (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M 20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera grabaciolo (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c: Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura d-Garbanillo S/15	Releño cobertura e- HM-20	Releño cobertura f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Releño cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (compensación a nivel 0%, e-superficie vertical 5%)	Cinta liberada (m)	Manto escollera e-0.5m. ancho-30m. (m3)
DC-12/1/14	T19-120	1.253.00	63.802.03				1	1.524	275	9.50	16								3.86	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	15.4	15.4	15.4	5.0	1.3	3.7	8.6	1.3		3.7			8.6	1.9	1.0								
DC-12/1/14	T19-120	1.254.00	63.803.03				1	1.524	275	9.50	16								3.82	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.4	1.3		3.7			8.4	1.9	1.0								
DC-12/1/14	T19-120	1.255.00	63.804.03				1	1.524	275	9.50	16								3.78	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	15.0	15.0	15.0	5.0	1.3	3.7	8.2	1.3		3.7			8.2	1.9	1.0								
DC-12/1/14	T19-120	1.256.00	63.805.03				1	1.524	275	9.50	16								3.74	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.8	14.8	14.8	5.0	1.3	3.7	8.0	1.3		3.7			8.0	1.9	1.0								
DC-12/1/14	T19-120	1.257.00	63.806.03				1	1.524	275	9.50	16								3.70	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.6	14.6	14.6	5.0	1.3	3.7	7.8	1.3		3.7			7.8	1.9	1.0								
DC-12/1/14	T19-120	1.258.00	63.807.03				1	1.524	275	9.50	16								3.67	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.4	14.4	14.4	5.0	1.3	3.7	7.6	1.3		3.7			7.6	1.9	1.0								
DC-12/1/14	T19-120	1.259.00	63.808.03				1	1.524	275	9.50	16								3.64	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.2	14.2	14.2	5.0	1.3	3.7	7.5	1.3		3.7			7.5	1.9	1.0								
DC-12/1/14	T19-120	1.260.00	63.809.03				1	1.524	275	9.50	16								3.61	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.4	1.3		3.7			7.4	1.9	1.0								
DC-12/1/14	T19-120	1.261.00	63.810.03				1	1.524	275	9.50	16								3.60	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.3	1.3		3.7			7.3	1.9	1.0								
DC-12/1/14	T19-120	1.262.00	63.811.03				1	1.524	275	9.50	16								3.59	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.0	14.0	14.0	5.0	1.3	3.7	7.2	1.3		3.7			7.2	1.9	1.0								
DC-12/1/14	T19-120	1.263.00	63.812.03				1	1.524	275	9.50	16								3.59	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.0	14.0	14.0	5.0	1.3	3.7	7.2	1.3		3.7			7.2	1.9	1.0								
DC-12/1/14	T19-120	1.264.00	63.813.03				1	1.524	275	9.50	16								3.58	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.9	13.9	13.9	5.0	1.3	3.7	7.2	1.3		3.7			7.2	1.9	1.0								
DC-12/1/14	T19-120	1.265.00	63.814.03				1	1.524	275	9.50	16								3.57	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.9	13.9	13.9	5.0	1.3	3.7	7.1	1.3		3.7			7.1	1.9	1.0								
DC-12/1/14	T19-120	1.266.00	63.815.03				1	1.524	275	9.50	16								3.56	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.1	1.2		3.7			7.1	1.9	1.0								
DC-12/1/14	T19-120	1.267.00	63.816.03				1	1.524	275	9.50	16								3.54	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.0	1.3		3.7			7.0	1.9	1.0								
DC-12/1/14	T19-120	1.268.00	63.817.03				1	1.524	275	9.50	16								3.55	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.0	1.3		3.7			7.0	1.9	1.0								
DC-12/1/14	T19-120	1.269.00	63.818.03				1	1.524	275	9.50	16								3.54	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.7	13.7	13.7	5.0	1.3	3.7	7.0	1.3		3.7			7.0	1.9	1.0								
DC-12/1/14	T19-120	1.270.00	63.819.03				1	1.524	275	9.50	16								3.53	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.7	13.7	13.7	5.0	1.3	3.7	7.0	1.3		3.7			7.0	1.9	1.0								
DC-12/1/14	T19-120	1.271.00	63.820.03				1	1.524	275	9.50	16								3.52	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.6	13.6	13.6	5.0	1.3	3.7	6.9	1.3		3.7			6.9	1.9	1.0								
DC-12/1/14	T19-120	1.272.00	63.821.03				1	1.524	275	9.50	16								3.52	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.6	13.6	13.6	5.0	1.3	3.7	6.9	1.3		3.7			6.9	1.9	1.0								
DC-12/1/14	T19-120	1.273.00	63.822.03				1	1.524	275	9.50	16								3.51	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.6	13.6	13.6	5.0	1.3	3.7	6.8	1.3		3.7			6.8	1.9	1.0								
DC-12/1/14	T19-120	1.274.00	63.823.03				1	1.524	275	9.50	16								3.52	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.6	13.6	13.6	5.0	1.3	3.7	6.8	1.3		3.7			6.8	1.9	1.0								
DC-12/1/14	T19-120	1.275.00	63.824.03				1	1.524	275	9.50	16								3.54	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.7	13.7	13.7	5.0	1.3	3.7	7.0	1.3		3.7			7.0	1.9	1.0								
DC-12/1/14	T19-120	1.276.00	63.825.03				1	1.524	275	9.50	16								3.56	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.1	1.3		3.7			7.1	1.9	1.0								
DC-12/1/14	T19-120	1.277.00	63.826.03				1	1.524	275	9.50	16								3.58	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.9	13.9	13.9	5.0	1.3	3.7	7.2	1.3		3.7			7.2	1.9	1.0								
DC-12/1/14	T19-120	1.278.00	63.827.03				1	1.524	275	9.50	16								3.59	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.0	14.0	14.0	5.0	1.3	3.7	7.3	1.3		3.7			7.3	1.9	1.0								
DC-12/1/14	T19-120	1.279.00	63.828.03				1	1.524	275	9.50	16								3.61	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.4	1.2		3.7			7.4	1.9	1.0								
DC-12/1/14	T19-120	1.280.00	63.829.03				1	1.524	275	9.50	16								3.62	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.2	14.2	14.2	5.0	1.3	3.7	7.5	1.3		3.7			7.5	1.9	1.0								
DC-12/1/14	T19-120	1.281.00	63.830.03				1	1.524	275	9.50	16								3.65	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.3	14.3	14.3	5.0	1.3	3.7	7																

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adaptado (mm)	PN (limpieza válvula (mm)	Nº verticos por tubería	DN vertical (mm)	Nº válvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concrecionado zapala	A= separación tubo salud	S ₂ = Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rebavaciones a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompió HM-20. f= Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S/15. f-Suela adecuada procedente excavación (<150mm) C/65 % PN. g- Lecho modif.	Exposic (m). escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	HD=HDH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño c-arena (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera grabaciado (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura d-Garbanillo S/15	Releño cobertura e- HM-20	Releño cobertura f-Suelo adecuado procedente excavación (<150mm) C/65 % PN	Releño cobertura g- Lecho modif (m3)	Excedente de tierra (m3) (consumo a nivel 0%, e-spojaniento 5%)	Cinta liberata (m)	Manto escollera a 0.5m. ancho-30m (m3)
DC-12/1/T14	T19-T20	1.381.00	63.930.03				1	1.524	275	9.50	16								3.75	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.8	14.8	14.8	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.382.00	63.931.03				1	1.524	275	9.50	16								3.75	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.8	14.8	14.8	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.383.00	63.932.03				1	1.524	275	9.50	16								3.75	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.8	14.8	14.8	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.384.00	63.933.03				1	1.524	275	9.50	16								3.75	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.8	14.8	14.8	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.385.00	63.934.03				1	1.524	275	9.50	16								3.75	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.8	14.8	14.8	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.386.00	63.935.03				1	1.524	275	9.50	16								3.75	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.8	14.8	14.8	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.387.00	63.936.03				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.8	14.8	14.8	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.387.35	63.936.38				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	0.4	5.2	5.2	5.2	1.7	0.5	1.3	2.8	0.5		1.3			2.8	0.7	0.4									
DC-12/1/T14	T19-T20	1.388.00	63.937.03				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	0.6	9.6	9.6	9.6	3.2	0.9	2.4	5.3	0.9		5.3			5.3	1.2	0.6									
DC-12/1/T14	T19-T20	1.389.00	63.938.03				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.9	14.9	14.9	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.390.00	63.939.03				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.9	14.9	14.9	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.391.00	63.940.03				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.9	14.9	14.9	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.392.00	63.941.03				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.9	14.9	14.9	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.393.00	63.942.03				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.9	14.9	14.9	5.0	1.3	3.7	8.1	1.2		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.394.00	63.943.03				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.9	14.9	14.9	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.395.00	63.944.03				1	1.524	275	9.50	16								3.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.9	14.9	14.9	5.0	1.3	3.7	8.1	1.3		3.7			8.1	1.9	1.0									
DC-12/1/T14	T19-T20	1.396.00	63.945.03				1	1.524	275	9.50	16								3.78	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	14.9	14.9	14.9	5.0	1.3	3.7	8.2	1.3		3.7			8.2	1.9	1.0									
DC-12/1/T14	T19-T20	1.397.00	63.946.03				1	1.524	275	9.50	16								3.79	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.0	15.0	15.0	5.0	1.3	3.7	8.3	1.3		3.7			8.3	1.9	1.0									
DC-12/1/T14	T19-T20	1.398.00	63.947.03				1	1.524	275	9.50	16								3.80	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.1	15.1	15.1	5.0	1.3	3.7	8.4	1.3		3.7			8.4	1.9	1.0									
DC-12/1/T14	T19-T20	1.399.00	63.948.03				1	1.524	275	9.50	16								3.82	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.4	1.3		3.7			8.4	1.9	1.0									
DC-12/1/T14	T19-T20	1.400.00	63.949.03				1	1.524	275	9.50	16								3.83	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.3	15.3	15.3	5.0	1.3	3.7	8.5	1.3		3.7			8.5	1.9	1.0									
DC-12/1/T14	T19-T20	1.401.00	63.950.03				1	1.524	275	9.50	16								3.84	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.3	15.3	15.3	5.0	1.3	3.7	8.5	1.3		3.7			8.5	1.9	1.0									
DC-12/1/T14	T19-T20	1.402.00	63.951.03				1	1.524	275	9.50	16								3.83	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.5	1.3		3.7			8.5	1.9	1.0									
DC-12/1/T14	T19-T20	1.403.00	63.952.03				1	1.524	275	9.50	16								3.83	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.5	1.3		3.7			8.5	1.9	1.0									
DC-12/1/T14	T19-T20	1.404.00	63.953.03				1	1.524	275	9.50	16								3.82	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.5	1.3		3.7			8.5	1.9	1.0									
DC-12/1/T14	T19-T20	1.405.00	63.954.03				1	1.524	275	9.50	16								3.82	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.5	1.3		3.7			8.5	1.9	1.0									
DC-12/1/T14	T19-T20	1.406.00	63.955.03				1	1.524	275	9.50	16								3.82	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.4	1.2		3.7			8.4	1.9	1.0									
DC-12/1/T14	T19-T20	1.407.00	63.956.03				1	1.524	275	9.50	16								3.82	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.2	1.3		3.7			8.2	1.9	1.0									
DC-12/1/T14	T19-T20	1.408.00	63.957.03				1	1.524	275	9.50	16								3.82	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	15.2	15.2	15.2	5.0	1.3	3.7	8.5	1.3		3.7			8.5	1.9	1.0									
DC-12/1/T14	T19-T20	1.409.00	63.958.03				1	1.524	275																																																				

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adaptado (mm)	PN (limpieza válvula (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº válvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concretoado zapala	A= separación tubo salud	S ₂ = Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15, <borrompió (M4.20) 30 mm. e- M4.20. f- Suela seleccionada C/95% PN, < 30 mm. g- M4.20. d-Garbanillo S/15, f- Suela adecuada para excavación (<150mm) C/95 % PN. g- Luchero modif.	Exposic (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (m)	H1=DNH2 (m)	Long (m)	Excavación tapasolada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cama+riñones (m3)	Rebello c arena (m3)	Rebello riñones (m3)	Rebello cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Rebello riñones s/ suelo seleccionado (m3)	Rebello riñones grabaciado (m3)	Rebello cama+riñones (M4.20(m3)	Rebello cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Rebello cobertura. d-Garbanillo S/15	Rebello cobertura. e- H4.20	Rebello cobertura. f- Suelo adecuado e excavación (<150mm) C/95 % PN	Rebello cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (consumo a nivel 0%, e consumo tierra 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho 30m. (m3)
DC-12/1/T14	T19-T20	1439.00	64.188.03				1	1.524	275	950	16								4.47	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	32.0	32.0	32.0	7.6	1.5	6.1	22.6	1.5		6.1		22.6	1.8	1.0										
DC-12/1/T14	T19-T20	1440.00	64.189.03				1	1.524	275	950	16								4.49	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	32.2	32.2	32.2	7.6	1.5	6.1	22.8	1.5		6.1		22.8	1.8	1.0										
DC-12/1/T14	T19-T20	1441.00	64.190.03				1	1.524	275	950	16								4.50	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	32.4	32.4	32.4	7.6	1.5	6.1	23.0	1.5		6.1		23.0	1.8	1.0										
DC-12/1/T14	T19-T20	1442.00	64.191.03				1	1.524	275	950	16								4.52	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	32.6	32.6	32.6	7.6	1.5	6.1	23.2	1.5		6.1		23.2	1.8	1.0										
DC-12/1/T14	T19-T20	1443.00	64.192.03				1	1.524	275	950	16								4.53	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	32.7	32.7	32.7	7.6	1.5	6.1	23.3	1.5		6.1		23.3	1.8	1.0										
DC-12/1/T14	T19-T20	1444.00	64.193.03				1	1.524	275	950	16								4.54	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	32.8	32.8	32.8	7.6	1.5	6.1	23.4	1.5		6.1		23.4	1.8	1.0										
DC-12/1/T14	T19-T20	1445.00	64.194.03				1	1.524	275	950	16								4.55	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	33.0	33.0	33.0	7.6	1.5	6.1	23.6	1.5		6.1		23.6	1.8	1.0										
DC-12/1/T14	T19-T20	1446.00	64.195.03				1	1.524	275	950	16								4.56	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	33.1	33.1	33.1	7.6	1.5	6.1	23.7	1.5		6.1		23.7	1.8	1.0										
DC-12/1/T14	T19-T20	1447.00	64.196.03				1	1.524	275	950	16								4.57	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	33.2	33.2	33.2	7.6	1.5	6.1	23.8	1.5		6.1		23.8	1.8	1.0										
DC-12/1/T14	T19-T20	1448.00	64.197.03				1	1.524	275	950	16								4.52	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	32.7	32.7	32.7	7.6	1.5	6.1	23.3	1.5		6.1		23.3	1.8	1.0										
DC-12/1/T14	T19-T20	1449.00	64.198.03				1	1.524	275	950	16								4.45	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	31.8	31.8	31.8	7.6	1.5	6.1	22.4	1.5		6.1		22.4	1.8	1.0										
DC-12/1/T14	T19-T20	1450.00	64.199.03				1	1.524	275	950	16								4.44	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	31.7	31.7	31.7	7.6	1.5	6.1	22.3	1.5		6.1		22.3	1.8	1.0										
DC-12/1/T14	T19-T20	1451.00	64.200.03				1	1.524	275	950	16								4.39	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	31.2	31.2	31.2	7.6	1.5	6.1	21.8	1.5		6.1		21.8	1.8	1.0										
DC-12/1/T14	T19-T20	1452.00	64.201.03				1	1.524	275	950	16								4.35	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	30.6	30.6	30.6	7.6	1.5	6.1	21.2	1.5		6.1		21.2	1.8	1.0										
DC-12/1/T14	T19-T20	1453.00	64.202.03				1	1.524	275	950	16								4.30	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	30.1	30.1	30.1	7.6	1.5	6.1	20.7	1.5		6.1		20.7	1.8	1.0										
DC-12/1/T14	T19-T20	1454.00	64.203.03				1	1.524	275	950	16								4.25	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	29.5	29.5	29.5	7.6	1.5	6.1	20.1	1.5		6.1		20.1	1.8	1.0										
DC-12/1/T14	T19-T20	1455.00	64.204.03				1	1.524	275	950	16								4.20	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	29.0	29.0	29.0	7.6	1.5	6.1	19.6	1.5		6.1		19.6	1.8	1.0										
DC-12/1/T14	T19-T20	1456.00	64.205.03				1	1.524	275	950	16								4.15	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	28.4	28.4	28.4	7.6	1.5	6.1	19.0	1.5		6.1		19.0	1.8	1.0										
DC-12/1/T14	T19-T20	1457.00	64.206.03				1	1.524	275	950	16								4.10	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	27.9	27.9	27.9	7.6	1.5	6.1	18.5	1.5		6.1		18.5	1.8	1.0										
DC-12/1/T14	T19-T20	1458.00	64.207.03				1	1.524	275	950	16								4.05	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	27.4	27.4	27.4	7.6	1.5	6.1	18.0	1.5		6.1		18.0	1.8	1.0										
DC-12/1/T14	T19-T20	1459.00	64.208.03				1	1.524	275	950	16								4.01	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	26.9	26.9	26.9	7.6	1.5	6.1	17.5	1.5		6.1		17.5	1.8	1.0										
DC-12/1/T14	T19-T20	1460.00	64.209.03				1	1.524	275	950	16								3.96	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	26.4	26.4	26.4	7.6	1.5	6.1	17.0	1.5		6.1		17.0	1.8	1.0										
DC-12/1/T14	T19-T20	1461.00	64.210.03				1	1.524	275	950	16								3.91	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	25.8	25.8	25.8	7.6	1.5	6.1	16.4	1.5		6.1		16.4	1.8	1.0										
DC-12/1/T14	T19-T20	1462.00	64.211.03				1	1.524	275	950	16								3.90	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	25.8	25.8	25.8	7.6	1.5	6.1	16.4	1.5		6.1		16.4	1.8	1.0										
DC-12/1/T14	T19-T20	1463.00	64.212.03				1	1.524	275	950	16								3.94	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	26.2	26.2	26.2	7.6	1.5	6.1	16.8	1.5		6.1		16.8	1.8	1.0										
DC-12/1/T14	T19-T20	1464.00	64.213.03				1	1.524	275	950	16								3.97	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	26.4	26.4	26.4	7.6	1.5	6.1	17.0	1.5		6.1		17.0	1.8	1.0										
DC-12/1/T14	T19-T20	1465.00	64.214.03				1	1.524	275	950	16								3.98	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	26.6	26.6	26.6	7.6	1.5	6.1	17.2	1.5		6.1		17.2	1.8	1.0										
DC-12/1/T14	T19-T20	1466.00	64.215.03				1	1.524	275	950	16								3.99	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	26.7	26.7	26.7	7.6	1.5	6.1	17.3	1.5		6.1		17.3	1.8	1.0										
DC-12/1/T14	T19-T20	1467.00	64.216.03				1	1.524	275	950	16								4.00	1.00	21-1-1500	0.60	2.70				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	26.8	26.8	26.8	7.6	1.5	6.1	17.4	1.5		6.1		17.4	1.8	1.0										
DC-12/1/T14	T19-T20	1468.00	64.217.03				1	1.524	275	950	16								4.02	1.00	21-1-1500	0.60	2.7																																						

Agregación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adoptado (mm)	PN (límite valedad (um)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concrecionado zapala	A= separación tubo salud	S ₂ = Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M40)	Relación densidad c= Suelo seleccionado C/95% PN, < 30 mm. d-Gabarrillo S15, < bompom (M40)	Relación densidad c= Suelo seleccionado C/95% PN, < 30 mm. e- M40. d-Gabarrillo S15, < Suelo adecuado procedente excavación (<150mm) c/95% PN, g= Lecho mod.	Exposic (m, escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M40(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera grabaciado (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c= Suelo seleccionado C/95% PN, < 30 mm	Relleno cobertura d-Gabarrillo S15	Relleno cobertura c= HM20	Relleno cobertura f= Suelo adecuado excavación (<150mm) c/95% PN	Relleno cobertura g= Lecho mod (m3)	Excedente de tierra (m3) (consumo actual 0%, espolvoreo 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-12/1/T14	T19-120	1899.00	64.447.03				1	1.524	275	950	16								3.53	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.7	13.7	13.7	5.0	1.3	3.7	6.9	1.3		3.7		4.9	1.9	1.0										
DC-12/1/T14	T19-120	1899.00	64.448.03				1	1.524	275	950	16								3.53	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.7	13.7	13.7	5.0	1.3	3.7	7.0	1.3		3.7		7.0	1.9	1.0										
DC-12/1/T14	T19-120	1900.00	64.449.03				1	1.524	275	950	16								3.54	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.7	13.7	13.7	5.0	1.3	3.7	7.0	1.3		3.7		7.0	1.9	1.0										
DC-12/1/T14	T19-120	1901.00	64.450.03				1	1.524	275	950	16								3.54	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.7	13.7	13.7	5.0	1.3	3.7	7.0	1.3		3.7		7.0	1.9	1.0										
DC-12/1/T14	T19-120	1902.00	64.451.03				1	1.524	275	950	16								3.55	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.0	1.3		3.7		7.0	1.9	1.0										
DC-12/1/T14	T19-120	1903.00	64.452.03				1	1.524	275	950	16								3.55	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.1	1.3		3.7		7.1	1.9	1.0										
DC-12/1/T14	T19-120	1904.00	64.453.03				1	1.524	275	950	16								3.55	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.1	1.3		3.7		7.1	1.9	1.0										
DC-12/1/T14	T19-120	1905.00	64.454.03				1	1.524	275	950	16								3.56	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.1	1.3		3.7		7.1	1.9	1.0										
DC-12/1/T14	T19-120	1906.00	64.455.03				1	1.524	275	950	16								3.56	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.8	13.8	13.8	5.0	1.3	3.7	7.1	1.3		3.7		7.1	1.9	1.0										
DC-12/1/T14	T19-120	1907.00	64.456.03				1	1.524	275	950	16								3.56	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.9	13.9	13.9	5.0	1.3	3.7	7.1	1.3		3.7		7.1	1.9	1.0										
DC-12/1/T14	T19-120	1908.00	64.457.03				1	1.524	275	950	16								3.57	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.9	13.9	13.9	5.0	1.3	3.7	7.1	1.3		3.7		7.1	1.9	1.0										
DC-12/1/T14	T19-120	1909.00	64.458.03				1	1.524	275	950	16								3.57	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.9	13.9	13.9	5.0	1.3	3.7	7.2	1.3		3.7		7.2	1.9	1.0										
DC-12/1/T14	T19-120	1910.00	64.459.03				1	1.524	275	950	16								3.58	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.9	13.9	13.9	5.0	1.3	3.7	7.2	1.3		3.7		7.2	1.9	1.0										
DC-12/1/T14	T19-120	1911.00	64.460.03				1	1.524	275	950	16								3.58	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	13.9	13.9	13.9	5.0	1.3	3.7	7.2	1.3		3.7		7.2	1.9	1.0										
DC-12/1/T14	T19-120	1912.00	64.461.03				1	1.524	275	950	16								3.58	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.0	14.0	14.0	5.0	1.3	3.7	7.2	1.3		3.7		7.2	1.9	1.0										
DC-12/1/T14	T19-120	1913.00	64.462.03				1	1.524	275	950	16								3.59	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.0	14.0	14.0	5.0	1.3	3.7	7.2	1.3		3.7		7.2	1.9	1.0										
DC-12/1/T14	T19-120	1914.00	64.463.03				1	1.524	275	950	16								3.59	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.0	14.0	14.0	5.0	1.3	3.7	7.3	1.3		3.7		7.3	1.9	1.0										
DC-12/1/T14	T19-120	1914.94	64.463.97				1	1.524	275	950	16								3.60	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	0.9	13.2	13.2	13.2	4.7	1.2	3.4	6.9	1.2		3.4		6.9	1.7	0.9										
DC-12/1/T14	T19-120	1915.00	64.464.03				1	1.524	275	950	16								3.60	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.4	1.3		3.7		7.4	1.9	1.0										
DC-12/1/T14	T19-120	1916.00	64.465.03				1	1.524	275	950	16								3.60	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.0	14.0	14.0	5.0	1.3	3.7	7.3	1.3		3.7		7.3	1.9	1.0										
DC-12/1/T14	T19-120	1917.00	64.466.03				1	1.524	275	950	16								3.60	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.3	1.3		3.7		7.3	1.9	1.0										
DC-12/1/T14	T19-120	1918.00	64.467.03				1	1.524	275	950	16								3.61	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.3	1.3		3.7		7.3	1.9	1.0										
DC-12/1/T14	T19-120	1919.00	64.468.03				1	1.524	275	950	16								3.61	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.4	1.3		3.7		7.4	1.9	1.0										
DC-12/1/T14	T19-120	1920.00	64.469.03				1	1.524	275	950	16								3.61	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.4	1.3		3.7		7.4	1.9	1.0										
DC-12/1/T14	T19-120	1921.00	64.470.03				1	1.524	275	950	16								3.61	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.4	1.3		3.7		7.4	1.9	1.0										
DC-12/1/T14	T19-120	1922.00	64.471.03				1	1.524	275	950	16								3.62	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.4	1.3		3.7		7.4	1.9	1.0										
DC-12/1/T14	T19-120	1923.00	64.472.03				1	1.524	275	950	16								3.62	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.1	14.1	14.1	5.0	1.3	3.7	7.4	1.3		3.7		7.4	1.9	1.0										
DC-12/1/T14	T19-120	1924.00	64.473.03				1	1.524	275	950	16								3.62	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.2	14.2	14.2	5.0	1.3	3.7	7.5	1.3		3.7		7.5	1.9	1.0										
DC-12/1/T14	T19-120	1925.00	64.474.03				1	1.524	275	950	16								3.64	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	14.2	14.2	14.2	5.0	1.3	3.7	7.5	1.3		3.7		7.5	1.9	1.0										
DC-12/1/T14	T19-120	1926.00	64.475.03				1	1.524	275	950	16								3																																											

Agrupación	Tamaño	P. K. tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adaptado (mm)	PN (límite valedad (um)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre. Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concrecionado zapala	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granulado o arena b-cama de hormigón HM-20	Rebavaciones a-c: Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15. e-borromp HM-20. f-Huella cobertura a-c: Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S/15. f-Suela adecuada procedente excavación (<150mm) C/65 % PN. g- Lecho mod.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	HI=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñones (m3)	Releño c-ama (m3)	Releño riñones(s/m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Releño riñones+ suelo seleccionado (m3)	Releño riñones granbarrillo (m3)	Releño cama+riñones HM-20(m3)	Releño cobertura c: Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura d-Gabarrillo S/15	Releño cobertura e- HM-20	Releño cobertura f-Suelo adecuado procedente excavación (<150mm) C/65 % PN	Releño cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (consumo a sualid 0%, e-spojaniento 5%)	Cinta liberata (m)	Manto escollera e-0.5m. ancho-30m. (m3)
DC-12/1/14	TI9-120	2.027.00	64.576.03				1	1.524	275	950	16								4.34	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	18.0	18.0	18.0	5.0	1.3	3.7	11.2	1.3						11.2	1.9	1.0							
DC-12/1/14	TI9-120	2.027.68	64.576.70				1	1.524	275	950	16								4.33	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	0.7	12.1	12.1	12.1	3.4	0.9	2.5	7.6	0.9						7.6	1.3	0.7							
DC-12/1/14	TI9-120	2.028.00	64.577.03				1	1.524	275	950	16								4.32	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	0.3	5.8	5.8	5.8	1.6	0.4	1.2	3.6	0.4						3.6	0.6	0.3							
DC-12/1/14	TI9-120	2.029.00	64.578.03				1	1.524	275	950	16								4.32	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.9	17.9	17.9	5.0	1.3	3.7	11.2	1.3						11.2	1.9	1.0							
DC-12/1/14	TI9-120	2.030.00	64.579.03				1	1.524	275	950	16								4.31	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.8	17.8	17.8	5.0	1.3	3.7	11.1	1.3						11.1	1.9	1.0							
DC-12/1/14	TI9-120	2.031.00	64.580.03				1	1.524	275	950	16								4.30	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.8	17.8	17.8	5.0	1.3	3.7	11.0	1.3						11.0	1.9	1.0							
DC-12/1/14	TI9-120	2.032.00	64.581.03				1	1.524	275	950	16								4.29	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.7	17.7	17.7	5.0	1.3	3.7	11.0	1.3						11.0	1.9	1.0							
DC-12/1/14	TI9-120	2.033.00	64.582.03				1	1.524	275	950	16								4.27	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.6	17.6	17.6	5.0	1.3	3.7	10.9	1.3						10.9	1.9	1.0							
DC-12/1/14	TI9-120	2.034.00	64.583.03				1	1.524	275	950	16								4.26	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.5	17.5	17.5	5.0	1.3	3.7	10.8	1.3						10.8	1.9	1.0							
DC-12/1/14	TI9-120	2.035.00	64.584.03				1	1.524	275	950	16								4.24	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.4	17.4	17.4	5.0	1.3	3.7	10.7	1.3						10.7	1.9	1.0							
DC-12/1/14	TI9-120	2.036.00	64.585.03				1	1.524	275	950	16								4.22	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.3	17.3	17.3	5.0	1.3	3.7	10.6	1.3						10.6	1.9	1.0							
DC-12/1/14	TI9-120	2.037.00	64.586.03				1	1.524	275	950	16								4.20	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.2	17.2	17.2	5.0	1.3	3.7	10.5	1.3						10.5	1.9	1.0							
DC-12/1/14	TI9-120	2.038.00	64.587.03				1	1.524	275	950	16								4.18	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.1	17.1	17.1	5.0	1.3	3.7	10.4	1.3						10.4	1.9	1.0							
DC-12/1/14	TI9-120	2.039.00	64.588.03				1	1.524	275	950	16								4.16	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	17.0	17.0	17.0	5.0	1.3	3.7	10.3	1.2						10.3	1.9	1.0							
DC-12/1/14	TI9-120	2.040.00	64.589.03				1	1.524	275	950	16								4.14	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.9	16.9	16.9	5.0	1.3	3.7	10.1	1.3						10.1	1.9	1.0							
DC-12/1/14	TI9-120	2.041.00	64.590.03				1	1.524	275	950	16								4.12	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.8	16.8	16.8	5.0	1.3	3.7	10.0	1.3						10.0	1.9	1.0							
DC-12/1/14	TI9-120	2.042.00	64.591.03				1	1.524	275	950	16								4.10	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.7	16.7	16.7	5.0	1.3	3.7	9.9	1.3						9.9	1.9	1.0							
DC-12/1/14	TI9-120	2.043.00	64.592.03				1	1.524	275	950	16								4.10	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.7	16.7	16.7	5.0	1.3	3.7	9.9	1.3						9.9	1.9	1.0							
DC-12/1/14	TI9-120	2.044.00	64.593.03				1	1.524	275	950	16								4.10	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.7	16.7	16.7	5.0	1.3	3.7	9.7	1.2						9.7	1.9	1.0							
DC-12/1/14	TI9-120	2.045.00	64.594.03				1	1.524	275	950	16								4.11	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.7	16.7	16.7	5.0	1.3	3.7	10.0	1.3						10.0	1.9	1.0							
DC-12/1/14	TI9-120	2.046.00	64.595.03				1	1.524	275	950	16								4.11	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.7	16.7	16.7	5.0	1.3	3.7	10.0	1.3						10.0	1.9	1.0							
DC-12/1/14	TI9-120	2.047.00	64.596.03				1	1.524	275	950	16								4.11	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.7	16.7	16.7	5.0	1.3	3.7	10.0	1.3						10.0	1.9	1.0							
DC-12/1/14	TI9-120	2.048.00	64.597.03				1	1.524	275	950	16								4.12	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.8	16.8	16.8	5.0	1.3	3.7	10.0	1.3						10.0	1.9	1.0							
DC-12/1/14	TI9-120	2.049.00	64.598.03				1	1.524	275	950	16								4.12	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.8	16.8	16.8	5.0	1.3	3.7	10.1	1.3						10.1	1.9	1.0							
DC-12/1/14	TI9-120	2.050.00	64.599.03				1	1.524	275	950	16								4.12	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.8	16.8	16.8	5.0	1.3	3.7	10.1	1.3						10.1	1.9	1.0							
DC-12/1/14	TI9-120	2.051.00	64.600.03				1	1.524	275	950	16								4.13	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.8	16.8	16.8	5.0	1.3	3.7	10.1	1.3						10.1	1.9	1.0							
DC-12/1/14	TI9-120	2.052.00	64.601.03				1	1.524	275	950	16								4.13	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.8	16.8	16.8	5.0	1.3	3.7	10.1	1.2						10.1	1.9	1.0							
DC-12/1/14	TI9-120	2.053.00	64.602.03				1	1.524	275	950	16								4.12	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.9	16.9	16.9	5.0	1.3	3.7	10.1	1.3						10.1	1.9	1.0							
DC-12/1/14	TI9-120	2.054.00	64.603.03				1	1.524	275	950	16								4.14	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	16.9	16.9	16.9	5.0	1.3	3																	

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adaptado (mm)	PN (límite valvula (dm)	Nº verticos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desague	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concrecionado zapaja	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Relaciones: a-c= Suelo seleccionado C/95% PN, < 30 mm. d-Gabarrón S/15, <borrompi (M4.20) Relación cobertura a-c= Suelo seleccionado C/95% PN, < 30 mm. e- M4.20. d-Gabarrón S/15, < Suelo adecuado para excavación (<150mm) c/95% PN. g- Lecho mod.	Exposici (m, escalón (n))	% Escavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (m)	DN-H4/H2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Releño cama+riñonera (m3)	Releño c arena (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera grabaciolo (m3)	Releño cama+riñonera (M4.20(m3)	Releño cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura. d-Gabarrón S/15	Releño cobertura. e- H4.20	Releño cobertura. f-Suelo adecuado excavación (<150mm) c/95% PN	Releño cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumo a nivel 0%, e+apojamiento 5%)	Cinta liberata (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-12/1/T14	T19-120	2155.00	64.704.03				1	1.524	275	9.50	16								4.64	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	19.7	19.7	19.7	5.0	1.3	3.7	13.0	1.3		3.7				13.0	1.9	1.0							
DC-12/1/T14	T19-120	2156.00	64.705.03				1	1.524	275	9.50	16								4.65	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	19.7	19.7	19.7	5.0	1.3	3.7	13.0	1.3		3.7			13.0	1.9	1.0								
DC-12/1/T14	T19-120	2157.00	64.706.03				1	1.524	275	9.50	16								4.65	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	19.8	19.8	19.8	5.0	1.3	3.7	13.0	1.3		3.7			13.0	1.9	1.0								
DC-12/1/T14	T19-120	2158.00	64.707.03				1	1.524	275	9.50	16								4.66	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	19.8	19.8	19.8	5.0	1.3	3.7	13.1	1.3		3.7			13.1	1.9	1.0								
DC-12/1/T14	T19-120	2159.00	64.708.03				1	1.524	275	9.50	16								4.67	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	19.9	19.9	19.9	5.0	1.3	3.7	13.1	1.3		3.7			13.1	1.9	1.0								
DC-12/1/T14	T19-120	2160.00	64.709.03				1	1.524	275	9.50	16								4.67	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	19.9	19.9	19.9	5.0	1.3	3.7	13.2	1.3		3.7			13.2	1.9	1.0								
DC-12/1/T14	T19-120	2161.00	64.710.03				1	1.524	275	9.50	16								4.68	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	19.9	19.9	19.9	5.0	1.3	3.7	13.2	1.3		3.7			13.2	1.9	1.0								
DC-12/1/T14	T19-120	2162.00	64.711.03				1	1.524	275	9.50	16								4.69	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.0	20.0	20.0	5.0	1.3	3.7	13.3	1.3		3.7			13.3	1.9	1.0								
DC-12/1/T14	T19-120	2163.00	64.712.03				1	1.524	275	9.50	16								4.70	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.0	20.0	20.0	5.0	1.3	3.7	13.3	1.3		3.7			13.3	1.9	1.0								
DC-12/1/T14	T19-120	2164.00	64.713.03				1	1.524	275	9.50	16								4.70	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.1	20.1	20.1	5.0	1.3	3.7	13.3	1.3		3.7			13.3	1.9	1.0								
DC-12/1/T14	T19-120	2165.00	64.714.03				1	1.524	275	9.50	16								4.71	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.1	20.1	20.1	5.0	1.3	3.7	13.4	1.3		3.7			13.4	1.9	1.0								
DC-12/1/T14	T19-120	2166.00	64.715.03				1	1.524	275	9.50	16								4.72	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.2	20.2	20.2	5.0	1.3	3.7	13.4	1.3		3.7			13.4	1.9	1.0								
DC-12/1/T14	T19-120	2167.00	64.716.03				1	1.524	275	9.50	16								4.77	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.5	20.5	20.5	5.0	1.3	3.7	13.8	1.3		3.7			13.8	1.9	1.0								
DC-12/1/T14	T19-120	2168.00	64.717.03				1	1.524	275	9.50	16								4.81	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.7	20.7	20.7	5.0	1.3	3.7	14.0	1.2		3.7			14.0	1.9	1.0								
DC-12/1/T14	T19-120	2169.00	64.718.03				1	1.524	275	9.50	16								4.75	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.3	20.3	20.3	5.0	1.3	3.7	13.6	1.3		3.7			13.6	1.9	1.0								
DC-12/1/T14	T19-120	2170.00	64.719.03				1	1.524	275	9.50	16								4.69	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.0	20.0	20.0	5.0	1.3	3.7	13.3	1.3		3.7			13.3	1.9	1.0								
DC-12/1/T14	T19-120	2171.00	64.720.03				1	1.524	275	9.50	16								4.64	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	19.7	19.7	19.7	5.0	1.3	3.7	13.0	1.3		3.7			13.0	1.9	1.0								
DC-12/1/T14	T19-120	2171.98	64.721.00				1	1.524	275	9.50	16								4.56	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	18.8	18.8	18.8	4.8	1.3	3.6	12.2	1.3		3.6			12.2	1.8	1.0								
DC-12/1/T14	T19-120	2172.00	64.721.03				1	1.524	275	9.50	16								4.57	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	18.8	18.8	18.8	4.8	1.3	3.6	12.2	1.3		3.6			12.2	1.8	1.0								
DC-12/1/T14	T19-120	2173.00	64.722.03				1	1.524	275	9.50	16								4.76	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.4	20.4	20.4	5.0	1.3	3.7	13.6	1.3		3.7			13.6	1.9	1.0								
DC-12/1/T14	T19-120	2174.00	64.723.03				1	1.524	275	9.50	16								4.77	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.5	20.5	20.5	5.0	1.3	3.7	13.7	1.3		3.7			13.7	1.9	1.0								
DC-12/1/T14	T19-120	2175.00	64.724.03				1	1.524	275	9.50	16								4.79	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.6	20.6	20.6	5.0	1.3	3.7	13.8	1.3		3.7			13.8	1.9	1.0								
DC-12/1/T14	T19-120	2176.00	64.725.03				1	1.524	275	9.50	16								4.80	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.7	20.7	20.7	5.0	1.3	3.7	13.9	1.3		3.7			13.9	1.9	1.0								
DC-12/1/T14	T19-120	2177.00	64.726.03				1	1.524	275	9.50	16								4.82	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.7	20.7	20.7	5.0	1.3	3.7	14.0	1.3		3.7			14.0	1.9	1.0								
DC-12/1/T14	T19-120	2178.00	64.727.03				1	1.524	275	9.50	16								4.83	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	20.8	20.8	20.8	5.0	1.3	3.7	14.1	1.3		3.7			14.1	1.9	1.0								
DC-12/1/T14	T19-120	2178.17	64.727.20				1	1.524	275	9.50	16								4.84	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	0.2	3.6	3.6	3.6	0.9	0.2	0.6	2.4	0.2		0.6			2.4	0.3	0.2								
DC-12/1/T14	T19-120	2179.00	64.728.03				1	1.524	275	9.50	16								4.85	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	0.8	17.3	17.3	17.3	4.1	1.1	3.0	11.8	1.1		11.8			11.8	1.5	0.8								
DC-12/1/T14	T19-120	2180.00	64.729.03				1	1.524	275	9.50	16								4.86	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	21.0	21.0	21.0	5.0	1.3	3.7	14.3	1.3		3.7			14.3	1.9	1.0								
DC-12/1/T14	T19-120	2181.00	64.730.03				1	1.524	275	9.50	16								4.88	0.33	21-1-1500	0.60	2.70				0.20	120	0.30	1.50		a	c	f	100%	0.6	2.0	1.0	21.1	21.1	21.1																				

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	PN (limpieza vial) (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº válvulas de sague	DN Desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto/azopla	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang. Apoyo	H2=Recubrimiento cobertura mínima (m)	H3=Profundidad mínima 4' cave (m)	H4=Altura de la boma desde fondo	Carra de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones a-c: S=acero laminado C/95% PN, c=30 mm. d-Gabarrillo S/15. e-borne tipo HM-20. Relación cobertura a-c: S=acero laminado C/95% PN, c=30 mm. e-HM-20. d-Gabarrillo S/15. f-suelo adecuado para excavación (<150mm) c/6% PN. g- Lecho mod.	Exposici (m. escalón (n)	% Excavable con empleo puntal de martillo	% Escavable ripable con empleo de martillo	H1=ang (n)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntal de martillo	Total excavable ripable con empleo de martillo	Relevo cama-riflorera (m3)	Relevo c-ama (m3)	Relevo riflorera (m3)	Relevo riflorera suelo seleccionado (m3)	Relevo riflorera grabado (m3)	Relevo cama-riflorera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, c=30 mm	Relevo cobertura d-Gabarrillo S/15	Relevo cobertura c- HM-20	Relevo cobertura f-Suelo adecuado para excavación (<150mm) c/6% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (consumo a nivel 0%, espolvoreo lateral 5%)	Cinta liberata (m)	Manto escollera a 0.5m. ancho-30m (m3)
DC-12/1/14	T19-120	2.409.00	64.958.03				1	1.524	275	9.50	16							3.30	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.8	19.8	19.8	7.6	1.5	6.1	10.4	1.5		6.1			10.4	1.8	1.0						
DC-12/1/14	T19-120	2.410.00	64.959.03				1	1.524	275	9.50	16							3.27	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.5	19.5	19.5	7.6	1.5	6.1	10.1	1.5		6.1			10.1	1.8	1.0						
DC-12/1/14	T19-120	2.411.00	64.960.03				1	1.524	275	9.50	16							3.28	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.6	19.6	19.6	7.6	1.5	6.1	10.2	1.5		6.1			10.2	1.8	1.0						
DC-12/1/14	T19-120	2.412.00	64.961.03				1	1.524	275	9.50	16							3.28	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.7	19.7	19.7	7.6	1.5	6.1	10.3	1.5		6.1			10.3	1.8	1.0						
DC-12/1/14	T19-120	2.413.00	64.962.03				1	1.524	275	9.50	16							3.29	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.7	19.7	19.7	7.6	1.5	6.1	10.3	1.5		6.1			10.3	1.8	1.0						
DC-12/1/14	T19-120	2.414.00	64.963.03				1	1.524	275	9.50	16							3.30	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.8	19.8	19.8	7.6	1.5	6.1	10.4	1.5		6.1			10.4	1.8	1.0						
DC-12/1/14	T19-120	2.415.00	64.964.03				1	1.524	275	9.50	16							3.31	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.9	19.9	19.9	7.6	1.5	6.1	10.5	1.5		6.1			10.5	1.8	1.0						
DC-12/1/14	T19-120	2.416.00	64.965.03				1	1.524	275	9.50	16							3.31	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	19.9	19.9	19.9	7.6	1.5	6.1	10.5	1.5		6.1			10.5	1.8	1.0						
DC-12/1/14	T19-120	2.417.00	64.966.03				1	1.524	275	9.50	16							3.32	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.0	20.0	20.0	7.6	1.5	6.1	10.6	1.5		6.1			10.6	1.8	1.0						
DC-12/1/14	T19-120	2.418.00	64.967.03				1	1.524	275	9.50	16							3.33	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.1	20.1	20.1	7.6	1.5	6.1	10.7	1.5		6.1			10.7	1.8	1.0						
DC-12/1/14	T19-120	2.419.00	64.968.03				1	1.524	275	9.50	16							3.34	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.2	20.2	20.2	7.6	1.5	6.1	10.8	1.5		6.1			10.8	1.8	1.0						
DC-12/1/14	T19-120	2.420.00	64.969.03				1	1.524	275	9.50	16							3.35	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.3	20.3	20.3	7.6	1.5	6.1	10.9	1.5		6.1			10.9	1.8	1.0						
DC-12/1/14	T19-120	2.421.00	64.970.03				1	1.524	275	9.50	16							3.36	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.4	20.4	20.4	7.6	1.5	6.1	11.0	1.5		6.1			11.0	1.8	1.0						
DC-12/1/14	T19-120	2.422.00	64.971.03				1	1.524	275	9.50	16							3.36	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.4	20.4	20.4	7.6	1.5	6.1	11.0	1.5		6.1			11.0	1.8	1.0						
DC-12/1/14	T19-120	2.423.00	64.972.03				1	1.524	275	9.50	16							3.37	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.1			0.0	0.0	0.0	0.1			0.1	1.8	1.0	
DC-12/1/14	T19-120	2.424.00	64.973.03				1	1.524	275	9.50	16							3.37	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.5	20.5	20.5	7.6	1.5	6.1	11.1	1.5		6.1			11.1	1.8	1.0						
DC-12/1/14	T19-120	2.425.00	64.974.03				1	1.524	275	9.50	16							3.38	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.6	20.6	20.6	7.6	1.5	6.1	11.2	1.5		6.1			11.2	1.8	1.0						
DC-12/1/14	T19-120	2.426.00	64.975.03				1	1.524	275	9.50	16							3.39	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.6	20.6	20.6	7.6	1.5	6.1	11.2	1.5		6.1			11.2	1.8	1.0						
DC-12/1/14	T19-120	2.427.00	64.976.03				1	1.524	275	9.50	16							3.40	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.7	20.7	20.7	7.6	1.5	6.1	11.3	1.5		6.1			11.3	1.8	1.0						
DC-12/1/14	T19-120	2.428.00	64.977.03				1	1.524	275	9.50	16							3.40	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.8	20.8	20.8	7.6	1.5	6.1	11.4	1.5		6.1			11.4	1.8	1.0						
DC-12/1/14	T19-120	2.429.00	64.978.03				1	1.524	275	9.50	16							3.40	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.8	20.8	20.8	7.6	1.5	6.1	11.4	1.5		6.1			11.4	1.8	1.0						
DC-12/1/14	T19-120	2.430.00	64.979.03				1	1.524	275	9.50	16							3.41	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.8	20.8	20.8	7.6	1.5	6.1	11.4	1.5		6.1			11.4	1.8	1.0						
DC-12/1/14	T19-120	2.431.00	64.980.03				1	1.524	275	9.50	16							3.41	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.8	20.8	20.8	7.6	1.5	6.1	11.4	1.5		6.1			11.4	1.8	1.0						
DC-12/1/14	T19-120	2.432.00	64.981.03				1	1.524	275	9.50	16							3.41	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.9	20.9	20.9	7.6	1.5	6.1	11.5	1.5		6.1			11.5	1.8	1.0						
DC-12/1/14	T19-120	2.433.00	64.982.03				1	1.524	275	9.50	16							3.42	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	20.9	20.9	20.9	7.6	1.5	6.1	11.5	1.5		6.1			11.5	1.8	1.0						
DC-12/1/14	T19-120	2.434.00	64.983.03				1	1.524	275	9.50	16							3.42	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	21.0	21.0	21.0	7.6	1.5	6.1	11.6	1.5		6.1			11.6	1.8	1.0						
DC-12/1/14	T19-120	2.435.00	64.984.03				1	1.524	275	9.50	16							3.43	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	21.0	21.0	21.0	7.6	1.5	6.1	11.6	1.5		6.1			11.6	1.8	1.0						
DC-12/1/14	T19-120	2.436.00	64.985.03				1	1.524	275	9.50	16							3.44	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	21.1	21.1	21.1	7.6	1.5	6.1	11.7	1.5		6.1			11.7	1.8	1.0						
DC-12/1/14	T19-120	2.437.00	64.986.03				1	1.524	275	9.50	16							3.44	1.00	21-1-1500	0.60		2.70			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.0	1.0	21.2	21.2	21.2	7.6	1.5	6.1	11.8	1.5		6.1			11.8	1.8	1.0						
DC-12/1/14	T19-120	2.438.00	64.987.03				1	1.524	275	9.50	16							3.45	1.00																																						

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	PN (limpieza válvula (mm)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto/canchales	A=separación tubo salud	S ₂ =separación entre laborías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima 4' cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Relaciones: a-c: Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15, <bornoplom (M20) Relación cobertura c-c: Suela seleccionada C/95% PN, < 30 mm. e-M20. d-Gabarrillo S15, <Suela adecuada para excavación (<150mm) C/95% PN. g- Lecho mod.	Exposici (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama-rifonera (m3)	Relevo c-ama (m3)	Relevo rifonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Relevo rifonera suelo seleccionado (m3)	Relevo rifonera grabada (m3)	Relevo cama-rifonera (M20(m3)	Relevo cobertura c-c: Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d-Gabarrillo S15	Relevo cobertura c- H420	Relevo cobertura: f-Suelo adecuado para excavación (<150mm) C/95% PN	Relevo cobertura: g- Lecho mod (m3)	Excedente de tierra (m3) (consumo a nivel 0%, e-spojaniento sector 5%)	Cinta laborías (m)	Manto escollera a 0.5m, ancho-30m (m3)
DC-12/1/T14	T20-T21	97.00	65.086.03				1	1.321	275	0.00	16							4.27	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	28.9	28.9	28.9	6.4	1.3	5.1	21.2	1.3	5.1							21.2	1.3	1.0						
DC-12/1/T14	T20-T21	98.00	65.087.03				1	1.321	275	0.00	16							4.28	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.0	29.0	29.0	6.4	1.3	5.1	21.2	1.3	5.1							21.2	1.3	1.0						
DC-12/1/T14	T20-T21	99.00	65.088.03				1	1.321	275	0.00	16							4.28	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.0	29.0	29.0	6.4	1.3	5.1	21.3	1.3	5.1							21.3	1.3	1.0						
DC-12/1/T14	T20-T21	100.00	65.089.03				1	1.321	275	0.00	16							4.28	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.1	29.1	29.1	6.4	1.3	5.1	21.3	1.3	5.1							21.3	1.3	1.0						
DC-12/1/T14	T20-T21	101.00	65.090.03				1	1.321	275	0.00	16							4.29	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.1	29.1	29.1	6.4	1.3	5.1	21.3	1.3	5.1							21.3	1.3	1.0						
DC-12/1/T14	T20-T21	102.00	65.091.03				1	1.321	275	0.00	16							4.29	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.1	29.1	29.1	6.4	1.3	5.1	21.4	1.3	5.1							21.4	1.3	1.0						
DC-12/1/T14	T20-T21	103.00	65.092.03				1	1.321	275	0.00	16							4.29	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.2	29.2	29.2	6.4	1.3	5.1	21.4	1.3	5.1							21.4	1.3	1.0						
DC-12/1/T14	T20-T21	104.00	65.093.03				1	1.321	275	0.00	16							4.30	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.2	29.2	29.2	6.4	1.3	5.1	21.5	1.3	5.1							21.5	1.3	1.0						
DC-12/1/T14	T20-T21	105.00	65.094.03				1	1.321	275	0.00	16							4.30	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.3	29.3	29.3	6.4	1.3	5.1	21.5	1.3	5.1							21.5	1.3	1.0						
DC-12/1/T14	T20-T21	106.00	65.095.03				1	1.321	275	0.00	16							4.30	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.3	29.3	29.3	6.4	1.3	5.1	21.5	1.3	5.1							21.5	1.3	1.0						
DC-12/1/T14	T20-T21	107.00	65.096.03				1	1.321	275	0.00	16							4.31	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.3	29.3	29.3	6.4	1.3	5.1	21.6	1.3	5.1							21.6	1.3	1.0						
DC-12/1/T14	T20-T21	108.00	65.097.03				1	1.321	275	0.00	16							4.31	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.4	29.4	29.4	6.4	1.3	5.1	21.6	1.3	5.1							21.6	1.3	1.0						
DC-12/1/T14	T20-T21	109.00	65.098.03				1	1.321	275	0.00	16							4.32	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.4	29.4	29.4	6.4	1.3	5.1	21.7	1.3	5.1							21.7	1.3	1.0						
DC-12/1/T14	T20-T21	110.00	65.099.03				1	1.321	275	0.00	16							4.32	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.4	29.4	29.4	6.4	1.3	5.1	21.7	1.3	5.1							21.7	1.3	1.0						
DC-12/1/T14	T20-T21	111.00	65.100.03				1	1.321	275	0.00	16							4.32	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.5	29.5	29.5	6.4	1.3	5.1	21.7	1.3	5.1							21.7	1.3	1.0						
DC-12/1/T14	T20-T21	112.00	65.101.03				1	1.321	275	0.00	16							4.33	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.5	29.5	29.5	6.4	1.3	5.1	21.8	1.3	5.1							21.8	1.3	1.0						
DC-12/1/T14	T20-T21	113.00	65.102.03				1	1.321	275	0.00	16							4.33	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.6	29.6	29.6	6.4	1.3	5.1	21.8	1.3	5.1							21.8	1.3	1.0						
DC-12/1/T14	T20-T21	114.00	65.103.03				1	1.321	275	0.00	16							4.34	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.7	29.7	29.7	6.4	1.3	5.1	21.9	1.3	5.1							21.9	1.3	1.0						
DC-12/1/T14	T20-T21	115.00	65.104.03				1	1.321	275	0.00	16							4.35	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.8	29.8	29.8	6.4	1.3	5.1	22.1	1.3	5.1							22.1	1.3	1.0						
DC-12/1/T14	T20-T21	116.00	65.105.03				1	1.321	275	0.00	16							4.36	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	29.9	29.9	29.9	6.4	1.3	5.1	22.2	1.3	5.1							22.2	1.3	1.0						
DC-12/1/T14	T20-T21	117.00	65.106.03				1	1.321	275	0.00	16							4.38	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	30.1	30.1	30.1	6.4	1.3	5.1	22.3	1.3	5.1							22.3	1.3	1.0						
DC-12/1/T14	T20-T21	118.00	65.107.03				1	1.321	275	0.00	16							4.39	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	30.2	30.2	30.2	6.4	1.3	5.1	22.5	1.3	5.1							22.5	1.3	1.0						
DC-12/1/T14	T20-T21	119.00	65.108.03				1	1.321	275	0.00	16							4.40	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	30.4	30.4	30.4	6.4	1.3	5.1	22.6	1.3	5.1							22.6	1.3	1.0						
DC-12/1/T14	T20-T21	120.00	65.109.03				1	1.321	275	0.00	16							4.41	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	30.5	30.5	30.5	6.4	1.3	5.1	22.8	1.3	5.1							22.8	1.3	1.0						
DC-12/1/T14	T20-T21	121.00	65.110.03				1	1.321	275	0.00	16							4.43	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	30.6	30.6	30.6	6.4	1.3	5.1	22.9	1.3	5.1							22.9	1.3	1.0						
DC-12/1/T14	T20-T21	122.00	65.111.03				1	1.321	275	0.00	16							4.44	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	30.8	30.8	30.8	6.4	1.3	5.1	23.0	1.3	5.1							23.0	1.3	1.0						
DC-12/1/T14	T20-T21	123.00	65.112.03				1	1.321	275	0.00	16							4.45	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	30.9	30.9	30.9	6.4	1.3	5.1	23.2	1.3	5.1							23.2	1.3	1.0						
DC-12/1/T14	T20-T21	124.00	65.113.03				1	1.321	275	0.00	16							4.46	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	31.1	31.1	31.1	6.4	1.3	5.1	23.3	1.3	5.1							23.3	1.3	1.0						
DC-12/1/T14	T20-T21	125.00	65.114.03				1	1.321	275	0.00	16							4.47	1.00	Z1-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	31.2	31.2	31.																					

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN en (mm)	Acero tipo S	espesor adaptado (mm)	PN limbrage vial/agua (dm)	Nº vertederos por tubería	DN vertical (mm)	Nº válvulas de sagüe	DN Desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concreto/canchales/ zapla	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Reforzamientos c- Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15, <bormpoq HM-20	Reforzamientos e- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S/15, < Suela adecuada procedente excavación (<150mm) C/65 % PN, g- Luchito modif.	Exposic (m, escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (n)	H1=DNH2 (m)	Long (m)	Excavación tapasada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo c/ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera s/ suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d-Gabarrillo S/15	Relevo cobertura c- HM-20	Relevo cobertura f-Suelo adecuado o procedente excavación (<150mm) C/65 % PN	Relevo cobertura g- Luchito modif (m3)	Excedente de tierra (m3) (compensado a nivel 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho-30m (m3)
DC-12/1/T14	T20-T21	226.00	65.215.03				1	1.321	275	0.00	16									4.50	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	31.5	31.5	31.5	6.4	1.3	5.1	23.8	1.3		5.1			23.8	1.3	1.0										
DC-12/1/T14	T20-T21	227.00	65.216.03				1	1.321	275	0.00	16									4.50	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	31.5	31.5	31.5	6.4	1.3	5.1	23.7	1.3		5.1			23.7	1.3	1.0										
DC-12/1/T14	T20-T21	228.00	65.217.03				1	1.321	275	0.00	16									4.49	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	31.4	31.4	31.4	6.4	1.3	5.1	23.7	1.3		5.1			23.7	1.3	1.0										
DC-12/1/T14	T20-T21	229.00	65.218.03				1	1.321	275	0.00	16									4.49	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	31.3	31.3	31.3	6.4	1.3	5.1	23.6	1.3		5.1			23.6	1.3	1.0										
DC-12/1/T14	T20-T21	230.00	65.219.03				1	1.321	275	0.00	16									4.48	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	31.3	31.3	31.3	6.4	1.3	5.1	23.5	1.3		5.1			23.5	1.3	1.0										
DC-12/1/T14	T20-T21	230.82	65.219.84				1	1.321	275	0.00	16									4.48	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	0.8	25.5	25.5	25.5	5.2	1.1	4.1	19.1	1.1		4.1			19.1	1.1	0.8										
DC-12/1/T14	T20-T21	231.00	65.220.03				1	1.321	275	0.00	16									4.48	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	0.2	5.8	5.8	5.8	1.2	0.2	0.9	4.3	0.2		0.9			4.3	0.2	0.2										
DC-12/1/T14	T20-T21	232.00	65.221.03				1	1.321	275	0.00	16									4.47	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	31.2	31.2	31.2	6.4	1.3	5.1	23.4	1.3		5.1			23.4	1.3	1.0										
DC-12/1/T14	T20-T21	233.00	65.222.03				1	1.321	275	0.00	16									4.47	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	31.1	31.1	31.1	6.4	1.3	5.1	23.4	1.3		5.1			23.4	1.3	1.0										
DC-12/1/T14	T20-T21	234.00	65.223.03				1	1.321	275	0.00	16									4.46	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	31.1	31.1	31.1	6.4	1.3	5.1	23.3	1.3		5.1			23.3	1.3	1.0										
DC-12/1/T14	T20-T21	235.00	65.224.03				1	1.321	275	0.00	16									4.46	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	31.0	31.0	31.0	6.4	1.3	5.1	23.3	1.3		5.1			23.3	1.3	1.0										
DC-12/1/T14	T20-T21	236.00	65.225.03				1	1.321	275	0.00	16									4.45	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	30.9	30.9	30.9	6.4	1.3	5.1	23.2	1.3		5.1			23.2	1.3	1.0										
DC-12/1/T14	T20-T21	237.00	65.226.03				1	1.321	275	0.00	16									4.45	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	30.9	30.9	30.9	6.4	1.3	5.1	23.1	1.3		5.1			23.1	1.3	1.0										
DC-12/1/T14	T20-T21	238.00	65.227.03				1	1.321	275	0.00	16									4.44	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	30.8	30.8	30.8	6.4	1.3	5.1	23.1	1.2		5.1			23.1	1.2	1.0										
DC-12/1/T14	T20-T21	239.00	65.228.03				1	1.321	275	0.00	16									4.43	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	30.8	30.8	30.8	6.4	1.3	5.1	23.0	1.3		5.1			23.0	1.3	1.0										
DC-12/1/T14	T20-T21	240.00	65.229.03				1	1.321	275	0.00	16									4.43	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	30.7	30.7	30.7	6.4	1.3	5.1	23.0	1.3		5.1			23.0	1.3	1.0										
DC-12/1/T14	T20-T21	241.00	65.230.03				1	1.321	275	0.00	16									4.43	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	30.7	30.7	30.7	6.4	1.3	5.1	22.9	1.3		5.1			22.9	1.3	1.0										
DC-12/1/T14	T20-T21	242.00	65.231.03				1	1.321	275	0.00	16									4.42	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	30.5	30.5	30.5	6.4	1.3	5.1	22.8	1.3		5.1			22.8	1.3	1.0										
DC-12/1/T14	T20-T21	243.00	65.232.03				1	1.321	275	0.00	16									4.40	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	29.9	29.9	29.9	6.4	1.3	5.1	22.4	1.3		5.1			22.4	1.3	1.0										
DC-12/1/T14	T20-T21	244.00	65.233.03				1	1.321	275	0.00	16									4.39	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	30.2	30.2	30.2	6.4	1.3	5.1	22.5	1.3		5.1			22.5	1.3	1.0										
DC-12/1/T14	T20-T21	245.00	65.234.03				1	1.321	275	0.00	16									4.37	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	30.1	30.1	30.1	6.4	1.3	5.1	22.3	1.3		5.1			22.3	1.3	1.0										
DC-12/1/T14	T20-T21	246.00	65.235.03				1	1.321	275	0.00	16									4.36	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	29.9	29.9	29.9	6.4	1.3	5.1	22.2	1.3		5.1			22.2	1.3	1.0										
DC-12/1/T14	T20-T21	247.00	65.236.03				1	1.321	275	0.00	16									4.35	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	29.7	29.7	29.7	6.4	1.3	5.1	22.0	1.3		5.1			22.0	1.3	1.0										
DC-12/1/T14	T20-T21	248.00	65.237.03				1	1.321	275	0.00	16									4.33	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	29.6	29.6	29.6	6.4	1.3	5.1	21.8	1.3		5.1			21.8	1.3	1.0										
DC-12/1/T14	T20-T21	249.00	65.238.03				1	1.321	275	0.00	16									4.32	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	29.4	29.4	29.4	6.4	1.3	5.1	21.7	1.3		5.1			21.7	1.3	1.0										
DC-12/1/T14	T20-T21	250.00	65.239.03				1	1.321	275	0.00	16									4.30	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	29.3	29.3	29.3	6.4	1.3	5.1	21.5	1.3		5.1			21.5	1.3	1.0										
DC-12/1/T14	T20-T21	251.00	65.240.03				1	1.321	275	0.00	16									4.29	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	29.1	29.1	29.1	6.4	1.3	5.1	21.4	1.2		5.1			21.4	1.2	1.0										
DC-12/1/T14	T20-T21	252.00	65.241.03				1	1.321	275	0.00	16									4.28	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	29.0	29.0	29.0	6.4	1.3	5.1	21.2	1.3		5.1			21.2	1.3	1.0										
DC-12/1/T14	T20-T21	253.00	65.242.03				1	1.321	275	0.00	16									4.26	1.00	21-1-1300	0.60	250			0.20	120	0.30	1.50		a	c	f	100%	0.5	1.8	1.0	28.8	28.8	28.8	6.4	1.3	5.1	21.1	1.3		5.1			21.1												

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertices por tubería	Nº valvulas de salida	DN desague	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S ₂ =Separación entre laborías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima 4' cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	Relaciones: a-c: Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo 515. e-borompi (M4.20) Relaciones: a-c: Suela seleccionada C/95% PN, < 30 mm. e- M4.20. d-Gabarrillo 515. f-Suela adecuada procedente excavación (<150mm) C/95% PN. g- Lecho mod.	Expos. (m. escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	H1-DHHz (m)	Long (m)	Excavación tapas (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama-rhoner (m3)	Relevo c-ama (m3)	Relevo rhoner es(m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relevo rhoner a suelo seleccionado (m3)	Relevo rhoner grabado (m3)	Relevo cama-rhoner (M4.20m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura. d-Gabarrillo 515	Relevo cobertura. e- M4.20	Relevo cobertura. f-Suelo adecuado excavación (<150mm) C/95% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumo a suela 0%, e-spojaniento 5%)	Cinta laborías (m)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-12/11/14	T20-T21	355.00	65.344.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.3	22.3	22.3	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	356.00	65.345.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.3	22.3	22.3	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	357.00	65.346.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.3	22.3	22.3	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	358.00	65.347.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.3	22.3	22.3	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	359.00	65.348.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.2	22.2	22.2	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	360.00	65.349.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.2	22.2	22.2	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	361.00	65.350.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.2	22.2	22.2	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	362.00	65.351.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.2	22.2	22.2	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	363.00	65.352.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.2	22.2	22.2	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	364.00	65.353.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.2	22.2	22.2	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	365.00	65.354.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.2	22.2	22.2	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	366.00	65.355.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.2	22.2	22.2	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	367.00	65.356.03				1	1.321	275	0.00	16				3.63	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.3	22.3	22.3	6.4	1.3	5.1	14.5	1.3	5.1				14.5	1.3	1.0									
DC-12/11/14	T20-T21	368.00	65.357.03				1	1.321	275	0.00	16				3.65	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.4	22.4	22.4	6.4	1.3	5.1	14.7	1.2	5.1				14.7	1.2	1.0									
DC-12/11/14	T20-T21	369.00	65.358.03				1	1.321	275	0.00	16				3.67	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.4	22.4	22.4	6.4	1.3	5.1	14.9	1.3	5.1				14.9	1.3	1.0									
DC-12/11/14	T20-T21	370.00	65.359.03				1	1.321	275	0.00	16				3.69	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.8	22.8	22.8	6.4	1.3	5.1	15.1	1.3	5.1				15.1	1.3	1.0									
DC-12/11/14	T20-T21	371.00	65.360.03				1	1.321	275	0.00	16				3.71	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	23.0	23.0	23.0	6.4	1.3	5.1	15.3	1.3	5.1				15.3	1.3	1.0									
DC-12/11/14	T20-T21	372.00	65.361.03				1	1.321	275	0.00	16				3.73	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	23.2	23.2	23.2	6.4	1.3	5.1	15.5	1.3	5.1				15.5	1.3	1.0									
DC-12/11/14	T20-T21	373.00	65.362.03				1	1.321	275	0.00	16				3.75	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	23.4	23.4	23.4	6.4	1.3	5.1	15.7	1.3	5.1				15.7	1.3	1.0									
DC-12/11/14	T20-T21	374.00	65.363.03				1	1.321	275	0.00	16				3.77	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	23.6	23.6	23.6	6.4	1.3	5.1	15.9	1.3	5.1				15.9	1.3	1.0									
DC-12/11/14	T20-T21	375.00	65.364.03				1	1.321	275	0.00	16				3.79	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	23.9	23.9	23.9	6.4	1.3	5.1	16.1	1.3	5.1				16.1	1.3	1.0									
DC-12/11/14	T20-T21	375.41	65.364.43				1	1.321	275	0.00	16				3.80	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	0.4	9.7	9.7	9.7	2.6	0.5	2.1	6.6	0.5	2.1				6.6	0.5	0.4									
DC-12/11/14	T20-T21	376.00	65.365.03				1	1.321	275	0.00	16				3.82	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	0.4	14.3	14.3	14.3	3.8	0.8	3.0	9.7	0.8	3.0				9.7	0.8	0.4									
DC-12/11/14	T20-T21	377.00	65.366.03				1	1.321	275	0.00	16				3.84	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	24.3	24.3	24.3	6.4	1.3	5.1	16.6	1.3	5.1				16.6	1.3	1.0									
DC-12/11/14	T20-T21	378.00	65.367.03				1	1.321	275	0.00	16				3.86	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	24.5	24.5	24.5	6.4	1.3	5.1	16.8	1.3	5.1				16.8	1.3	1.0									
DC-12/11/14	T20-T21	379.00	65.368.03				1	1.321	275	0.00	16				3.87	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	24.6	24.6	24.6	6.4	1.3	5.1	16.9	1.3	5.1				16.9	1.3	1.0									
DC-12/11/14	T20-T21	380.00	65.369.03			Via Verde Tarazona	1	1.321	275	0.00	16				3.88	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	22.8	22.8	22.8	6.4	1.3	5.1	15.0	1.2	5.1				15.0	1.2	1.0									
DC-12/11/14	T20-T21	381.00	65.370.03			Via Verde Tarazona	1	1.321	275	0.00	16				3.90	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	23.1	23.1	23.1	6.4	1.3	5.1	15.1	1.4	5.1				15.1	1.4	1.0									
DC-12/11/14	T20-T21	382.00	65.371.03			Via Verde Tarazona	1	1.321	275	0.00	16				3.12	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	17.5	17.5	17.5	6.4	1.3	5.1	9.8	1.3	5.1				9.8	1.3	1.0									
DC-12/11/14	T20-T21	383.00	65.372.03			Via Verde Tarazona	1	1.321	275	0.00	16				3.35	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	19.6	19.6	19.6	6.4	1.3	5.1	11.8	1.3	5.1				11.8	1.3	1.0									
DC-12/11/14	T20-T21	384.00	65.373.03			Via Verde Tarazona	1	1.321	275	0.00	16				3.39	1.00	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	19.9	19.9	19.9	6.4	1.3	5.1	12.2	1.3	5.1				12.2	1.										

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	PN (limpieza vial) (mm)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concretoado zapala	A= separación tubo salud	S ₂ = Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang Apoyo	H2=Recubrimiento cobertura mínima (m)	H3=Profundidad mínima 4' cave (m)	H4= altura de la boma desde fondo	Carra de apoyo a-cama material granulado o arena: b-cama de hormigón (M4.20)	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Gabarrón S/15. e-borneopn M4.20. Relación: a-c: Suelo seleccionado C/95% PN, < 30 mm. e-M4.20. d-Gabarrón S/15. f-Suelo adecuado para excavación (<150mm) C/65% PN. g- Lecho mod.	Exposor (m. escalón (n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1=ang (n)	H1=DNHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M4.20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura d-Gabarrón S/15	Relevo cobertura e- M4.20	Relevo cobertura f-Suelo adecuado para excavación (<150mm) C/65% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de bermas (m3) (consumo actual 0%, e-superficie 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-12/11/14	T20-T21	743.00	65.732.03				1	1.321	275	0.00	16							3.83	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.5	14.5	14.5	4.3	1.1	3.1	8.9	1.1	3.1							8.9	1.4	1.0						
DC-12/11/14	T20-T21	744.00	65.733.03				1	1.321	275	0.00	16							3.84	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.5	14.5	14.5	4.3	1.1	3.1	8.9	1.1	3.1							8.9	1.4	1.0						
DC-12/11/14	T20-T21	745.00	65.734.03				1	1.321	275	0.00	16							3.85	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.5	14.5	14.5	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/11/14	T20-T21	746.00	65.735.03				1	1.321	275	0.00	16							3.85	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/11/14	T20-T21	747.00	65.736.03				1	1.321	275	0.00	16							3.86	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/11/14	T20-T21	748.00	65.737.03				1	1.321	275	0.00	16							3.87	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.7	14.7	14.7	4.3	1.1	3.1	9.1	1.1	3.1							9.1	1.4	1.0						
DC-12/11/14	T20-T21	749.00	65.738.03				1	1.321	275	0.00	16							3.87	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.7	14.7	14.7	4.3	1.1	3.1	9.1	1.1	3.1							9.1	1.4	1.0						
DC-12/11/14	T20-T21	750.00	65.739.03				1	1.321	275	0.00	16							3.88	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.7	14.7	14.7	4.3	1.1	3.1	9.1	1.1	3.1							9.1	1.4	1.0						
DC-12/11/14	T20-T21	751.00	65.740.03				1	1.321	275	0.00	16							3.89	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.8	14.8	14.8	4.3	1.1	3.1	9.2	1.1	3.1							9.2	1.4	1.0						
DC-12/11/14	T20-T21	752.00	65.741.03				1	1.321	275	0.00	16							3.90	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.8	14.8	14.8	4.3	1.1	3.1	9.2	1.1	3.1							9.2	1.4	1.0						
DC-12/11/14	T20-T21	753.00	65.742.03				1	1.321	275	0.00	16							3.90	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.8	14.8	14.8	4.3	1.1	3.1	9.3	1.1	3.1							9.3	1.4	1.0						
DC-12/11/14	T20-T21	754.00	65.743.03				1	1.321	275	0.00	16							3.91	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.9	14.9	14.9	4.3	1.1	3.1	9.3	1.1	3.1							9.3	1.4	1.0						
DC-12/11/14	T20-T21	755.00	65.744.03				1	1.321	275	0.00	16							3.92	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.9	14.9	14.9	4.3	1.1	3.1	9.3	1.1	3.1							9.3	1.4	1.0						
DC-12/11/14	T20-T21	756.00	65.745.03				1	1.321	275	0.00	16							3.92	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	14.9	14.9	14.9	4.3	1.1	3.1	9.4	1.1	3.1							9.4	1.4	1.0						
DC-12/11/14	T20-T21	757.00	65.746.03				1	1.321	275	0.00	16							3.93	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.0	15.0	15.0	4.3	1.1	3.1	9.4	1.1	3.1							9.4	1.4	1.0						
DC-12/11/14	T20-T21	758.00	65.747.03				1	1.321	275	0.00	16							3.94	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.0	15.0	15.0	4.3	1.1	3.1	9.4	1.1	3.1							9.4	1.4	1.0						
DC-12/11/14	T20-T21	759.00	65.748.03				1	1.321	275	0.00	16							3.95	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.1	15.1	15.1	4.3	1.1	3.1	9.5	1.1	3.1							9.5	1.4	1.0						
DC-12/11/14	T20-T21	760.00	65.749.03				1	1.321	275	0.00	16							3.95	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.1	15.1	15.1	4.3	1.1	3.1	9.5	1.1	3.1							9.5	1.4	1.0						
DC-12/11/14	T20-T21	760.20	65.749.20				1	1.321	275	0.00	16							3.95	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.1	15.1	15.1	4.3	1.1	3.1	9.5	1.1	3.1							9.5	1.4	1.0						
DC-12/11/14	T20-T21	761.00	65.750.03				1	1.321	275	0.00	16							3.96	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.2	15.2	15.2	4.3	1.1	3.1	9.6	1.1	3.1							9.6	1.4	1.0						
DC-12/11/14	T20-T21	762.00	65.751.03				1	1.321	275	0.00	16							3.97	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.2	15.2	15.2	4.3	1.1	3.1	9.6	1.1	3.1							9.6	1.4	1.0						
DC-12/11/14	T20-T21	763.00	65.752.03				1	1.321	275	0.00	16							3.97	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.2	15.2	15.2	4.3	1.1	3.1	9.6	1.1	3.1							9.6	1.4	1.0						
DC-12/11/14	T20-T21	764.00	65.753.03				1	1.321	275	0.00	16							3.98	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.2	15.2	15.2	4.3	1.1	3.1	9.7	1.1	3.1							9.7	1.4	1.0						
DC-12/11/14	T20-T21	765.00	65.754.03				1	1.321	275	0.00	16							3.99	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.3	15.3	15.3	4.3	1.1	3.1	9.7	1.1	3.1							9.7	1.4	1.0						
DC-12/11/14	T20-T21	766.00	65.755.03				1	1.321	275	0.00	16							4.00	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.3	15.3	15.3	4.3	1.1	3.1	9.7	1.1	3.1							9.7	1.4	1.0						
DC-12/11/14	T20-T21	767.00	65.756.03				1	1.321	275	0.00	16							4.00	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.3	15.3	15.3	4.3	1.1	3.1	9.8	1.1	3.1							9.8	1.4	1.0						
DC-12/11/14	T20-T21	768.00	65.757.03				1	1.321	275	0.00	16							3.99	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.3	15.3	15.3	4.3	1.1	3.1	9.7	1.1	3.1							9.7	1.4	1.0						
DC-12/11/14	T20-T21	769.00	65.758.03				1	1.321	275	0.00	16							3.98	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.2	15.2	15.2	4.3	1.1	3.1	9.7	1.1	3.1							9.7	1.4	1.0						
DC-12/11/14	T20-T21	770.00	65.759.03				1	1.321	275	0.00	16							3.97	0.33	21-1-1300	0.60	2.50				0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	15.2	15.2																						

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertices por tubería	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima 4' cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rebavilaciones a-c: Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió HM-20 Rebavilaciones b-c: Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suela adecuada procedente excavación (<150mm) c/6% PN. g- Lecho modif.	Exposici. (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (n)	H1-DHxH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Releño c-ama (m3)	Releño riñonera(s)m3)	Releño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Releño riñonera suelo seleccionado (m3)	Releño riñonera granular (m3)	Releño cama+riñonera HM-20(m3)	Releño cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Releño cobertura d-Garbanillo 5/15	Releño cobertura e- HM-20	Releño cobertura f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Releño cobertura g- Lecho modif (m3)	Excedente de tierra (m3) (consumo a sueldo 0%, e-spojaniento sectorio 5%)	Cinta liberata (m3)	Manto escollera a-0.5m. ancho-30m. (m3)
DC-12/1/14	T20-T21	1.001.00	65.990.03				1	1.321	275	0.00	16				3.58	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.2	13.2	13.2	4.3	1.1	3.1	7.6	1.1	3.1				7.6	1.4	1.0								
DC-12/1/14	T20-T21	1.002.00	65.991.03				1	1.321	275	0.00	16				3.59	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.2	13.2	13.2	4.3	1.1	3.1	7.7	1.1	3.1				7.7	1.4	1.0								
DC-12/1/14	T20-T21	1.003.00	65.992.03				1	1.321	275	0.00	16				3.59	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.3	13.3	13.3	4.3	1.1	3.1	7.7	1.1	3.1				7.7	1.4	1.0								
DC-12/1/14	T20-T21	1.004.00	65.993.03				1	1.321	275	0.00	16				3.60	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.3	13.3	13.3	4.3	1.1	3.1	7.7	1.1	3.1				7.7	1.4	1.0								
DC-12/1/14	T20-T21	1.005.00	65.994.03				1	1.321	275	0.00	16				3.61	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.4	13.4	13.4	4.3	1.1	3.1	7.8	1.1	3.1				7.8	1.4	1.0								
DC-12/1/14	T20-T21	1.006.00	65.995.03				1	1.321	275	0.00	16				3.62	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.4	13.4	13.4	4.3	1.1	3.1	7.8	1.1	3.1				7.8	1.4	1.0								
DC-12/1/14	T20-T21	1.007.00	65.996.03				1	1.321	275	0.00	16				3.62	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.4	13.4	13.4	4.3	1.1	3.1	7.9	1.1	3.1				7.9	1.4	1.0								
DC-12/1/14	T20-T21	1.008.00	65.997.03				1	1.321	275	0.00	16				3.63	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.5	13.5	13.5	4.3	1.1	3.1	7.9	1.1	3.1				7.9	1.4	1.0								
DC-12/1/14	T20-T21	1.009.00	65.998.03				1	1.321	275	0.00	16				3.64	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.5	13.5	13.5	4.3	1.1	3.1	7.9	1.1	3.1				7.9	1.4	1.0								
DC-12/1/14	T20-T21	1.010.00	65.999.03				1	1.321	275	0.00	16				3.65	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.5	13.5	13.5	4.3	1.1	3.1	8.0	1.1	3.1				8.0	1.4	1.0								
DC-12/1/14	T20-T21	1.011.00	66.000.03				1	1.321	275	0.00	16				3.65	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.6	13.6	13.6	4.3	1.1	3.1	8.0	1.1	3.1				8.0	1.4	1.0								
DC-12/1/14	T20-T21	1.012.00	66.001.03				1	1.321	275	0.00	16				3.66	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.6	13.6	13.6	4.3	1.1	3.1	8.0	1.1	3.1				8.0	1.4	1.0								
DC-12/1/14	T20-T21	1.013.00	66.002.03				1	1.321	275	0.00	16				3.67	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.6	13.6	13.6	4.3	1.1	3.1	8.1	1.1	3.1				8.1	1.4	1.0								
DC-12/1/14	T20-T21	1.014.00	66.003.03				1	1.321	275	0.00	16				3.67	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.7	13.7	13.7	4.3	1.1	3.1	8.1	1.1	3.1				8.1	1.4	1.0								
DC-12/1/14	T20-T21	1.015.00	66.004.03				1	1.321	275	0.00	16				3.68	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.7	13.7	13.7	4.3	1.1	3.1	8.1	1.1	3.1				8.1	1.4	1.0								
DC-12/1/14	T20-T21	1.016.00	66.005.03				1	1.321	275	0.00	16				3.68	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.7	13.7	13.7	4.3	1.1	3.1	8.1	1.1	3.1				8.1	1.4	1.0								
DC-12/1/14	T20-T21	1.017.00	66.006.03				1	1.321	275	0.00	16				3.69	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.7	13.7	13.7	4.3	1.1	3.1	8.2	1.1	3.1				8.2	1.4	1.0								
DC-12/1/14	T20-T21	1.018.00	66.007.03				1	1.321	275	0.00	16				3.69	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.8	13.8	13.8	4.3	1.1	3.1	8.2	1.1	3.1				8.2	1.4	1.0								
DC-12/1/14	T20-T21	1.019.00	66.008.03				1	1.321	275	0.00	16				3.70	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.8	13.8	13.8	4.3	1.1	3.1	8.2	1.1	3.1				8.2	1.4	1.0								
DC-12/1/14	T20-T21	1.020.00	66.009.03				1	1.321	275	0.00	16				3.70	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.8	13.8	13.8	4.3	1.1	3.1	8.2	1.1	3.1				8.2	1.4	1.0								
DC-12/1/14	T20-T21	1.021.00	66.010.03				1	1.321	275	0.00	16				3.71	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.8	13.8	13.8	4.3	1.1	3.1	8.3	1.1	3.1				8.3	1.4	1.0								
DC-12/1/14	T20-T21	1.022.00	66.011.03				1	1.321	275	0.00	16				3.71	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.9	13.9	13.9	4.3	1.1	3.1	8.3	1.1	3.1				8.3	1.4	1.0								
DC-12/1/14	T20-T21	1.023.00	66.012.03				1	1.321	275	0.00	16				3.72	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.9	13.9	13.9	4.3	1.1	3.1	8.3	1.1	3.1				8.3	1.4	1.0								
DC-12/1/14	T20-T21	1.024.00	66.013.03				1	1.321	275	0.00	16				3.72	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	13.9	13.9	13.9	4.3	1.1	3.1	8.3	1.1	3.1				8.3	1.4	1.0								
DC-12/1/14	T20-T21	1.025.00	66.014.03				1	1.321	275	0.00	16				3.73	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	14.0	14.0	14.0	4.3	1.1	3.1	8.4	1.1	3.1				8.4	1.4	1.0								
DC-12/1/14	T20-T21	1.026.00	66.015.03				1	1.321	275	0.00	16				3.73	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	14.0	14.0	14.0	4.3	1.1	3.1	8.4	1.1	3.1				8.4	1.4	1.0								
DC-12/1/14	T20-T21	1.027.00	66.016.03				1	1.321	275	0.00	16				3.74	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	14.0	14.0	14.0	4.3	1.1	3.1	8.4	1.1	3.1				8.4	1.4	1.0								
DC-12/1/14	T20-T21	1.028.00	66.017.03				1	1.321	275	0.00	16				3.75	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	14.0	14.0	14.0	4.3	1.1	3.1	8.5	1.1	3.1				8.5	1.4	1.0								
DC-12/1/14	T20-T21	1.029.00	66.018.03				1	1.321	275	0.00	16				3.75	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	14.1	14.1	14.1	4.3	1.1	3.1	8.5	1.1	3.1				8.5	1.4	1.0								
DC-12/1/14	T20-T21	1.030.00	66.019.03				1	1.321	275	0.00	16				3.76	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	0.5	1.8	1.0	14.1	14.1	14.1	4.3	1.1	3.1	8.5	1.1	3.1				8.5	1.4	1.0								
DC-12/1/14	T20-T21	1.031.00	66.020.03				1	1.321	275																																															

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	PN (limpieza vial) (mm)	Nº vertederos por tubería	DN vertical (mm)	Nº válvulas de sague	DN Desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A=separación tubo salud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M20)	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompi M20. M20 recubierta (- Suelo seleccionado C/95% PN, < 30 mm. e- M20. d-Garbanillo S/15. f-Suelo adecuado para excavación (-<150mm) c/95% PN. g- Luchero modif.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo M20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera granitica (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Releeno cobertura. d-Garbanillo S/15	Releeno cobertura. e- H4/20	Releeno cobertura. f-Suelo adecuado para excavación (-<150mm) c/95% PN	Releeno cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (compensando nivel 0%, e-superficies 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-12/1/14	T20-T21	1.130.00	66.119.03				1	1.321	275	0.00	16							3.31	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.9	11.9	11.9	4.3	1.1	3.1	6.3	1.1	3.1		4.3	1.4	1.0											
DC-12/1/14	T20-T21	1.131.00	66.120.03				1	1.321	275	0.00	16							3.29	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.8	11.8	11.8	4.3	1.1	3.1	6.3	1.1	3.1		4.3	1.4	1.0											
DC-12/1/14	T20-T21	1.132.00	66.121.03				1	1.321	275	0.00	16							3.28	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.8	11.8	11.8	4.3	1.1	3.1	6.2	1.1	3.1		6.2	1.4	1.0											
DC-12/1/14	T20-T21	1.133.00	66.122.03				1	1.321	275	0.00	16							3.27	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.7	11.7	11.7	4.3	1.1	3.1	6.1	1.1	3.1		6.1	1.4	1.0											
DC-12/1/14	T20-T21	1.134.00	66.123.03				1	1.321	275	0.00	16							3.26	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.7	11.7	11.7	4.3	1.1	3.1	6.1	1.1	3.1		6.1	1.4	1.0											
DC-12/1/14	T20-T21	1.135.00	66.124.03				1	1.321	275	0.00	16							3.25	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.6	11.6	11.6	4.3	1.1	3.1	6.1	1.1	3.1		6.1	1.4	1.0											
DC-12/1/14	T20-T21	1.136.00	66.125.03				1	1.321	275	0.00	16							3.24	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.6	11.6	11.6	4.3	1.1	3.1	6.0	1.1	3.1		6.0	1.4	1.0											
DC-12/1/14	T20-T21	1.137.00	66.126.03				1	1.321	275	0.00	16							3.23	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.5	11.5	11.5	4.3	1.1	3.1	6.0	1.1	3.1		6.0	1.4	1.0											
DC-12/1/14	T20-T21	1.138.00	66.127.03				1	1.321	275	0.00	16							3.22	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.5	11.5	11.5	4.3	1.1	3.1	5.9	1.1	3.1		5.9	1.4	1.0											
DC-12/1/14	T20-T21	1.139.00	66.128.03				1	1.321	275	0.00	16							3.21	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.5	11.5	11.5	4.3	1.1	3.1	5.9	1.1	3.1		5.9	1.4	1.0											
DC-12/1/14	T20-T21	1.140.00	66.129.03				1	1.321	275	0.00	16							3.20	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.4	11.4	11.4	4.3	1.1	3.1	5.8	1.1	3.1		5.8	1.4	1.0											
DC-12/1/14	T20-T21	1.141.00	66.130.03				1	1.321	275	0.00	16							3.20	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.4	11.4	11.4	4.3	1.1	3.1	5.8	1.1	3.1		5.8	1.4	1.0											
DC-12/1/14	T20-T21	1.142.00	66.131.03				1	1.321	275	0.00	16							3.19	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.4	11.4	11.4	4.3	1.1	3.1	5.8	1.1	3.1		5.8	1.4	1.0											
DC-12/1/14	T20-T21	1.143.00	66.132.03				1	1.321	275	0.00	16							3.19	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.4	11.4	11.4	4.3	1.1	3.1	5.8	1.1	3.1		5.8	1.4	1.0											
DC-12/1/14	T20-T21	1.144.00	66.133.03				1	1.321	275	0.00	16							3.18	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.145.00	66.134.03				1	1.321	275	0.00	16							3.18	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.146.00	66.135.03				1	1.321	275	0.00	16							3.18	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.147.00	66.136.03				1	1.321	275	0.00	16							3.17	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.148.00	66.137.03				1	1.321	275	0.00	16							3.17	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.149.00	66.138.03				1	1.321	275	0.00	16							3.16	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.2	11.2	11.2	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.149.10	66.138.13				1	1.321	275	0.00	16							3.16	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	0.1	1.1	1.1	1.1	0.4	0.1	0.3	0.6	0.1	0.3		0.6	0.1	0.1	0.1	0.1	0.1								
DC-12/1/14	T20-T21	1.150.00	66.139.03				1	1.321	275	0.00	16							3.16	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	0.9	10.1	10.1	10.1	3.8	1.0	2.8	5.1	1.0	2.8		5.1	1.3	0.9											
DC-12/1/14	T20-T21	1.151.00	66.140.03				1	1.321	275	0.00	16							3.17	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.152.00	66.141.03				1	1.321	275	0.00	16							3.17	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.153.00	66.142.03				1	1.321	275	0.00	16							3.18	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.154.00	66.143.03				1	1.321	275	0.00	16							3.18	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.7	1.1	3.1		5.7	1.4	1.0											
DC-12/1/14	T20-T21	1.155.00	66.144.03				1	1.321	275	0.00	16							3.18	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.3	11.3	11.3	4.3	1.1	3.1	5.8	1.1	3.1		5.8	1.4	1.0											
DC-12/1/14	T20-T21	1.156.00	66.145.03				1	1.321	275	0.00	16							3.19	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.4	11.4	11.4	4.3	1.1	3.1	5.8	1.1	3.1		5.8	1.4	1.0											
DC-12/1/14	T20-T21	1.157.00	66.146.03				1	1.321	275	0.00	16							3.19	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.4	11.4	11.4	4.3	1.1	3.1	5.8	1.1	3.1		5.8	1.4	1.0											
DC-12/1/14	T20-T21	1.158.00	66.147.03				1	1.321	275	0.00	16							3.20	0.33	21-1-1300	0.60	250			0.20	120	0.30	150	a	c	f	100%	0.5	1.8	1.0	11.4	11.4	11.4	4.3	1.1	3.1	5.8	1.1	3.1		5.8	1.4	1.0											
DC-12/1/14	T20-T21	1.159.00	66.148.03				1	1.321	275	0.00	16							3.20	0.33	21-1-1300	0.60	250			0.20	120	0.30	150																															

Agregación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN ref (mm)	Acero tipo S	espesor adaptado (mm)	PN (limbaje valvuleta (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero+espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación entre laboras	S ₂ =Separación entre laboras	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM20	Rebavatación a-c: Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S/15, s-borrompió HM20	Rebavatación b-c: Suela seleccionada C/95% PN, < 30 mm. e- HM20. d-Gabarrillo S/15, f-Suela adecuada procedente excavación (<150mm) c/65% PN, g- Luchero modif.	Exposici (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (º)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Rebello cama+riñonera (m³)	Rebello c-ama (m³)	Rebello riñonera(s)m²)	Rebello cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM20(m³)	Rebello riñonera suelo seleccionado (m³)	Rebello riñonera grabaciolo (m³)	Rebello cama+riñonera HM20(m³)	Rebello cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Rebello cobertura d-Gabarrillo S/15	Rebello cobertura e- HM20:	Rebello cobertura f-Suelo adecuado excavación (<150mm) c/65% PN	Rebello cobertura g- Luchero modif (m³)	Excedente de tierra (m³) (consumo actual 0%, esparcimiento 5%)	Cinta laboras (m)	Manto escollera a=0.5m, ancho=30m (m³)
DC-12/1/T14	T20-T21	1517.00	66.506.03				1	1.321	275	0.00	16									3.86	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.1	1.1	3.1								9.1	1.4	1.0					
DC-12/1/T14	T20-T21	1518.00	66.507.03				1	1.321	275	0.00	16									3.86	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1519.00	66.508.03				1	1.321	275	0.00	16									3.86	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1520.00	66.509.03				1	1.321	275	0.00	16									3.86	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1521.00	66.510.03				1	1.321	275	0.00	16									3.86	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1522.00	66.511.03				1	1.321	275	0.00	16									3.86	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1523.00	66.512.03				1	1.321	275	0.00	16									3.85	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1524.00	66.513.03				1	1.321	275	0.00	16									3.85	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1525.00	66.514.03				1	1.321	275	0.00	16									3.85	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1526.00	66.515.03				1	1.321	275	0.00	16									3.85	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.6	14.6	14.6	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1527.00	66.516.03				1	1.321	275	0.00	16									3.85	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.5	14.5	14.5	4.3	1.1	3.1	9.0	1.1	3.1							9.0	1.4	1.0						
DC-12/1/T14	T20-T21	1528.00	66.517.03				1	1.321	275	0.00	16									3.83	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.5	14.5	14.5	4.3	1.1	3.1	8.9	1.1	3.1							8.9	1.4	1.0						
DC-12/1/T14	T20-T21	1529.00	66.518.03				1	1.321	275	0.00	16									3.81	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.3	14.3	14.3	4.3	1.1	3.1	8.8	1.1	3.1							8.8	1.4	1.0						
DC-12/1/T14	T20-T21	1530.00	66.519.03				1	1.321	275	0.00	16									3.77	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.2	14.2	14.2	4.3	1.1	3.1	8.6	1.1	3.1							8.6	1.4	1.0						
DC-12/1/T14	T20-T21	1531.00	66.520.03				1	1.321	275	0.00	16									3.75	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	14.0	14.0	14.0	4.3	1.1	3.1	8.5	1.1	3.1							8.5	1.4	1.0						
DC-12/1/T14	T20-T21	1532.00	66.521.03				1	1.321	275	0.00	16									3.71	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	13.9	13.9	13.9	4.3	1.1	3.1	8.3	1.1	3.1							8.3	1.4	1.0						
DC-12/1/T14	T20-T21	1533.00	66.522.03				1	1.321	275	0.00	16									3.67	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	13.6	13.6	13.6	4.3	1.1	3.1	8.1	1.1	3.1							8.1	1.4	1.0						
DC-12/1/T14	T20-T21	1534.00	66.523.03				1	1.321	275	0.00	16									3.61	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	13.4	13.4	13.4	4.3	1.1	3.1	7.8	1.1	3.1							7.8	1.4	1.0						
DC-12/1/T14	T20-T21	1535.00	66.524.03				1	1.321	275	0.00	16									3.55	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	13.1	13.1	13.1	4.3	1.1	3.1	7.5	1.1	3.1							7.5	1.4	1.0						
DC-12/1/T14	T20-T21	1536.00	66.525.03				1	1.321	275	0.00	16									3.48	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	12.7	12.7	12.7	4.3	1.1	3.1	7.2	1.1	3.1							7.2	1.4	1.0						
DC-12/1/T14	T20-T21	1537.00	66.526.03				1	1.321	275	0.00	16									3.41	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	12.4	12.4	12.4	4.3	1.1	3.1	6.8	1.1	3.1							6.8	1.4	1.0						
DC-12/1/T14	T20-T21	1538.00	66.527.03				1	1.321	275	0.00	16									3.32	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	12.0	12.0	12.0	4.3	1.1	3.1	6.4	1.1	3.1							6.4	1.4	1.0						
DC-12/1/T14	T20-T21	1539.00	66.528.03				1	1.321	275	0.00	16									3.23	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	11.5	11.5	11.5	4.3	1.1	3.1	6.0	1.1	3.1							6.0	1.4	1.0						
DC-12/1/T14	T20-T21	1540.00	66.529.03				1	1.321	275	0.00	16									3.13	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	11.1	11.1	11.1	4.3	1.1	3.1	5.5	1.1	3.1							5.5	1.4	1.0						
DC-12/1/T14	T20-T21	1541.00	66.530.03				1	1.321	275	0.00	16									3.02	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	10.6	10.6	10.6	4.3	1.1	3.1	5.0	1.1	3.1							5.0	1.4	1.0						
DC-12/1/T14	T20-T21	1542.00	66.531.03				1	1.321	275	0.00	16									2.91	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	10.1	10.1	10.1	4.3	1.1	3.1	4.5	1.1	3.1							4.5	1.4	1.0						
DC-12/1/T14	T20-T21	1543.00	66.532.03				1	1.321	275	0.00	16									2.93	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	10.2	10.2	10.2	4.3	1.1	3.1	4.6	1.1	3.1							4.6	1.4	1.0						
DC-12/1/T14	T20-T21	1544.00	66.533.03				1	1.321	275	0.00	16									2.95	0.33	21-1-1300	0.60	250			0.20	120	0.30	150		a	c	f	100%	0.5	1.8	1.0	10.3	10.3	10.3	4.3	1.1	3.1	4.7	1.1	3.1							4.7	1.4	1.0						
DC-12/1/T14	T20-T21	1545.00	66.534.03				1	1.321	275	0.00	16	</																																																		

Agrupación	Tamaño	P. K. tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN ref (mm)	Acero tipo S	espesor adaptado (mm)	PN (límite valvuleta (mm)	Nº verticos por tubería	DN vertical (mm)	Nº valvulas de sague	DN Desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre. Acero espesor Lámina (mm)	Altura de excavación a TH (m)	Talud HV	concrecionado zapla	A= separación tubo salud	S= Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang. Apoyo	H2=Recurvimiento cobertura mínimo (m)	H3=Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Carra de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rehabilitación c- Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo S/15. e-borrompió HM-20. f-Hidrocoberadura c- Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S/15. f-Suelo adecuado procedente excavación (<-150mm) c/95% PN. g- Lecho mod.	Exposic (m. escalón (n)	% Escavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1=ang (m)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo camu+riñonera (m3)	Relevo c-ama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Carra apoyo granular (m3)	Carra apoyo HM-20(m3)	Relevo riñonera suelo seleccionado C/95% PN	Relevo riñonera granular (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d-Garbanillo S/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suelo adecuado procedente excavación (<-150mm) c/95% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensando a nivel 0%, e-spojaniento 5%)	Cinta liberata (m3)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-12/1/14	T20-21	1.776.00	66.765.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.12	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.7	2.2	36.9	36.9	4.3	1.1	3.1	31.3	1.1	3.1				31.3	1.4	1.0								
DC-12/1/14	T20-21	1.777.00	66.766.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.11	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.6	2.2	36.8	36.8	4.3	1.1	3.1	31.2	1.1	3.1				31.2	1.4	1.0								
DC-12/1/14	T20-21	1.778.00	66.767.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.10	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.6	2.1	36.7	36.7	4.3	1.1	3.1	31.1	1.1	3.1				31.1	1.4	1.0								
DC-12/1/14	T20-21	1.779.00	66.768.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.09	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.5	2.1	36.6	36.6	4.3	1.1	3.1	31.0	1.1	3.1				31.0	1.4	1.0								
DC-12/1/14	T20-21	1.780.00	66.769.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.08	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.4	2.1	36.5	36.5	4.3	1.1	3.1	30.9	1.1	3.1				30.9	1.4	1.0								
DC-12/1/14	T20-21	1.781.00	66.770.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.07	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.3	2.1	36.4	36.4	4.3	1.1	3.1	30.8	1.1	3.1				30.8	1.4	1.0								
DC-12/1/14	T20-21	1.782.00	66.771.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.06	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.2	2.1	36.3	36.3	4.3	1.1	3.1	30.7	1.1	3.1				30.7	1.4	1.0								
DC-12/1/14	T20-21	1.783.00	66.772.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.04	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.1	2.1	36.2	36.2	4.3	1.1	3.1	30.6	1.1	3.1				30.6	1.4	1.0								
DC-12/1/14	T20-21	1.784.00	66.773.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.03	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.1	2.0	36.1	36.1	4.3	1.1	3.1	30.5	1.1	3.1				30.5	1.4	1.0								
DC-12/1/14	T20-21	1.785.00	66.774.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.02	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	34.0	2.0	36.0	36.0	4.3	1.1	3.1	30.4	1.1	3.1				30.4	1.4	1.0								
DC-12/1/14	T20-21	1.786.00	66.775.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.01	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.9	2.0	35.9	35.9	4.3	1.1	3.1	30.3	1.1	3.1				30.3	1.4	1.0								
DC-12/1/14	T20-21	1.787.00	66.776.03			Ajuste piezométrica	1	1.321	275	10.00	16									7.00	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.8	2.0	35.8	35.8	4.3	1.1	3.1	30.2	1.1	3.1				30.2	1.4	1.0								
DC-12/1/14	T20-21	1.788.00	66.777.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.98	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.7	2.0	35.7	35.7	4.3	1.1	3.1	30.1	1.1	3.1				30.1	1.4	1.0								
DC-12/1/14	T20-21	1.789.00	66.778.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.97	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.6	2.0	35.6	35.6	4.3	1.1	3.1	30.0	1.1	3.1				30.0	1.4	1.0								
DC-12/1/14	T20-21	1.790.00	66.779.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.96	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.5	1.9	35.5	35.5	4.3	1.1	3.1	29.9	1.1	3.1				29.9	1.4	1.0								
DC-12/1/14	T20-21	1.791.00	66.780.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.95	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.5	1.9	35.4	35.4	4.3	1.1	3.1	29.8	1.1	3.1				29.8	1.4	1.0								
DC-12/1/14	T20-21	1.792.00	66.781.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.94	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.4	1.9	35.3	35.3	4.3	1.1	3.1	29.7	1.1	3.1				29.7	1.4	1.0								
DC-12/1/14	T20-21	1.793.00	66.782.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.92	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.3	1.9	35.2	35.2	4.3	1.1	3.1	29.6	1.1	3.1				29.6	1.4	1.0								
DC-12/1/14	T20-21	1.794.00	66.783.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.91	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.2	1.9	35.1	35.1	4.3	1.1	3.1	29.5	1.1	3.1				29.5	1.4	1.0								
DC-12/1/14	T20-21	1.795.00	66.784.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.90	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.1	1.9	35.0	35.0	4.3	1.1	3.1	29.4	1.1	3.1				29.4	1.4	1.0								
DC-12/1/14	T20-21	1.796.00	66.785.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.89	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	33.0	1.8	34.9	34.9	4.3	1.1	3.1	29.3	1.1	3.1				29.3	1.4	1.0								
DC-12/1/14	T20-21	1.797.00	66.786.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.87	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	32.9	1.8	34.8	34.8	4.3	1.1	3.1	29.2	1.1	3.1				29.2	1.4	1.0								
DC-12/1/14	T20-21	1.798.00	66.787.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.86	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	32.9	1.8	34.7	34.7	4.3	1.1	3.1	29.1	1.1	3.1				29.1	1.4	1.0								
DC-12/1/14	T20-21	1.799.00	66.788.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.85	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	32.7	1.8	34.5	34.5	4.3	1.1	3.1	28.9	1.1	3.1				28.9	1.4	1.0								
DC-12/1/14	T20-21	1.800.00	66.789.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.83	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	32.6	1.8	34.4	34.4	4.3	1.1	3.1	28.8	1.1	3.1				28.8	1.4	1.0								
DC-12/1/14	T20-21	1.801.00	66.790.03			Ajuste piezométrica	1	1.321	275	10.00	16									6.81	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0	32.5	1.7	34.2	34.2	4.3	1.1	3.1	28.7	1.1	3.1				28.7	1.4	1.0								
DC-12/1/14	T20-21	1.801.73	66.790.76			Ajuste piezométrica	1	1.321	275	10.00	16									6.80	0.33	22-1-1300	0.60	250	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.5	1.8	1.0																								

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación entre laboras	S ₂ =Separación entre laboras	B=Ancho interior (m)	Borne X1	Borne X2	H1=Cama apoyo (m)	Ang Apoyo	H2=Recubrimiento cobertura mínima (m)	H3=Profundidad mínima s/ cave (m)	H4=Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Reforzamientos c- Suela seleccionada C/95% PN, c= 30 mm. d-Gabarrillo S/15, e-borrompió HM-20 Reforzamientos f- Suela seleccionada C/95% PN, c= 30 mm. e- HM-20. d-Gabarrillo S/15, f-suela adecuada para excavación (<150mm) c/95% PN, g- Lecho mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1=ang (n)	H1=DNH2 (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m2)	Relevo cama (m2)	Relevo riñonera(s)m2	Relevo cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo HM-20(m2)	Relevo riñonera s/ suelo seleccionado (m2)	Relevo riñonera grabaciado (m2)	Relevo cama+riñonera HM-20(m2)	Relevo cobertura c- Suelo seleccionado C/95% PN, c= 30 mm	Relevo cobertura d-Gabarrillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f-Suelo adecuado para excavación (<150mm) c/95% PN	Relevo cobertura g- Lecho modif (m2)	Excedente de bermas (m2) (consumo actual 0%, e-superficie vertical 5%)	Cinta laboras (n)	Manto escollera a=0.5m, ancho=30m (m2)
DC-12/1/14	T20-21	2.033.00	67.022.03				1	1.321	275	10.00	16					4.36	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	17.2	17.2	17.2	4.3	1.1	3.1	11.7	1.1		3.1				11.7	1.4	1.0								
DC-12/1/14	T20-21	2.034.00	67.023.03				1	1.321	275	10.00	16					4.35	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	17.2	17.2	17.2	4.3	1.1	3.1	11.6	1.1		3.1			11.6	1.4	1.0									
DC-12/1/14	T20-21	2.035.00	67.024.03				1	1.321	275	10.00	16					4.34	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	17.1	17.1	17.1	4.3	1.1	3.1	11.5	1.1		3.1			11.5	1.4	1.0									
DC-12/1/14	T20-21	2.036.00	67.025.03				1	1.321	275	10.00	16					4.33	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	17.0	17.0	17.0	4.3	1.1	3.1	11.5	1.1		3.1			11.5	1.4	1.0									
DC-12/1/14	T20-21	2.037.00	67.026.03				1	1.321	275	10.00	16					4.31	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	17.0	17.0	17.0	4.3	1.1	3.1	11.4	1.1		3.1			11.4	1.4	1.0									
DC-12/1/14	T20-21	2.038.00	67.027.03				1	1.321	275	10.00	16					4.30	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.9	16.9	16.9	4.3	1.1	3.1	11.3	1.1		3.1			11.3	1.4	1.0									
DC-12/1/14	T20-21	2.039.00	67.028.03				1	1.321	275	10.00	16					4.29	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.8	16.8	16.8	4.3	1.1	3.1	11.3	1.1		3.1			11.3	1.4	1.0									
DC-12/1/14	T20-21	2.040.00	67.029.03				1	1.321	275	10.00	16					4.27	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.8	16.8	16.8	4.3	1.1	3.1	11.2	1.1		3.1			11.2	1.4	1.0									
DC-12/1/14	T20-21	2.041.00	67.030.03				1	1.321	275	10.00	16					4.26	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.7	16.7	16.7	4.3	1.1	3.1	11.1	1.1		3.1			11.1	1.4	1.0									
DC-12/1/14	T20-21	2.042.00	67.031.03				1	1.321	275	10.00	16					4.25	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.6	16.6	16.6	4.3	1.1	3.1	11.1	1.1		3.1			11.1	1.4	1.0									
DC-12/1/14	T20-21	2.043.00	67.032.03				1	1.321	275	10.00	16					4.24	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.6	16.6	16.6	4.3	1.1	3.1	11.0	1.1		3.1			11.0	1.4	1.0									
DC-12/1/14	T20-21	2.044.00	67.033.03				1	1.321	275	10.00	16					4.24	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.6	16.6	16.6	4.3	1.1	3.1	11.0	1.1		3.1			11.0	1.4	1.0									
DC-12/1/14	T20-21	2.045.00	67.034.03				1	1.321	275	10.00	16					4.23	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.5	16.5	16.5	4.3	1.1	3.1	11.0	1.1		3.1			11.0	1.4	1.0									
DC-12/1/14	T20-21	2.046.00	67.035.03				1	1.321	275	10.00	16					4.23	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.5	16.5	16.5	4.3	1.1	3.1	10.9	1.1		3.1			10.9	1.4	1.0									
DC-12/1/14	T20-21	2.047.00	67.036.03				1	1.321	275	10.00	16					4.22	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.5	16.5	16.5	4.3	1.1	3.1	10.9	1.1		3.1			10.9	1.4	1.0									
DC-12/1/14	T20-21	2.048.00	67.037.03				1	1.321	275	10.00	16					4.21	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.4	16.4	16.4	4.3	1.1	3.1	10.9	1.1		3.1			10.9	1.4	1.0									
DC-12/1/14	T20-21	2.049.00	67.038.03				1	1.321	275	10.00	16					4.21	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.4	16.4	16.4	4.3	1.1	3.1	10.8	1.1		3.1			10.8	1.4	1.0									
DC-12/1/14	T20-21	2.050.00	67.039.03				1	1.321	275	10.00	16					4.20	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.4	16.4	16.4	4.3	1.1	3.1	10.8	1.1		3.1			10.8	1.4	1.0									
DC-12/1/14	T20-21	2.051.00	67.040.03				1	1.321	275	10.00	16					4.19	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.3	16.3	16.3	4.3	1.1	3.1	10.8	1.1		3.1			10.8	1.4	1.0									
DC-12/1/14	T20-21	2.052.00	67.041.03				1	1.321	275	10.00	16					4.19	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.3	16.3	16.3	4.3	1.1	3.1	10.7	1.1		3.1			10.7	1.4	1.0									
DC-12/1/14	T20-21	2.053.00	67.042.03				1	1.321	275	10.00	16					4.18	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.3	16.3	16.3	4.3	1.1	3.1	10.7	1.1		3.1			10.7	1.4	1.0									
DC-12/1/14	T20-21	2.054.00	67.043.03				1	1.321	275	10.00	16					4.17	0.33	21-1-1300	0.60	2.50			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.2	16.2	16.2	4.3	1.1	3.1	10.6	1.1		3.1			10.6	1.4	1.0									
DC-12/1/14	T20-21	2.055.00	67.044.03	Toma	TOMA 21	TOMA 21	1	1.321	275	10.00	16	1	200			4.15	0.33	21-1-1300	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.5	1.8	1.0	16.1	16.1	16.1	4.3	1.1	3.1	10.6	1.1		3.1			10.6	1.4	1.0									
DC-12/1/14	DC-116	1.00	1.00				1	1.829	275	11.50	16	1	200			4.51	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3													4.5												
DC-12/1/14	DC-116	2.00	2.00				1	1.829	275	11.50	16					4.51	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	20.3	20.3	20.3	6.1	1.6	4.5	11.7	1.6		4.5			11.7	2.7	1.0									
DC-12/1/14	DC-116	3.00	3.00				1	1.829	275	11.50	16					4.52	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	20.3	20.3	20.3	6.1	1.6	4.5	11.7	1.6		4.5			11.7	2.7	1.0									
DC-12/1/14	DC-116	4.00	4.00				1	1.829	275	11.50	16					4.52	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	20.4	20.4	20.4	6.1	1.6	4.5	11.7	1.6		4.5			11.7	2.7	1.0									
DC-12/1/14	DC-116	5.00	5.00				1	1.829	275	11.50	16					4.53	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	20.4	20.4	20.4	6.1	1.6	4.5	11.8	1.6		4.5			11.8	2.7	1.0									
DC-12/1/14	DC-116	6.00	6.00				1	1.829	275	11.50	16					4.54	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	20.5	20.5	20.5	6.1	1.6	4.5	11.8	1.6		4.5			11.8	2.7	1.0									
DC-12/1/14	DC-116	7.00	7.00				1	1.829	275	11.50	16					4.55	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	10.0	20.5	20.5	20.5	6.1	1.6	4.5	11.9	1.6		4.5			11.9	2.7	1.0									
DC-12/1/14	DC-116	8.00	8.00				1	1.829	275	11.50	16					4.55	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50	a	c	f																												

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº verederos por tubería	DN verederos (mm)	Nº valvulas de sagu	DN Desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínima (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Reforzamiento c= Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S/15, <borrompió HM-20	Reforzamiento d= Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Garbanillo S/15, < Suela adecuada procedente excavación (<150mm) c/65% PN, g- Luchero mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1= ang (º)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m³)	Relevo c/ama (m³)	Relevo riñonera(s)m³	Relevo cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relevo riñonera suelo seleccionado (m³)	Relevo riñonera grabaciado (m³)	Relevo cama+riñonera HM-20(m³)	Relevo cobertura c= Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d-Garbanillo S/15	Relevo cobertura c= HM-20	Relevo cobertura f= Suelo adecuado excavación (<150mm) c/65% PN	Relevo cobertura g= Luchero modif (m³)	Excedente de tierra (m³) (compensando nivel 0% y espolvoreo lateral 5%)	Cinta liberada (m)	Manto escollera a= 0.5m, ancho=30m (m³)
DC-12/1/14	DC-T16	365.00	365.00				1	1.829	275	1150	16						4.45	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	21.2	21.2	21.2	6.1	1.6	4.5	12.5	1.6		4.5				12.5	2.7	1.0									
DC-12/1/14	DC-T16	366.00	366.00				1	1.829	275	1150	16						4.59	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.8	20.8	20.8	6.1	1.6	4.5	12.1	1.6		4.5			12.1	2.7	1.0										
DC-12/1/14	DC-T16	367.00	367.00				1	1.829	275	1150	16						4.51	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.3	20.3	20.3	6.1	1.6	4.5	11.6	1.6		4.5			11.6	2.7	1.0										
DC-12/1/14	DC-T16	368.00	368.00				1	1.829	275	1150	16						4.46	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.0	20.0	20.0	6.1	1.6	4.5	11.3	1.6		4.5			11.3	2.7	1.0										
DC-12/1/14	DC-T16	369.00	369.00				1	1.829	275	1150	16						4.40	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	19.7	19.7	19.7	6.1	1.6	4.5	11.0	1.6		4.5			11.0	2.7	1.0										
DC-12/1/14	DC-T16	370.00	370.00				1	1.829	275	1150	16						4.33	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	19.2	19.2	19.2	6.1	1.6	4.5	10.6	1.6		4.5			10.6	2.7	1.0										
DC-12/1/14	DC-T16	371.00	371.00				1	1.829	275	1150	16						4.22	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	18.6	18.6	18.6	6.1	1.6	4.5	9.9	1.6		4.5			9.9	2.7	1.0										
DC-12/1/14	DC-T16	372.00	372.00				1	1.829	275	1150	16						4.07	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.7	17.7	17.7	6.1	1.6	4.5	9.1	1.6		4.5			9.1	2.7	1.0										
DC-12/1/14	DC-T16	373.00	373.00				1	1.829	275	1150	16						4.08	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.8	17.8	17.8	6.1	1.6	4.5	9.1	1.6		4.5			9.1	2.7	1.0										
DC-12/1/14	DC-T16	374.00	374.00				1	1.829	275	1150	16						3.80	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.6	17.6	17.6	6.1	1.6	4.5	9.0	1.6		4.5			9.0	2.7	1.0										
DC-12/1/14	DC-T16	375.00	375.00				1	1.829	275	1150	16						3.98	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	17.2	17.2	17.2	6.1	1.6	4.5	8.6	1.6		4.5			8.6	2.7	1.0										
DC-12/1/14	DC-T16	376.00	376.00				1	1.829	275	1150	16						3.92	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.9	16.9	16.9	6.1	1.6	4.5	8.2	1.6		4.5			8.2	2.7	1.0										
DC-12/1/14	DC-T16	377.00	377.00				1	1.829	275	1150	16						3.87	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.6	16.6	16.6	6.1	1.6	4.5	7.9	1.6		4.5			7.9	2.7	1.0										
DC-12/1/14	DC-T16	378.00	378.00				1	1.829	275	1150	16						3.84	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.4	16.4	16.4	6.1	1.6	4.5	7.8	1.6		4.5			7.8	2.7	1.0										
DC-12/1/14	DC-T16	379.00	379.00				1	1.829	275	1150	16						3.83	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.7	1.6		4.5			7.7	2.7	1.0										
DC-12/1/14	DC-T16	380.00	380.00				1	1.829	275	1150	16						3.82	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.3	16.3	16.3	6.1	1.6	4.5	7.6	1.6		4.5			7.6	2.7	1.0										
DC-12/1/14	DC-T16	381.00	381.00				1	1.829	275	1150	16						3.81	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.3	16.3	16.3	6.1	1.6	4.5	7.6	1.6		4.5			7.6	2.7	1.0										
DC-12/1/14	DC-T16	382.00	382.00				1	1.829	275	1150	16						3.81	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.6	1.6		4.5			7.6	2.7	1.0										
DC-12/1/14	DC-T16	383.00	383.00				1	1.829	275	1150	16						3.80	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.6	1.6		4.5			7.6	2.7	1.0										
DC-12/1/14	DC-T16	384.00	384.00				1	1.829	275	1150	16						3.80	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	385.00	385.00				1	1.829	275	1150	16						3.80	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	386.00	386.00				1	1.829	275	1150	16						3.80	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	387.00	387.00				1	1.829	275	1150	16						3.80	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	388.00	388.00				1	1.829	275	1150	16						3.80	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	389.00	389.00				1	1.829	275	1150	16						3.80	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	390.00	390.00				1	1.829	275	1150	16						3.79	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	391.00	391.00				1	1.829	275	1150	16						3.79	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.2	16.2	16.2	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	392.00	392.00				1	1.829	275	1150	16						3.79	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.1	16.1	16.1	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	393.00	393.00				1	1.829	275	1150	16						3.79	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.1	16.1	16.1	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	394.00	394.00				1	1.829	275	1150	16						3.78	0.33	21-1-1800	0.60	3.00			0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	16.1	16.1	16.1	6.1	1.6	4.5	7.5	1.6		4.5			7.5	2.7	1.0										
DC-12/1/14	DC-T16	395.00	395.00				1	1.829	275	1150	16																																																	

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	DN ref (mm)	Acero tipo S	espesor adoptado (mm)	PN límite valvuleta (daN)	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Taldud HW	concrecionado zapaja	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la bermá desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón (M4.20)	R ₁ -R ₂ -R ₃ -R ₄ -R ₅ -R ₆ -R ₇ -R ₈ -R ₉ -R ₁₀ -R ₁₁ -R ₁₂ -R ₁₃ -R ₁₄ -R ₁₅ -R ₁₆ -R ₁₇ -R ₁₈ -R ₁₉ -R ₂₀ -R ₂₁ -R ₂₂ -R ₂₃ -R ₂₄ -R ₂₅ -R ₂₆ -R ₂₇ -R ₂₈ -R ₂₉ -R ₃₀ -R ₃₁ -R ₃₂ -R ₃₃ -R ₃₄ -R ₃₅ -R ₃₆ -R ₃₇ -R ₃₈ -R ₃₉ -R ₄₀ -R ₄₁ -R ₄₂ -R ₄₃ -R ₄₄ -R ₄₅ -R ₄₆ -R ₄₇ -R ₄₈ -R ₄₉ -R ₅₀ -R ₅₁ -R ₅₂ -R ₅₃ -R ₅₄ -R ₅₅ -R ₅₆ -R ₅₇ -R ₅₈ -R ₅₉ -R ₆₀ -R ₆₁ -R ₆₂ -R ₆₃ -R ₆₄ -R ₆₅ -R ₆₆ -R ₆₇ -R ₆₈ -R ₆₉ -R ₇₀ -R ₇₁ -R ₇₂ -R ₇₃ -R ₇₄ -R ₇₅ -R ₇₆ -R ₇₇ -R ₇₈ -R ₇₉ -R ₈₀ -R ₈₁ -R ₈₂ -R ₈₃ -R ₈₄ -R ₈₅ -R ₈₆ -R ₈₇ -R ₈₈ -R ₈₉ -R ₉₀ -R ₉₁ -R ₉₂ -R ₉₃ -R ₉₄ -R ₉₅ -R ₉₆ -R ₉₇ -R ₉₈ -R ₉₉ -R ₁₀₀ -R ₁₀₁ -R ₁₀₂ -R ₁₀₃ -R ₁₀₄ -R ₁₀₅ -R ₁₀₆ -R ₁₀₇ -R ₁₀₈ -R ₁₀₉ -R ₁₁₀ -R ₁₁₁ -R ₁₁₂ -R ₁₁₃ -R ₁₁₄ -R ₁₁₅ -R ₁₁₆ -R ₁₁₇ -R ₁₁₈ -R ₁₁₉ -R ₁₂₀ -R ₁₂₁ -R ₁₂₂ -R ₁₂₃ -R ₁₂₄ -R ₁₂₅ -R ₁₂₆ -R ₁₂₇ -R ₁₂₈ -R ₁₂₉ -R ₁₃₀ -R ₁₃₁ -R ₁₃₂ -R ₁₃₃ -R ₁₃₄ -R ₁₃₅ -R ₁₃₆ -R ₁₃₇ -R ₁₃₈ -R ₁₃₉ -R ₁₄₀ -R ₁₄₁ -R ₁₄₂ -R ₁₄₃ -R ₁₄₄ -R ₁₄₅ -R ₁₄₆ -R ₁₄₇ -R ₁₄₈ -R ₁₄₉ -R ₁₅₀ -R ₁₅₁ -R ₁₅₂ -R ₁₅₃ -R ₁₅₄ -R ₁₅₅ -R ₁₅₆ -R ₁₅₇ -R ₁₅₈ -R ₁₅₉ -R ₁₆₀ -R ₁₆₁ -R ₁₆₂ -R ₁₆₃ -R ₁₆₄ -R ₁₆₅ -R ₁₆₆ -R ₁₆₇ -R ₁₆₈ -R ₁₆₉ -R ₁₇₀ -R ₁₇₁ -R ₁₇₂ -R ₁₇₃ -R ₁₇₄ -R ₁₇₅ -R ₁₇₆ -R ₁₇₇ -R ₁₇₈ -R ₁₇₉ -R ₁₈₀ -R ₁₈₁ -R ₁₈₂ -R ₁₈₃ -R ₁₈₄ -R ₁₈₅ -R ₁₈₆ -R ₁₈₇ -R ₁₈₈ -R ₁₈₉ -R ₁₉₀ -R ₁₉₁ -R ₁₉₂ -R ₁₉₃ -R ₁₉₄ -R ₁₉₅ -R ₁₉₆ -R ₁₉₇ -R ₁₉₈ -R ₁₉₉ -R ₂₀₀ -R ₂₀₁ -R ₂₀₂ -R ₂₀₃ -R ₂₀₄ -R ₂₀₅ -R ₂₀₆ -R ₂₀₇ -R ₂₀₈ -R ₂₀₉ -R ₂₁₀ -R ₂₁₁ -R ₂₁₂ -R ₂₁₃ -R ₂₁₄ -R ₂₁₅ -R ₂₁₆ -R ₂₁₇ -R ₂₁₈ -R ₂₁₉ -R ₂₂₀ -R ₂₂₁ -R ₂₂₂ -R ₂₂₃ -R ₂₂₄ -R ₂₂₅ -R ₂₂₆ -R ₂₂₇ -R ₂₂₈ -R ₂₂₉ -R ₂₃₀ -R ₂₃₁ -R ₂₃₂ -R ₂₃₃ -R ₂₃₄ -R ₂₃₅ -R ₂₃₆ -R ₂₃₇ -R ₂₃₈ -R ₂₃₉ -R ₂₄₀ -R ₂₄₁ -R ₂₄₂ -R ₂₄₃ -R ₂₄₄ -R ₂₄₅ -R ₂₄₆ -R ₂₄₇ -R ₂₄₈ -R ₂₄₉ -R ₂₅₀ -R ₂₅₁ -R ₂₅₂ -R ₂₅₃ -R ₂₅₄ -R ₂₅₅ -R ₂₅₆ -R ₂₅₇ -R ₂₅₈ -R ₂₅₉ -R ₂₆₀ -R ₂₆₁ -R ₂₆₂ -R ₂₆₃ -R ₂₆₄ -R ₂₆₅ -R ₂₆₆ -R ₂₆₇ -R ₂₆₈ -R ₂₆₉ -R ₂₇₀ -R ₂₇₁ -R ₂₇₂ -R ₂₇₃ -R ₂₇₄ -R ₂₇₅ -R ₂₇₆ -R ₂₇₇ -R ₂₇₈ -R ₂₇₉ -R ₂₈₀ -R ₂₈₁ -R ₂₈₂ -R ₂₈₃ -R ₂₈₄ -R ₂₈₅ -R ₂₈₆ -R ₂₈₇ -R ₂₈₈ -R ₂₈₉ -R ₂₉₀ -R ₂₉₁ -R ₂₉₂ -R ₂₉₃ -R ₂₉₄ -R ₂₉₅ -R ₂₉₆ -R ₂₉₇ -R ₂₉₈ -R ₂₉₉ -R ₃₀₀ -R ₃₀₁ -R ₃₀₂ -R ₃₀₃ -R ₃₀₄ -R ₃₀₅ -R ₃₀₆ -R ₃₀₇ -R ₃₀₈ -R ₃₀₉ -R ₃₁₀ -R ₃₁₁ -R ₃₁₂ -R ₃₁₃ -R ₃₁₄ -R ₃₁₅ -R ₃₁₆ -R ₃₁₇ -R ₃₁₈ -R ₃₁₉ -R ₃₂₀ -R ₃₂₁ -R ₃₂₂ -R ₃₂₃ -R ₃₂₄ -R ₃₂₅ -R ₃₂₆ -R ₃₂₇ -R ₃₂₈ -R ₃₂₉ -R ₃₃₀ -R ₃₃₁ -R ₃₃₂ -R ₃₃₃ -R ₃₃₄ -R ₃₃₅ -R ₃₃₆ -R ₃₃₇ -R ₃₃₈ -R ₃₃₉ -R ₃₄₀ -R ₃₄₁ -R ₃₄₂ -R ₃₄₃ -R ₃₄₄ -R ₃₄₅ -R ₃₄₆ -R ₃₄₇ -R ₃₄₈ -R ₃₄₉ -R ₃₅₀ -R ₃₅₁ -R ₃₅₂ -R ₃₅₃ -R ₃₅₄ -R ₃₅₅ -R ₃₅₆ -R ₃₅₇ -R ₃₅₈ -R ₃₅₉ -R ₃₆₀ -R ₃₆₁ -R ₃₆₂ -R ₃₆₃ -R ₃₆₄ -R ₃₆₅ -R ₃₆₆ -R ₃₆₇ -R ₃₆₈ -R ₃₆₉ -R ₃₇₀ -R ₃₇₁ -R ₃₇₂ -R ₃₇₃ -R ₃₇₄ -R ₃₇₅ -R ₃₇₆ -R ₃₇₇ -R ₃₇₈ -R ₃₇₉ -R ₃₈₀ -R ₃₈₁ -R ₃₈₂ -R ₃₈₃ -R ₃₈₄ -R ₃₈₅ -R ₃₈₆ -R ₃₈₇ -R ₃₈₈ -R ₃₈₉ -R ₃₉₀ -R ₃₉₁ -R ₃₉₂ -R ₃₉₃ -R ₃₉₄ -R ₃₉₅ -R ₃₉₆ -R ₃₉₇ -R ₃₉₈ -R ₃₉₉ -R ₄₀₀ -R ₄₀₁ -R ₄₀₂ -R ₄₀₃ -R ₄₀₄ -R ₄₀₅ -R ₄₀₆ -R ₄₀₇ -R ₄₀₈ -R ₄₀₉ -R ₄₁₀ -R ₄₁₁ -R ₄₁₂ -R ₄₁₃ -R ₄₁₄ -R ₄₁₅ -R ₄₁₆ -R ₄₁₇ -R ₄₁₈ -R ₄₁₉ -R ₄₂₀ -R ₄₂₁ -R ₄₂₂ -R ₄₂₃ -R ₄₂₄ -R ₄₂₅ -R ₄₂₆ -R ₄₂₇ -R ₄₂₈ -R ₄₂₉ -R ₄₃₀ -R ₄₃₁ -R ₄₃₂ -R ₄₃₃ -R ₄₃₄ -R ₄₃₅ -R ₄₃₆ -R ₄₃₇ -R ₄₃₈ -R ₄₃₉ -R ₄₄₀ -R ₄₄₁ -R ₄₄₂ -R ₄₄₃ -R ₄₄₄ -R ₄₄₅ -R ₄₄₆ -R ₄₄₇ -R ₄₄₈ -R ₄₄₉ -R ₄₅₀ -R ₄₅₁ -R ₄₅₂ -R ₄₅₃ -R ₄₅₄ -R ₄₅₅ -R ₄₅₆ -R ₄₅₇ -R ₄₅₈ -R ₄₅₉ -R ₄₆₀ -R ₄₆₁ -R ₄₆₂ -R ₄₆₃ -R ₄₆₄ -R ₄₆₅ -R ₄₆₆ -R ₄₆₇ -R ₄₆₈ -R ₄₆₉ -R ₄₇₀ -R ₄₇₁ -R ₄₇₂ -R ₄₇₃ -R ₄₇₄ -R ₄₇₅ -R ₄₇₆ -R ₄₇₇ -R ₄₇₈ -R ₄₇₉ -R ₄₈₀ -R ₄₈₁ -R ₄₈₂ -R ₄₈₃ -R ₄₈₄ -R ₄₈₅ -R ₄₈₆ -R ₄₈₇ -R ₄₈₈ -R ₄₈₉ -R ₄₉₀ -R ₄₉₁ -R ₄₉₂ -R ₄₉₃ -R ₄₉₄ -R ₄₉₅ -R ₄₉₆ -R ₄₉₇ -R ₄₉₈ -R ₄₉₉ -R ₅₀₀ -R ₅₀₁ -R ₅₀₂ -R ₅₀₃ -R ₅₀₄ -R ₅₀₅ -R ₅₀₆ -R ₅₀₇ -R ₅₀₈ -R ₅₀₉ -R ₅₁₀ -R ₅₁₁ -R ₅₁₂ -R ₅₁₃ -R ₅₁₄ -R ₅₁₅ -R ₅₁₆ -R ₅₁₇ -R ₅₁₈ -R ₅₁₉ -R ₅₂₀ -R ₅₂₁ -R ₅₂₂ -R ₅₂₃ -R ₅₂₄ -R ₅₂₅ -R ₅₂₆ -R ₅₂₇ -R ₅₂₈ -R ₅₂₉ -R ₅₃₀ -R ₅₃₁ -R ₅₃₂ -R ₅₃₃ -R ₅₃₄ -R ₅₃₅ -R ₅₃₆ -R ₅₃₇ -R ₅₃₈ -R ₅₃₉ -R ₅₄₀ -R ₅₄₁ -R ₅₄₂ -R ₅₄₃ -R ₅₄₄ -R ₅₄₅ -R ₅₄₆ -R ₅₄₇ -R ₅₄₈ -R ₅₄₉ -R ₅₅₀ -R ₅₅₁ -R ₅₅₂ -R ₅₅₃ -R ₅₅₄ -R ₅₅₅ -R ₅₅₆ -R ₅₅₇ -R ₅₅₈ -R ₅₅₉ -R ₅₆₀ -R ₅₆₁ -R ₅₆₂ -R ₅₆₃ -R ₅₆₄ -R ₅₆₅ -R ₅₆₆ -R ₅₆₇ -R ₅₆₈ -R ₅₆₉ -R ₅₇₀ -R ₅₇₁ -R ₅₇₂ -R ₅₇₃ -R ₅₇₄ -R ₅₇₅ -R ₅₇₆ -R ₅₇₇ -R ₅₇₈ -R ₅₇₉ -R ₅₈₀ -R ₅₈₁ -R ₅₈₂ -R ₅₈₃ -R ₅₈₄ -R ₅₈₅ -R ₅₈₆ -R ₅₈₇ -R ₅₈₈ -R ₅₈₉ -R ₅₉₀ -R ₅₉₁ -R ₅₉₂ -R ₅₉₃ -R ₅₉₄ -R ₅₉₅ -R ₅₉₆ -R ₅₉₇ -R ₅₉₈ -R ₅₉₉ -R ₆₀₀ -R ₆₀₁ -R ₆₀₂ -R ₆₀₃ -R ₆₀₄ -R ₆₀₅ -R ₆₀₆ -R ₆₀₇ -R ₆₀₈ -R ₆₀₉ -R ₆₁₀ -R ₆₁₁ -R ₆₁₂ -R ₆₁₃ -R ₆₁₄ -R ₆₁₅ -R ₆₁₆ -R ₆₁₇ -R ₆₁₈ -R ₆₁₉ -R ₆₂₀ -R ₆₂₁ -R ₆₂₂ -R ₆₂₃ -R ₆₂₄ -R ₆₂₅ -R ₆₂₆ -R ₆₂₇ -R ₆₂₈ -R ₆₂₉ -R ₆₃₀ -R ₆₃₁ -R ₆₃₂ -R ₆₃₃ -R ₆₃₄ -R ₆₃₅ -R ₆₃₆ -R ₆₃₇ -R ₆₃₈ -R ₆₃₉ -R ₆₄₀ -R ₆₄₁ -R ₆₄₂ -R ₆₄₃ -R ₆₄₄ -R ₆₄₅ -R ₆₄₆ -R ₆₄₇ -R ₆₄₈ -R ₆₄₉ -R ₆₅₀ -R ₆₅₁ -R ₆₅₂ -R ₆₅₃ -R ₆₅₄ -R ₆₅₅ -R ₆₅₆ -R ₆₅₇ -R ₆₅₈ -R ₆₅₉ -R ₆₆₀ -R ₆₆₁ -R ₆₆₂ -R ₆₆₃ -R ₆₆₄ -R ₆₆₅ -R ₆₆₆ -R ₆₆₇ -R ₆₆₈ -R ₆₆₉ -R ₆₇₀ -R ₆₇₁ -R ₆₇₂ -R ₆₇₃ -R ₆₇₄ -R ₆₇₅ -R ₆₇₆ -R ₆₇₇ -R ₆₇₈ -R ₆₇₉ -R ₆₈₀ -R ₆₈₁ -R ₆₈₂ -R ₆₈₃ -R ₆₈₄ -R ₆₈₅ -R ₆₈₆ -R ₆₈₇ -R ₆₈₈ -R ₆₈₉ -R ₆₉₀ -R ₆₉₁ -R ₆₉₂ -R ₆₉₃ -R ₆₉₄ -R ₆₉₅ -R ₆₉₆ -R ₆₉₇ -R ₆₉₈ -R ₆₉₉ -R ₇₀₀ -R ₇₀₁ -R ₇₀₂ -R ₇₀₃ -R ₇₀₄ -R ₇₀₅ -R ₇₀₆ -R ₇₀₇ -R ₇₀₈ -R ₇₀₉ -R ₇₁₀ -R ₇₁₁ -R ₇₁₂ -R ₇₁₃ -R ₇₁₄ -R ₇₁₅ -R ₇₁₆ -R ₇₁₇ -R ₇₁₈ -R ₇₁₉ -R ₇₂₀ -R ₇₂₁ -R ₇₂₂ -R ₇₂₃ -R ₇₂₄ -R ₇₂₅ -R ₇₂₆ -R ₇₂₇ -R ₇₂₈ -R ₇₂₉ -R ₇₃₀ -R ₇₃₁ -R ₇₃₂ -R ₇₃₃ -R ₇₃₄ -R ₇₃₅ -R ₇₃₆ -R ₇₃₇ -R ₇₃₈ -R ₇₃₉ -R ₇₄₀ -R ₇₄₁ -R ₇₄₂ -R ₇₄₃ -R ₇₄₄ -R ₇₄₅ -R ₇₄₆ -R ₇₄₇ -R ₇₄₈ -R ₇₄₉ -R ₇₅₀ -R ₇₅₁ -R ₇₅₂ -R ₇₅₃ -R ₇₅₄ -R ₇₅₅ -R ₇₅₆ -R ₇₅₇ -R ₇₅₈ -R ₇₅₉ -R ₇₆₀ -R ₇₆₁ -R ₇₆₂ -R ₇₆₃ -R ₇₆₄ -R ₇₆₅ -R ₇₆₆ -R ₇₆₇ -R ₇₆₈ -R ₇₆₉ -R ₇₇₀ -R ₇₇₁ -R ₇₇₂ -R ₇₇₃ -R ₇₇₄ -R ₇₇₅ -R ₇₇₆ -R ₇₇₇ -R ₇₇₈ -R ₇₇₉ -R ₇₈₀ -R ₇₈₁ -R ₇₈₂ -R ₇₈₃ -R ₇₈₄ -R ₇₈₅ -R ₇₈₆ -R ₇₈₇ -R ₇₈₈ -R ₇₈₉ -R ₇₉₀ -R ₇₉₁ -R ₇₉₂ -R ₇₉₃ -R ₇₉₄ -R ₇₉₅ -R ₇₉₆ -R ₇₉₇ -R ₇₉₈ -R ₇₉₉ -R ₈₀₀ -R ₈₀₁ -R ₈₀₂ -R ₈₀₃ -R ₈₀₄ -R ₈₀₅ -R ₈₀₆ -R ₈₀₇ -R ₈₀₈ -R ₈₀₉ -R ₈₁₀ -R ₈₁₁ -R ₈₁₂ -R ₈₁₃ -R ₈₁₄ -R ₈₁₅ -R ₈₁₆ -R ₈₁₇ -R ₈₁₈ -R ₈₁₉ -R ₈₂₀ -R ₈₂₁ -R ₈₂₂ -R ₈₂₃ -R ₈₂₄ -R ₈₂₅ -R ₈₂₆ -R ₈₂₇ -R ₈₂₈ -R ₈₂₉ -R ₈₃₀ -R ₈₃₁ -R ₈₃₂ -R ₈₃₃ -R ₈₃₄ -R ₈₃₅ -R ₈₃₆ -R ₈₃₇ -R ₈₃₈ -R ₈₃₉ -R ₈₄₀ -R ₈₄₁ -R ₈₄₂ -R ₈₄₃ -R ₈₄₄ -R ₈₄₅ -R ₈₄₆ -R ₈₄₇ -R ₈₄₈ -R ₈₄₉ -R ₈₅₀ -R ₈₅₁ -R ₈₅₂ -R ₈₅₃ -R ₈₅₄ -R ₈₅₅ -R ₈₅₆ -R ₈₅₇ -R ₈₅₈ -R ₈₅₉ -R ₈₆₀ -R ₈₆₁ -R ₈₆₂ -R ₈₆₃ -R ₈₆₄ -R ₈₆₅ -R ₈₆₆ -R ₈₆₇ -R ₈₆₈ -R ₈₆₉ -R ₈₇₀ -R ₈₇₁ -R ₈₇₂ -R ₈₇₃ -R ₈₇₄ -R ₈₇₅ -R ₈₇₆ -R ₈₇₇ -R ₈₇₈ -R ₈₇₉ -R ₈₈₀ -R ₈₈₁ -R ₈₈₂ -R ₈₈₃ -R ₈₈₄ -R ₈₈₅ -R ₈₈₆ -R ₈₈₇ -R ₈₈₈ -R ₈₈₉ -R ₈₉₀ -R ₈₉₁ -R ₈₉₂ -R ₈₉₃ -R ₈₉₄ -R ₈₉₅ -R ₈₉₆ -R ₈₉₇ -R ₈₉₈ -R ₈₉₉ -R ₉₀₀ -R ₉₀₁ -R ₉₀₂ -R ₉₀₃ -R ₉₀₄ -R ₉₀₅ -R ₉₀₆ -R ₉₀₇ -R ₉₀₈ -R ₉₀₉ -R ₉₁₀ -R ₉₁₁ -R ₉₁₂ -R ₉₁₃ -R ₉₁₄ -R ₉₁₅ -R ₉₁₆ -R ₉₁₇ -R ₉₁₈ -R ₉₁₉ -R ₉₂₀ -R ₉₂₁ -R ₉₂₂ -R ₉₂₃ -R ₉₂₄ -R ₉₂₅ -R ₉₂₆ -R ₉₂₇ -R ₉₂₈ -R ₉₂₉ -R ₉₃₀ -R ₉₃₁ -R ₉₃₂ -R ₉₃₃ -R ₉₃₄ -R ₉₃₅ -R ₉₃₆ -R ₉₃₇ -R ₉₃₈ -R ₉₃₉ -R ₉₄₀ -R ₉₄₁ -R ₉₄₂ -R ₉₄₃ -R ₉₄₄ -R ₉₄₅ -R ₉₄₆ -R ₉₄₇ -R ₉₄₈ -R ₉₄₉ -R ₉₅₀ -R ₉₅₁ -R ₉₅₂ -R ₉₅₃ -R ₉₅₄ -R ₉₅₅ -R ₉₅₆ -R ₉₅₇ -R ₉₅₈ -R ₉₅₉ -R ₉₆₀ -R ₉₆₁ -R ₉₆₂ -R ₉₆₃ -R ₉₆₄ -R ₉₆₅ -R ₉₆₆ -R ₉₆₇ -R ₉₆₈ -R ₉₆₉ -R ₉₇₀ -R ₉₇₁ -R ₉₇₂ -R ₉₇₃ -R ₉₇₄ -R ₉₇₅ -R ₉₇₆ -R ₉₇₇ -R ₉₇₈ -R ₉₇₉ -R ₉₈₀ -R ₉₈₁ -R ₉₈₂ -R ₉₈₃ -R ₉₈₄ -R ₉₈₅ -R ₉₈₆ -R ₉₈₇ -R ₉₈₈ -R ₉₈₉ -R ₉₉₀ -R ₉₉₁ -R ₉₉₂ -R ₉₉₃ -R ₉₉₄ -R ₉₉₅ -R ₉₉₆ -R ₉₉₇ -R ₉₉₈ -R ₉₉₉ -R ₁₀₀₀ -R ₁₀₀₁ -R ₁₀₀₂ -R ₁₀₀₃ -R ₁₀₀₄ -R ₁₀₀₅ -R ₁₀₀₆ -R ₁₀₀₇ -R ₁₀₀₈ -R ₁₀₀₉ -R ₁₀₁₀ -R ₁₀₁₁ -R ₁₀₁₂ -R ₁₀₁₃ -R ₁₀₁₄ -R ₁₀₁₅ -R ₁₀₁₆ -R ₁₀₁₇ -R ₁₀₁₈ -R ₁₀₁₉ -R ₁₀₂₀ -R ₁₀₂₁ -R ₁₀₂₂ -R ₁₀₂₃ -R ₁₀₂₄ -R ₁₀₂₅ -R ₁₀₂₆ -R ₁₀₂₇ -R ₁₀₂₈ -R ₁₀₂₉ -R ₁₀₃₀ -R ₁₀₃₁ -R ₁₀₃₂ -R ₁₀₃₃ -R ₁₀₃₄ -R ₁₀₃₅ -R ₁₀₃₆ -R ₁₀₃₇ -R ₁₀₃₈ -R ₁₀₃₉ -R ₁₀₄₀ -R ₁₀₄₁ -R ₁₀₄₂ -R ₁₀₄₃ -R ₁₀₄₄ -R ₁₀₄₅ -R ₁₀₄₆ -R ₁₀₄₇ -R ₁₀₄₈ -R ₁₀₄₉ -R ₁₀₅₀ -R ₁₀₅₁ -R ₁₀₅₂ -R ₁₀₅₃ -R ₁₀₅₄ -R ₁₀₅₅ -R ₁₀₅₆ -R ₁₀₅₇ -R ₁₀₅₈ -R ₁₀₅₉ -R ₁₀₆₀ -R ₁₀₆₁ -R ₁₀₆₂ -R ₁₀₆₃ -R ₁₀₆₄ -R ₁₀₆₅ -R ₁₀₆₆ -R ₁₀₆₇ -R ₁₀₆₈ -R ₁₀₆₉ -R ₁₀₇₀ -R ₁₀₇₁ -R ₁₀₇₂ -R ₁₀₇₃ -R ₁₀₇₄ -R ₁₀₇₅ -R ₁₀₇₆ -R ₁₀₇₇ -R ₁₀₇₈ -R ₁₀₇₉ -R ₁₀₈₀ -R ₁₀₈₁ -R ₁₀₈₂ -R ₁₀₈₃ -R ₁₀₈₄ -R ₁₀₈₅ -R ₁₀₈₆ -R ₁₀₈₇ -R ₁₀₈₈ -R ₁₀₈₉ -R ₁₀₉₀ -R ₁₀₉₁ -R ₁₀₉₂ -R ₁₀₉₃ -R ₁₀₉₄ -R ₁₀₉₅ -R ₁₀₉₆ -R ₁₀₉₇ -R ₁₀₉₈ -R ₁₀₉₉ -R ₁₁₀₀ -R ₁₁₀₁ -R ₁₁₀₂ -R ₁₁₀₃ -R ₁₁₀₄ -R ₁₁₀₅ -R ₁₁₀₆ -R ₁₁₀₇ -R ₁₁₀₈ -R ₁₁₀₉ -R ₁₁₁₀ -R ₁₁₁₁ -R ₁₁₁₂ -R ₁₁₁₃ -R ₁₁₁₄ -R ₁₁₁₅ -R ₁₁₁₆ -R ₁₁₁₇ -R ₁₁₁₈ -R ₁₁₁₉ -R ₁₁₂₀ -R ₁₁₂₁ -R ₁₁₂₂ -R ₁₁₂₃ -R ₁₁₂₄ -R ₁₁₂₅ -R ₁₁₂₆ -R ₁₁₂₇ -R ₁₁₂₈ -R ₁₁₂₉ -R ₁₁₃₀ -R ₁₁₃₁ -R ₁₁₃₂ -R ₁₁₃₃ -R ₁₁₃₄ -R ₁₁₃₅ -R ₁₁₃₆ -R ₁₁₃₇ -R ₁₁₃₈ -R ₁₁₃₉ -R ₁₁₄₀ -R ₁₁₄₁ -R ₁₁₄₂ -R ₁₁₄₃ -R ₁₁₄₄ -R ₁₁₄₅ -R ₁₁₄₆ -R ₁₁₄₇ -R ₁₁₄₈ -R ₁₁₄₉ -R ₁₁₅₀ -R ₁₁₅₁ -R ₁₁₅₂ -R ₁₁₅₃ -R ₁₁₅₄ -R ₁₁₅₅
------------	-------	------------	----------------	----------	---------	-------------	-------------	-------------	--------------	-----------------------	---------------------------	---------------------------	------------------	----------------------	------------	-----------------	--------------------	---------------------------------	---	-------------------------------	-----------	----------------------	--------------------------	--	-----------------------	----------	----------	--------------------	------------	--	------------------------------------	------------------------------------	--	--

Agrupación	Tamaño	P.K. Acumulado	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adaptado (mm)	PN (límite valvuleta (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. DN 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	Alcance de zanja	A-: separación tubo salud	S-: Separación entre tuberías	B-: Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínima (m)	H3- Profundidad mínima 4' cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Rehabilitación c-: Suela seleccionada C/95% PN, < 30 mm. d-Gabarrillo S15. e- borrompió HM-20	Rehabilitación c-: Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S15. f- Suela adecuada procedente excavación (<150mm) c/95% PN. g- Luchero mod.	Exposici. (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1- ang (m)	H1-DH+H2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m³)	Relevo cama (m³)	Relevo riñonera (m³)	Relevo cama+riñonera HM-20(m³)	Relevo cobertura c-: Suela seleccionada C/95% PN, < 30 mm	Relevo cobertura. d-Gabarrillo S15	Relevo cobertura. e- HM-20	Relevo cobertura. f- Suela adecuada procedente excavación (<150mm) c/95% PN	Relevo cobertura. g- Luchero mod. (m³)	Excedente de tierra (m³) (compensación actual 0%, e- conjunto neto)	Cinta laberios (m)	Manto escollera a-0.5m. ancho-30m. (m³)
DC-12/11/14	DC-116	623.00	623.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.10	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	46.2	3.5	49.6	49.6	6.1	1.6	4.5	41.0	1.6	4.5	41.0	2.7	1.0							
DC-12/11/14	DC-116	624.00	624.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.31	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	48.0	3.5	51.7	51.7	6.1	1.6	4.5	43.0	1.6	4.5	43.0	2.7	1.0							
DC-12/11/14	DC-116	625.00	625.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.47	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	49.3	4.0	53.3	53.3	6.1	1.6	4.5	44.6	1.6	4.5	44.6	2.7	1.0							
DC-12/11/14	DC-116	626.00	626.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.56	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	50.1	4.1	54.2	54.2	6.1	1.6	4.5	45.5	1.6	4.5	45.5	2.7	1.0							
DC-12/11/14	DC-116	627.00	627.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.52	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	49.7	4.0	53.8	53.8	6.1	1.6	4.5	45.1	1.6	4.5	45.1	2.7	1.0							
DC-12/11/14	DC-116	628.00	628.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.54	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	50.0	4.1	54.0	54.0	6.1	1.6	4.5	45.4	1.6	4.5	45.4	2.7	1.0							
DC-12/11/14	DC-116	629.00	629.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.62	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	50.6	4.2	54.7	54.7	6.1	1.6	4.5	46.1	1.6	4.5	46.1	2.7	1.0							
DC-12/11/14	DC-116	630.00	630.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.69	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	51.2	4.3	55.5	55.5	6.1	1.6	4.5	46.8	1.6	4.5	46.8	2.7	1.0							
DC-12/11/14	DC-116	631.00	631.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.76	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	51.9	4.3	56.2	56.2	6.1	1.6	4.5	47.6	1.6	4.5	47.6	2.7	1.0							
DC-12/11/14	DC-116	632.00	632.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.84	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	52.5	4.4	57.0	57.0	6.1	1.6	4.5	48.3	1.6	4.5	48.3	2.7	1.0							
DC-12/11/14	DC-116	633.00	633.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.91	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	53.2	4.5	57.7	57.7	6.1	1.6	4.5	49.1	1.6	4.5	49.1	2.7	1.0							
DC-12/11/14	DC-116	634.00	634.00			Ajuste piezométrica	1	1.829	275	18.00	16								8.99	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	53.9	4.7	58.6	58.6	6.1	1.6	4.5	49.9	1.6	4.5	49.9	2.7	1.0							
DC-12/11/14	DC-116	635.00	635.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.07	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	54.7	4.8	59.4	59.4	6.1	1.6	4.5	50.8	1.6	4.5	50.8	2.7	1.0							
DC-12/11/14	DC-116	636.00	636.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.16	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	55.4	4.9	60.3	60.3	6.1	1.6	4.5	51.6	1.6	4.5	51.6	2.7	1.0							
DC-12/11/14	DC-116	637.00	637.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.22	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	57.2	5.1	62.3	62.3	6.1	1.6	4.5	52.3	1.6	4.5	52.3	2.7	1.0							
DC-12/11/14	DC-116	638.00	638.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.25	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	56.2	5.0	61.2	61.2	6.1	1.6	4.5	52.6	1.6	4.5	52.6	2.7	1.0							
DC-12/11/14	DC-116	639.00	639.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.27	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	56.5	5.0	61.5	61.5	6.1	1.6	4.5	52.9	1.6	4.5	52.9	2.7	1.0							
DC-12/11/14	DC-116	640.00	640.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.31	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	56.8	5.1	61.9	61.9	6.1	1.6	4.5	53.2	1.6	4.5	53.2	2.7	1.0							
DC-12/11/14	DC-116	641.00	641.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.35	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	57.3	5.1	62.1	62.1	6.1	1.6	4.5	53.7	1.6	4.5	53.7	2.7	1.0							
DC-12/11/14	DC-116	642.00	642.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.39	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	57.6	5.2	62.8	62.8	6.1	1.6	4.5	54.1	1.6	4.5	54.1	2.7	1.0							
DC-12/11/14	DC-116	643.00	643.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.43	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	58.0	5.2	63.2	63.2	6.1	1.6	4.5	54.5	1.6	4.5	54.5	2.7	1.0							
DC-12/11/14	DC-116	644.00	644.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.50	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	58.5	5.3	63.9	63.9	6.1	1.6	4.5	55.2	1.6	4.5	55.2	2.7	1.0							
DC-12/11/14	DC-116	644.96	644.96			Ajuste piezométrica	1	1.829	275	18.00	16								9.55	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	58.8	5.3	64.0	64.0	6.1	1.6	4.5	55.3	1.5	4.4	55.3	2.7	1.0							
DC-12/11/14	DC-116	645.00	645.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.55	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	59.4	5.4	64.8	64.8	6.1	1.6	4.5	56.2	1.6	4.5	56.2	2.7	1.0							
DC-12/11/14	DC-116	646.00	646.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.59	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	59.4	5.4	64.8	64.8	6.1	1.6	4.5	56.2	1.6	4.5	56.2	2.7	1.0							
DC-12/11/14	DC-116	647.00	647.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.69	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	60.4	5.6	66.0	66.0	6.1	1.6	4.5	57.3	1.6	4.5	57.3	2.7	1.0							
DC-12/11/14	DC-116	648.00	648.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.75	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	61.0	5.7	66.6	66.6	6.1	1.6	4.5	58.0	1.6	4.5	58.0	2.7	1.0							
DC-12/11/14	DC-116	649.00	649.00			Ajuste piezométrica	1	1.829	275	18.00	16								9.79	0.33	22-1-1800	0.60	3.00	1.00	3.00	0.20	120	0.30	1.50	5.50	a	c	f	100%	0.7	2.3	1.0	61.7	5.7	67.1	67.1	6.1	1.6	4.5	58.3	1.6	4.5	58.3	2.7	1.0							
DC-12/11/14	DC-116	650.00	650.00			Ajuste piezométrica</																																																			

Agregación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adoptado (mm)	PN (límite valedad (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre, Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	concretoado zapla	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granular o arena b- cama de hormigón HM-20	Reforzamiento c- Suela seleccionada C/95% PN, < 30 mm. d- Gábarillo S/15, < bornapaja HM-20	Reforzamiento e- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d- Gábarillo S/15, < Suela adecuada para excavación (<150mm) c/95% PN, g- Luchero modif.	Exposic (m, escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1- ang (n)	HI-DHxH2 (m)	Long (m)	Excavación tapasoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera granular (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suela seleccionada C/95% PN, < 30 mm	Relevo cobertura d-Gábarillo S/15	Relevo cobertura e- HM-20	Relevo cobertura f- Suela adecuada para excavación (<150mm) c/95% PN	Relevo cobertura g- Luchero modif (m3)	Excedente de tierra (m3) (consumo actual 0%, c/soportante 5%)	Cinta liberada (m)	Manto escollera a 0.5m, ancho-30m (m3)
DC-12/1/14	DC-T16	1.009.00	1.009.00				1	1.829	275	11.50	16								3.95	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.0	17.0	17.0	6.1	1.6	4.5	8.4	1.6	4.5					8.4	2.7	1.0									
DC-12/1/14	DC-T16	1.010.00	1.010.00				1	1.829	275	11.50	16								3.96	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.1	17.1	17.1	6.1	1.6	4.5	8.4	1.6	4.5					8.4	2.7	1.0									
DC-12/1/14	DC-T16	1.011.00	1.011.00				1	1.829	275	11.50	16								3.97	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.2	17.2	17.2	6.1	1.6	4.5	8.5	1.6	4.5					8.5	2.7	1.0									
DC-12/1/14	DC-T16	1.012.00	1.012.00				1	1.829	275	11.50	16								3.98	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.2	17.2	17.2	6.1	1.6	4.5	8.6	1.6	4.5					8.6	2.7	1.0									
DC-12/1/14	DC-T16	1.013.00	1.013.00				1	1.829	275	11.50	16								3.99	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.3	17.3	17.3	6.1	1.6	4.5	8.6	1.6	4.5					8.6	2.7	1.0									
DC-12/1/14	DC-T16	1.014.00	1.014.00				1	1.829	275	11.50	16								4.01	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.4	17.4	17.4	6.1	1.6	4.5	8.7	1.6	4.5					8.7	2.7	1.0									
DC-12/1/14	DC-T16	1.015.00	1.015.00				1	1.829	275	11.50	16								4.02	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.4	17.4	17.4	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0									
DC-12/1/14	DC-T16	1.016.00	1.016.00				1	1.829	275	11.50	16								4.02	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.4	17.4	17.4	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0									
DC-12/1/14	DC-T16	1.017.00	1.017.00				1	1.829	275	11.50	16								4.02	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.4	17.4	17.4	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0									
DC-12/1/14	DC-T16	1.018.00	1.018.00				1	1.829	275	11.50	16								4.04	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5					8.9	2.7	1.0									
DC-12/1/14	DC-T16	1.019.00	1.019.00				1	1.829	275	11.50	16								4.02	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0									
DC-12/1/14	DC-T16	1.020.00	1.020.00				1	1.829	275	11.50	16								4.03	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0									
DC-12/1/14	DC-T16	1.021.00	1.021.00				1	1.829	275	11.50	16								4.03	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0									
DC-12/1/14	DC-T16	1.022.00	1.022.00				1	1.829	275	11.50	16								4.03	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0									
DC-12/1/14	DC-T16	1.023.00	1.023.00				1	1.829	275	11.50	16								4.04	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5					8.9	2.7	1.0									
DC-12/1/14	DC-T16	1.024.00	1.024.00				1	1.829	275	11.50	16								4.03	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5					8.9	2.7	1.0									
DC-12/1/14	DC-T16	1.025.00	1.025.00				1	1.829	275	11.50	16								4.03	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5					8.9	2.7	1.0									
DC-12/1/14	DC-T16	1.026.00	1.026.00				1	1.829	275	11.50	16								4.03	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5					8.9	2.7	1.0									
DC-12/1/14	DC-T16	1.027.00	1.027.00				1	1.829	275	11.50	16								4.04	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5					8.9	2.7	1.0									
DC-12/1/14	DC-T16	1.028.00	1.028.00				1	1.829	275	11.50	16								4.04	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.9	1.6	4.5					8.9	2.7	1.0									
DC-12/1/14	DC-T16	1.029.00	1.029.00				1	1.829	275	11.50	16								4.03	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0									
DC-12/1/14	DC-T16	1.030.00	1.030.00				1	1.829	275	11.50	16								4.02	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.5	17.5	17.5	6.1	1.6	4.5	8.8	1.6	4.5					8.8	2.7	1.0									
DC-12/1/14	DC-T16	1.031.00	1.031.00				1	1.829	275	11.50	16								4.01	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.4	17.4	17.4	6.1	1.6	4.5	8.7	1.6	4.5					8.7	2.7	1.0									
DC-12/1/14	DC-T16	1.032.00	1.032.00				1	1.829	275	11.50	16								4.00	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.4	17.4	17.4	6.1	1.6	4.5	8.7	1.6	4.5					8.7	2.7	1.0									
DC-12/1/14	DC-T16	1.033.00	1.033.00				1	1.829	275	11.50	16								4.00	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.3	17.3	17.3	6.1	1.6	4.5	8.7	1.6	4.5					8.7	2.7	1.0									
DC-12/1/14	DC-T16	1.034.00	1.034.00				1	1.829	275	11.50	16								3.99	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.3	17.3	17.3	6.1	1.6	4.5	8.6	1.6	4.5					8.6	2.7	1.0									
DC-12/1/14	DC-T16	1.035.00	1.035.00				1	1.829	275	11.50	16								3.98	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.2	17.2	17.2	6.1	1.6	4.5	8.6	1.6	4.5					8.6	2.7	1.0									
DC-12/1/14	DC-T16	1.036.00	1.036.00				1	1.829	275	11.50	16								3.97	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.2	17.2	17.2	6.1	1.6	4.5	8.5	1.6	4.5					8.5	2.7	1.0									
DC-12/1/14	DC-T16	1.037.00	1.037.00				1	1.829	275	11.50	16								3.96	0.33	21-1-1800	0.60	3.00				0.20	120	0.30	1.50	a	c	f	100%	0.7	2.3	1.0	17.1	17.1	17.1	6.1	1.6	4.5	8.4	1.6	4.5					8.4	2.7	1.0									

Agrupación	Tramo	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº verticos (mm)	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lateral (mm)	Altura de excavación a TH (m)	Talud HW	concretoado zapla	A- separación tubo salud	S ₂ - Separación entre laborías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a- cama material granulado o arena b- cama de hormigón HM-20	Rehabilitación c- Suela seleccionada C/95% PN, < 30 mm. d- Garbanillo 5/15, e- homopon HM-20	Rehabilitación f- Suela seleccionada C/95% PN, < 30 mm. e- HM-20. d- Garbanillo 5/15, f- Suela adecuada procedente excavación (<150mm) c/95% PN, g- Lector modif.	Exposici. mtr. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1- ang (m)	H1- DN+H2 (m)	Long (m)	Excavación tapasocial (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionada (m3)	Relevo riñonera grabaciado (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura d-Garbanillo 5/15	Relevo cobertura e- HM-20	Relevo cobertura f- Suelo adecuado procedente excavación (<150mm) c/95% PN	Relevo cobertura g- Lector modif (m3)	Excedente de tierra (m3) (compensando altura 0% e- conjunto tierra 5%)	Cinta laborías (m)	Manto escollera a- 0.5m, ancho-30m (m3)
DC-12/1/T14	DC-T16	1.137.00	1.137.00				1	1.829	275	11.50	16					4.54	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.5	20.5	20.5	6.1	1.6	4.5	11.8	1.6	4.5				11.8	2.7	1.0										
DC-12/1/T14	DC-T16	1.138.00	1.138.00				1	1.829	275	11.50	16					4.55	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.6	20.6	20.6	6.1	1.6	4.5	11.9	1.6	4.5				11.9	2.7	1.0										
DC-12/1/T14	DC-T16	1.139.00	1.139.00				1	1.829	275	11.50	16					4.56	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.6	20.6	20.6	6.1	1.6	4.5	12.0	1.6	4.5				12.0	2.7	1.0										
DC-12/1/T14	DC-T16	1.140.00	1.140.00				1	1.829	275	11.50	16					4.54	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.5	20.5	20.5	6.1	1.6	4.5	11.8	1.6	4.5				11.8	2.7	1.0										
DC-12/1/T14	DC-T16	1.141.00	1.141.00				1	1.829	275	11.50	16					4.51	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.3	20.3	20.3	6.1	1.6	4.5	11.7	1.6	4.5				11.7	2.7	1.0										
DC-12/1/T14	DC-T16	1.142.00	1.142.00				1	1.829	275	11.50	16					4.50	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.6	1.6	4.5				11.6	2.7	1.0										
DC-12/1/T14	DC-T16	1.143.00	1.143.00				1	1.829	275	11.50	16					4.50	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.6	1.6	4.5				11.6	2.7	1.0										
DC-12/1/T14	DC-T16	1.144.00	1.144.00				1	1.829	275	11.50	16					4.49	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.6	1.6	4.5				11.6	2.7	1.0										
DC-12/1/T14	DC-T16	1.145.00	1.145.00				1	1.829	275	11.50	16					4.49	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.5	1.6	4.5				11.5	2.7	1.0										
DC-12/1/T14	DC-T16	1.146.00	1.146.00				1	1.829	275	11.50	16					4.49	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.5	1.6	4.5				11.5	2.7	1.0										
DC-12/1/T14	DC-T16	1.147.00	1.147.00				1	1.829	275	11.50	16					4.49	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.5	1.6	4.5				11.5	2.7	1.0										
DC-12/1/T14	DC-T16	1.148.00	1.148.00				1	1.829	275	11.50	16					4.49	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.5	1.6	4.5				11.5	2.7	1.0										
DC-12/1/T14	DC-T16	1.149.00	1.149.00				1	1.829	275	11.50	16					4.49	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.5	1.6	4.5				11.5	2.7	1.0										
DC-12/1/T14	DC-T16	1.150.00	1.150.00				1	1.829	275	11.50	16					4.48	0.33	21-1-1800	0.60		3.00		0.20	120	0.30	1.50		a	c	f	100%	0.7	2.3	1.0	20.2	20.2	20.2	6.1	1.6	4.5	11.5	1.6	4.5				11.5	2.7	1.0										
DC-12/1/T14	T16-T14	1.150.00	1.150.00	Toma	TOMA 16	TOMA 16	1	1.626	275	10.00	16					4.48	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	19.2	19.2	19.2	5.3	1.4	3.9	11.9	1.4	3.9				11.9	2.1	1.0										
DC-12/1/T14	T16-T14	1.00	1.151.00				1	1.626	275	10.00	16					4.47	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	19.2	19.2	19.2	5.3	1.4	3.9	11.8	1.4	3.9				11.8	2.1	1.0										
DC-12/1/T14	T16-T14	2.00	1.152.00				1	1.626	275	10.00	16					4.47	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	19.1	19.1	19.1	5.3	1.4	3.9	11.8	1.4	3.9				11.8	2.1	1.0										
DC-12/1/T14	T16-T14	3.00	1.153.00				1	1.626	275	10.00	16					4.47	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	19.1	19.1	19.1	5.3	1.4	3.9	11.8	1.4	3.9				11.8	2.1	1.0										
DC-12/1/T14	T16-T14	4.00	1.154.00				1	1.626	275	10.00	16					4.46	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	19.1	19.1	19.1	5.3	1.4	3.9	11.8	1.4	3.9				11.8	2.1	1.0										
DC-12/1/T14	T16-T14	5.00	1.155.00				1	1.626	275	10.00	16					4.45	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	19.1	19.1	19.1	5.3	1.4	3.9	11.7	1.4	3.9				11.7	2.1	1.0										
DC-12/1/T14	T16-T14	6.00	1.156.00				1	1.626	275	10.00	16					4.45	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	19.0	19.0	19.0	5.3	1.4	3.9	11.7	1.4	3.9				11.7	2.1	1.0										
DC-12/1/T14	T16-T14	7.00	1.157.00				1	1.626	275	10.00	16					4.43	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	19.0	19.0	19.0	5.3	1.4	3.9	11.6	1.4	3.9				11.6	2.1	1.0										
DC-12/1/T14	T16-T14	8.00	1.158.00				1	1.626	275	10.00	16					4.43	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	19.0	19.0	19.0	5.3	1.4	3.9	11.6	1.4	3.9				11.6	2.1	1.0										
DC-12/1/T14	T16-T14	9.00	1.159.00				1	1.626	275	10.00	16					4.43	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	18.9	18.9	18.9	5.3	1.4	3.9	11.6	1.4	3.9				11.6	2.1	1.0										
DC-12/1/T14	T16-T14	10.00	1.160.00				1	1.626	275	10.00	16					4.42	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	18.9	18.9	18.9	5.3	1.4	3.9	11.5	1.4	3.9				11.5	2.1	1.0										
DC-12/1/T14	T16-T14	11.00	1.161.00				1	1.626	275	10.00	16					4.41	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	18.8	18.8	18.8	5.3	1.4	3.9	11.5	1.4	3.9				11.5	2.1	1.0										
DC-12/1/T14	T16-T14	12.00	1.162.00				1	1.626	275	10.00	16					4.41	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	18.8	18.8	18.8	5.3	1.4	3.9	11.5	1.4	3.9				11.5	2.1	1.0										
DC-12/1/T14	T16-T14	13.00	1.163.00				1	1.626	275	10.00	16					4.40	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	18.8	18.8	18.8	5.3	1.4	3.9	11.4	1.4	3.9				11.4	2.1	1.0										
DC-12/1/T14	T16-T14	14.00	1.164.00				1	1.626	275	10.00	16					4.39	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	18.7	18.7	18.7	5.3	1.4	3.9	11.4	1.4	3.9				11.4	2.1	1.0										
DC-12/1/T14	T16-T14	15.00	1.165.00				1	1.626	275	10.00	16					4.39	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	18.7	18.7	18.7	5.3	1.4	3.9	11.3	1.4	3.9				11.3	2.1	1.0										
DC-12/1/T14	T16-T14	16.00	1.166.00				1	1.626	2																																																		

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja concalcada	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granulado o arena: b-cama de hormigón HM-20	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió HM-20. f= Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suelo adecuado para excavación (<150mm) c/95% PN. g- Lecho mod.	Exposici. m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (m)	H1=DNH2 (m)	Long (m)	Excavación tapasada (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera granular (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura d-Garbanillo 5/15	Relevo cobertura e- HM-20	Relevo cobertura f-Suelo adecuado para excavación (<150mm) c/95% PN	Relevo cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (compromiso anual 0%, e-compromiso 5%)	Cinta liberada (m3)	Manto escollera a=0.5m, ancho=30m (m3)
DC-12/1/T14	T16-T14	244.00	1.394.00				1	1.626	275	10.00	16				4.16	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.4	17.4	17.4	5.3	1.4	3.9	10.1	1.4	3.9							10.1	2.1	1.0						
DC-12/1/T14	T16-T14	245.00	1.395.00				1	1.626	275	10.00	16				4.16	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.4	17.4	17.4	5.3	1.4	3.9	10.1	1.4	3.9							10.1	2.1	1.0						
DC-12/1/T14	T16-T14	246.00	1.396.00				1	1.626	275	10.00	16				4.17	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.5	17.5	17.5	5.3	1.4	3.9	10.1	1.4	3.9							10.1	2.1	1.0						
DC-12/1/T14	T16-T14	247.00	1.397.00				1	1.626	275	10.00	16				4.18	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.5	17.5	17.5	5.3	1.4	3.9	10.2	1.4	3.9							10.2	2.1	1.0						
DC-12/1/T14	T16-T14	248.00	1.398.00				1	1.626	275	10.00	16				4.18	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.5	17.5	17.5	5.3	1.4	3.9	10.2	1.4	3.9							10.2	2.1	1.0						
DC-12/1/T14	T16-T14	249.00	1.399.00				1	1.626	275	10.00	16				4.19	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.6	17.6	17.6	5.3	1.4	3.9	10.2	1.4	3.9							10.2	2.1	1.0						
DC-12/1/T14	T16-T14	250.00	1.400.00				1	1.626	275	10.00	16				4.19	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.6	17.6	17.6	5.3	1.4	3.9	10.3	1.4	3.9							10.3	2.1	1.0						
DC-12/1/T14	T16-T14	251.00	1.401.00				1	1.626	275	10.00	16				4.20	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.6	17.6	17.6	5.3	1.4	3.9	10.3	1.4	3.9							10.3	2.1	1.0						
DC-12/1/T14	T16-T14	252.00	1.402.00				1	1.626	275	10.00	16				4.21	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.7	17.7	17.7	5.3	1.4	3.9	10.3	1.4	3.9							10.3	2.1	1.0						
DC-12/1/T14	T16-T14	253.00	1.403.00				1	1.626	275	10.00	16				4.21	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.7	17.7	17.7	5.3	1.4	3.9	10.4	1.4	3.9							10.4	2.1	1.0						
DC-12/1/T14	T16-T14	254.00	1.404.00				1	1.626	275	10.00	16				4.22	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.7	17.7	17.7	5.3	1.4	3.9	10.4	1.4	3.9							10.4	2.1	1.0						
DC-12/1/T14	T16-T14	255.00	1.405.00				1	1.626	275	10.00	16				4.22	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.8	17.8	17.8	5.3	1.4	3.9	10.4	1.4	3.9							10.4	2.1	1.0						
DC-12/1/T14	T16-T14	256.00	1.406.00				1	1.626	275	10.00	16				4.23	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.8	17.8	17.8	5.3	1.4	3.9	10.4	1.4	3.9							10.4	2.1	1.0						
DC-12/1/T14	T16-T14	257.00	1.407.00				1	1.626	275	10.00	16				4.23	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.8	17.8	17.8	5.3	1.4	3.9	10.5	1.4	3.9							10.5	2.1	1.0						
DC-12/1/T14	T16-T14	258.00	1.408.00				1	1.626	275	10.00	16				4.24	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.9	17.9	17.9	5.3	1.4	3.9	10.5	1.4	3.9							10.5	2.1	1.0						
DC-12/1/T14	T16-T14	259.00	1.409.00				1	1.626	275	10.00	16				4.27	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.0	18.0	18.0	5.3	1.4	3.9	10.7	1.4	3.9							10.7	2.1	1.0						
DC-12/1/T14	T16-T14	260.00	1.410.00				1	1.626	275	10.00	16				4.30	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.2	18.2	18.2	5.3	1.4	3.9	10.8	1.4	3.9							10.8	2.1	1.0						
DC-12/1/T14	T16-T14	261.00	1.411.00				1	1.626	275	10.00	16				4.33	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.4	18.4	18.4	5.3	1.4	3.9	11.0	1.4	3.9							11.0	2.1	1.0						
DC-12/1/T14	T16-T14	262.00	1.412.00				1	1.626	275	10.00	16				4.36	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.5	18.5	18.5	5.3	1.4	3.9	11.2	1.4	3.9							11.2	2.1	1.0						
DC-12/1/T14	T16-T14	263.00	1.413.00				1	1.626	275	10.00	16				4.39	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.7	18.7	18.7	5.3	1.4	3.9	11.4	1.4	3.9							11.4	2.1	1.0						
DC-12/1/T14	T16-T14	264.00	1.414.00				1	1.626	275	10.00	16				4.41	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.8	18.8	18.8	5.3	1.4	3.9	11.5	1.4	3.9							11.5	2.1	1.0						
DC-12/1/T14	T16-T14	265.00	1.415.00				1	1.626	275	10.00	16				4.44	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	19.0	19.0	19.0	5.3	1.4	3.9	11.7	1.4	3.9							11.7	2.1	1.0						
DC-12/1/T14	T16-T14	266.00	1.416.00				1	1.626	275	10.00	16				4.45	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	19.1	19.1	19.1	5.3	1.4	3.9	11.7	1.4	3.9							11.7	2.1	1.0						
DC-12/1/T14	T16-T14	267.00	1.417.00				1	1.626	275	10.00	16				4.41	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	19.8	19.8	19.8	5.3	1.4	3.9	11.5	1.4	3.9							11.5	2.1	1.0						
DC-12/1/T14	T16-T14	267.78	1.417.78				1	1.626	275	10.00	16				4.35	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.8	14.4	14.4	14.4	4.2	1.1	3.1	8.7	1.1	3.1							8.7	1.6	0.8						
DC-12/1/T14	T16-T14	268.00	1.418.00				1	1.626	275	10.00	16				4.33	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.2	4.0	4.0	4.0	1.2	0.3	0.9	2.4	0.3	0.9							2.4	0.5	0.2						
DC-12/1/T14	T16-T14	269.00	1.419.00				1	1.626	275	10.00	16				4.29	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.2	18.2	18.2	5.3	1.4	3.9	10.8	1.4	3.9							10.8	2.1	1.0						
DC-12/1/T14	T16-T14	270.00	1.420.00				1	1.626	275	10.00	16				4.29	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.1	18.1	18.1	5.3	1.4	3.9	10.8	1.4	3.9							10.8	2.1	1.0						
DC-12/1/T14	T16-T14	271.00	1.421.00				1	1.626	275	10.00	16				4.29	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.1	18.1	18.1	5.3	1.4	3.9	10.8	1.4	3.9							10.8	2.1	1.0						
DC-12/1/T14	T16-T14	272.00	1.422.00				1	1.626	275	10.00	16				4.29	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.1																							

Agrupación	Tamaño	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre. Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HV	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió HM-20 Relaciones: a-c: Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<150mm) c/95% PN. g- Lecho mod.	Exposor (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m3)	Relevo cama (m3)	Relevo riñonera(s)m3)	Relevo cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relevo riñonera suelo seleccionado (m3)	Relevo riñonera granular (m3)	Relevo cama+riñonera HM-20(m3)	Relevo cobertura c.- Suelo seleccionado C/95% PN, < 30 mm	Relevo cobertura. d-Garbanillo 5/15	Relevo cobertura. e- HM-20	Relevo cobertura. f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relevo cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensado a nivel 0%, e-superficie teorica 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-12/1/T14	T16-T14	372.00	1.522.00			1	1.626	275	10.00	16				4.42	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.9	18.9		18.9	5.3	1.4	3.9	11.5	1.4	3.9			11.5	2.1	1.0									
DC-12/1/T14	T16-T14	373.00	1.523.00			1	1.626	275	10.00	16				4.41	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.8	18.8		18.8	5.3	1.4	3.9	11.5	1.4	3.9			11.5	2.1	1.0									
DC-12/1/T14	T16-T14	374.00	1.524.00			1	1.626	275	10.00	16				4.40	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.8	18.8		18.8	5.3	1.4	3.9	11.5	1.4	3.9			11.5	2.1	1.0									
DC-12/1/T14	T16-T14	375.00	1.525.00			1	1.626	275	10.00	16				4.40	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.8	18.8		18.8	5.3	1.4	3.9	11.4	1.4	3.9			11.4	2.1	1.0									
DC-12/1/T14	T16-T14	376.00	1.526.00			1	1.626	275	10.00	16				4.40	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.8	18.8		18.8	5.3	1.4	3.9	11.4	1.4	3.9			11.4	2.1	1.0									
DC-12/1/T14	T16-T14	377.00	1.527.00			1	1.626	275	10.00	16				4.39	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.7	18.7		18.7	5.3	1.4	3.9	11.4	1.4	3.9			11.4	2.1	1.0									
DC-12/1/T14	T16-T14	378.00	1.528.00			1	1.626	275	10.00	16				4.39	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.7	18.7		18.7	5.3	1.4	3.9	11.3	1.4	3.9			11.3	2.1	1.0									
DC-12/1/T14	T16-T14	379.00	1.529.00			1	1.626	275	10.00	16				4.38	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.7	18.7		18.7	5.3	1.4	3.9	11.3	1.4	3.9			11.3	2.1	1.0									
DC-12/1/T14	T16-T14	380.00	1.530.00			1	1.626	275	10.00	16				4.38	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.6	18.6		18.6	5.3	1.4	3.9	11.3	1.4	3.9			11.3	2.1	1.0									
DC-12/1/T14	T16-T14	381.00	1.531.00			1	1.626	275	10.00	16				4.37	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.6	18.6		18.6	5.3	1.4	3.9	11.3	1.4	3.9			11.3	2.1	1.0									
DC-12/1/T14	T16-T14	382.00	1.532.00			1	1.626	275	10.00	16				4.37	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.6	18.6		18.6	5.3	1.4	3.9	11.2	1.4	3.9			11.2	2.1	1.0									
DC-12/1/T14	T16-T14	383.00	1.533.00			1	1.626	275	10.00	16				4.36	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.6	18.6		18.6	5.3	1.4	3.9	11.2	1.4	3.9			11.2	2.1	1.0									
DC-12/1/T14	T16-T14	384.00	1.534.00			1	1.626	275	10.00	16				4.36	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.5	18.5		18.5	5.3	1.4	3.9	11.2	1.4	3.9			11.2	2.1	1.0									
DC-12/1/T14	T16-T14	385.00	1.535.00			1	1.626	275	10.00	16				4.35	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.5	18.5		18.5	5.3	1.4	3.9	11.2	1.4	3.9			11.2	2.1	1.0									
DC-12/1/T14	T16-T14	386.00	1.536.00			1	1.626	275	10.00	16				4.35	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.5	18.5		18.5	5.3	1.4	3.9	11.1	1.4	3.9			11.1	2.1	1.0									
DC-12/1/T14	T16-T14	387.00	1.537.00			1	1.626	275	10.00	16				4.35	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.5	18.5		18.5	5.3	1.4	3.9	11.1	1.4	3.9			11.1	2.1	1.0									
DC-12/1/T14	T16-T14	388.00	1.538.00			1	1.626	275	10.00	16				4.35	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.5	18.5		18.5	5.3	1.4	3.9	11.1	1.4	3.9			11.1	2.1	1.0									
DC-12/1/T14	T16-T14	389.00	1.539.00			1	1.626	275	10.00	16				4.35	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.5	18.5		18.5	5.3	1.4	3.9	11.1	1.4	3.9			11.1	2.1	1.0									
DC-12/1/T14	T16-T14	390.00	1.540.00			1	1.626	275	10.00	16				4.35	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.5	18.5		18.5	5.3	1.4	3.9	11.1	1.4	3.9			11.1	2.1	1.0									
DC-12/1/T14	T16-T14	391.00	1.541.00			1	1.626	275	10.00	16				4.26	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.0	18.0		18.0	5.3	1.4	3.9	10.6	1.4	3.9			10.6	2.1	1.0									
DC-12/1/T14	T16-T14	392.00	1.542.00			1	1.626	275	10.00	16				4.15	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.4	17.4		17.4	5.3	1.4	3.9	10.0	1.4	3.9			10.0	2.1	1.0									
DC-12/1/T14	T16-T14	393.00	1.543.00			1	1.626	275	10.00	16				4.04	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.7	16.7		16.7	5.3	1.4	3.9	9.4	1.4	3.9			9.4	2.1	1.0									
DC-12/1/T14	T16-T14	394.00	1.544.00			1	1.626	275	10.00	16				3.92	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.1	16.1		16.1	5.3	1.4	3.9	8.7	1.4	3.9			8.7	2.1	1.0									
DC-12/1/T14	T16-T14	395.00	1.545.00			1	1.626	275	10.00	16				3.81	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.5	15.5		15.5	5.3	1.4	3.9	8.1	1.4	3.9			8.1	2.1	1.0									
DC-12/1/T14	T16-T14	396.00	1.546.00			1	1.626	275	10.00	16				3.76	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.2	15.2		15.2	5.3	1.4	3.9	7.9	1.4	3.9			7.9	2.1	1.0									
DC-12/1/T14	T16-T14	397.00	1.547.00			1	1.626	275	10.00	16				3.76	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.2	15.2		15.2	5.3	1.4	3.9	7.9	1.4	3.9			7.9	2.1	1.0									
DC-12/1/T14	T16-T14	398.00	1.548.00			1	1.626	275	10.00	16				3.75	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.2	15.2		15.2	5.3	1.4	3.9	7.8	1.4	3.9			7.8	2.1	1.0									
DC-12/1/T14	T16-T14	399.00	1.549.00			1	1.626	275	10.00	16				3.75	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.2	15.2		15.2	5.3	1.4	3.9	7.8	1.4	3.9			7.8	2.1	1.0									
DC-12/1/T14	T16-T14	400.00	1.550.00			1	1.626	275	10.00	16				3.74	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1		15.1	5.3	1.4	3.9	7.8	1.4	3.9			7.8	2.1	1.0									
DC-12/1/T14	T16-T14	401.00	1.551.00			1	1.626	275	10.00	16				3.73	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1		15.1	5.3	1.4	3.9	7.8	1.4	3.9			7.8	2.1	1.0									
DC-12/1/T14	T16-T14	402.00	1.552.00			1	1.626	275	10.00	16				3.73	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1		15.1	5.3	1.4	3.9	7.7	1.4	3.9			7.7	2.1	1.0									
DC-12/1/T14	T16-T14	403.00	1.553.00			1	1.626	275	10.00	16				3.73	0.33																																								

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº vertederos por tubería	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre, Acero o espesor lateral (mm)	Altura de excavación a TH (m)	Talud HW	A=separación entre laboras	S=separación entre laboras	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recurvimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relleno/cobertura c- Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15. e-hormigón HM-20. f-Relleno/cobertura c- Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<150mm) c/6% PN. g- Lector modif.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	H1-DHHz (m)	Long (m)	Excavación tapasoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera granbanillo (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relleno cobertura. d-Garbanillo 5/15	Relleno cobertura. e- HM-20	Relleno cobertura. f-Suelo adecuado procedente excavación (<150mm) c/6% PN	Relleno cobertura. g- Lector modif (m3)	Excedente de tierra (m3) (consumo a nivel 0%, e-spojaniento lateral 5%)	Cinta liberada (m)	Manto escollera a 0.5m. ancho-30m. (m3)
DC-121/T14	T16-T14	501.00	1.651.00				1	1.626	275	10.00	16				3.57	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.2	14.2	14.2	5.3	1.4	3.9	6.9	1.4	3.9					4.9	2.1	1.0								
DC-121/T14	T16-T14	501.50	1.651.50				1	1.626	275	10.00	16				3.57	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.2	14.2	14.2	5.3	1.4	3.9	6.9	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	502.00	1.652.00				1	1.626	275	10.00	16				3.57	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.2	14.2	14.2	5.3	1.4	3.9	6.9	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	503.00	1.653.00				1	1.626	275	10.00	16				3.57	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.3	14.3	14.3	5.3	1.4	3.9	6.9	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	504.00	1.654.00				1	1.626	275	10.00	16				3.58	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.3	14.3	14.3	5.3	1.4	3.9	6.9	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	505.00	1.655.00				1	1.626	275	10.00	16				3.58	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.3	14.3	14.3	5.3	1.4	3.9	7.0	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	506.00	1.656.00				1	1.626	275	10.00	16				3.59	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.3	14.3	14.3	5.3	1.4	3.9	7.0	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	507.00	1.657.00				1	1.626	275	10.00	16				3.59	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.4	14.4	14.4	5.3	1.4	3.9	7.0	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	508.00	1.658.00				1	1.626	275	10.00	16				3.60	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.4	14.4	14.4	5.3	1.4	3.9	7.0	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	509.00	1.659.00				1	1.626	275	10.00	16				3.60	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.4	14.4	14.4	5.3	1.4	3.9	7.1	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	510.00	1.660.00				1	1.626	275	10.00	16				3.61	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.4	14.4	14.4	5.3	1.4	3.9	7.1	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	511.00	1.661.00				1	1.626	275	10.00	16				3.61	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	512.00	1.662.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	513.00	1.663.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	514.00	1.664.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	515.00	1.665.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	516.00	1.666.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	517.00	1.667.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	518.00	1.668.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	519.00	1.669.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	520.00	1.670.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	521.00	1.671.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	522.00	1.672.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	523.00	1.673.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	524.00	1.674.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	525.00	1.675.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	526.00	1.676.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	527.00	1.677.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	528.00	1.678.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	529.00	1.679.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	530.00	1.680.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9			4.9	2.1	1.0										
DC-121/T14	T16-T14	531.00	1.681.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60		2.80		0.20	120	0.30																																

Agrupación	Tamaño	P. K. tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertidos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	concentricado zanja	A- separación tubo salud	S ₂ - Separación entre tuberías	B- Ancho interior (m)	Borne X1	Borne X2	H1- Cama apoyo (m)	Ang. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la boma desde fondo	Cama de apoyo a-cama material granulado o arena: b-cama de hormigón HM-20	Rebavaciones a: c- Suela seleccionada C/95% PN, < 30 mm. d-Garbanillo S15. e-borrompió HM-20. f- Suela seleccionada C/95% PN, < 30 mm. g- HM-20. d-Garbanillo S15. f-Suela adecuada procedente excavación (<150mm) c/95% PN. g- Luchero modif.	Exposición (m. escalón (n))	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	H1-DH+H2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno cama (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera grabada(m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Reelleno cobertura. d-Garbanillo S15	Reelleno cobertura. e- HM-20	Reelleno cobertura. f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Reelleno cobertura. g- Luchero modif (m3)	Excedente de tierra (m3) (compensando nivel 0% y espolvoreando 5%)	Cinta liberada (m)	Manto escollera a=0.5m. ancho=30m. (m3)
DC-12/1/T14	T16-T14	758.00	1908.00				1	1.626	275	10.00	16						4.35	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.5	18.5		18.5	5.3	1.4	3.9	11.1	1.4		3.9				11.1	2.1	1.0							
DC-12/1/T14	T16-T14	759.00	1909.00				1	1.626	275	10.00	16						4.37	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.6	18.6		18.6	5.3	1.4	3.9	11.2	1.4		3.9				11.2	2.1	1.0							
DC-12/1/T14	T16-T14	760.00	1910.00				1	1.626	275	10.00	16						4.38	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.6	18.6		18.6	5.3	1.4	3.9	11.3	1.4		3.9				11.3	2.1	1.0							
DC-12/1/T14	T16-T14	761.00	1911.00				1	1.626	275	10.00	16						4.39	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.7	18.7		18.7	5.3	1.4	3.9	11.4	1.4		3.9				11.4	2.1	1.0							
DC-12/1/T14	T16-T14	762.00	1912.00				1	1.626	275	10.00	16						4.40	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.8	18.8		18.8	5.3	1.4	3.9	11.4	1.4		3.9				11.4	2.1	1.0							
DC-12/1/T14	T16-T14	763.00	1913.00				1	1.626	275	10.00	16						4.42	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.9	18.9		18.9	5.3	1.4	3.9	11.5	1.4		3.9				11.5	2.1	1.0							
DC-12/1/T14	T16-T14	764.00	1914.00				1	1.626	275	10.00	16						4.42	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.9	18.9		18.9	5.3	1.4	3.9	11.5	1.4		3.9				11.5	2.1	1.0							
DC-12/1/T14	T16-T14	765.00	1915.00				1	1.626	275	10.00	16						4.42	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.9	18.9		18.9	5.3	1.4	3.9	11.5	1.4		3.9				11.5	2.1	1.0							
DC-12/1/T14	T16-T14	766.00	1916.00				1	1.626	275	10.00	16						4.41	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.9	18.9		18.9	5.3	1.4	3.9	11.5	1.4		3.9				11.5	2.1	1.0							
DC-12/1/T14	T16-T14	767.00	1917.00				1	1.626	275	10.00	16						4.41	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.9	18.9		18.9	5.3	1.4	3.9	11.5	1.4		3.9				11.5	2.1	1.0							
DC-12/1/T14	T16-T14	768.00	1918.00				1	1.626	275	10.00	16						4.40	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.7	18.7		18.7	5.3	1.4	3.9	11.4	1.4		3.9				11.4	2.1	1.0							
DC-12/1/T14	T16-T14	769.00	1919.00				1	1.626	275	10.00	16						4.37	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.6	18.6		18.6	5.3	1.4	3.9	11.2	1.4		3.9				11.2	2.1	1.0							
DC-12/1/T14	T16-T14	770.00	1920.00				1	1.626	275	10.00	16						4.34	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.4	18.4		18.4	5.3	1.4	3.9	11.1	1.4		3.9				11.1	2.1	1.0							
DC-12/1/T14	T16-T14	771.00	1921.00				1	1.626	275	10.00	16						4.31	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.3	18.3		18.3	5.3	1.4	3.9	10.9	1.4		3.9				10.9	2.1	1.0							
DC-12/1/T14	T16-T14	772.00	1922.00				1	1.626	275	10.00	16						4.28	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	18.1	18.1		18.1	5.3	1.4	3.9	10.8	1.4		3.9				10.8	2.1	1.0							
DC-12/1/T14	T16-T14	773.00	1923.00				1	1.626	275	10.00	16						4.26	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.9	17.9		17.9	5.3	1.4	3.9	10.6	1.4		3.9				10.6	2.1	1.0							
DC-12/1/T14	T16-T14	774.00	1924.00				1	1.626	275	10.00	16						4.23	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.8	17.8		17.8	5.3	1.4	3.9	10.4	1.4		3.9				10.4	2.1	1.0							
DC-12/1/T14	T16-T14	775.00	1925.00				1	1.626	275	10.00	16						4.20	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.6	17.6		17.6	5.3	1.4	3.9	10.3	1.4		3.9				10.3	2.1	1.0							
DC-12/1/T14	T16-T14	776.00	1926.00				1	1.626	275	10.00	16						4.17	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.5	17.5		17.5	5.3	1.4	3.9	10.1	1.4		3.9				10.1	2.1	1.0							
DC-12/1/T14	T16-T14	777.00	1927.00				1	1.626	275	10.00	16						4.14	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.3	17.3		17.3	5.3	1.4	3.9	10.0	1.4		3.9				10.0	2.1	1.0							
DC-12/1/T14	T16-T14	778.00	1928.00				1	1.626	275	10.00	16						4.11	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.1	17.1		17.1	5.3	1.4	3.9	9.8	1.4		3.9				9.8	2.1	1.0							
DC-12/1/T14	T16-T14	778.90	1928.90				1	1.626	275	10.00	16						4.06	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.9	15.1	15.1		15.1	4.8	1.3	3.5	8.5	1.3		3.5				8.5	1.9	0.9							
DC-12/1/T14	T16-T14	779.00	1929.00				1	1.626	275	10.00	16						4.05	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.1	17.7	17.7		17.7	0.6	0.1	0.4	1.0	0.1		0.4				1.0	0.2	0.1							
DC-12/1/T14	T16-T14	780.00	1930.00				1	1.626	275	10.00	16						3.96	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.3	16.3		16.3	5.3	1.4	3.9	9.0	1.4		3.9				9.0	2.1	1.0							
DC-12/1/T14	T16-T14	781.00	1931.00				1	1.626	275	10.00	16						3.97	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.4	16.4		16.4	5.3	1.4	3.9	9.0	1.4		3.9				9.0	2.1	1.0							
DC-12/1/T14	T16-T14	782.00	1932.00				1	1.626	275	10.00	16						4.05	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.8	16.8		16.8	5.3	1.4	3.9	9.5	1.4		3.9				9.5	2.1	1.0							
DC-12/1/T14	T16-T14	783.00	1933.00				1	1.626	275	10.00	16						4.13	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.3	17.3		17.3	5.3	1.4	3.9	9.9	1.4		3.9				9.9	2.1	1.0							
DC-12/1/T14	T16-T14	784.00	1934.00				1	1.626	275	10.00	16						4.24	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.9	17.9		17.9	5.3	1.4	3.9	10.5	1.4		3.9				10.5	2.1	1.0							
DC-12/1/T14	T16-T14	785.00	1935.00				1	1.626	275	10.00	16						4.25	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	17.9	17.9		17.9	5.3	1.4	3.9	10.6	1.4		3.9				10.6	2.1	1.0							
DC-12/1/T14	T16-T14	786.00	1936.00				1	1.626	275	10.00	16						4.26	0.33	21-1-1600																																								

[illegible]

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Altura de excavación a TH (m)	Talud HW	Altura de la bermá desde fondo	Carra de apoyo a-cama material granular o arena	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4- altura de la bermá desde fondo	% Escavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	H1-ang (m)	H1-DH42 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c/arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera granular (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, c- 30 mm	Reelleno cobertura d-Garbanillo 5/15	Reelleno cobertura c- HM-20	Reelleno cobertura f-Suelo adecuado e-escavado (<150mm)C/95% PN	Reelleno cobertura g- Lecho modif (m3)	Excedente de tierra (m3) (compromiso a nivel 0%, e+compromiso nivel 5%)	Cinta liberada (m)	Manto escollera a-0.5m, ancho-30m (m3)
DC-12/1/T14	T16-T14	1.53000	2.680.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.6	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4		3.9									2.1	1.0		
DC-12/1/T14	T16-T14	1.53100	2.681.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.6	14.6	14.6	14.6	5.3	1.4	3.9	7.3	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.53200	2.682.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.6	14.6	14.6	14.6	5.3	1.4	3.9	7.3	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.53300	2.683.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.6	14.6	14.6	14.6	5.3	1.4	3.9	7.3	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.53400	2.684.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.6	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.53500	2.685.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.6	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.53600	2.686.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.6	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.53700	2.687.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.53800	2.688.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.53900	2.689.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54000	2.690.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54100	2.691.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54200	2.692.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54300	2.693.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54400	2.694.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54500	2.695.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54600	2.696.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54700	2.697.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54800	2.698.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.54900	2.699.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55000	2.700.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55100	2.701.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55200	2.702.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55300	2.703.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55400	2.704.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55500	2.705.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55600	2.706.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55700	2.707.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55800	2.708.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.55900	2.709.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56000	2.710.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56100	2.711.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56200	2.712.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56300	2.713.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56400	2.714.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56500	2.715.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56600	2.716.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56700	2.717.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56800	2.718.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.56900	2.719.00				1	1.626	275	10.00	16						100%	0.6	2.1	1.0	14.5	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4		3.9								2.1	1.0			
DC-12/1/T14	T16-T14	1.57000	2.720.00				1	1.626	275	10.00	16						10																										

Agrupación	Tamaño	P.K. Tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Desague	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja concalcionada	A= separación tubo salud	S ₂ = Separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1=Carra apoyo (m)	Ang. Apoyo	H2=Recurvimiento cobertura mínimo (m)	H3=Profundidad mínima s/ cave (m)	H4= altura de la borra desde fondo	Carra de apoyo a carra material granular o arena: b=carra de bornes(MM20)	Relleno tuberías c= Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15. e-bornes(MM20)	Releno cobertura f= Suelo seleccionado C/95% PN, < 30 mm. e- MM20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<=150mm) c/65% PN. g- Lecho mod.	Exposor (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1=ang (m)	H1=DNH2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno carra+riñonera (m3)	Relleno carra+riñonera (m3)	Relleno carra+riñonera (m3)	Relleno carra+riñonera (m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura. d-Garbanillo 5/15	Relleno cobertura. e- MM20	Relleno cobertura. f-Suelo adecuado procedente excavación (<=150mm) c/65% PN	Relleno cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (compensación alval 0%, e-compañamiento 5%)	Cinta liberata (m)	Manto escollera a 0.5m. ancho=30m. (m3)
DC-12/1/T14	T16-T14	1.660.00	2.810.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.661.00	2.811.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.662.00	2.812.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.663.00	2.813.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.664.00	2.814.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.665.00	2.815.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.666.00	2.816.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.667.00	2.817.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.668.00	2.818.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.669.00	2.819.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.670.00	2.820.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.671.00	2.821.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.672.00	2.822.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.673.00	2.823.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.674.00	2.824.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.675.00	2.825.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.676.00	2.826.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.677.00	2.827.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.678.00	2.828.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.679.00	2.829.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.680.00	2.830.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.681.00	2.831.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.682.00	2.832.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.683.00	2.833.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.684.00	2.834.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.685.00	2.835.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.686.00	2.836.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.687.00	2.837.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.688.00	2.838.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.689.00	2.839.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4		3.9			7.6	2.1	1.0					
DC-12/1/T14	T16-T14	1.690.00	2.840.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9																		

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Aquela rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A-: separación entre labrías	S ₂ -: Separación entre labrías	B-: Ancho interior (m)	Borne X1	Borne X2	H1-: Cama apoyo (m)	Ang. Apoyo	H2-: Recubrimiento cobertura mínimo (m)	H3-: Profundidad mínima s/ cave (m)	H4-: altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena: b-cama de hormigón HM-20	Relleno/cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm. d-Garbanillo 5/15. e-bornopig HM-20. f-Relleno/cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<-150mm) c/95% PN. g- Lecho modif.	Exposici. (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c-arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera garbanillo (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura. d-Garbanillo 5/15	Relleno cobertura. e- HM-20	Relleno cobertura. f-Suelo adecuado procedente excavación (<-150mm) c/95% PN	Relleno cobertura. g- Lecho modif (m3)	Excedente de tierra (m3) (compensado a nivel 0%, e-superficie lateral 5%)	Cinta labrías (m)	Manto escollera a=0.5m. ancho=30m. (m3)
DC-121/T14	T16-T14	1.790.00	2.940.00				1	1.626	275	10.00	16				3.66	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.4	1.4	3.9						7.4	2.1	1.0						
DC-121/T14	T16-T14	1.791.00	2.941.00				1	1.626	275	10.00	16				3.66	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.4	1.4	3.9						7.4	2.1	1.0						
DC-121/T14	T16-T14	1.792.00	2.942.00				1	1.626	275	10.00	16				3.66	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.4	1.4	3.9						7.4	2.1	1.0						
DC-121/T14	T16-T14	1.793.00	2.943.00				1	1.626	275	10.00	16				3.66	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.3	1.4	3.9						7.3	2.1	1.0						
DC-121/T14	T16-T14	1.794.00	2.944.00				1	1.626	275	10.00	16				3.65	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.3	1.4	3.9						7.3	2.1	1.0						
DC-121/T14	T16-T14	1.795.00	2.945.00				1	1.626	275	10.00	16				3.65	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.3	1.4	3.9						7.3	2.1	1.0						
DC-121/T14	T16-T14	1.796.00	2.946.00				1	1.626	275	10.00	16				3.65	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.3	1.4	3.9						7.3	2.1	1.0						
DC-121/T14	T16-T14	1.797.00	2.947.00				1	1.626	275	10.00	16				3.64	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.3	1.4	3.9						7.3	2.1	1.0						
DC-121/T14	T16-T14	1.798.00	2.948.00				1	1.626	275	10.00	16				3.64	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.3	1.4	3.9						7.3	2.1	1.0						
DC-121/T14	T16-T14	1.799.00	2.949.00				1	1.626	275	10.00	16				3.64	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.800.00	2.950.00				1	1.626	275	10.00	16				3.64	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.801.00	2.951.00				1	1.626	275	10.00	16				3.64	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.802.00	2.952.00				1	1.626	275	10.00	16				3.64	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.803.00	2.953.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.804.00	2.954.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.805.00	2.955.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.806.00	2.956.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.807.00	2.957.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.808.00	2.958.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.809.00	2.959.00				1	1.626	275	10.00	16				3.63	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.810.00	2.960.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.811.00	2.961.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.812.00	2.962.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.813.00	2.963.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9						7.2	2.1	1.0						
DC-121/T14	T16-T14	1.814.00	2.964.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4	3.9						7.1	2.1	1.0						
DC-121/T14	T16-T14	1.815.00	2.965.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4	3.9						7.1	2.1	1.0						
DC-121/T14	T16-T14	1.816.00	2.966.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4	3.9						7.1	2.1	1.0						
DC-121/T14	T16-T14	1.817.00	2.967.00				1	1.626	275	10.00	16				3.62	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4	3.9						7.1	2.1	1.0						
DC-121/T14	T16-T14	1.818.00	2.968.00				1	1.626	275	10.00	16				3.61	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4	3.9						7.1	2.1	1.0						
DC-121/T14	T16-T14	1.819.00	2.969.00				1	1.626	275	10.00	16				3.59	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	a	c	f	100%	0.6	2.1	1.0	14.4	14.4	14.4	5.3	1.4	3.9	7.0	1.4	3.9														

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN Descarga	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A-: separación entre laboras	S ₂ -: Separación entre laboras	B-:Ancho interior (m)	Borne X1	Borne X2	H1-:Cama apoyo (m)	Ang. Apoyo	H2-:Recubrimiento cobertura mínimo (m)	H3-:Profundidad mínima s/ cave (m)	H4-: altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relleno/cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm. d-Garbanillo 5/15. e-bornopel HM-20	Releno/cobertura f-: Suelo seleccionado C/95% PN, <= 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<-150mm) c/95% PN. g- Lecho mod.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	H1-DHHz2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleño cama+riñonera (m3)	Relleño c-ama (m3)	Relleño riñonera(s)m3)	Relleño cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleño riñonera suelo seleccionado (m3)	Relleño riñonera granbanillo (m3)	Relleño cama+riñonera HM-20(m3)	Relleño cobertura c-: Suelo seleccionado C/95% PN, <= 30 mm	Relleño cobertura d-Garbanillo 5/15	Relleño cobertura e- HM-20	Relleño cobertura f-Suelo adecuado procedente excavación (<-150mm) c/95% PN	Relleño cobertura g- Lecho mod (m3)	Excedente de tierra (m3) (consumible a nivel 0%, e-superavitario 5%)	Cinta laboras (m)	Manto escollera e-0.5m. ancho-30m. (m3)
DC-121/T14	T16-T14	1920.00	3070.00				1	1.626	275	10.00	16				3.74	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1	15.1	5.3	1.4	3.9	7.8	1.4	3.9							7.8	2.1	1.0							
DC-121/T14	T16-T14	1921.00	3071.00				1	1.626	275	10.00	16				3.74	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1	15.1	5.3	1.4	3.9	7.8	1.4	3.9						7.8	2.1	1.0								
DC-121/T14	T16-T14	1922.00	3072.00				1	1.626	275	10.00	16				3.74	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1	15.1	5.3	1.4	3.9	7.8	1.4	3.9						7.8	2.1	1.0								
DC-121/T14	T16-T14	1923.00	3073.00				1	1.626	275	10.00	16				3.73	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1	15.1	5.3	1.4	3.9	7.8	1.4	3.9						7.8	2.1	1.0								
DC-121/T14	T16-T14	1924.00	3074.00				1	1.626	275	10.00	16				3.73	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1	15.1	5.3	1.4	3.9	7.7	1.4	3.9						7.7	2.1	1.0								
DC-121/T14	T16-T14	1925.00	3075.00				1	1.626	275	10.00	16				3.73	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1	15.1	5.3	1.4	3.9	7.7	1.4	3.9						7.7	2.1	1.0								
DC-121/T14	T16-T14	1926.00	3076.00				1	1.626	275	10.00	16				3.72	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.0	15.0	15.0	5.3	1.4	3.9	7.7	1.4	3.9						7.7	2.1	1.0								
DC-121/T14	T16-T14	1927.00	3077.00				1	1.626	275	10.00	16				3.72	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.0	15.0	15.0	5.3	1.4	3.9	7.7	1.4	3.9						7.7	2.1	1.0								
DC-121/T14	T16-T14	1928.00	3078.00				1	1.626	275	10.00	16				3.72	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.0	15.0	15.0	5.3	1.4	3.9	7.7	1.4	3.9						7.7	2.1	1.0								
DC-121/T14	T16-T14	1929.00	3079.00				1	1.626	275	10.00	16				3.72	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.0	15.0	15.0	5.3	1.4	3.9	7.7	1.4	3.9						7.7	2.1	1.0								
DC-121/T14	T16-T14	1930.00	3080.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.0	15.0	15.0	5.3	1.4	3.9	7.6	1.4	3.9						7.6	2.1	1.0								
DC-121/T14	T16-T14	1931.00	3081.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.0	15.0	15.0	5.3	1.4	3.9	7.6	1.4	3.9						7.6	2.1	1.0								
DC-121/T14	T16-T14	1932.00	3082.00				1	1.626	275	10.00	16				3.71	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.0	15.0	15.0	5.3	1.4	3.9	7.6	1.4	3.9						7.6	2.1	1.0								
DC-121/T14	T16-T14	1933.00	3083.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4	3.9						7.6	2.1	1.0								
DC-121/T14	T16-T14	1934.00	3084.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4	3.9						7.6	2.1	1.0								
DC-121/T14	T16-T14	1935.00	3085.00				1	1.626	275	10.00	16				3.70	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.6	1.4	3.9						7.6	2.1	1.0								
DC-121/T14	T16-T14	1936.00	3086.00				1	1.626	275	10.00	16				3.69	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.5	1.4	3.9						7.5	2.1	1.0								
DC-121/T14	T16-T14	1937.00	3087.00				1	1.626	275	10.00	16				3.69	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.5	1.4	3.9						7.5	2.1	1.0								
DC-121/T14	T16-T14	1938.00	3088.00				1	1.626	275	10.00	16				3.69	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.5	1.4	3.9						7.5	2.1	1.0								
DC-121/T14	T16-T14	1939.00	3089.00				1	1.626	275	10.00	16				3.69	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.8	14.8	14.8	5.3	1.4	3.9	7.5	1.4	3.9						7.5	2.1	1.0								
DC-121/T14	T16-T14	1940.00	3090.00				1	1.626	275	10.00	16				3.68	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.8	14.8	14.8	5.3	1.4	3.9	7.5	1.4	3.9						7.5	2.1	1.0								
DC-121/T14	T16-T14	1941.00	3091.00				1	1.626	275	10.00	16				3.68	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.8	14.8	14.8	5.3	1.4	3.9	7.5	1.4	3.9						7.5	2.1	1.0								
DC-121/T14	T16-T14	1942.00	3092.00				1	1.626	275	10.00	16				3.68	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.8	14.8	14.8	5.3	1.4	3.9	7.5	1.4	3.9						7.5	2.1	1.0								
DC-121/T14	T16-T14	1943.00	3093.00				1	1.626	275	10.00	16				3.68	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.8	14.8	14.8	5.3	1.4	3.9	7.4	1.4	3.9						7.4	2.1	1.0								
DC-121/T14	T16-T14	1944.00	3094.00				1	1.626	275	10.00	16				3.67	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.8	14.8	14.8	5.3	1.4	3.9	7.4	1.4	3.9						7.4	2.1	1.0								
DC-121/T14	T16-T14	1945.00	3095.00				1	1.626	275	10.00	16				3.67	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.8	14.8	14.8	5.3	1.4	3.9	7.4	1.4	3.9						7.4	2.1	1.0								
DC-121/T14	T16-T14	1946.00	3096.00				1	1.626	275	10.00	16				3.67	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.4	1.4	3.9						7.4	2.1	1.0								
DC-121/T14	T16-T14	1947.00	3097.00				1	1.626	275	10.00	16				3.66	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.4	1.4	3.9						7.4	2.1	1.0								
DC-121/T14	T16-T14	1948.00	3098.00				1	1.626	275	10.00	16				3.66	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.4	1.4	3.9						7.4	2.1	1.0								
DC-121/T14	T16-T14	1949.00	3099.00				1	1.626	275	10.00	16				3.66	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.3	1.4	3.9						7.3	2.1	1.0								
DC-121/T14	T16-T14	1950.00	3100.00				1	1.626	275	10.00	16				3.65	0.33	21-1-1600	0.60	2.80																																						

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº verticos por tubería	Nº valvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre. Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja	A= separación tubo salud	S= Separación entre tuberías	B= Ancho interior (m)	Borne X1	Borne X2	H1= Cama apoyo (m)	Ang. Apoyo	H2= Recubrimiento cobertura mínimo (m)	H3= Profundidad mínima s/ cave (m)	H4= altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena b-cama de hormigón HM-20	Relleno tuberías c- Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15. e-borrompió HM-20. f-Relleno cobertura f- Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Garbanillo 5/15. f-Suelo adecuado procedente excavación (<=150mm) C/65 % PN. g- Luchero modif.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1= ang (m)	H1=DN+H2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno c arena (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera granitacido (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura d-Garbanillo 5/15	Relleno cobertura e- HM-20	Relleno cobertura f-Suelo adecuado procedente excavación (<=150mm) C/65 % PN	Relleno cobertura g- Luchero modif (m3)	Excedente de tierra (m3) (consumible a nivel 0%, e-superavitario 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m3)
DC-12/1/T14	T16-T14	2310.00	3460.00				1	1.626	275	10.00	16				3.53	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.0	14.0	14.0	5.3	1.4	3.9	6.7	1.4		3.9				6.7	2.1	1.0								
DC-12/1/T14	T16-T14	2311.00	3461.00				1	1.626	275	10.00	16				3.52	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.0	14.0	14.0	5.3	1.4	3.9	6.6	1.4		3.9			6.6	2.1	1.0									
DC-12/1/T14	T16-T14	2312.00	3462.00				1	1.626	275	10.00	16				3.51	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.9	13.9	13.9	5.3	1.4	3.9	6.6	1.4		3.9			6.6	2.1	1.0									
DC-12/1/T14	T16-T14	2313.00	3463.00				1	1.626	275	10.00	16				3.50	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.9	13.9	13.9	5.3	1.4	3.9	6.5	1.4		3.9			6.5	2.1	1.0									
DC-12/1/T14	T16-T14	2314.00	3464.00				1	1.626	275	10.00	16				3.49	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.8	13.8	13.8	5.3	1.4	3.9	6.5	1.4		3.9			6.5	2.1	1.0									
DC-12/1/T14	T16-T14	2315.00	3465.00				1	1.626	275	10.00	16				3.49	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.8	13.8	13.8	5.3	1.4	3.9	6.5	1.4		3.9			6.5	2.1	1.0									
DC-12/1/T14	T16-T14	2316.00	3466.00				1	1.626	275	10.00	16				3.50	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.9	13.9	13.9	5.3	1.4	3.9	6.5	1.4		3.9			6.5	2.1	1.0									
DC-12/1/T14	T16-T14	2317.00	3467.00				1	1.626	275	10.00	16				3.50	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.9	13.9	13.9	5.3	1.4	3.9	6.5	1.4		3.9			6.5	2.1	1.0									
DC-12/1/T14	T16-T14	2318.00	3468.00				1	1.626	275	10.00	16				3.50	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.9	13.9	13.9	5.3	1.4	3.9	6.5	1.4		3.9			6.5	2.1	1.0									
DC-12/1/T14	T16-T14	2319.00	3469.00				1	1.626	275	10.00	16				3.50	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.9	13.9	13.9	5.3	1.4	3.9	6.6	1.4		3.9			6.6	2.1	1.0									
DC-12/1/T14	T16-T14	2320.00	3470.00				1	1.626	275	10.00	16				3.51	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.9	13.9	13.9	5.3	1.4	3.9	6.6	1.4		3.9			6.6	2.1	1.0									
DC-12/1/T14	T16-T14	2321.00	3471.00				1	1.626	275	10.00	16				3.51	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	13.9	13.9	13.9	5.3	1.4	3.9	6.6	1.4		3.9			6.6	2.1	1.0									
DC-12/1/T14	T16-T14	2322.00	3472.00				1	1.626	275	10.00	16				3.51	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.0	14.0	14.0	5.3	1.4	3.9	6.6	1.4		3.9			6.6	2.1	1.0									
DC-12/1/T14	T16-T14	2323.00	3473.00				1	1.626	275	10.00	16				3.52	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.0	14.0	14.0	5.3	1.4	3.9	6.6	1.4		3.9			6.6	2.1	1.0									
DC-12/1/T14	T16-T14	2324.00	3474.00				1	1.626	275	10.00	16				3.52	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.0	14.0	14.0	5.3	1.4	3.9	6.6	1.4		3.9			6.6	2.1	1.0									
DC-12/1/T14	T16-T14	2325.00	3475.00				1	1.626	275	10.00	16				3.52	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.0	14.0	14.0	5.3	1.4	3.9	6.6	1.4		3.9			6.6	2.1	1.0									
DC-12/1/T14	T16-T14	2326.00	3476.00				1	1.626	275	10.00	16				3.53	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.0	14.0	14.0	5.3	1.4	3.9	6.7	1.4		3.9			6.7	2.1	1.0									
DC-12/1/T14	T16-T14	2327.00	3477.00				1	1.626	275	10.00	16				3.53	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.0	14.0	14.0	5.3	1.4	3.9	6.7	1.4		3.9			6.7	2.1	1.0									
DC-12/1/T14	T16-T14	2328.00	3478.00				1	1.626	275	10.00	16				3.53	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.0	14.0	14.0	5.3	1.4	3.9	6.7	1.4		3.9			6.7	2.1	1.0									
DC-12/1/T14	T16-T14	2329.00	3479.00				1	1.626	275	10.00	16				3.53	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.1	14.1	14.1	5.3	1.4	3.9	6.7	1.4		3.9			6.7	2.1	1.0									
DC-12/1/T14	T16-T14	2330.00	3480.00				1	1.626	275	10.00	16				3.54	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.1	14.1	14.1	5.3	1.4	3.9	6.7	1.4		3.9			6.7	2.1	1.0									
DC-12/1/T14	T16-T14	2331.00	3481.00				1	1.626	275	10.00	16				3.54	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.1	14.1	14.1	5.3	1.4	3.9	6.7	1.4		3.9			6.7	2.1	1.0									
DC-12/1/T14	T16-T14	2332.00	3482.00				1	1.626	275	10.00	16				3.54	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.1	14.1	14.1	5.3	1.4	3.9	6.8	1.4		3.9			6.8	2.1	1.0									
DC-12/1/T14	T16-T14	2333.00	3483.00				1	1.626	275	10.00	16				3.55	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.1	14.1	14.1	5.3	1.4	3.9	6.8	1.4		3.9			6.8	2.1	1.0									
DC-12/1/T14	T16-T14	2334.00	3484.00				1	1.626	275	10.00	16				3.55	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.1	14.1	14.1	5.3	1.4	3.9	6.8	1.4		3.9			6.8	2.1	1.0									
DC-12/1/T14	T16-T14	2335.00	3485.00				1	1.626	275	10.00	16				3.55	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.1	14.1	14.1	5.3	1.4	3.9	6.8	1.4		3.9			6.8	2.1	1.0									
DC-12/1/T14	T16-T14	2336.00	3486.00				1	1.626	275	10.00	16				3.55	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.2	14.2	14.2	5.3	1.4	3.9	6.8	1.4		3.9			6.8	2.1	1.0									
DC-12/1/T14	T16-T14	2337.00	3487.00				1	1.626	275	10.00	16				3.56	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.2	14.2	14.2	5.3	1.4	3.9	6.8	1.4		3.9			6.8	2.1	1.0									
DC-12/1/T14	T16-T14	2338.00	3488.00				1	1.626	275	10.00	16				3.56	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.2	14.2	14.2	5.3	1.4	3.9	6.8	1.4		3.9			6.8	2.1	1.0									
DC-12/1/T14	T16-T14	2339.00	3489.00				1	1.626	275	10.00	16				3.56	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.2	14.2	14.2	5.3	1.4	3.9	6.9	1.4		3.9			6.9	2.1	1.0									
DC-12/1/T14	T16-T14	2340.00	3490.00				1	1.626	275	10.00	16				3.57	0.33	21-1-1600	0.60	2.80				0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.2	14.2	14.2																					

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Altura de excavación a TH (m)	Talud HW	Altura de la bermá desde fondo	Carra de apoyo a-cama material granular o arena b-cama de hormigón HM-20	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la bermá desde fondo	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	H1-DH+H2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relevo cama+riñonera (m³)	Relevo cama (m³)	Relevo riñonera(s)m²	Relevo cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relevo riñonera suelo seleccionado (m³)	Relevo riñonera granular (m³)	Relevo cama+riñonera HM-20(m³)	Relevo cobertura c- Suelo seleccionado C/95% PN, <= 30 mm	Relevo cobertura d-Garbanillo S15	Relevo cobertura e- H4/20	Relevo cobertura f-Suelo adecuado a excavación (<=150mm C/95% PN	Relevo cobertura g- Lecho modif (m³)	Excedente de tierra (m³) (compensación a nivel 0%, e+compañamiento 5%)	Cinta liberada (m)	Manto escollera a=0.5m, ancho=30m (m³)
DC-12/11/14	T16-114	2.549.00	3.719.00				1	1.626	275	10.00	16			4.96	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.1	22.1	22.1	5.3	1.4	3.9	14.7	1.4		3.9		14.7	2.1	1.0
DC-12/11/14	T16-114	2.570.00	3.720.00				1	1.626	275	10.00	16			4.97	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.1	22.1	22.1	5.3	1.4	3.9	14.8	1.4		3.9		14.8	2.1	1.0
DC-12/11/14	T16-114	2.571.00	3.721.00				1	1.626	275	10.00	16			4.98	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.2	22.2	22.2	5.3	1.4	3.9	14.8	1.4		3.9		14.8	2.1	1.0
DC-12/11/14	T16-114	2.572.00	3.722.00				1	1.626	275	10.00	16			4.99	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.3	22.3	22.3	5.3	1.4	3.9	14.9	1.4		3.9		14.9	2.1	1.0
DC-12/11/14	T16-114	2.573.00	3.723.00				1	1.626	275	10.00	16			5.00	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.3	22.3	22.3	5.3	1.4	3.9	15.0	1.4		3.9		15.0	2.1	1.0
DC-12/11/14	T16-114	2.574.00	3.724.00				1	1.626	275	10.00	16			5.01	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.4	22.4	22.4	5.3	1.4	3.9	15.0	1.4		3.9		15.0	2.1	1.0
DC-12/11/14	T16-114	2.575.00	3.725.00				1	1.626	275	10.00	16			5.02	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.4	22.4	22.4	5.3	1.4	3.9	15.1	1.4		3.9		15.1	2.1	1.0
DC-12/11/14	T16-114	2.576.00	3.726.00				1	1.626	275	10.00	16			5.03	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.5	22.5	22.5	5.3	1.4	3.9	15.1	1.4		3.9		15.1	2.1	1.0
DC-12/11/14	T16-114	2.577.00	3.727.00				1	1.626	275	10.00	16			5.03	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.5	22.5	22.5	5.3	1.4	3.9	15.2	1.4		3.9		15.2	2.1	1.0
DC-12/11/14	T16-114	2.578.00	3.728.00				1	1.626	275	10.00	16			5.04	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.6	22.6	22.6	5.3	1.4	3.9	15.2	1.4		3.9		15.2	2.1	1.0
DC-12/11/14	T16-114	2.579.00	3.729.00				1	1.626	275	10.00	16			5.05	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.6	22.6	22.6	5.3	1.4	3.9	15.3	1.4		3.9		15.3	2.1	1.0
DC-12/11/14	T16-114	2.580.00	3.730.00				1	1.626	275	10.00	16			5.06	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.7	22.7	22.7	5.3	1.4	3.9	15.4	1.4		3.9		15.4	2.1	1.0
DC-12/11/14	T16-114	2.581.00	3.731.00				1	1.626	275	10.00	16			5.07	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.8	22.8	22.8	5.3	1.4	3.9	15.4	1.4		3.9		15.4	2.1	1.0
DC-12/11/14	T16-114	2.582.00	3.732.00				1	1.626	275	10.00	16			5.08	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.8	22.8	22.8	5.3	1.4	3.9	15.5	1.4		3.9		15.5	2.1	1.0
DC-12/11/14	T16-114	2.583.00	3.733.00				1	1.626	275	10.00	16			5.09	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.9	22.9	22.9	5.3	1.4	3.9	15.5	1.4		3.9		15.5	2.1	1.0
DC-12/11/14	T16-114	2.584.00	3.734.00				1	1.626	275	10.00	16			5.09	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.9	22.9	22.9	5.3	1.4	3.9	15.6	1.4		3.9		15.6	2.1	1.0
DC-12/11/14	T16-114	2.585.00	3.735.00				1	1.626	275	10.00	16			5.10	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.0	23.0	23.0	5.3	1.4	3.9	15.6	1.4		3.9		15.6	2.1	1.0
DC-12/11/14	T16-114	2.586.00	3.736.00				1	1.626	275	10.00	16			5.11	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.0	23.0	23.0	5.3	1.4	3.9	15.7	1.4		3.9		15.7	2.1	1.0
DC-12/11/14	T16-114	2.587.00	3.737.00				1	1.626	275	10.00	16			5.12	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.1	23.1	23.1	5.3	1.4	3.9	15.7	1.4		3.9		15.7	2.1	1.0
DC-12/11/14	T16-114	2.588.00	3.738.00				1	1.626	275	10.00	16			5.13	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.1	23.1	23.1	5.3	1.4	3.9	15.8	1.4		3.9		15.8	2.1	1.0
DC-12/11/14	T16-114	2.589.00	3.739.00				1	1.626	275	10.00	16			5.14	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.2	23.2	23.2	5.3	1.4	3.9	15.8	1.4		3.9		15.8	2.1	1.0
DC-12/11/14	T16-114	2.590.00	3.740.00				1	1.626	275	10.00	16			5.14	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.2	23.2	23.2	5.3	1.4	3.9	15.9	1.4		3.9		15.9	2.1	1.0
DC-12/11/14	T16-114	2.591.00	3.741.00				1	1.626	275	10.00	16			5.15	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.3	23.3	23.3	5.3	1.4	3.9	15.9	1.4		3.9		15.9	2.1	1.0
DC-12/11/14	T16-114	2.592.00	3.742.00				1	1.626	275	10.00	16			5.16	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.3	23.3	23.3	5.3	1.4	3.9	16.0	1.4		3.9		16.0	2.1	1.0
DC-12/11/14	T16-114	2.593.00	3.743.00				1	1.626	275	10.00	16			5.17	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.4	23.4	23.4	5.3	1.4	3.9	16.0	1.4		3.9		16.0	2.1	1.0
DC-12/11/14	T16-114	2.594.00	3.744.00				1	1.626	275	10.00	16			5.18	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.4	23.4	23.4	5.3	1.4	3.9	16.1	1.4		3.9		16.1	2.1	1.0
DC-12/11/14	T16-114	2.595.00	3.745.00				1	1.626	275	10.00	16			5.19	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.5	23.5	23.5	5.3	1.4	3.9	16.1	1.4		3.9		16.1	2.1	1.0
DC-12/11/14	T16-114	2.596.00	3.746.00				1	1.626	275	10.00	16			5.20	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.5	23.5	23.5	5.3	1.4	3.9	16.2	1.4		3.9		16.2	2.1	1.0
DC-12/11/14	T16-114	2.597.00	3.747.00				1	1.626	275	10.00	16			5.20	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.6	23.6	23.6	5.3	1.4	3.9	16.2	1.4		3.9		16.2	2.1	1.0
DC-12/11/14	T16-114	2.598.00	3.748.00				1	1.626	275	10.00	16			5.21	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.6	23.6	23.6	5.3	1.4	3.9	16.3	1.4		3.9		16.3	2.1	1.0
DC-12/11/14	T16-114	2.599.00	3.749.00				1	1.626	275	10.00	16			5.22	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.7	23.7	23.7	5.3	1.4	3.9	16.3	1.4		3.9		16.3	2.1	1.0
DC-12/11/14	T16-114	2.600.00	3.750.00				1	1.626	275	10.00	16			5.23	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	23.7	23.7	23.7	5.3	1.4	3.9	16.4	1.4		3.9		16.4	2.1	1.0
DC-12/11/14	T16-114	2.600.04	3.750.04				1	1.626	275	10.00	16			5.23	0.33	21-1-1600	0.60	2.80	0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	0.0	0.9	0.9												

Agrupación	Tamaño	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	Nº vertederos por tubería	DN vertical (mm)	Nº valvulas de sague	DN desagüe	Tipo de válvula	Aquella rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero o espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	Alcance de zanja	A=separación tubo salud	S=separación entre tuberías	B=Ancho interior (m)	Borne X1	Borne X2	H1-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínimo (m)	H3-Profundidad mínima s/ cave (m)	H4-Altura de la boma desde fondo	Cama de apoyo a-cama material granulado o arena b-cama de hormigón HM-20	Relleno tuberías c- Suelo seleccionado C/95% PN, < 30 mm. d-Garbanillo 5/15. e-hormigón HM-20. f-hormigón de cobertura C/95% PN, < 30 mm. g- HM-20. d-Garbanillo 5/15. f-Suelo adecuado para excavación (<150mm c/95% PN. g- Luchero modif.	Exposici (m. escalón (n)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	H1-DHHz (m)	Long (m)	Excavación tapizada (m2)	Excavación de bermas (m2)	Total excavación (m2)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m2)	Relleno c-arena (m2)	Relleno riñonera(s)m2)	Relleno cobertura (m2)	Cama apoyo granular (m2)	Cama apoyo HM-20(m2)	Relleno riñonera suelo seleccionado (m2)	Relleno riñonera grabaciado (m2)	Relleno cama+riñonera HM-20(m2)	Relleno cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relleno cobertura d-Garbanillo 5/15	Relleno cobertura e- HM-20	Relleno cobertura f-Suelo adecuado para excavación (<150mm c/95% PN	Relleno cobertura g- Luchero modif (m2)	Excedente de tierra (m2) (consumo actual 0%, e-superficie 5%)	Cinta liberada (m)	Manto escollera e-0.5m. ancho-30m. (m2)
DC-12/1/T14	T16-T14	2498.00	3848.00				1	1.626	275	10.00	16						4.97	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.1	22.1	22.1	5.3	1.4	3.9	14.8	1.4	3.9			14.8		2.1	1.0										
DC-12/1/T14	T16-T14	2499.00	3849.00				1	1.626	275	10.00	16						4.96	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.1	22.1	22.1	5.3	1.4	3.9	14.7	1.4	3.9			14.7		2.1	1.0										
DC-12/1/T14	T16-T14	2500.00	3850.00				1	1.626	275	10.00	16						4.95	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.0	22.0	22.0	5.3	1.4	3.9	14.7	1.4	3.9			14.7		2.1	1.0										
DC-12/1/T14	T16-T14	2501.00	3851.00				1	1.626	275	10.00	16						4.94	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	22.0	22.0	22.0	5.3	1.4	3.9	14.6	1.4	3.9			14.6		2.1	1.0										
DC-12/1/T14	T16-T14	2502.00	3852.00				1	1.626	275	10.00	16						4.93	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.9	21.9	21.9	5.3	1.4	3.9	14.5	1.4	3.9			14.5		2.1	1.0										
DC-12/1/T14	T16-T14	2503.00	3853.00				1	1.626	275	10.00	16						4.92	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.8	21.8	21.8	5.3	1.4	3.9	14.5	1.4	3.9			14.5		2.1	1.0										
DC-12/1/T14	T16-T14	2504.00	3854.00				1	1.626	275	10.00	16						4.91	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.8	21.8	21.8	5.3	1.4	3.9	14.4	1.4	3.9			14.4		2.1	1.0										
DC-12/1/T14	T16-T14	2505.00	3855.00				1	1.626	275	10.00	16						4.90	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.7	21.7	21.7	5.3	1.4	3.9	14.4	1.4	3.9			14.4		2.1	1.0										
DC-12/1/T14	T16-T14	2506.00	3856.00				1	1.626	275	10.00	16						4.89	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.7	21.7	21.7	5.3	1.4	3.9	14.3	1.4	3.9			14.3		2.1	1.0										
DC-12/1/T14	T16-T14	2507.00	3857.00				1	1.626	275	10.00	16						4.89	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.7	21.7	21.7	5.3	1.4	3.9	14.3	1.4	3.9			14.3		2.1	1.0										
DC-12/1/T14	T16-T14	2508.00	3858.00				1	1.626	275	10.00	16						4.88	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.6	21.6	21.6	5.3	1.4	3.9	14.3	1.4	3.9			14.3		2.1	1.0										
DC-12/1/T14	T16-T14	2509.00	3859.00				1	1.626	275	10.00	16						4.88	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.6	21.6	21.6	5.3	1.4	3.9	14.3	1.4	3.9			14.3		2.1	1.0										
DC-12/1/T14	T16-T14	2510.00	3860.00				1	1.626	275	10.00	16						4.87	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.6	21.6	21.6	5.3	1.4	3.9	14.2	1.4	3.9			14.2		2.1	1.0										
DC-12/1/T14	T16-T14	2511.00	3861.00				1	1.626	275	10.00	16						4.87	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.5	21.5	21.5	5.3	1.4	3.9	14.2	1.4	3.9			14.2		2.1	1.0										
DC-12/1/T14	T16-T14	2512.00	3862.00				1	1.626	275	10.00	16						4.86	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.5	21.5	21.5	5.3	1.4	3.9	14.1	1.4	3.9			14.1		2.1	1.0										
DC-12/1/T14	T16-T14	2513.00	3863.00				1	1.626	275	10.00	16						4.86	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.5	21.5	21.5	5.3	1.4	3.9	14.1	1.4	3.9			14.1		2.1	1.0										
DC-12/1/T14	T16-T14	2514.00	3864.00				1	1.626	275	10.00	16						4.85	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.4	21.4	21.4	5.3	1.4	3.9	14.1	1.4	3.9			14.1		2.1	1.0										
DC-12/1/T14	T16-T14	2515.00	3865.00				1	1.626	275	10.00	16						4.84	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.4	21.4	21.4	5.3	1.4	3.9	14.0	1.4	3.9			14.0		2.1	1.0										
DC-12/1/T14	T16-T14	2516.00	3866.00				1	1.626	275	10.00	16						4.84	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.4	21.4	21.4	5.3	1.4	3.9	14.0	1.4	3.9			14.0		2.1	1.0										
DC-12/1/T14	T16-T14	2517.00	3867.00				1	1.626	275	10.00	16						4.83	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.3	21.3	21.3	5.3	1.4	3.9	13.9	1.4	3.9			13.9		2.1	1.0										
DC-12/1/T14	T16-T14	2518.00	3868.00				1	1.626	275	10.00	16						4.82	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.2	21.2	21.2	5.3	1.4	3.9	13.9	1.4	3.9			13.9		2.1	1.0										
DC-12/1/T14	T16-T14	2519.00	3869.00				1	1.626	275	10.00	16						4.81	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.2	21.2	21.2	5.3	1.4	3.9	13.8	1.4	3.9			13.8		2.1	1.0										
DC-12/1/T14	T16-T14	2520.00	3870.00				1	1.626	275	10.00	16						4.80	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.1	21.1	21.1	5.3	1.4	3.9	13.8	1.4	3.9			13.8		2.1	1.0										
DC-12/1/T14	T16-T14	2521.00	3871.00				1	1.626	275	10.00	16						4.80	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.1	21.1	21.1	5.3	1.4	3.9	13.8	1.4	3.9			13.8		2.1	1.0										
DC-12/1/T14	T16-T14	2522.00	3872.00				1	1.626	275	10.00	16						4.80	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.1	21.1	21.1	5.3	1.4	3.9	13.7	1.4	3.9			13.7		2.1	1.0										
DC-12/1/T14	T16-T14	2523.00	3873.00				1	1.626	275	10.00	16						4.79	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.1	21.1	21.1	5.3	1.4	3.9	13.7	1.4	3.9			13.7		2.1	1.0										
DC-12/1/T14	T16-T14	2524.00	3874.00				1	1.626	275	10.00	16						4.79	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.0	21.0	21.0	5.3	1.4	3.9	13.7	1.4	3.9			13.7		2.1	1.0										
DC-12/1/T14	T16-T14	2525.00	3875.00				1	1.626	275	10.00	16						4.78	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.0	21.0	21.0	5.3	1.4	3.9	13.7	1.4	3.9			13.7		2.1	1.0										
DC-12/1/T14	T16-T14	2526.00	3876.00				1	1.626	275	10.00	16						4.78	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.0	21.0	21.0	5.3	1.4	3.9	13.6	1.4	3.9			13.6		2.1	1.0										
DC-12/1/T14	T16-T14	2527.00	3877.00				1	1.626	275	10.00	16						4.77	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	21.0	21.0	21.0	5.3	1.4	3.9	13.6	1.4	3.9			13.6		2.1	1.0										
DC-12/1/T14	T16-T14	2528.00	3878.00				1	1.626	275	10.00	16																																																

Agrupación	Tamaño	P. K. Tramo	P. K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Acero tipo S	espesor adaptado (mm)	PN (limbaje valsekita (dm)	Nº vertidos por tubería	DN vertical (mm)	Nº válvulas de sague	DN desagüe	Tipo de válvula	Agueta rotura tipo	Conex. M 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero espesor lámina (mm)	Altura de excavación a TH (m)	Talud HW	A=separación entre laboras	S=separación entre laboras	B=Ancho interior (m)	Borne X1	Borne X2	HT-Cama apoyo (m)	Ang. Apoyo	H2-Recubrimiento cobertura mínima (m)	H3-Profundidad mínima s/ cave (m)	HT- altura de la boma desde fondo	Cama de apoyo a-cama material granular o arena: b-cama de hormigón HM-20	Relleno tuberías c- Suelo seleccionado C/95% PN, < 30 mm. d-Gabarrillo S/15. e-bombopu HM-20. f-Relleno cobertura f- Suelo seleccionado C/95% PN, < 30 mm. e- HM-20. d-Gabarrillo S/15. f-Suelo adecuado procedente excavación (<150mm) c/95% PN. g- Lecho mod.	Exposor (m. escalón (n)	% Excavable con empleo puntual de martillo	% Escavable ripable con empleo de martillo	HT-ang (n)	HT-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñonera (m3)	Relleno cama (m3)	Relleno riñonera(s)m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera grabaciolo (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura c- Suelo seleccionado C/95% PN, < 30 mm	Relleno cobertura. d-Gabarrillo S/15	Relleno cobertura. e- HM-20	Relleno cobertura. f-Suelo adecuado procedente excavación (<150mm) c/95% PN	Relleno cobertura. g- Lecho mod (m3)	Excedente de tierra (m3) (consumible a nivel 0%, e-spojaniento 5%)	Cinta laboras (m)	Manto escollera e-0.5m. ancho-30m. (m3)
DC-12/1/T14	T16-T14	2.826.00	3.978.00				1	1.626	275	10.00	16								3.97	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.4	16.4	16.4	5.3	1.4	3.9	9.0	1.4	3.9		9.0	2.1	1.0											
DC-12/1/T14	T16-T14	2.829.00	3.979.00				1	1.626	275	10.00	16								3.96	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.3	16.3	16.3	5.3	1.4	3.9	9.0	1.4	3.9		8.9	2.1	1.0											
DC-12/1/T14	T16-T14	2.830.00	3.980.00				1	1.626	275	10.00	16								3.94	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.2	16.2	16.2	5.3	1.4	3.9	8.9	1.4	3.9		8.9	2.1	1.0											
DC-12/1/T14	T16-T14	2.831.00	3.981.00				1	1.626	275	10.00	16								3.93	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.1	16.1	16.1	5.3	1.4	3.9	8.8	1.4	3.9		8.8	2.1	1.0											
DC-12/1/T14	T16-T14	2.832.00	3.982.00				1	1.626	275	10.00	16								3.92	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.1	16.1	16.1	5.3	1.4	3.9	8.7	1.4	3.9		8.7	2.1	1.0											
DC-12/1/T14	T16-T14	2.833.00	3.983.00				1	1.626	275	10.00	16								3.90	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	16.0	16.0	16.0	5.3	1.4	3.9	8.7	1.4	3.9		8.7	2.1	1.0											
DC-12/1/T14	T16-T14	2.834.00	3.984.00				1	1.626	275	10.00	16								3.89	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.9	15.9	15.9	5.3	1.4	3.9	8.6	1.4	3.9		8.6	2.1	1.0											
DC-12/1/T14	T16-T14	2.835.00	3.985.00				1	1.626	275	10.00	16								3.88	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.9	15.9	15.9	5.3	1.4	3.9	8.5	1.4	3.9		8.5	2.1	1.0											
DC-12/1/T14	T16-T14	2.836.00	3.986.00				1	1.626	275	10.00	16								3.86	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.8	15.8	15.8	5.3	1.4	3.9	8.4	1.4	3.9		8.4	2.1	1.0											
DC-12/1/T14	T16-T14	2.837.00	3.987.00				1	1.626	275	10.00	16								3.85	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.7	15.7	15.7	5.3	1.4	3.9	8.4	1.4	3.9		8.4	2.1	1.0											
DC-12/1/T14	T16-T14	2.838.00	3.988.00				1	1.626	275	10.00	16								3.84	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.7	15.7	15.7	5.3	1.4	3.9	8.3	1.4	3.9		8.3	2.1	1.0											
DC-12/1/T14	T16-T14	2.839.00	3.989.00				1	1.626	275	10.00	16								3.82	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.6	15.6	15.6	5.3	1.4	3.9	8.2	1.4	3.9		8.2	2.1	1.0											
DC-12/1/T14	T16-T14	2.840.00	3.990.00				1	1.626	275	10.00	16								3.81	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.5	15.5	15.5	5.3	1.4	3.9	8.2	1.4	3.9		8.2	2.1	1.0											
DC-12/1/T14	T16-T14	2.841.00	3.991.00				1	1.626	275	10.00	16								3.80	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.4	15.4	15.4	5.3	1.4	3.9	8.1	1.4	3.9		8.1	2.1	1.0											
DC-12/1/T14	T16-T14	2.842.00	3.992.00				1	1.626	275	10.00	16								3.79	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.4	15.4	15.4	5.3	1.4	3.9	8.0	1.4	3.9		8.0	2.1	1.0											
DC-12/1/T14	T16-T14	2.843.00	3.993.00				1	1.626	275	10.00	16								3.77	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.3	15.3	15.3	5.3	1.4	3.9	8.0	1.4	3.9		8.0	2.1	1.0											
DC-12/1/T14	T16-T14	2.844.00	3.994.00				1	1.626	275	10.00	16								3.76	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.2	15.2	15.2	5.3	1.4	3.9	7.9	1.4	3.9		7.9	2.1	1.0											
DC-12/1/T14	T16-T14	2.845.00	3.995.00				1	1.626	275	10.00	16								3.75	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.2	15.2	15.2	5.3	1.4	3.9	7.8	1.4	3.9		7.8	2.1	1.0											
DC-12/1/T14	T16-T14	2.846.00	3.996.00				1	1.626	275	10.00	16								3.74	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.1	15.1	15.1	5.3	1.4	3.9	7.7	1.4	3.9		7.7	2.1	1.0											
DC-12/1/T14	T16-T14	2.847.00	3.997.00				1	1.626	275	10.00	16								3.72	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.0	15.0	15.0	5.3	1.4	3.9	7.7	1.4	3.9		7.7	2.1	1.0											
DC-12/1/T14	T16-T14	2.848.00	3.998.00				1	1.626	275	10.00	16								3.71	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	15.0	15.0	15.0	5.3	1.4	3.9	7.6	1.4	3.9		7.6	2.1	1.0											
DC-12/1/T14	T16-T14	2.849.00	3.999.00				1	1.626	275	10.00	16								3.69	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.9	14.9	14.9	5.3	1.4	3.9	7.5	1.4	3.9		7.5	2.1	1.0											
DC-12/1/T14	T16-T14	2.850.00	4.000.00				1	1.626	275	10.00	16								3.68	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.8	14.8	14.8	5.3	1.4	3.9	7.5	1.4	3.9		7.5	2.1	1.0											
DC-12/1/T14	T16-T14	2.851.00	4.001.00				1	1.626	275	10.00	16								3.67	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.8	14.8	14.8	5.3	1.4	3.9	7.4	1.4	3.9		7.4	2.1	1.0											
DC-12/1/T14	T16-T14	2.852.00	4.002.00				1	1.626	275	10.00	16								3.66	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.7	14.7	14.7	5.3	1.4	3.9	7.3	1.4	3.9		7.3	2.1	1.0											
DC-12/1/T14	T16-T14	2.853.00	4.003.00				1	1.626	275	10.00	16								3.65	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.3	1.4	3.9		7.3	2.1	1.0											
DC-12/1/T14	T16-T14	2.854.00	4.004.00				1	1.626	275	10.00	16								3.64	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.6	14.6	14.6	5.3	1.4	3.9	7.2	1.4	3.9		7.2	2.1	1.0											
DC-12/1/T14	T16-T14	2.855.00	4.005.00				1	1.626	275	10.00	16								3.63	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.2	1.4	3.9		7.2	2.1	1.0											
DC-12/1/T14	T16-T14	2.856.00	4.006.00				1	1.626	275	10.00	16								3.62	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4	3.9		7.1	2.1	1.0											
DC-12/1/T14	T16-T14	2.857.00	4.007.00				1	1.626	275	10.00	16								3.61	0.33	21-1-1600	0.60	2.80			0.20	120	0.30	1.50	a	c	f	100%	0.6	2.1	1.0	14.5	14.5	14.5	5.3	1.4	3.9	7.1	1.4	3.9		7.1	2.1	1.0											
DC-12/1/T14	T16-T14	2.858.00	4.008.00				1	1.626																																																				

Agrupación	Tramo	P.K. tramo	P.K. Acumulado	Elemento	Arqueta	Observación	Nº tuberías	Nº tuberías DN en (mm)	Acero tipo S-	espesor adoptado (mm)	PN limitaje valvuleta (atm)	Nº vertidos por tubería	DN vertidos (mm)	Nº valvulas de sague	DN Desague	Tipo de valvula	Aquetla rotura tipo	Conex. DN 800 mm peso hombre (m)	Conex. DN 800 mm peso hombre: Acero espesor tubería (mm)	Altura de excavación a TI (m)	Talud IV	concalonado zanja	A= separación tubo salud	S ₂ = Separación entre laborías	B= Ancho interior (m)	Borna X1	Borna X2	H1- Cama apoyo (m)	Ing. Apoyo	H2- Recubrimiento cobertura mínimo (m)	H3- Profundidad mínima s/ cave (m)	H4- altura de la borra desde fondo	Cama de apoyo: a- cama material granular o arena; b- cama de hormigón HM-20	Rehabilitación: c- Suelo seleccionado C/95% PN, <= 30 mm; d- Garbancillo 5/15 - e- bompajo HM-20 30 mm; e- HM-20; f- Suelo seleccionado C/95% PN, <= 30 mm; g- HM-20; h- Garbancillo 5/15; i- Suelo adecuado procedente excavación (<=150mm) c/95% PN; j- Lecho modif.	Exposor (m, escalera(n))	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1-ang (m)	H1-DHHz (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñoneras (m3)	Relleno: cama (m3)	Relleno: riñoneras(m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno: riñonera garbancillo (m3)	Relleno: cama+riñonera HM-20(m3)	Relleno cobertura: c- Suelo seleccionado C/95% PN, <= 30 mm	Relleno cobertura: d-Garbancillo 5/15	Relleno cobertura: e- HM-20;	Relleno cobertura: f-Suelo adecuado procedente excavación (<=150mm) c/95% PN	Relleno cobertura: g- Lecho modif (m3)	Excedente de tierras (m3) (compensando altura 0%, e-spojaniento terciario 5%)	Cinta liberás (m)	Manto escollera e-0.5m, ancho-30m (m3)
DC-121/T14	T16-T14	3.197.00	4.347.00				1	1.626	275	12.50	16									4.60	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	34.0	34.0	34.0	8.3	1.6	6.6	23.7	1.6		6.6				23.7		2.0	1.0							
DC-121/T14	T16-T14	3.198.00	4.348.00				1	1.626	275	12.50	16									4.57	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	33.7	33.7	33.7	8.3	1.6	6.6	23.4	1.6		6.6			23.4		2.0	1.0								
DC-121/T14	T16-T14	3.199.00	4.349.00				1	1.626	275	12.50	16									4.55	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	33.4	33.4	33.4	8.3	1.6	6.6	23.1	1.6		6.6			23.1		2.0	1.0								
DC-121/T14	T16-T14	3.200.00	4.350.00				1	1.626	275	12.50	16									4.52	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	33.1	33.1	33.1	8.3	1.6	6.6	22.8	1.6		6.6			22.8		2.0	1.0								
DC-121/T14	T16-T14	3.201.00	4.351.00				1	1.626	275	12.50	16									4.50	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	32.9	32.9	32.9	8.3	1.6	6.6	22.6	1.6		6.6			22.6		2.0	1.0								
DC-121/T14	T16-T14	3.202.00	4.352.00				1	1.626	275	12.50	16									4.48	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	32.6	32.6	32.6	8.3	1.6	6.6	22.3	1.6		6.6			22.3		2.0	1.0								
DC-121/T14	T16-T14	3.203.00	4.353.00				1	1.626	275	12.50	16									4.46	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	32.3	32.3	32.3	8.3	1.6	6.6	22.0	1.6		6.6			22.0		2.0	1.0								
DC-121/T14	T16-T14	3.204.00	4.354.00				1	1.626	275	12.50	16									4.43	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	32.1	32.1	32.1	8.3	1.6	6.6	21.8	1.6		6.6			21.8		2.0	1.0								
DC-121/T14	T16-T14	3.205.00	4.355.00				1	1.626	275	12.50	16									4.41	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	31.8	31.8	31.8	8.3	1.6	6.6	21.5	1.6		6.6			21.5		2.0	1.0								
DC-121/T14	T16-T14	3.206.00	4.356.00				1	1.626	275	12.50	16									4.39	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	31.6	31.6	31.6	8.3	1.6	6.6	21.3	1.6		6.6			21.3		2.0	1.0								
DC-121/T14	T16-T14	3.207.00	4.357.00				1	1.626	275	12.50	16									4.37	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	31.3	31.3	31.3	8.3	1.6	6.6	21.0	1.6		6.6			21.0		2.0	1.0								
DC-121/T14	T16-T14	3.208.00	4.358.00				1	1.626	275	12.50	16									4.35	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	31.1	31.1	31.1	8.3	1.6	6.6	20.8	1.6		6.6			20.8		2.0	1.0								
DC-121/T14	T16-T14	3.209.00	4.359.00				1	1.626	275	12.50	16									4.33	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	30.8	30.8	30.8	8.3	1.6	6.6	20.5	1.6		6.6			20.5		2.0	1.0								
DC-121/T14	T16-T14	3.210.00	4.360.00				1	1.626	275	12.50	16									4.30	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	30.5	30.5	30.5	8.3	1.6	6.6	20.2	1.6		6.6			20.2		2.0	1.0								
DC-121/T14	T16-T14	3.211.00	4.361.00				1	1.626	275	12.50	16									4.28	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	30.3	30.3	30.3	8.3	1.6	6.6	20.0	1.6		6.6			20.0		2.0	1.0								
DC-121/T14	T16-T14	3.212.00	4.362.00				1	1.626	275	12.50	16									4.26	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	30.1	30.1	30.1	8.3	1.6	6.6	19.8	1.6		6.6			19.8		2.0	1.0								
DC-121/T14	T16-T14	3.213.00	4.363.00				1	1.626	275	12.50	16									4.25	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	30.0	30.0	30.0	8.3	1.6	6.6	19.7	1.6		6.6			19.7		2.0	1.0								
DC-121/T14	T16-T14	3.214.00	4.364.00				1	1.626	275	12.50	16									4.24	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	29.8	29.8	29.8	8.3	1.6	6.6	19.6	1.6		6.6			19.6		2.0	1.0								
DC-121/T14	T16-T14	3.215.00	4.365.00				1	1.626	275	12.50	16									4.23	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	29.7	29.7	29.7	8.3	1.6	6.6	19.4	1.6		6.6			19.4		2.0	1.0								
DC-121/T14	T16-T14	3.216.00	4.366.00				1	1.626	275	12.50	16									4.22	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	29.6	29.6	29.6	8.3	1.6	6.6	19.3	1.6		6.6			19.3		2.0	1.0								
DC-121/T14	T16-T14	3.217.00	4.367.00				1	1.626	275	12.50	16									4.21	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	29.5	29.5	29.5	8.3	1.6	6.6	19.2	1.6		6.6			19.2		2.0	1.0								
DC-121/T14	T16-T14	3.218.00	4.368.00				1	1.626	275	12.50	16									4.20	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	29.4	29.4	29.4	8.3	1.6	6.6	19.1	1.6		6.6			19.1		2.0	1.0								
DC-121/T14	T16-T14	3.219.00	4.369.00				1	1.626	275	12.50	16									4.19	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	29.3	29.3	29.3	8.3	1.6	6.6	19.0	1.6		6.6			19.0		2.0	1.0								
DC-121/T14	T16-T14	3.220.00	4.370.00				1	1.626	275	12.50	16									4.18	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	29.1	29.1	29.1	8.3	1.6	6.6	18.9	1.6		6.6			18.9		2.0	1.0								
DC-121/T14	T16-T14	3.221.00	4.371.00				1	1.626	275	12.50	16									4.17	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	29.0	29.0	29.0	8.3	1.6	6.6	18.7	1.6		6.6			18.7		2.0	1.0								
DC-121/T14	T16-T14	3.222.00	4.372.00				1	1.626	275	12.50	16									4.16	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	28.9	28.9	28.9	8.3	1.6	6.6	18.6	1.6		6.6			18.6		2.0	1.0								
DC-121/T14	T16-T14	3.223.00	4.373.00				1	1.626	275	12.50	16									4.14	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	28.8	28.8	28.8	8.3	1.6	6.6	18.5	1.6		6.6			18.5		2.0	1.0								
DC-121/T14	T16-T14	3.224.00	4.374.00				1	1.626	275	12.50	16									4.13	1.00	21-1-1600	0.60	2.80			0.20	120	0.30	1.50		a	c	f	100%	0.6	2.1	1.0	28.7	28.7	28.7	8.3	1.6	6.6	18.4	1.6		6.6			18.4		2.0	1.0								
DC-121/T14	T16-T14	3.225.00	4.375.00				1	1.626	275	12.50	16									4.12	1.00	21-1-1600	0.60																																							

TUBERÍAS. LONGITUDES

MEDICIÓN TOTAL TUBERÍAS

MEDICIÓN TOTAL TUBERÍAS																
Suma de longitud tubería total (m)		Etiquetas de columna														
Etiquetas de fila	Conex	CN-T11	T11-T12	C-T12	T12-T13	T13-T13B	T13B-BT	BT-DC	T12-DC	DC-T16	T16-T14	DC-T17	T17-T18	T18-T19	T19-T20	T20-T21
10.00					1.00				0.00							DC-T21;
275.00					0.00				0.00							T14/T15
8.00					0.00				0.00							Total general
10.00					0.00				0.00							
1.500.00					0.00				0.00						2.440.00	2.440.00
275.00					0.00				0.00						2.440.00	2.440.00
8.50					0.00				0.00						1.522.00	1.522.00
10.50					0.00				0.00						450.00	450.00
16.00					0.00				0.00						468.00	468.00
1.000.00					0.00		13.855.46		13.855.46		3.241.37		6.460.00		468.00	9.701.37
275.00					0.00		13.855.46		13.855.46		3.241.37		6.460.00			9.701.37
10.00					0.00		8.872.46		8.872.46		3.043.00		6.392.00			18.113.49
12.50					0.00		4.888.00		4.888.00		193.37		68.00			361.37
16.00					0.00		94.00		94.00							0.00
1.000.00			23.680.00		23.680.00	25.000.00	7.380.00		3.288.95		1.150.00		5.460.00		5.610.00	12.270.00
275.00			23.680.00		23.680.00	7.658.00	5.518.00		13.176.00		1.150.00		5.460.00		5.610.00	12.270.00
11.50			23.580.00		23.580.00	5.830.00	5.518.00		11.348.00		839.00		5.248.00		5.564.00	11.651.00
12.50					0.00	1.094.00			1.094.00							0.00
14.00					100.00	100.00	30.00		30.00				212.00			212.00
15.00					0.00	704.00			704.00							704.00
18.00					0.00		357.00		0.00		311.00			46.00		357.00
355.00					0.00	17.342.00	1.762.00		19.104.00							0.00
11.50					0.00	2.184.00	1.762.00		6.946.00							0.00
12.50					0.00	1.694.00			1.694.00							0.00
13.00					0.00	8.376.00			8.376.00							0.00
18.00					0.00	2.088.00			2.088.00							0.00
1.000.00					0.00			3.288.95	3.288.95							0.00
275.00					0.00			3.288.95	3.288.95							0.00
13.00					0.00			3.288.95	3.288.95							0.00
2.000.00		273.65	38.580.00		38.853.65				0.00							0.00
275.00		273.65	23.700.00		23.973.65				0.00							0.00
14.00			30.562.00		30.562.00				0.00							0.00
15.00		273.65	3.118.00		3.411.65				0.00							0.00
355.00			4.880.00		4.880.00				0.00							0.00
14.00			4.660.00		4.660.00				0.00							0.00
15.00					220.00				0.00							0.00
Total general		273.65	38.580.00	23.680.00	52.533.65	25.000.00	7.380.00	13.855.46	3.288.95	49.424.41	1.150.00	3.241.37	5.460.00	6.460.00	5.610.00	2.055.00

36.416.37 128.374.43

TRAMIFICACIÓN COMPUESTA POR CONDUCCIÓN Y TIPO DE ZANJA

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. tramo	P. K. Acumulado	Nº tuberías	DN ex (mm)	Acero tipo S-	espesor adoptado (mm)	PN Timbraje valvulara (atm)	Zanja tipo asignada	Talud HV
Conex	0,00	0,00	2	2.000	275	15,00	16	Z1	0,33
Conex	136,82	136,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	0,00	136,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	214,00	350,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	215,00	351,82	2	2.000	275	15,00	16	Z2	0,33
CN-T11	289,00	425,82	2	2.000	275	15,00	16	Z2	0,33
CN-T11	290,00	426,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	409,00	545,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	410,00	546,82	2	2.000	275	15,00	16	Z6	1,00
CN-T11	430,00	566,82	2	2.000	275	15,00	16	Z6	1,00
CN-T11	431,00	567,82	2	2.000	275	15,00	16	Z1	1,00
CN-T11	434,00	570,82	2	2.000	275	15,00	16	Z1	1,00
CN-T11	435,00	571,82	2	2.000	275	15,00	16	Z5	1,00
CN-T11	444,00	580,82	2	2.000	275	15,00	16	Z5	1,00
CN-T11	445,00	581,82	2	2.000	275	15,00	16	Z1	1,00
CN-T11	475,00	611,82	2	2.000	275	15,00	16	Z1	1,00
CN-T11	476,00	612,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	564,00	700,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	565,00	701,82	2	2.000	275	15,00	16	Z5	0,33
CN-T11	575,00	711,82	2	2.000	275	15,00	16	Z5	0,33
CN-T11	576,00	712,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	869,00	1.005,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	870,00	1.006,82	2	2.000	275	15,00	16	Z6	0,33
CN-T11	890,00	1.026,82	2	2.000	275	15,00	16	Z6	0,33
CN-T11	891,00	1.027,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	979,00	1.115,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	980,00	1.116,82	2	2.000	275	15,00	16	Z5	0,33
CN-T11	990,00	1.126,82	2	2.000	275	15,00	16	Z5	0,33
CN-T11	990,50	1.127,32	2	2.000	275	15,00	16	Z6	0,33
CN-T11	1.000,00	1.136,82	2	2.000	275	15,00	16	Z6	0,33
CN-T11	1.001,00	1.137,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	1.042,00	1.178,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	1.043,00	1.179,82	2	2.000	275	15,00	16	Z2	0,33
CN-T11	1.165,00	1.301,82	2	2.000	275	15,00	16	Z2	0,33
CN-T11	1.166,00	1.302,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	1.324,00	1.460,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	1.325,00	1.461,82	2	2.000	275	15,00	16	Z5	0,33
CN-T11	1.335,00	1.471,82	2	2.000	275	15,00	16	Z5	0,33
CN-T11	1.336,00	1.472,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	1.426,00	1.562,82	2	2.000	275	15,00	16	Z1	0,33
CN-T11	1.427,00	1.563,82	2	2.000	275	15,00	16	Z2	0,33
CN-T11	1.569,00	1.705,82	2	2.000	275	15,00	16	Z2	0,33
CN-T11	1.570,00	1.706,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	1.640,00	1.776,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	1.641,00	1.777,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	1.660,00	1.796,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	1.661,00	1.797,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	1.699,00	1.835,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	1.700,00	1.836,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	1.720,00	1.856,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	1.721,00	1.857,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	1.889,00	2.025,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	1.890,00	2.026,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	1.919,50	2.056,32	2	2.000	275	14,00	16	Z6	0,33
CN-T11	1.920,00	2.056,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	1.930,00	2.066,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	1.931,00	2.067,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	2.144,00	2.280,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	2.145,00	2.281,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	2.155,00	2.291,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	2.156,00	2.292,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	2.359,00	2.495,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	2.360,00	2.496,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	2.370,00	2.506,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	2.371,00	2.507,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	2.380,00	2.516,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	2.381,00	2.517,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	3.024,00	3.160,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	3.025,00	3.161,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	3.035,00	3.171,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	3.035,50	3.172,32	2	2.000	275	14,00	16	Z11	0,67
CN-T11	3.200,00	3.336,82	2	2.000	275	14,00	16	Z11	0,67
CN-T11	3.201,00	3.337,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	3.409,00	3.545,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	3.410,00	3.546,82	2	2.000	275	14,00	16	Z6	1,00
CN-T11	3.440,00	3.576,82	2	2.000	275	14,00	16	Z6	1,00
CN-T11	3.441,00	3.577,82	2	2.000	275	14,00	16	Z1	1,00
CN-T11	3.764,94	3.901,76	2	2.000	275	14,00	16	Z1	1,00
CN-T11	3.765,00	3.901,82	2	2.000	275	14,00	16	Z5	1,00
CN-T11	3.775,00	3.911,82	2	2.000	275	14,00	16	Z5	1,00
CN-T11	3.776,00	3.912,82	2	2.000	275	14,00	16	Z1	1,00
CN-T11	3.984,00	4.120,82	2	2.000	275	14,00	16	Z1	1,00
CN-T11	3.985,00	4.121,82	2	2.000	275	14,00	16	Z5	1,00
CN-T11	3.995,00	4.131,82	2	2.000	275	14,00	16	Z5	1,00
CN-T11	3.996,00	4.132,82	2	2.000	275	14,00	16	Z1	1,00
CN-T11	4.300,00	4.436,82	2	2.000	275	14,00	16	Z1	1,00
CN-T11	4.301,00	4.437,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	4.514,00	4.650,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	4.515,00	4.651,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	4.525,00	4.661,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	4.526,00	4.662,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	5.124,00	5.260,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	5.125,00	5.261,82	2	2.000	275	14,00	16	Z4	0,33
CN-T11	5.145,00	5.281,82	2	2.000	275	14,00	16	Z4	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PM Timbraje valvulara (atm)	Zanja tipo asignada	Talud HV
CN-T11	5.146,00	5.282,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	5.254,00	5.390,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	5.255,00	5.391,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	5.265,00	5.401,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	5.266,00	5.402,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	5.455,00	5.591,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	5.456,00	5.592,82	2	2.000	275	14,00	16	Z3	0,33
CN-T11	5.471,00	5.607,82	2	2.000	275	14,00	16	Z3	0,33
CN-T11	5.472,00	5.608,82	2	2.000	355	14,00	25	Z3	0,33
CN-T11	5.496,00	5.632,82	2	2.000	355	14,00	25	Z3	0,33
CN-T11	5.497,00	5.633,82	2	2.000	355	14,00	25	Z10	0,00
CN-T11	5.512,00	5.648,82	2	2.000	355	14,00	25	Z10	0,00
CN-T11	5.513,00	5.649,82	2	2.000	355	14,00	25	Z9	Hinca
CN-T11	5.666,00	5.802,82	2	2.000	355	14,00	25	Z9	Hinca
CN-T11	5.667,00	5.803,82	2	2.000	355	14,00	25	Z10	0,00
CN-T11	5.679,00	5.815,82	2	2.000	355	14,00	25	Z10	0,00
CN-T11	5.680,00	5.816,82	2	2.000	355	14,00	25	Z2	1,50
CN-T11	5.700,00	5.836,82	2	2.000	355	14,00	25	Z2	1,50
CN-T11	5.701,00	5.837,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	6.134,00	6.270,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	6.135,00	6.271,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	6.145,00	6.281,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	6.146,00	6.282,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	6.334,00	6.470,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	6.335,00	6.471,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	6.345,00	6.481,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	6.346,00	6.482,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	6.934,00	7.070,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	6.935,00	7.071,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	6.945,00	7.081,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	6.946,00	7.082,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.396,00	7.532,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.397,00	7.533,82	2	2.000	355	14,00	25	Z2	1,50
CN-T11	7.398,00	7.534,82	2	2.000	355	15,00	25	Z2	1,50
CN-T11	7.404,00	7.540,82	2	2.000	355	15,00	25	Z2	1,50
CN-T11	7.405,00	7.541,82	2	2.000	355	15,00	25	Z5	1,50
CN-T11	7.415,00	7.551,82	2	2.000	355	15,00	25	Z5	1,50
CN-T11	7.416,00	7.552,82	2	2.000	355	15,00	25	Z2	1,50
CN-T11	7.418,00	7.554,82	2	2.000	355	15,00	25	Z2	1,50
CN-T11	7.419,00	7.555,82	2	2.000	355	15,00	25	Z10	0,00
CN-T11	7.434,00	7.570,82	2	2.000	355	15,00	25	Z10	0,00
CN-T11	7.435,00	7.571,82	2	2.000	355	15,00	25	Z9	Hinca
CN-T11	7.470,00	7.606,82	2	2.000	355	15,00	25	Z9	Hinca
CN-T11	7.471,00	7.607,82	2	2.000	355	15,00	25	Z10	0,00
CN-T11	7.485,00	7.621,82	2	2.000	355	15,00	25	Z10	0,00
CN-T11	7.486,00	7.622,82	2	2.000	355	15,00	25	Z2	1,50
CN-T11	7.507,00	7.643,82	2	2.000	355	15,00	25	Z2	1,50
CN-T11	7.508,00	7.644,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.634,00	7.770,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.635,00	7.771,82	2	2.000	355	14,00	25	Z6	1,50
CN-T11	7.645,00	7.781,82	2	2.000	355	14,00	25	Z6	1,50
CN-T11	7.646,00	7.782,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.676,00	7.812,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.677,00	7.813,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	7.687,00	7.823,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	7.688,00	7.824,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.846,00	7.982,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.847,00	7.983,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	7.857,00	7.993,82	2	2.000	355	14,00	25	Z5	1,50
CN-T11	7.858,00	7.994,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.875,00	8.011,82	2	2.000	355	14,00	25	Z1	1,50
CN-T11	7.876,00	8.012,82	2	2.000	355	14,00	25	Z1	0,33
CN-T11	7.911,00	8.047,82	2	2.000	355	14,00	25	Z1	0,33
CN-T11	7.912,00	8.048,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	7.934,00	8.070,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	7.935,00	8.071,82	2	2.000	275	14,00	16	Z2	0,33
CN-T11	7.989,00	8.125,82	2	2.000	275	14,00	16	Z2	0,33
CN-T11	7.990,00	8.126,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.008,00	8.144,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.009,00	8.145,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	8.140,00	8.276,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	8.141,00	8.277,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.294,00	8.430,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.295,00	8.431,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	8.305,00	8.441,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	8.306,00	8.442,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.679,00	8.815,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.680,00	8.816,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	8.690,00	8.826,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	8.691,00	8.827,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.804,00	8.940,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.805,00	8.941,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	8.815,00	8.951,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	8.816,00	8.952,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.867,00	9.003,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	8.868,00	9.004,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	8.878,00	9.014,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	8.879,00	9.015,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	9.250,00	9.386,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	9.251,00	9.387,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	9.265,00	9.401,82	2	2.000	275	14,00	16	Z6	0,33
CN-T11	9.266,00	9.402,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	9.279,50	9.416,32	2	2.000	275	14,00	16	Z1	0,33
CN-T11	9.280,00	9.416,82	2	2.000	275	14,00	16	Z8	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PM Timbraje valvulara (atm)	Zanja tipo asignada	Talud HV
CN-T11	9.310,00	9.446,82	2	2.000	275	14,00	16	Z9	0,33
CN-T11	9.311,00	9.447,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	9.464,00	9.600,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	9.465,00	9.601,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	9.475,00	9.611,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	9.476,00	9.612,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	10.215,00	10.351,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	10.216,00	10.352,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	10.226,00	10.362,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	10.227,00	10.363,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	10.914,00	11.050,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	10.915,00	11.051,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	10.925,00	11.061,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	10.926,00	11.062,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	11.489,00	11.625,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	11.490,00	11.626,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	11.500,00	11.636,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	11.501,00	11.637,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	12.014,00	12.150,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	12.015,00	12.151,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	12.025,00	12.161,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	12.026,00	12.162,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	12.294,00	12.430,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	12.295,00	12.431,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	12.305,00	12.441,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	12.306,00	12.442,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	12.794,00	12.930,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	12.795,00	12.931,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	12.805,00	12.941,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	12.806,00	12.942,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	13.024,00	13.160,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	13.025,00	13.161,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	13.035,00	13.171,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	13.036,00	13.172,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	13.604,00	13.740,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	13.605,00	13.741,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	13.615,00	13.751,82	2	2.000	275	14,00	16	Z5	0,33
CN-T11	13.616,00	13.752,82	2	2.000	275	14,00	16	Z1	0,33
CN-T11	14.290,00	14.426,82	2	2.000	275	14,00	16	Z1	0,33
T11-T12	0,00	14.426,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	169,00	14.595,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	170,00	14.596,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	180,00	14.606,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	181,00	14.607,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	774,00	15.200,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	775,00	15.201,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	785,00	15.211,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	786,00	15.212,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	1.444,00	15.870,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	1.445,00	15.871,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	1.455,00	15.881,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	1.456,00	15.882,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	1.946,00	16.372,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	1.947,00	16.373,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	1.957,00	16.383,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	1.958,00	16.384,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	2.084,00	16.510,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	2.085,00	16.511,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	2.095,00	16.521,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	2.096,00	16.522,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	2.284,00	16.710,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	2.285,00	16.711,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	2.295,00	16.721,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	2.296,00	16.722,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	2.305,00	16.731,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	2.306,00	16.732,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	2.807,00	17.233,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	2.808,00	17.234,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	2.818,00	17.244,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	2.819,00	17.245,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	3.217,00	17.643,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	3.218,00	17.644,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	3.228,00	17.654,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	3.229,00	17.655,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	3.377,00	17.803,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	3.378,00	17.804,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	3.388,00	17.814,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	3.389,00	17.815,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	3.580,00	18.006,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	3.581,00	18.007,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	3.591,00	18.017,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	3.592,00	18.018,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	3.924,00	18.350,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	3.925,00	18.351,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	3.935,00	18.361,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	3.936,00	18.362,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	4.167,00	18.593,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	4.168,00	18.594,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	4.178,00	18.604,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	4.179,00	18.605,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	4.469,00	18.895,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	4.470,00	18.896,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	4.480,00	18.906,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	4.481,00	18.907,82	2	1.800	275	11,50	16	Z1	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P.K. tramo	P.K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PN Timbraje valvulería (atm)	Zanja tipo asignada	Talud HW
T11-T12	4.729,00	19.155,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	4.730,00	19.156,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	4.740,00	19.166,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	4.741,00	19.167,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	4.837,00	19.263,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	4.838,00	19.264,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	4.848,00	19.274,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	4.849,00	19.275,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	5.259,00	19.685,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	5.260,00	19.686,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	5.270,00	19.696,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	5.271,00	19.697,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	5.504,00	19.930,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	5.505,00	19.931,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	5.515,00	19.941,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	5.516,00	19.942,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	5.981,00	20.407,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	5.982,00	20.408,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	5.992,00	20.418,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	5.993,00	20.419,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	6.195,00	20.621,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	6.196,00	20.622,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	6.206,00	20.632,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	6.207,00	20.633,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	6.438,00	20.864,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	6.439,00	20.865,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	6.449,00	20.875,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	6.450,00	20.876,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	7.104,00	21.530,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	7.105,00	21.531,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	7.115,00	21.541,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	7.116,00	21.542,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	7.844,00	22.270,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	7.845,00	22.271,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	7.855,00	22.281,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	7.856,00	22.282,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	8.250,00	22.676,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	8.251,00	22.677,82	2	1.800	275	11,50	16	Z1	1,00
T11-T12	8.319,00	22.745,82	2	1.800	275	11,50	16	Z1	1,00
T11-T12	8.320,00	22.746,82	2	1.800	275	11,50	16	Z6	1,00
T11-T12	8.327,00	22.753,82	2	1.800	275	11,50	16	Z6	1,00
T11-T12	8.328,00	22.754,82	2	1.800	275	11,50	16	Z5	1,00
T11-T12	8.338,00	22.764,82	2	1.800	275	11,50	16	Z5	1,00
T11-T12	8.339,00	22.765,82	2	1.800	275	11,50	16	Z1	1,00
T11-T12	8.400,00	22.826,82	2	1.800	275	11,50	16	Z1	1,00
T11-T12	8.401,00	22.827,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	8.644,00	23.070,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	8.645,00	23.071,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	8.655,00	23.081,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	8.656,00	23.082,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	9.233,00	23.659,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	9.234,00	23.660,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	9.244,00	23.670,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	9.245,00	23.671,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	9.255,00	23.681,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	9.256,00	23.682,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	9.554,00	23.980,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	9.555,00	23.981,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	9.565,00	23.991,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	9.566,00	23.992,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	10.054,00	24.480,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	10.055,00	24.481,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	10.065,00	24.491,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	10.066,00	24.492,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	10.764,00	25.190,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	10.765,00	25.191,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	10.775,00	25.201,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	10.776,00	25.202,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	10.818,00	25.244,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	10.819,00	25.245,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	10.831,00	25.257,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	10.832,00	25.258,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	10.965,00	25.391,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	10.966,00	25.392,82	2	1.800	275	14,00	16	Z1	0,33
T11-T12	10.967,00	25.393,82	2	1.800	275	14,00	16	Z2	0,33
T11-T12	10.984,00	25.410,82	2	1.800	275	14,00	16	Z2	0,33
T11-T12	10.985,00	25.411,82	2	1.800	275	14,00	16	Z5	0,33
T11-T12	10.995,00	25.421,82	2	1.800	275	14,00	16	Z5	0,33
T11-T12	10.996,00	25.422,82	2	1.800	275	14,00	16	Z6	0,33
T11-T12	11.015,00	25.441,82	2	1.800	275	14,00	16	Z6	0,33
T11-T12	11.016,00	25.442,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	11.214,00	25.640,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	11.215,00	25.641,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	11.225,00	25.651,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	11.226,00	25.652,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	11.371,00	25.797,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	11.372,00	25.798,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	11.384,00	25.810,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	11.385,00	25.811,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	11.432,00	25.858,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	11.433,00	25.859,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	11.444,00	25.870,82	2	1.800	275	11,50	16	Z6	0,33
T11-T12	11.445,00	25.871,82	2	1.800	275	11,50	16	Z5	0,33
T11-T12	11.455,00	25.881,82	2	1.800	275	11,50	16	Z5	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. Tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PN Timbraje valvulería (atm)	Zanja tipo asignada	Talud HV
T11-T12	11.456,00	25.882,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	11.650,00	26.076,82	2	1.800	275	11,50	16	Z1	0,33
T11-T12	11.651,00	26.077,82	2	1.800	275	11,50	16	Z1	1,00
T11-T12	11.840,00	26.266,82	2	1.800	275	11,50	16	Z1	1,00
T12-T13	0,00	26.266,82	2	1.800	275	11,50	16	Z1	1,00
T12-T13	100,00	26.366,82	2	1.800	275	11,50	16	Z1	1,00
T12-T13	101,00	26.367,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	559,00	26.825,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	560,00	26.826,82	2	1.800	275	11,50	16	Z6	0,33
T12-T13	734,00	27.000,82	2	1.800	275	11,50	16	Z6	0,33
T12-T13	735,00	27.001,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	745,00	27.011,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	745,20	27.012,03	2	1.800	275	11,50	16	Z6	0,33
T12-T13	750,00	27.016,82	2	1.800	275	11,50	16	Z6	0,33
T12-T13	751,00	27.017,82	2	1.800	275	11,50	16	Z6	1,00
T12-T13	759,00	27.025,82	2	1.800	275	11,50	16	Z6	1,00
T12-T13	760,00	27.026,82	2	1.800	275	11,50	16	Z9	Hinca
T12-T13	960,00	27.226,82	2	1.800	275	11,50	16	Z9	Hinca
T12-T13	961,00	27.227,82	2	1.800	275	14,00	16	Z2	0,33
T12-T13	973,00	27.239,82	2	1.800	275	14,00	16	Z2	0,33
T12-T13	974,00	27.240,82	2	1.800	275	14,00	16	Z1	0,33
T12-T13	975,00	27.241,82	2	1.800	275	14,00	16	Z1	0,33
T12-T13	976,00	27.242,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	1.234,00	27.500,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	1.235,00	27.501,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	1.245,00	27.511,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	1.246,00	27.512,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	1.302,00	27.568,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	1.303,00	27.569,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	1.313,00	27.579,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	1.314,00	27.580,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	1.834,00	28.100,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	1.835,00	28.101,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	1.845,00	28.111,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	1.846,00	28.112,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	2.414,00	28.680,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	2.415,00	28.681,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	2.425,00	28.691,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	2.426,00	28.692,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	2.574,00	28.840,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	2.575,00	28.841,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	2.585,00	28.851,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	2.586,00	28.852,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	2.904,00	29.170,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	2.905,00	29.171,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	2.915,00	29.181,82	2	1.800	275	11,50	16	Z5	0,33
T12-T13	2.916,00	29.182,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	2.930,00	29.196,82	2	1.800	275	11,50	16	Z1	0,33
T12-T13	2.931,00	29.197,82	2	1.800	275	15,00	16	Z1	0,33
T12-T13	2.932,00	29.198,82	2	1.800	275	15,00	16	Z2	0,33
T12-T13	3.012,00	29.278,82	2	1.800	275	15,00	16	Z2	0,33
T12-T13	3.012,82	29.279,64	2	1.800	275	15,00	16	Z1	0,33
T12-T13	3.251,00	29.517,82	2	1.800	275	15,00	16	Z1	0,33
T12-T13	3.252,00	29.518,82	2	1.800	275	15,00	16	Z2	0,33
T12-T13	3.270,00	29.536,82	2	1.800	275	15,00	16	Z2	0,33
T12-T13	3.271,00	29.537,82	2	1.800	275	15,00	16	Z1	0,33
T12-T13	3.282,00	29.548,82	2	1.800	275	15,00	16	Z1	0,33
T12-T13	3.283,00	29.549,82	2	1.800	275	12,50	16	Z1	0,33
T12-T13	3.604,00	29.870,82	2	1.800	275	12,50	16	Z1	0,33
T12-T13	3.605,00	29.871,82	2	1.800	275	12,50	16	Z5	0,33
T12-T13	3.615,00	29.881,82	2	1.800	275	12,50	16	Z5	0,33
T12-T13	3.616,00	29.882,82	2	1.800	275	12,50	16	Z1	0,33
T12-T13	3.829,00	30.095,82	2	1.800	275	12,50	16	Z1	0,33
T12-T13	3.830,00	30.096,82	2	1.800	355	12,50	25	Z1	0,33
T12-T13	4.259,00	30.525,82	2	1.800	355	12,50	25	Z1	0,33
T12-T13	4.260,00	30.526,82	2	1.800	355	12,50	25	Z6	0,33
T12-T13	4.284,00	30.550,82	2	1.800	355	12,50	25	Z6	0,33
T12-T13	4.285,00	30.551,82	2	1.800	355	12,50	25	Z5	0,33
T12-T13	4.295,00	30.561,82	2	1.800	355	12,50	25	Z5	0,33
T12-T13	4.296,00	30.562,82	2	1.800	355	12,50	25	Z6	0,33
T12-T13	4.600,00	30.866,82	2	1.800	355	12,50	25	Z6	0,33
T12-T13	4.601,00	30.867,82	2	1.800	355	12,50	25	Z6	1,00
T12-T13	4.676,00	30.942,82	2	1.800	355	12,50	25	Z6	1,00
T12-T13	4.677,00	30.943,82	2	1.800	355	13,00	25	Z6	1,00
T12-T13	4.799,00	31.065,82	2	1.800	355	13,00	25	Z6	1,00
T12-T13	4.800,00	31.066,82	2	1.800	355	13,00	25	Z1	1,00
T12-T13	4.884,00	31.150,82	2	1.800	355	13,00	25	Z1	1,00
T12-T13	4.885,00	31.151,82	2	1.800	355	13,00	25	Z5	1,00
T12-T13	4.895,00	31.161,82	2	1.800	355	13,00	25	Z5	1,00
T12-T13	4.896,00	31.162,82	2	1.800	355	13,00	25	Z1	1,00
T12-T13	5.013,00	31.279,82	2	1.800	355	13,00	25	Z1	1,00
T12-T13	5.014,00	31.280,82	2	1.800	355	13,00	25	Z4	1,00
T12-T13	5.060,00	31.326,82	2	1.800	355	13,00	25	Z4	1,00
T12-T13	5.061,00	31.327,82	2	1.800	355	13,00	25	Z1	1,00
T12-T13	5.200,00	31.466,82	2	1.800	355	13,00	25	Z1	1,00
T12-T13	5.201,00	31.467,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	5.234,00	31.500,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	5.235,00	31.501,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	5.245,00	31.511,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	5.246,00	31.512,82	2	1.800	355	13,00	25	Z6	1,50
T12-T13	5.270,00	31.536,82	2	1.800	355	13,00	25	Z6	1,50
T12-T13	5.271,00	31.537,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	5.454,00	31.720,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	5.455,00	31.721,82	2	1.800	355	13,00	25	Z5	1,50

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. Tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PN Timbraje valvulera (atm)	Zanja tipo asignada	Talud HV
T12-T13	5.465,00	31.731,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	5.466,00	31.732,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	5.665,00	31.931,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	5.666,00	31.932,82	2	1.800	355	13,00	25	Z2	1,50
T12-T13	5.685,00	31.951,82	2	1.800	355	13,00	25	Z2	1,50
T12-T13	5.686,00	31.952,82	2	1.800	355	13,00	25	Z10	0,00
T12-T13	5.701,00	31.967,82	2	1.800	355	13,00	25	Z10	0,00
T12-T13	5.701,37	31.968,20	2	1.800	355	13,00	25	Z9	Hinca
T12-T13	5.751,37	32.018,20	2	1.800	355	13,00	25	Z9	Hinca
T12-T13	5.752,00	32.018,82	2	1.800	355	13,00	25	Z10	0,00
T12-T13	5.766,00	32.032,82	2	1.800	355	13,00	25	Z10	0,00
T12-T13	5.767,00	32.033,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	5.775,00	32.041,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	5.776,00	32.042,82	2	1.800	355	13,00	25	Z2	1,50
T12-T13	5.791,00	32.057,82	2	1.800	355	13,00	25	Z2	1,50
T12-T13	5.792,00	32.058,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	6.330,00	32.596,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	6.331,00	32.597,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	6.341,00	32.607,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	6.342,00	32.608,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	6.779,00	33.045,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	6.780,00	33.046,82	2	1.800	355	13,00	25	Z6	1,50
T12-T13	6.791,00	33.057,82	2	1.800	355	13,00	25	Z6	1,50
T12-T13	6.792,00	33.058,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	6.802,00	33.068,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	6.803,00	33.069,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	6.974,00	33.240,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	6.975,00	33.241,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	6.985,00	33.251,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	6.986,00	33.252,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	7.244,00	33.510,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	7.245,00	33.511,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	7.255,00	33.521,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	7.256,00	33.522,82	2	1.800	355	13,00	25	Z6	1,50
T12-T13	7.262,00	33.528,82	2	1.800	355	13,00	25	Z6	1,50
T12-T13	7.263,00	33.529,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	7.568,00	33.834,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	7.569,00	33.835,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	7.579,00	33.845,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	7.580,00	33.846,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	7.869,00	34.135,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	7.870,00	34.136,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	7.880,00	34.146,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	7.881,00	34.147,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	8.124,00	34.390,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	8.125,00	34.391,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	8.135,00	34.401,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	8.136,00	34.402,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	8.434,00	34.700,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	8.435,00	34.701,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	8.445,00	34.711,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	8.446,00	34.712,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	8.723,00	34.989,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	8.724,00	34.990,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	8.734,00	35.000,82	2	1.800	355	13,00	25	Z5	1,50
T12-T13	8.735,00	35.001,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	8.855,00	35.121,82	2	1.800	355	13,00	25	Z1	1,50
T12-T13	8.856,00	35.122,82	2	1.800	355	13,00	25	Z2	1,50
T12-T13	8.864,00	35.130,82	2	1.800	355	13,00	25	Z2	1,50
T12-T13	8.865,00	35.131,82	2	1.800	355	14,00	25	Z2	1,50
T12-T13	8.874,00	35.140,82	2	1.800	355	14,00	25	Z2	1,50
T12-T13	8.875,00	35.141,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	8.879,00	35.145,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	8.880,00	35.146,82	2	1.800	355	14,00	25	Z10	1,50
T12-T13	8.881,00	35.147,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	8.889,00	35.155,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	8.890,00	35.156,82	2	1.800	355	14,00	25	Z9	Hinca
T12-T13	9.390,00	35.656,82	2	1.800	355	14,00	25	Z9	Hinca
T12-T13	9.391,00	35.657,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	9.403,00	35.669,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	9.404,00	35.670,82	2	1.800	355	14,00	25	Z2	1,50
T12-T13	9.553,00	35.819,82	2	1.800	355	14,00	25	Z2	1,50
T12-T13	9.554,00	35.820,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	9.569,00	35.835,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	9.570,00	35.836,82	2	1.800	355	14,00	25	Z9	Hinca
T12-T13	9.620,00	35.886,82	2	1.800	355	14,00	25	Z9	Hinca
T12-T13	9.621,00	35.887,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	9.635,00	35.901,82	2	1.800	355	14,00	25	Z10	0,00
T12-T13	9.636,00	35.902,82	2	1.800	355	14,00	25	Z2	0,33
T12-T13	9.663,00	35.929,82	2	1.800	355	14,00	25	Z2	0,33
T12-T13	9.664,00	35.930,82	2	1.800	355	14,00	25	Z1	0,33
T12-T13	9.704,00	35.970,82	2	1.800	355	14,00	25	Z1	0,33
T12-T13	9.705,00	35.971,82	2	1.800	355	14,00	25	Z5	0,33
T12-T13	9.717,00	35.983,82	2	1.800	355	14,00	25	Z5	0,33
T12-T13	9.718,00	35.984,82	2	1.800	355	14,00	25	Z1	0,33
T12-T13	9.908,00	36.174,82	2	1.800	355	14,00	25	Z1	0,33
T12-T13	9.909,00	36.175,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	10.174,00	36.440,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	10.175,00	36.441,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	10.185,00	36.451,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	10.186,00	36.452,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	10.374,00	36.640,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	10.375,00	36.641,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	10.385,00	36.651,82	2	1.800	355	11,50	25	Z5	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P.K. tramo	P.K. Acumulado	Nº tuberías	DN ex (mm)	Acero tipo S-	espesor adoptado (mm)	PN Tímbraje valvulera (atm)	Zanja tipo asignada	Talud HV
T12-T13	10.386,00	36.652,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	10.644,00	36.910,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	10.645,00	36.911,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	10.655,00	36.921,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	10.656,00	36.922,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	10.854,00	37.120,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	10.855,00	37.121,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	10.865,00	37.131,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	10.866,00	37.132,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	11.083,00	37.349,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	11.084,00	37.350,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	11.094,00	37.360,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	11.095,00	37.361,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	11.450,00	37.716,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	11.451,00	37.717,82	2	1.800	355	11,50	25	Z1	1,50
T12-T13	11.544,00	37.810,82	2	1.800	355	11,50	25	Z1	1,50
T12-T13	11.545,00	37.811,82	2	1.800	355	11,50	25	Z5	1,50
T12-T13	11.555,00	37.821,82	2	1.800	355	11,50	25	Z5	1,50
T12-T13	11.556,00	37.822,82	2	1.800	355	11,50	25	Z6	1,50
T12-T13	11.565,00	37.831,82	2	1.800	355	11,50	25	Z6	1,50
T12-T13	11.566,00	37.832,82	2	1.800	355	11,50	25	Z1	1,50
T12-T13	11.600,00	37.866,82	2	1.800	355	11,50	25	Z1	1,50
T12-T13	11.601,00	37.867,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	11.964,00	38.230,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	11.965,00	38.231,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	11.975,00	38.241,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	11.976,00	38.242,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	12.314,00	38.580,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	12.315,00	38.581,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	12.325,00	38.591,82	2	1.800	355	11,50	25	Z5	0,33
T12-T13	12.326,00	38.592,82	2	1.800	355	11,50	25	Z1	0,33
T12-T13	12.500,00	38.766,82	2	1.800	355	11,50	25	Z1	0,33
T13-T13B	0,00	38.766,82	2	1.800	355	11,50	25	Z1	1,00
T13-T13B	36,00	38.802,82	2	1.800	355	11,50	25	Z1	1,00
T13-T13B	37,00	38.803,82	2	1.800	355	11,50	25	Z8	1,00
T13-T13B	102,00	38.868,82	2	1.800	355	11,50	25	Z8	1,00
T13-T13B	103,00	38.869,82	2	1.800	355	11,50	25	Z1	1,00
T13-T13B	150,00	38.916,82	2	1.800	355	11,50	25	Z1	1,00
T13-T13B	151,00	38.917,82	2	1.800	355	11,50	25	Z1	0,33
T13-T13B	574,00	39.340,82	2	1.800	355	11,50	25	Z1	0,33
T13-T13B	575,00	39.341,82	2	1.800	355	11,50	25	Z5	0,33
T13-T13B	585,00	39.351,82	2	1.800	355	11,50	25	Z5	0,33
T13-T13B	586,00	39.352,82	2	1.800	355	11,50	25	Z1	0,33
T13-T13B	881,00	39.647,82	2	1.800	355	11,50	25	Z1	0,33
T13-T13B	882,00	39.648,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.105,00	39.871,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.106,00	39.872,82	2	1.800	275	11,50	16	Z2	0,33
T13-T13B	1.129,00	39.895,82	2	1.800	275	11,50	16	Z2	0,33
T13-T13B	1.130,00	39.896,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.144,00	39.910,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.145,00	39.911,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	1.155,00	39.921,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	1.156,00	39.922,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.244,00	40.010,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.245,00	40.011,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	1.255,00	40.021,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	1.256,00	40.022,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.671,00	40.437,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.672,00	40.438,82	2	1.800	275	11,50	16	Z11	0,67
T13-T13B	1.713,00	40.479,82	2	1.800	275	11,50	16	Z11	0,67
T13-T13B	1.714,00	40.480,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.720,00	40.486,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	1.721,00	40.487,82	2	1.800	275	11,50	16	Z3	0,33
T13-T13B	1.863,00	40.629,82	2	1.800	275	11,50	16	Z3	0,33
T13-T13B	1.864,00	40.630,82	2	1.800	275	11,50	16	Z6	0,33
T13-T13B	1.889,00	40.655,82	2	1.800	275	11,50	16	Z6	0,33
T13-T13B	1.890,00	40.656,82	2	1.800	275	11,50	16	Z3	0,33
T13-T13B	1.900,00	40.666,82	2	1.800	275	11,50	16	Z3	0,33
T13-T13B	1.901,00	40.667,82	2	1.800	275	11,50	16	Z3	1,00
T13-T13B	2.365,00	41.131,82	2	1.800	275	11,50	16	Z3	1,00
T13-T13B	2.366,00	41.132,82	2	1.800	275	11,50	16	Z1	1,00
T13-T13B	2.379,00	41.145,82	2	1.800	275	11,50	16	Z1	1,00
T13-T13B	2.380,00	41.146,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	2.524,00	41.290,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	2.525,00	41.291,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	2.535,00	41.301,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	2.536,00	41.302,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	2.802,00	41.568,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	2.802,74	41.569,57	2	1.800	275	11,50	16	Z4	0,33
T13-T13B	2.820,00	41.586,82	2	1.800	275	11,50	16	Z4	0,33
T13-T13B	2.821,00	41.587,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	2.964,00	41.730,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	2.965,00	41.731,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	2.975,00	41.741,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	2.976,00	41.742,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	3.194,00	41.960,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	3.195,00	41.961,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	3.205,00	41.971,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	3.206,00	41.972,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	3.374,00	42.140,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	3.375,00	42.141,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	3.385,00	42.151,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	3.386,00	42.152,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	3.495,00	42.261,82	2	1.800	275	11,50	16	Z1	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PM Timbraje valvulara (atm)	Zanja tipo asignada	Talud HV
T13-T13B	3.496,00	42.262,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	3.506,00	42.272,82	2	1.800	275	11,50	16	Z5	0,33
T13-T13B	3.507,00	42.273,82	2	1.800	275	11,50	16	Z1	0,33
T13-T13B	3.640,00	42.406,82	2	1.800	275	11,50	16	Z1	0,33
T13B-BT	0,00	42.406,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	18,00	42.424,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	19,00	42.425,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	55,00	42.461,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	56,00	42.462,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	74,00	42.480,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	75,00	42.481,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	85,00	42.491,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	86,00	42.492,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	157,00	42.563,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	158,00	42.564,82	2	1.600	275	12,50	16	Z4	0,33
T13B-BT	254,00	42.660,82	2	1.600	275	12,50	16	Z4	0,33
T13B-BT	255,00	42.661,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	290,00	42.696,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	291,00	42.697,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	292,00	42.698,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	594,00	43.000,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	595,00	43.001,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	605,00	43.011,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	606,00	43.012,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	644,00	43.050,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	645,00	43.051,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	655,00	43.061,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	656,00	43.062,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	854,00	43.260,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	855,00	43.261,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	865,00	43.271,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	866,00	43.272,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	1.224,00	43.630,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	1.225,00	43.631,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	1.235,00	43.641,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	1.236,00	43.642,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	1.494,00	43.900,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	1.495,00	43.901,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	1.505,00	43.911,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	1.506,00	43.912,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	1.507,00	43.913,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	1.510,00	43.916,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	1.511,00	43.917,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	1.595,00	44.001,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	1.596,00	44.002,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	1.864,00	44.270,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	1.865,00	44.271,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	1.875,00	44.281,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	1.876,00	44.282,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	1.955,00	44.361,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	1.956,00	44.362,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	1.966,00	44.372,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	1.967,00	44.373,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	2.018,00	44.424,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	2.019,00	44.425,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	2.324,00	44.730,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	2.325,00	44.731,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	2.335,00	44.741,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	2.336,00	44.742,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	2.550,00	44.956,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	2.551,00	44.957,82	2	1.600	275	10,00	16	Z1	1,00
T13B-BT	2.604,00	45.010,82	2	1.600	275	10,00	16	Z1	1,00
T13B-BT	2.605,00	45.011,82	2	1.600	275	10,00	16	Z5	1,00
T13B-BT	2.615,00	45.021,82	2	1.600	275	10,00	16	Z5	1,00
T13B-BT	2.616,00	45.022,82	2	1.600	275	10,00	16	Z1	1,00
T13B-BT	2.700,00	45.106,82	2	1.600	275	10,00	16	Z1	1,00
T13B-BT	2.701,00	45.107,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	2.824,00	45.230,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	2.825,00	45.231,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	2.835,00	45.241,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	2.836,00	45.242,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	3.020,00	45.426,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	3.021,00	45.427,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.024,00	45.430,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.025,00	45.431,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	3.072,00	45.478,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	3.073,00	45.479,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.154,00	45.560,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.155,00	45.561,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.165,00	45.571,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.166,00	45.572,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.284,00	45.690,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.285,00	45.691,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.295,00	45.701,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.296,00	45.702,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.404,00	45.810,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.405,00	45.811,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.415,00	45.821,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.416,00	45.822,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.594,00	46.000,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.595,00	46.001,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.605,00	46.011,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.606,00	46.012,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	3.915,00	46.321,82	2	1.600	275	12,50	16	Z1	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. Tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PM Timbraje valvulera (atm)	Zanja tipo asignada	Talud HV
T13B-BT	3.916,00	46.322,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.926,00	46.332,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	3.927,00	46.333,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	4.141,00	46.547,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	4.142,00	46.548,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	4.177,00	46.583,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	4.178,00	46.584,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	4.179,00	46.585,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	4.180,00	46.586,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	4.224,00	46.630,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	4.225,00	46.631,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	4.235,00	46.641,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	4.236,00	46.642,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	4.604,00	47.010,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	4.605,00	47.011,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	4.615,00	47.021,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	4.616,00	47.022,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	4.955,00	47.361,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	4.956,00	47.362,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	4.966,00	47.372,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	4.967,00	47.373,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	5.084,00	47.490,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	5.085,00	47.491,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	5.095,00	47.501,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	5.096,00	47.502,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	5.346,00	47.752,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	5.347,00	47.753,82	2	1.600	275	16,00	16	Z1	0,33
T13B-BT	5.348,00	47.754,82	2	1.600	275	16,00	16	Z1	0,33
T13B-BT	5.349,00	47.755,82	2	1.600	275	16,00	16	Z2	0,33
T13B-BT	5.371,00	47.777,82	2	1.600	275	16,00	16	Z2	0,33
T13B-BT	5.372,00	47.778,82	2	1.600	275	16,00	16	Z3	0,33
T13B-BT	5.393,00	47.799,82	2	1.600	275	16,00	16	Z3	0,33
T13B-BT	5.393,98	47.800,81	2	1.600	275	12,50	16	Z9	Hinca
T13B-BT	5.508,98	47.915,81	2	1.600	275	12,50	16	Z9	Hinca
T13B-BT	5.509,00	47.915,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	5.524,00	47.930,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	5.525,00	47.931,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	5.535,00	47.941,82	2	1.600	275	12,50	16	Z5	0,33
T13B-BT	5.536,00	47.942,82	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	5.544,69	47.951,51	2	1.600	275	12,50	16	Z2	0,33
T13B-BT	5.545,00	47.951,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	5.774,00	48.180,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	5.775,00	48.181,82	2	1.600	275	12,50	16	Z4	0,33
T13B-BT	5.781,00	48.187,82	2	1.600	275	12,50	16	Z4	0,33
T13B-BT	5.782,00	48.188,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	5.875,00	48.281,82	2	1.600	275	12,50	16	Z1	0,33
T13B-BT	5.876,00	48.282,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	5.984,00	48.390,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	5.985,00	48.391,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	5.995,00	48.401,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	5.996,00	48.402,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	6.274,00	48.680,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	6.275,00	48.681,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	6.285,00	48.691,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	6.286,00	48.692,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	6.554,00	48.960,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	6.555,00	48.961,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	6.565,00	48.971,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	6.566,00	48.972,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	6.674,00	49.080,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	6.675,00	49.081,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	6.685,00	49.091,82	2	1.600	275	10,00	16	Z5	0,33
T13B-BT	6.686,00	49.092,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	6.750,00	49.156,82	2	1.600	275	10,00	16	Z1	0,33
T13B-BT	6.751,00	49.157,82	2	1.600	275	10,00	16	Z1	1,00
T13B-BT	6.890,00	49.296,82	2	1.600	275	10,00	16	Z1	1,00
T13B-BT	6.890,62	49.297,44	2	1.600	275	10,00	16	Z5	1,00
T13B-BT	6.927,73	49.334,55	2	1.600	275	10,00	16	Z5	1,00
BT-DC	0,00	49.334,55	2	1.900	275	13,00	16	Z1	1,00
BT-DC	64,00	49.398,55	2	1.900	275	13,00	16	Z1	1,00
BT-DC	65,00	49.399,55	2	1.900	275	13,00	16	Z5	1,00
BT-DC	75,00	49.409,55	2	1.900	275	13,00	16	Z5	1,00
BT-DC	76,00	49.410,55	2	1.900	275	13,00	16	Z1	1,00
BT-DC	120,00	49.454,55	2	1.900	275	13,00	16	Z1	1,00
BT-DC	121,00	49.455,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	164,00	49.498,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	165,00	49.499,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	175,00	49.509,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	176,00	49.510,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	444,00	49.778,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	445,00	49.779,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	455,00	49.789,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	456,00	49.790,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	644,00	49.978,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	645,00	49.979,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	655,00	49.989,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	656,00	49.990,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	914,00	50.248,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	915,00	50.249,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	925,00	50.259,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	926,00	50.260,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	974,00	50.308,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	975,00	50.309,55	2	1.900	275	13,00	16	Z6	0,33
BT-DC	990,00	50.324,55	2	1.900	275	13,00	16	Z6	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PM Timbraje valvularia (atm)	Zanja tipo asignada	Talud HV
BT-DC	991,00	50.325,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	1.009,00	50.343,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	1.010,00	50.344,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	1.020,00	50.354,55	2	1.900	275	13,00	16	Z5	0,33
BT-DC	1.021,00	50.355,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	1.060,00	50.394,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	1.061,00	50.395,55	2	1.900	275	13,00	16	Z1	1,00
BT-DC	1.114,00	50.448,55	2	1.900	275	13,00	16	Z1	1,00
BT-DC	1.115,00	50.449,55	2	1.900	275	13,00	16	Z5	1,00
BT-DC	1.125,00	50.459,55	2	1.900	275	13,00	16	Z5	1,00
BT-DC	1.126,00	50.460,55	2	1.900	275	13,00	16	Z1	1,00
BT-DC	1.150,00	50.484,55	2	1.900	275	13,00	16	Z1	1,00
BT-DC	1.151,00	50.485,55	2	1.900	275	13,00	16	Z1	0,33
BT-DC	1.644,48	50.979,03	2	1.900	275	13,00	16	Z1	0,33
DC-T17	0,00	50.979,03	2	1.800	275	14,00	16	Z1	0,33
DC-T17	10,00	50.989,03	2	1.800	275	14,00	16	Z1	0,33
DC-T17	11,00	50.990,03	2	1.800	275	14,00	16	Z2	0,33
DC-T17	39,00	51.018,03	2	1.800	275	14,00	16	Z2	0,33
DC-T17	40,00	51.019,03	2	1.800	275	14,00	16	Z9	Hinca
DC-T17	80,00	51.059,03	2	1.800	275	14,00	16	Z9	Hinca
DC-T17	81,00	51.060,03	2	1.800	275	14,00	16	Z2	0,33
DC-T17	84,00	51.063,03	2	1.800	275	14,00	16	Z2	0,33
DC-T17	85,00	51.064,03	2	1.800	275	14,00	16	Z5	0,33
DC-T17	95,00	51.074,03	2	1.800	275	14,00	16	Z5	0,33
DC-T17	96,00	51.075,03	2	1.800	275	14,00	16	Z2	0,33
DC-T17	103,00	51.082,03	2	1.800	275	14,00	16	Z2	0,33
DC-T17	104,00	51.083,03	2	1.800	275	14,00	16	Z1	0,33
DC-T17	106,00	51.085,03	2	1.800	275	14,00	16	Z1	0,33
DC-T17	107,00	51.086,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	344,00	51.323,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	345,00	51.324,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	355,00	51.334,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	356,00	51.335,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	529,00	51.508,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	530,00	51.509,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	540,00	51.519,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	541,00	51.520,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	550,00	51.529,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	551,00	51.530,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.014,00	51.993,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.015,00	51.994,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	1.025,00	52.004,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	1.026,00	52.005,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.164,00	52.143,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.165,00	52.144,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	1.175,00	52.154,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	1.176,00	52.155,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.325,00	52.304,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.326,00	52.305,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	1.336,00	52.315,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	1.337,00	52.316,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.544,00	52.523,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.545,00	52.524,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	1.555,00	52.534,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	1.556,00	52.535,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.744,00	52.723,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	1.745,00	52.724,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	1.755,00	52.734,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	1.756,00	52.735,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	1.800,00	52.779,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	1.801,00	52.780,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	2.177,00	53.156,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	2.178,00	53.157,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	2.184,00	53.163,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	2.185,00	53.164,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	2.195,00	53.174,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	2.196,00	53.175,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	2.374,00	53.353,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	2.375,00	53.354,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	2.384,00	53.363,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	2.385,00	53.364,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	2.395,00	53.374,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	2.396,00	53.375,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	2.454,00	53.433,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	2.455,00	53.434,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	2.465,00	53.444,03	2	1.800	275	11,50	16	Z5	0,33
DC-T17	2.466,00	53.445,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	2.472,00	53.451,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	2.473,00	53.452,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	2.674,00	53.653,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	2.675,00	53.654,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	2.690,00	53.669,03	2	1.800	275	11,50	16	Z6	0,33
DC-T17	2.691,00	53.670,03	2	1.800	275	11,50	16	Z1	0,33
DC-T17	2.730,00	53.709,03	2	1.800	275	11,50	16	Z1	0,33
T17-T18	0,00	53.709,03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	129,00	53.838,03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	130,00	53.839,03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	141,00	53.850,03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	142,00	53.851,03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	254,00	53.963,03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	255,00	53.964,03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	265,00	53.974,03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	266,00	53.975,03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	349,00	54.058,03	2	1.600	275	10,00	16	Z1	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PM Timbraje valvulara (atm)	Zanja tipo asignada	Talud HV
T17-T18	350,00	54.059.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	357,00	54.066.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	358,00	54.067.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	604,00	54.313.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	605,00	54.314.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	615,00	54.324.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	616,00	54.325.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	714,00	54.423.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	715,00	54.424.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	725,00	54.434.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	726,00	54.435.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	732,00	54.441.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	733,00	54.442.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	814,00	54.523.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	815,00	54.524.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	825,00	54.534.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	826,00	54.535.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	839,00	54.548.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	840,00	54.549.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.049,00	54.758.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.050,00	54.759.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	1.060,00	54.769.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	1.061,00	54.770.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.121,00	54.830.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.122,00	54.831.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.132,00	54.841.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.133,00	54.842.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.281,00	54.990.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.282,00	54.991.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.292,00	55.001.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.293,00	55.002.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	1.301,00	55.010.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	1.302,00	55.011.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.334,00	55.043.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.335,00	55.044.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.345,00	55.054.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.346,00	55.055.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.474,00	55.183.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.475,00	55.184.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.485,00	55.194.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.486,00	55.195.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.549,00	55.258.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.550,00	55.259.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	1.561,00	55.270.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	1.562,00	55.271.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.739,00	55.448.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.740,00	55.449.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	1.751,00	55.460.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	1.752,00	55.461.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.867,00	55.576.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	1.868,00	55.577.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.878,00	55.587.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	1.879,00	55.588.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.124,00	55.833.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.125,00	55.834.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	2.135,00	55.844.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	2.136,00	55.845.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.149,00	55.858.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.150,00	55.859.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	2.160,00	55.869.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	2.161,00	55.870.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.304,00	56.013.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.305,00	56.014.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	2.315,00	56.024.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	2.316,00	56.025.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.319,00	56.028.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.320,00	56.029.03	2	1.600	275	12,50	16	Z1	0,33
T17-T18	2.322,00	56.031.03	2	1.600	275	12,50	16	Z1	0,33
T17-T18	2.323,00	56.032.03	2	1.600	275	12,50	16	Z2	0,33
T17-T18	2.351,00	56.060.03	2	1.600	275	12,50	16	Z2	0,33
T17-T18	2.352,00	56.061.03	2	1.600	275	12,50	16	Z1	0,33
T17-T18	2.353,00	56.062.03	2	1.600	275	12,50	16	Z1	0,33
T17-T18	2.354,00	56.063.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.359,00	56.068.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.360,00	56.069.03	2	1.600	275	10,00	16	Z11	0,67
T17-T18	2.390,00	56.099.03	2	1.600	275	10,00	16	Z11	0,67
T17-T18	2.391,00	56.100.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.459,00	56.168.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.460,00	56.169.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	2.471,00	56.180.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	2.472,00	56.181.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.644,00	56.353.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.645,00	56.354.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	2.654,00	56.363.03	2	1.600	275	10,00	16	Z6	0,33
T17-T18	2.655,00	56.364.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	2.665,00	56.374.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	2.666,00	56.375.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.938,00	56.647.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	2.939,00	56.648.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	2.949,00	56.658.03	2	1.600	275	10,00	16	Z5	0,33
T17-T18	2.950,00	56.659.03	2	1.600	275	10,00	16	Z1	0,33
T17-T18	3.230,00	56.939.03	2	1.600	275	10,00	16	Z1	0,33
T18-T19	0,00	56.939.03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	64,00	57.003.03	1	1.800	275	11,50	16	Z1	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PM Timbraje valvulara (atm)	Zanja tipo asignada	Talud HV
T18-T19	65,00	57.004,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	75,00	57.014,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	76,00	57.015,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	367,00	57.306,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	368,00	57.307,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	378,00	57.317,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	379,00	57.318,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	614,00	57.553,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	615,00	57.554,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	625,00	57.564,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	626,00	57.565,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	1.064,00	58.003,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	1.065,00	58.004,03	1	1.800	275	11,50	16	Z6	0,33
T18-T19	1.075,00	58.014,03	1	1.800	275	11,50	16	Z6	0,33
T18-T19	1.076,00	58.015,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	1.134,00	58.073,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	1.135,00	58.074,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	1.145,00	58.084,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	1.146,00	58.085,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	1.227,00	58.166,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	1.228,00	58.167,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	1.238,00	58.177,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	1.239,00	58.178,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	1.420,00	58.359,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	1.421,00	58.360,03	1	1.800	275	11,50	16	Z11	0,67
T18-T19	1.437,00	58.376,03	1	1.800	275	11,50	16	Z11	0,67
T18-T19	1.438,00	58.377,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	1.445,00	58.384,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	1.446,00	58.385,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	2.164,00	59.103,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	2.165,00	59.104,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	2.175,00	59.114,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	2.176,00	59.115,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	2.324,00	59.263,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	2.325,00	59.264,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	2.335,00	59.274,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	2.336,00	59.275,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	3.106,00	60.045,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	3.107,00	60.046,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	3.117,00	60.056,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	3.118,00	60.057,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	3.278,00	60.217,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	3.279,00	60.218,03	1	1.800	275	18,00	16	Z1	0,33
T18-T19	3.280,00	60.219,03	1	1.800	275	18,00	16	Z2	0,33
T18-T19	3.324,00	60.263,03	1	1.800	275	18,00	16	Z2	0,33
T18-T19	3.325,00	60.264,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	3.335,00	60.274,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	3.336,00	60.275,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	3.400,00	60.339,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	3.401,00	60.340,03	1	1.800	275	11,50	16	Z1	1,00
T18-T19	3.524,00	60.463,03	1	1.800	275	11,50	16	Z1	1,00
T18-T19	3.525,00	60.464,03	1	1.800	275	11,50	16	Z5	1,00
T18-T19	3.535,00	60.474,03	1	1.800	275	11,50	16	Z5	1,00
T18-T19	3.536,00	60.475,03	1	1.800	275	11,50	16	Z1	1,00
T18-T19	3.625,00	60.564,03	1	1.800	275	11,50	16	Z1	1,00
T18-T19	3.626,00	60.565,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	3.669,00	60.608,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	3.670,00	60.609,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	3.680,00	60.619,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	3.681,00	60.620,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	4.029,00	60.968,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	4.030,00	60.969,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	4.040,00	60.979,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	4.041,00	60.980,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	4.665,00	61.604,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	4.666,00	61.605,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	4.676,00	61.615,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	4.677,00	61.616,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	4.706,00	61.645,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	4.707,00	61.646,03	1	1.800	275	11,50	16	Z6	0,33
T18-T19	4.717,00	61.656,03	1	1.800	275	11,50	16	Z6	0,33
T18-T19	4.717,54	61.656,57	1	1.800	275	11,50	16	Z1	0,33
T18-T19	4.905,00	61.844,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	4.906,00	61.845,03	1	1.800	275	11,50	16	Z6	0,33
T18-T19	4.914,00	61.853,03	1	1.800	275	11,50	16	Z6	0,33
T18-T19	4.915,00	61.854,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	4.925,00	61.864,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	4.926,00	61.865,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	5.000,00	61.939,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	5.001,00	61.940,03	1	1.800	275	11,50	16	Z1	1,00
T18-T19	5.211,00	62.150,03	1	1.800	275	11,50	16	Z1	1,00
T18-T19	5.212,00	62.151,03	1	1.800	275	11,50	16	Z6	1,00
T18-T19	5.225,00	62.164,03	1	1.800	275	11,50	16	Z6	1,00
T18-T19	5.226,00	62.165,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	5.304,00	62.243,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	5.305,00	62.244,03	1	1.800	275	11,50	16	Z6	0,33
T18-T19	5.315,00	62.254,03	1	1.800	275	11,50	16	Z6	0,33
T18-T19	5.316,00	62.255,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	5.364,00	62.303,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	5.365,00	62.304,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	5.375,00	62.314,03	1	1.800	275	11,50	16	Z5	0,33
T18-T19	5.376,00	62.315,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	5.484,00	62.423,03	1	1.800	275	11,50	16	Z1	0,33
T18-T19	5.485,00	62.424,03	1	1.800	275	11,50	16	Z6	0,33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. tramo	P. K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PM Timbraje valvulara (atm)	Zanja tipo asignada	Talud HV
T18-T19	5.494,00	62.433.03	1	1.800	275	11.50	16	Z6	0.33
T18-T19	5.495,00	62.434.03	1	1.800	275	11.50	16	Z5	0.33
T18-T19	5.505,00	62.444.03	1	1.800	275	11.50	16	Z5	0.33
T18-T19	5.506,00	62.445.03	1	1.800	275	11.50	16	Z1	0.33
T18-T19	5.559,00	62.498.03	1	1.800	275	11.50	16	Z1	0.33
T18-T19	5.560,00	62.499.03	1	1.800	275	11.50	16	Z6	0.33
T18-T19	5.570,00	62.509.03	1	1.800	275	11.50	16	Z6	0.33
T18-T19	5.571,00	62.510.03	1	1.800	275	11.50	16	Z1	0.33
T18-T19	5.610,00	62.549.03	1	1.800	275	11.50	16	Z1	0.33
T19-T20	0,00	62.549.03	1	1.500	275	10.50	16	Z1	0.33
T19-T20	71,00	62.620.03	1	1.500	275	10.50	16	Z1	0.33
T19-T20	72,00	62.621.03	1	1.500	275	10.50	16	Z6	0.33
T19-T20	82,00	62.631.03	1	1.500	275	10.50	16	Z6	0.33
T19-T20	83,00	62.632.03	1	1.500	275	10.50	16	Z1	0.33
T19-T20	225,00	62.774.03	1	1.500	275	10.50	16	Z1	0.33
T19-T20	226,00	62.775.03	1	1.500	275	10.50	16	Z2	0.33
T19-T20	267,00	62.816.03	1	1.500	275	10.50	16	Z2	0.33
T19-T20	268,00	62.817.03	1	1.500	275	10.50	16	Z1	0.33
T19-T20	334,00	62.883.03	1	1.500	275	10.50	16	Z1	0.33
T19-T20	335,00	62.884.03	1	1.500	275	10.50	16	Z5	0.33
T19-T20	345,00	62.894.03	1	1.500	275	10.50	16	Z5	0.33
T19-T20	346,00	62.895.03	1	1.500	275	10.50	16	Z1	0.33
T19-T20	416,00	62.965.03	1	1.500	275	10.50	16	Z1	0.33
T19-T20	417,00	62.966.03	1	1.500	275	10.50	16	Z2	0.33
T19-T20	450,00	62.999.03	1	1.500	275	10.50	16	Z2	0.33
T19-T20	451,00	63.000.03	1	1.500	275	16.00	16	Z2	0.33
T19-T20	485,00	63.034.03	1	1.500	275	16.00	16	Z2	0.33
T19-T20	486,00	63.035.03	1	1.500	275	16.00	16	Z6	0.33
T19-T20	492,00	63.041.03	1	1.500	275	16.00	16	Z6	0.33
T19-T20	493,00	63.042.03	1	1.500	275	16.00	16	Z5	0.33
T19-T20	503,00	63.052.03	1	1.500	275	16.00	16	Z5	0.33
T19-T20	504,00	63.053.03	1	1.500	275	16.00	16	Z2	0.33
T19-T20	509,00	63.058.03	1	1.500	275	16.00	16	Z2	0.33
T19-T20	510,00	63.059.03	1	1.500	275	16.00	16	Z3	0.33
T19-T20	659,00	63.208.03	1	1.500	275	16.00	16	Z3	0.33
T19-T20	660,00	63.209.03	1	1.500	275	16.00	16	Z6	0.33
T19-T20	690,00	63.239.03	1	1.500	275	16.00	16	Z6	0.33
T19-T20	691,00	63.240.03	1	1.500	275	16.00	16	Z3	0.33
T19-T20	772,00	63.321.03	1	1.500	275	16.00	16	Z3	0.33
T19-T20	773,00	63.322.03	1	1.500	275	16.00	16	Z2	0.33
T19-T20	896,00	63.445.03	1	1.500	275	16.00	16	Z2	0.33
T19-T20	897,00	63.446.03	1	1.500	275	16.00	16	Z1	0.33
T19-T20	918,00	63.467.03	1	1.500	275	16.00	16	Z1	0.33
T19-T20	919,00	63.468.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	984,00	63.533.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	985,00	63.534.03	1	1.500	275	9.50	16	Z5	0.33
T19-T20	995,00	63.544.03	1	1.500	275	9.50	16	Z5	0.33
T19-T20	996,00	63.545.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	1.182,00	63.731.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	1.183,00	63.732.03	1	1.500	275	9.50	16	Z6	0.33
T19-T20	1.193,00	63.742.03	1	1.500	275	9.50	16	Z6	0.33
T19-T20	1.194,00	63.743.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	1.430,00	63.979.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	1.431,00	63.980.03	1	1.500	275	9.50	16	Z1	1.00
T19-T20	1.750,00	64.299.03	1	1.500	275	9.50	16	Z1	1.00
T19-T20	1.751,00	64.300.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	1.794,00	64.343.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	1.795,00	64.344.03	1	1.500	275	9.50	16	Z5	0.33
T19-T20	1.805,00	64.354.03	1	1.500	275	9.50	16	Z5	0.33
T19-T20	1.806,00	64.355.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	2.199,00	64.748.03	1	1.500	275	9.50	16	Z1	0.33
T19-T20	2.200,00	64.749.03	1	1.500	275	9.50	16	Z1	1.50
T19-T20	2.279,00	64.828.03	1	1.500	275	9.50	16	Z1	1.50
T19-T20	2.280,00	64.829.03	1	1.500	275	9.50	16	Z7	1.50
T19-T20	2.295,00	64.844.03	1	1.500	275	9.50	16	Z7	1.50
T19-T20	2.296,00	64.845.03	1	1.500	275	9.50	16	Z1	1.50
T19-T20	2.304,00	64.853.03	1	1.500	275	9.50	16	Z1	1.50
T19-T20	2.305,00	64.854.03	1	1.500	275	9.50	16	Z5	1.50
T19-T20	2.315,00	64.864.03	1	1.500	275	9.50	16	Z5	1.50
T19-T20	2.316,00	64.865.03	1	1.500	275	9.50	16	Z1	1.50
T19-T20	2.400,00	64.949.03	1	1.500	275	9.50	16	Z1	1.50
T19-T20	2.401,00	64.950.03	1	1.500	275	9.50	16	Z1	1.00
T19-T20	2.440,00	64.989.03	1	1.500	275	9.50	16	Z1	1.00
T20-T21	0,00	64.989.03	1	1.300	275	8.00	16	Z1	1.00
T20-T21	39,00	65.028.03	1	1.300	275	8.00	16	Z1	1.00
T20-T21	40,00	65.029.03	1	1.300	275	8.00	16	Z4	1.00
T20-T21	55,00	65.044.03	1	1.300	275	8.00	16	Z4	1.00
T20-T21	56,00	65.045.03	1	1.300	275	8.00	16	Z1	1.00
T20-T21	204,00	65.193.03	1	1.300	275	8.00	16	Z1	1.00
T20-T21	205,00	65.194.03	1	1.300	275	8.00	16	Z5	1.00
T20-T21	215,00	65.204.03	1	1.300	275	8.00	16	Z5	1.00
T20-T21	216,00	65.205.03	1	1.300	275	8.00	16	Z1	1.00
T20-T21	575,00	65.564.03	1	1.300	275	8.00	16	Z1	1.00
T20-T21	576,00	65.565.03	1	1.300	275	8.00	16	Z1	0.33
T20-T21	804,00	65.793.03	1	1.300	275	8.00	16	Z1	0.33
T20-T21	805,00	65.794.03	1	1.300	275	8.00	16	Z5	0.33
T20-T21	815,00	65.804.03	1	1.300	275	8.00	16	Z5	0.33
T20-T21	816,00	65.805.03	1	1.300	275	8.00	16	Z1	0.33
T20-T21	1.074,00	66.063.03	1	1.300	275	8.00	16	Z1	0.33
T20-T21	1.075,00	66.064.03	1	1.300	275	8.00	16	Z5	0.33
T20-T21	1.085,00	66.074.03	1	1.300	275	8.00	16	Z5	0.33
T20-T21	1.086,00	66.075.03	1	1.300	275	8.00	16	Z1	0.33
T20-T21	1.564,00	66.553.03	1	1.300	275	8.00	16	Z1	0.33
T20-T21	1.565,00	66.554.03	1	1.300	275	8.00	16	Z5	0.33

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P. K. Tramo	P. K. Acumulado	N° tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PN Tímbraje valvulera (atm)	Zanja tipo asignada	Talud HV
T20-T21	1.575,00	66.564,03	1	1.300	275	8,00	16	Z5	0,33
T20-T21	1.576,00	66.565,03	1	1.300	275	8,00	16	Z1	0,33
T20-T21	1.654,00	66.643,03	1	1.300	275	8,00	16	Z1	0,33
T20-T21	1.655,00	66.644,03	1	1.300	275	8,00	16	Z5	0,33
T20-T21	1.656,00	66.645,03	1	1.300	275	10,00	16	Z5	0,33
T20-T21	1.665,00	66.654,03	1	1.300	275	10,00	16	Z5	0,33
T20-T21	1.666,00	66.655,03	1	1.300	275	10,00	16	Z2	0,33
T20-T21	1.837,00	66.826,03	1	1.300	275	10,00	16	Z2	0,33
T20-T21	1.838,00	66.827,03	1	1.300	275	10,00	16	Z1	0,33
T20-T21	2.055,00	67.044,03	1	1.300	275	10,00	16	Z1	0,33
DC-T16	0,00	0,00	1	1.800	275	11,50	16	Z1	0,33
DC-T16	25,00	25,00	1	1.800	275	11,50	16	Z1	0,33
DC-T16	26,00	26,00	1	1.800	275	11,50	16	Z5	0,33
DC-T16	36,00	36,00	1	1.800	275	11,50	16	Z5	0,33
DC-T16	37,00	37,00	1	1.800	275	11,50	16	Z1	0,33
DC-T16	572,00	572,00	1	1.800	275	11,50	16	Z1	0,33
DC-T16	573,00	573,00	1	1.800	275	18,00	16	Z1	0,33
DC-T16	575,00	575,00	1	1.800	275	18,00	16	Z1	0,33
DC-T16	576,00	576,00	1	1.800	275	18,00	16	Z2	0,33
DC-T16	651,00	651,00	1	1.800	275	18,00	16	Z2	0,33
DC-T16	652,00	652,00	1	1.800	275	18,00	16	Z3	0,33
DC-T16	742,00	742,00	1	1.800	275	18,00	16	Z3	0,33
DC-T16	743,00	743,00	1	1.800	275	18,00	16	Z2	0,33
DC-T16	879,00	879,00	1	1.800	275	18,00	16	Z2	0,33
DC-T16	880,00	880,00	1	1.800	275	18,00	16	Z1	0,33
DC-T16	883,00	883,00	1	1.800	275	18,00	16	Z1	0,33
DC-T16	884,00	884,00	1	1.800	275	11,50	16	Z1	0,33
DC-T16	954,00	954,00	1	1.800	275	11,50	16	Z1	0,33
DC-T16	955,00	955,00	1	1.800	275	11,50	16	Z5	0,33
DC-T16	965,00	965,00	1	1.800	275	11,50	16	Z5	0,33
DC-T16	966,00	966,00	1	1.800	275	11,50	16	Z1	0,33
DC-T16	1.150,00	1.150,00	1	1.800	275	11,50	16	Z1	0,33
T16-T14	0,00	1.150,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	28,00	1.178,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	29,00	1.179,00	1	1.600	275	10,00	16	Z6	0,33
T16-T14	36,00	1.186,00	1	1.600	275	10,00	16	Z6	0,33
T16-T14	37,00	1.187,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	339,00	1.489,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	340,00	1.490,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	350,00	1.500,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	351,00	1.501,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	469,72	1.619,72	1	1.600	275	10,00	16	Z1	0,33
T16-T14	470,00	1.620,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	480,00	1.630,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	481,00	1.631,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	744,00	1.894,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	745,00	1.895,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	755,00	1.905,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	756,00	1.906,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	1.021,00	2.171,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	1.022,00	2.172,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	1.032,00	2.182,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	1.033,00	2.183,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	1.066,00	2.216,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	1.067,00	2.217,00	1	1.600	275	10,00	16	Z6	0,33
T16-T14	1.077,00	2.227,00	1	1.600	275	10,00	16	Z6	0,33
T16-T14	1.078,00	2.228,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	1.389,00	2.539,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	1.390,00	2.540,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	1.400,00	2.550,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	1.401,00	2.551,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	1.724,00	2.874,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	1.725,00	2.875,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	1.735,00	2.885,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	1.736,00	2.886,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	2.154,00	3.304,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	2.155,00	3.305,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	2.165,00	3.315,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	2.166,00	3.316,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	2.199,00	3.349,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	2.200,00	3.350,00	1	1.600	275	10,00	16	Z6	0,33
T16-T14	2.210,00	3.360,00	1	1.600	275	10,00	16	Z6	0,33
T16-T14	2.211,00	3.361,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	2.654,00	3.804,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	2.655,00	3.805,00	1	1.600	275	10,00	16	Z6	0,33
T16-T14	2.664,00	3.814,00	1	1.600	275	10,00	16	Z6	0,33
T16-T14	2.665,00	3.815,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	2.675,00	3.825,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	2.676,00	3.826,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	2.874,00	4.024,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	2.875,00	4.025,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	2.885,00	4.035,00	1	1.600	275	10,00	16	Z5	0,33
T16-T14	2.886,00	4.036,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	3.048,00	4.198,00	1	1.600	275	10,00	16	Z1	0,33
T16-T14	3.049,00	4.199,00	1	1.600	275	12,50	16	Z1	0,33
T16-T14	3.054,00	4.204,00	1	1.600	275	12,50	16	Z1	0,33
T16-T14	3.055,00	4.205,00	1	1.600	275	12,50	16	Z5	0,33
T16-T14	3.067,00	4.217,00	1	1.600	275	12,50	16	Z5	0,33
T16-T14	3.068,00	4.218,00	1	1.600	275	12,50	16	Z10	0,00
T16-T14	3.082,00	4.232,00	1	1.600	275	12,50	16	Z10	0,00
T16-T14	3.082,06	4.232,06	1	1.600	275	12,50	16	Z9	Hinca
T16-T14	3.132,06	4.282,06	1	1.600	275	12,50	16	Z9	Hinca
T16-T14	3.133,00	4.283,00	1	1.600	275	12,50	16	Z10	0,00
T16-T14	3.134,00	4.284,00	1	1.600	275	12,50	16	Z10	1,00

TABLA DE TRAMIFICACIÓN COMPUESTA: CONDUCCIÓN Y TIPO DE ZANJA									
Tramo	P.K. Tramo	P.K. Acumulado	Nº tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PM Timbraje valvulería (atm)	Zanja tipo asignada	Tallud HV
T16-T14	3.146,00	4.296,00	1	1.600	275	12,50	16	Z10	1,00
T16-T14	3.147,00	4.297,00	1	1.600	275	12,50	16	Z1	1,00

RESUMEN HINCAS

TABLA RESUMEN MEDICIÓN HINCAS	
Elemento	Hinca
Etiquetas de fila	Suma de longitud tubería total (m)
CN-T12	380,00
CN-T11	380,00
Cruce Aragón	308,00
2.000,00	308,00
14,00	308,00
NA-128	72,00
2.000,00	72,00
15,00	72,00
DC-T21/T14	132,06
DC-T17	82,00
NA-160	82,00
1.800,00	82,00
14,00	82,00
T16-T14	50,06
N-113	50,06
1.600,00	50,06
12,50	50,06
T12-DC	1.838,71
T12-T13	1.606,74
Cerro	402,00
1.800,00	402,00
11,50	402,00
Cruce Ebro	1.002,00
1.800,00	1.002,00
14,00	1.002,00
FFCC	102,00
1.800,00	102,00
14,00	102,00
NA-134	100,74
1.800,00	100,74
13,00	100,74
T13B-BT	231,97
AP68	231,97
1.600,00	231,97
12,50	231,97
Total general	2.350,77

HINCAS

MEDICIÓN HINCAS

Nº HINCA	1	2	3	4	5	6	7	8	9
TRAMO	CN-T11	CN-T11	T12-13	T12-13	T12-13	T12-13	T13BIS-BALSA TUDELA	D.C. -T17	T16 -T14 y T15
ELEMENTO DE CRUCE	Río Aragón	NA-128	CERRO	NA-134	RÍO EBRO	F.F.C.C. ALSASOLA ZARAGOZA	AP-68	NA-160	N-113
Sección	Z9-2-2000	Z9-2-2000	Z9-2-1800	Z9-2-1800	Z9-2-1800	Z9-2-1800	Z9-2-1600	Z9-2-1800	Z9-1-1600
PK INICIO-Tramo	5.513	7.435	760	5.701	8.890	9.570	5.394	40	3.082
Pozo	Salida	Ataque	Salida	Salida	Ataque	Ataque	Salida	Salida	Ataque
PK FINAL-Tramo	5.666	7.470	960	5.751	9.390	9.620	5.509	80	3.132
Pozo	Ataque	Salida	Ataque	Salida	Salida	Salida	Ataque	Ataque	Salida
LONGITUD HINCA (m)	153	35	200	50	500	50	115	40	50
Nº de tubos	2	2	2	2	2	2	2	2	1
DN TUBO ACERO (mm)	2.000	2.000	1.800	1.800	1.800	1.800	1.600	1.800	1.600
DN ext TUBO ACERO (mm)	2.032	2.032	1.829	1.829	1.829	1.829	1.626	1.829	1.626
DN TUBO HINCA MIN (mm)	2.500	2.500	2.500	2.500	2.500	2.500	2.000	2.500	2.000
TIPO TUBO HINCA	HA	HA	HA	HA	HA	HA	HA	HA	HA
DN EXT. TUBO HINCA (mm)	3.000	3.000	3.000	3.000	3.000	3.000	2.400	3.000	2.400
Clase tubo hınca	180	135	180	135	180	180	135	135	135
Tipo de hınca escudo	Cerrado	Cerrado	Abierto	Cerrado	Cerrado	Cerrado	Abierto	Abierto	Abierto
Tipo de pozo	Pantalla	Pantalla	Excavado	Pantalla	Pantalla	Pantalla	Excavado	Excavado	Pantalla
Relleno de mortero entre tub. de hormigón y tub. de acero (m3)	509,5	116,5	912,1	228,0	2.280,2	228,0	244,8	182,4	53,2
Relleno del gap exterior de la hınca (m3) e=0,2m	576,5	131,9	753,6	188,4	1.884,0	188,4	346,7	150,7	75,4
Geometría pantallas									
Profundidad pantallas pozo ataque (m)	18,00	16,00		16,00	18,00	16,00			16,00
Profundidad pantallas pozo salida(m)	24,00	16,00		16,00	18,00	16,00			16,00
Ancho int (m)	13,00	13,00		13,00	13,00	13,00			6,80
Largo int (m)	15,00	15,00		15,00	15,00	15,00			15,00
Largo ext(m)	17,00	17,00		17,00	17,00	17,00			17,00
Espesor de pantalla	1,00	1,00		1,00	1,00	1,00			1,00
Espesor de losa	0,40	0,40		0,40	0,40	0,40			0,40
Excavaciones interiores									
Profundidad excav. de pozo de ataque incl. Losa+HL+camcos (m)	9,74	7,63		7,60	9,20	8,30			6,00
Excav. Recinto apantallado pozo ataque (m3)	1.899,30	1.491,75		1.482,00	1.794,00	1.618,50			612,00
Profundidad excav. de pozo de salida (m)	13,25	7,20		6,80	8,30	7,80			6,25
Excav. Recinto apantallado pozo salida (m3)	2.756,00	1.497,40		1.414,40	1.726,40	1.622,40			680,00
Total excav. recinto apantallado (m3)	4.655,35	2.989,15		2.896,40	3.520,40	3.240,90			1.292,25
Pantallas									
Muro guía pozo ataque (m)	60,00	60,00		60,00	60,00	60,00			47,60
Muro guía pozo salida (m)	47,00	47,00		47,00	47,00	47,00			40,80
Muro guía total(m)	107,00	107,00		107,00	107,00	107,00			88,40
Excav y hormigonado de pantalla ataque (m2)	1.080,00	960,00		960,00	1.080,00	960,00			784,00
Excav y hormigonado de pantalla salida (m2)	1.128,00	752,00		752,00	846,00	752,00			652,80
Excav y hormigonado de pantalla (m3)	2.208,00	1.712,00		1.712,00	1.926,00	1.712,00			1.414,40
Excav y hormigonado de pantalla (m2)	2.208,00	1.712,00		1.712,00	1.926,00	1.712,00			1.414,40
Vigas de atado									
Pozo de ataque (m3 HA)									
Viga de atado-1	58,80	58,80		58,80	58,80	58,80			45,76
Viga de atado-2	26,88	26,88		26,88	26,88	26,88			20,97
Viga de atado-3	0,00	0,00							
Pozo de salida (m3 HA)									
Viga de atado-1	45,15	45,15		45,15	45,15	45,15			38,64
Viga de atado-2	20,64	20,64		20,64	20,64	20,64			17,66
Viga de atado-3	20,64								
Total hormigón HA -30 Vigas (m3)	172,11	151,47		151,47	151,47	151,47			123,03
Total hormigón HA-30 losas (m3)	78,00	78,00		78,00		78,00			40,80
Encofrado									
Pozo de ataque (m3 HA)									
Viga de atado-1	114,80	114,80		114,80	114,80	114,80			89,38
Viga de atado-2	78,40	78,40		78,40	78,40	78,40			61,04
Viga de atado-3	0,00								
Pozo de salida (m3 HA)									
Viga de atado-1	114,80	114,80		114,80	114,80	114,80			89,38
Viga de atado-2	78,40	78,40		78,40	78,40	78,40			61,04
Viga de atado-3	0,00								
Total (m2) encofrado vigas	464,80	386,40		386,40	386,40	386,40			300,84
Demolición									
Corte junta diamante (m)	3,77	3,77		3,77	3,77	3,77			3,01
Huaco entronque tubería hınca(m3) = Área del tubo xesp. Pant	18,84	18,84		18,84		18,84			7,54
hprof. Demolición (m²)	8,00	5,50		5,50	7,00	6,00			4,00
Huaco demolición de pantalla para conex. Tub. acero en pantalla de ataque (m3) = Ancho pantalla x hprof.x esp.pantalla									
	104,00	71,50		71,50	91,00	78,00			27,20
Conexión losa a muros pantallas									
Junta hidropneumática (m) = perimetro en pozo de ataque	56,00	56,00		56,00	56,00	56,00			43,60
Conexión barras epoxi (m2)	22,40	22,40		22,40	22,40	22,40			17,44
Acero pantallas									
Kg pantalla ataque módulo de 3m s/ cálculo+10% merma	3.614,55	1.785,29		2.110,06	3.712,41	2.244,06			2.110,06
Kg pantalla salida módulo de 3m s/ cálculo	14.536,72	1.785,29		2.110,06	3.712,41	2.244,06			2.110,06
Cuántia (Kg/m3) pantalla ataque	66,94	37,19		43,96	68,75	46,75			43,96
Cuántia (Kg/m3) pantalla salida	201,90	37,19		43,96	68,75	46,75			43,96
Refuerzo pantalla de ataque. Ramas f. 12/15 (Kg/m2)	306,67	306,67		306,67	306,67	306,67			306,67
Long. de refuerzo CORTANTE: pantalla de ataque (m)	3,00	3,00		3,00	3,00	3,00			3,00
Long. de refuerzo CORTANTE: pantalla de ataque (m)	8,00	8,00		8,00	8,00	8,00			8,00
Kg pantalla ataque incl. Refuerzos	127.491,00	90.905,80		97.401,20	129.448,20	100.081,20			77.271,62
Kg pantalla salida Incl. Refuerzos	227.741,95	27.969,54		33.057,61	58.161,09	35.156,94			28.696,82
Acero Vigas									
Pozo de ataque									
Viga de atado-1									
Ancho (m)	1,05	1,05		1,05	1,05	1,05			1,05
Alto (m)	1,00	1,00		1,00	1,00	1,00			1,00
Largo (m)	56,00	56,00		56,00	56,00	56,00			43,60
Armado superior	8 Ø20	1.120,00	8 Ø20	1.120,00	8 Ø20	1.120,00			872,00
Armado inferior	8 Ø20	1.120,00	8 Ø20	1.120,00	8 Ø20	1.120,00			872,00
Armado exterior	10 Ø20	1.428,00	10 Ø20	1.428,00	10 Ø20	1.428,00			1.111,80
Armado exterior refuerzo	N/A	0,00	N/A	0,00	N/A	0,00			0,00
Armado interior refuerzo	10 Ø20	1.428,00	10 Ø20	1.428,00	10 Ø20	1.428,00			1.111,80
Armado interior refuerzo	N/A	0,00	N/A	0,00	N/A	0,00			0,00
Cercos	16Ø15	2.434,13	16Ø15	2.434,13	4 ramas Ø12 c 15	5.632,85	4 ramas Ø12 c 15	5.632,85	4 ramas Ø12 c 15
Viga de atado-2									
Ancho (m)	0,80	0,80		0,80	0,80	0,80			0,80
Alto (m)	0,60	0,60		0,60	0,60	0,60			0,60
Largo (m)	56,00	56,00		56,00	56,00	56,00			43,60
Armado superior	8 Ø20	1.120,00	6 Ø20	840,00	6 Ø20	840,00			654,00
Armado inferior	8 Ø20	1.120,00	6 Ø20	840,00	6 Ø20	840,00			654,00
Armado exterior	10 Ø20	1.428,00	5 Ø20	714,00	5 Ø20	714,00			555,90
Armado exterior refuerzo	N/A	0,00	N/A	0,00	N/A	0,00			0,00
Armado interior	10 Ø20	1.428,00	5 Ø20	714,00	5 Ø20	714,00			555,90
Armado interior refuerzo	N/A	0,00	N/A	0,00	N/A	0,00			0,00
Cercos	16Ø15	2.004,90	16Ø15	2.004,90	4 ramas Ø12 c 20	3.394,80	16Ø15	2.004,90	4 ramas Ø12 c 15
Pozo de salida									
Viga de atado-1									
Ancho (m)	1,05	1,05		1,05	1,05	1,05			1,05
Alto (m)	1,00	1,00		1,00	1,00	1,00			1,00
Largo (m)	45,00	45,00		45,00	45,00	45,00			38,80
Armado superior	8 Ø20	918,00	8 Ø20	900,00	8 Ø20	900,00			776,00
Armado inferior	8 Ø20	918,00	8 Ø20	900,00	8 Ø20	900,00			776,00
Armado exterior	10 Ø20	1.147,50	10 Ø20	1.147,50	10 Ø20	1.147,50			989,40
Armado exterior refuerzo	N/A	0,00	N/A	0,00	N/A	0,00			0,00
Armado interior	10 Ø20	1.147,50	10 Ø20	1.147,50	10 Ø20	1.147,50			989,40
Armado interior refuerzo	N/A	0,00	N/A	0,00	N/A	0,00			0,00
Cercos	16Ø15	2.004,90	16Ø15	2.004,90	4 ramas Ø12 c 15	3.394,80	16Ø15	2.004,90	4 ramas Ø12 c 15
Viga de atado-2									
Ancho (m)	0,80	0,80		0,80	0,80	0,80			0,80
Alto (m)	0,60	0,60		0,60	0,60	0,60			0,60
Largo (m)	45,00	45,00		45,00	45,00	45,00			38,80
Armado superior	8 Ø20	918,00	6 Ø20	675,00	6 Ø20	675,00			582,00
Armado inferior	8 Ø20	918,00	6 Ø20	675,00	6 Ø20	675,00			582,00
Armado exterior	8 Ø20	918,00	5 Ø20	573,75	5 Ø20	573,75			494,70
Armado exterior refuerzo	8 Ø20	918,00	N/A	0,00	N/A	0,00			0,00
Armado interior	8 Ø20	918,00	5 Ø20	573,75	5 Ø20	573,75			494,70
Armado interior refuerzo	8 Ø20	918,00	N/A	0,00	N/A	0,00			0,00
Cercos	4 ramas Ø12 c 15	3.091,20	16Ø15	1.369,20	4 ramas Ø12 c 15	3.091,20	4 ramas Ø12 c 15	3.091,20	4 ramas Ø12 c 15
Viga de atado-3									
Ancho (m)	0,80	0,80		0,80	0,80	0,80			0,80
Alto (m)	0,60	0,60		0,60	0,60	0,60			0,60
Largo (m)	45,00	45,00		45,00	45,00	45,00			38,80
Armado superior	8 Ø20	918,00	8 Ø20	918,00	8 Ø20	918,00			776,00
Armado inferior	8 Ø20	918,00	8 Ø20	918,00	8 Ø20	918,00			776,00
Armado exterior refuerzo	N/A	0,00							0,00
Armado interior	8 Ø20	918,00	8 Ø20	918,00	8 Ø20	918,00			776,00
Armado interior refuerzo	N/A	0,00							0,00
Cercos	4 ramas Ø12 c 25	463,68							1.180,55
Total kg acero (B500S)	389.138,07	141.392,87	0,00	155.119,27	218.580,37	164.819,33	0,00	0,00	128.459,

Nº Hinca	1	2	3	4	5	6	7	8	9
TRAMO	CN-T11	CN-T11	T12-13	T12-13	T12-13	T12-13	T13BIS-BALSA TUDELA	D.C. -T17	T16 - T14 y T15
ELEMENTO DE CRUCE	Río Aragón	NA-128	CERRO	NA-134	RÍO EBRO	F.F.C.C. ALSASUA ZARAGOZA	AP-68	NA-160	N-113

[illegible]

VENTOSAS. ARQUETAS

MEDICIONES ARQUETAS VENTOSAS (SIN INCLUIR LAS TOMAS)

[illegible][illegible]

DESAGÜES (SIN INCLUIR TOMAS)

ARQUETA DE DESAGÜE	ARQUETA DE DESAGÜE	ARQUETA DE DESAGÜE
--------------------	--------------------	--------------------

[illegible]

MEDICIONES DE DESAGÜES SIN IN					ARQUETA DE DESAGÜE																													
					Calderería acero galvanizado																													
					Tramo-1 indiv.		Tramo-2 común.			Valvulería																								
Tramo					Acero galvanizado (Kg)- tuberías-bridas		Carrete pasamuros DN 500mm																											
					Válvula compuerta DN 100mm PN16	Válvula compuertaDN 150mm PN25	Válvula mariposa DN 100mm PN16	Válvula mariposa DN 150mm PN25	Válvula mariposa DN 200mm PN16	Válvula mariposa DN 200mm PN25	Válvula mariposa DN 250mm PN16	Válvula mariposa DN 250mm PN25	Válvula mariposa DN 300mm PN16	Válvula mariposa DN 300mm PN25	Válvula multiforificio DN 250mm PN16	Válvula multiforificio DN 250mm PN25	Válvula multiforificio DN 300mm PN16	Válvula multiforificio DN 300mm PN25	Carrete desmontaje DN 500mm PN16	Carrete desmontaje DN 500mm PN25	Carrete desmontaje DN200 PN16	Carrete desmontaje DN200 PN25	Carrete desmontaje DN250PN16	Carrete desmontaje DN250 PN25	Válv. compensación DN 150 mm	Válv. compensación DN 200 mm	Válv. compensación DN 250 mm	Ventosa DN25 PN16+válv.corte (Ud)	Ventosa DN25 PN25+valv. corte (Ud)	Excluíte rápido (Ud)				
CN-TI1					2,093.4	2,0	24	6					2					2	9							4	3		22	16				
T11-T12					1,508.4		24		4																				24	18				
T11-T13					1,040.4	2,0	26								2			6											24	22				
T13-T13B					267.9		6																						6	6				
T13B-BT					1,009.4		24																						24	24				
BT-DC					302.8		6																						6	6				
DC-T17					465.9		10																						10	10				
T17-T18					664.6		12		2										3								1		12	10				
T18-T19					483.7		9		1										10	8	8	8	8	8					9	8				
T19-T20					65.1		2								1				1	1	1	1	3	1					2	1				
T20-T21					105.7		3												3	3	3	3	3	3					3	3				
DC-T16					46.8		1												1	1	1	1	1						1	1				
T16-T14					268.1		5		1										6	4	4	4	4	4					5	4				
CN-TI2					3,601.8	2,0	48		10			2		2		2		2	15				5		4	5		1	46	34				
T12-DC					2,620.5	2,0	62					2			2		2		2			5						1	60	58				
DC-T21 y DC-T14					2,099.8		42		4			1					1		24	17	17	17	19	17		1			42	37				

Tramo			Calderería acero galvanizado										AROQUETA DE DESAGÜE																														
			Tramo-1 indiv.					Tramo-2 común.					Acero galvanizado (kg)- tuberías-bridas	Valvulería																													
			N° tramos-1	Long. Tubos conex (m)	espesor galvanizado (mm)	N° uniones embriadas	DN (mm)	N° tramos-2	Long. Tubos conex (m)	espesor galvanizado (mm)	N° uniones embriadas	Carrete pasamuros DN 500mm		Válvula compuerta DN 100mm PN16	Válvula compuerta DN 150mm PN25	Válvula mariposa DN 150mm PN16	Válvula mariposa DN 200mm PN16	Válvula mariposa DN 200mm PN25	Válvula mariposa DN 250mm PN16	Válvula mariposa DN 250mm PN25	Válvula multihojido DN 200mm PN25	Válvula multihojido DN 250mm PN16	Válvula multihojido DN 250mm PN25	Válvula multihojido DN 300mm PN16	Válvula multihojido DN 300mm PN25	Carrete desmontaje DN150 PN16	Carrete desmontaje DN150 PN25	Carrete desmontaje DN200 PN16	Carrete desmontaje DN200 PN25	Carrete desmontaje DN250 PN16	Carrete desmontaje DN250 PN25	Carrete desmontaje DN300 PN16	Carrete desmontaje DN300 PN25	Válv. compensación DN 150 mm	Válv. compensación DN 200 mm	Válv. compensación DN 250 mm	Ventosa DN25 PN16+válv. corte (Ud)	Ventosa DN25 PN25+válv. corte (Ud)	neufut rápido (Ud)				
P.K. tramo	P.K. Acumulado	N° tramos-1	Long. Tubos conex (m)	espesor galvanizado (mm)	N° uniones embriadas	DN (mm)	N° tramos-2	Long. Tubos conex (m)	espesor galvanizado (mm)	N° uniones embriadas	Acero galvanizado (kg)- tuberías-bridas	Carrete pasamuros DN 500mm	Válvula compuerta DN 100mm PN16	Válvula compuerta DN 150mm PN25	Válvula mariposa DN 150mm PN16	Válvula mariposa DN 200mm PN16	Válvula mariposa DN 200mm PN25	Válvula mariposa DN 250mm PN16	Válvula mariposa DN 250mm PN25	Válvula multihojido DN 200mm PN25	Válvula multihojido DN 250mm PN16	Válvula multihojido DN 250mm PN25	Válvula multihojido DN 300mm PN16	Válvula multihojido DN 300mm PN25	Carrete desmontaje DN150 PN16	Carrete desmontaje DN150 PN25	Carrete desmontaje DN200 PN16	Carrete desmontaje DN200 PN25	Carrete desmontaje DN250 PN16	Carrete desmontaje DN250 PN25	Carrete desmontaje DN300 PN16	Carrete desmontaje DN300 PN25	Válv. compensación DN 150 mm	Válv. compensación DN 200 mm	Válv. compensación DN 250 mm	Ventosa DN25 PN16+válv. corte (Ud)	Ventosa DN25 PN25+válv. corte (Ud)	neufut rápido (Ud)					
CN-T11	440,00	440,00	2,0	1,9	15,0	4,0	150,0	1,0	3,0	150,0	15,0	2,0	414,6	2	2											3								1		2							
CN-T11	985,00	985,00	2,0	1,9	15,0	4,0	150,0	1,0	3,0	150,0	15,0	2,0	414,6	2	2											3								1		2							
CN-T11	1.925,00	1.925,00	2,0	1,9	14,0	4,0	150,0	1,0	3,0	150,0	14,0	2,0	386,9	2	2											3								1		2							
CN-T11	2.365,00	2.365,00	2,0	1,5	14,0	2,0	100,0				14,0		108,7	2																							2						
CN-T11	3.990,00	3.990,00	2,0	1,5	14,0	2,0	100,0				14,0		108,7	2																							2						
CN-T11	5.508,00	5.508,00											2,0	2						2					2										4								
CN-T11	6.340,00	6.340,00	2,0	1,5	14,0	2,0	100,0				14,0		108,7	2																						2		2					
CN-T11	7.410,00	7.410,00	2,0	1,5	15,0	2,0	100,0				15,0		116,5	2																							2						
CN-T11	7.851,46	7.851,46	2,0	1,5	14,0	2,0	100,0				14,0		108,7	2																							2						
CN-T11	8.872,12	8.872,12	2,0	1,5	14,0	2,0	100,0				14,0		108,7	2																							2						
CN-T11	12.020,00	12.020,00	2,0	1,5	14,0	2,0	100,0				14,0		108,7	2																							2						
CN-T11	12.800,00	12.800,00	2,0	1,5	14,0	2,0	100,0				14,0		108,7	2																							2						
T11-T12	1.952,23	16.242,23	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T11-T12	2.290,00	16.580,00												2				2																			2						
T11-T12	3.222,52	17.512,52	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T11-T12	3.586,35	17.876,35	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T11-T12	4.173,13	18.463,13	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T11-T12	4.735,51	19.025,51	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T11-T12	5.264,66	19.554,66	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T11-T12	6.200,85	20.490,85	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T11-T12	8.333,57	22.623,57	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T11-T12	9.250,00	23.540,00	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T11-T12	10.990,00	25.280,00	2,0	1,9	14,0	4,0	150,0	1,0	3,0	150,0	14,0	2,0	386,9	2	2											3									1		2						
T11-T12	11.450,00	25.740,00	2,0	1,9	11,5	4,0	150,0	1,0	3,0	150,0	11,5	2,0	317,8	2	2											3									1		2						
T12-T13	1.308,04	27.438,04	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T12-T13	2.580,00	28.710,00	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T12-T13	5.240,00	31.370,00											2																									2					
T12-T13	5.770,00	31.900,00	2,0	1,5	13,0	2,0	100,0				13,0		100,9	2				2																			2						
T12-T13	6.797,05	32.927,05	2,0	1,5	13,0	2,0	100,0				13,0		100,9	2																							2						
T12-T13	7.250,00	33.380,00	2,0	1,5	13,0	2,0	100,0				13,0		100,9	2																							2						
T12-T13	7.874,64	34.004,64	2,0	1,5	13,0	2,0	100,0				13,0		100,9	2																							2						
T12-T13	8.440,00	34.570,00	2,0	1,5	13,0	2,0	100,0				13,0		100,9	2																							2						
T12-T13	8.880,00	35.010,00											2,0	2						2						2										4							
T12-T13	10.380,00	36.510,00	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T12-T13	10.860,00	36.990,00	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T12-T13	11.550,00	37.680,00	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T12-T13	12.320,00	38.450,00	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T13-T13B	1.250,00	39.880,00	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T13-T13B	2.970,00	41.600,00	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T13-T13B	3.380,00	42.010,00	2,0	1,5	11,5	2,0	100,0				11,5		89,3	2																							2						
T13B-BT	600,00	42.870,00	2,0	1,5	10,0	2,0	100,0				10,0		77,6	2																							2						
T13B-BT	860,00	43.130,00	2,0	1,5	10,0	2,0	100,0				10,0		77,6	2																							2						
T13B-BT	1.500,00	43.770,00	2,0	1,5	10,0	2,0	100,0				10,0		77,6	2																							2						
T13B-BT	1.960,63	44.230,63	2,0	1,5	12,5	2,0	100,0				12,5		97,1	2																							2						
T13B-BT	2.610,00	44.880,00	2,0	1,5	10,0	2,0	100,0				10,0		77,6	2																							2						
T13B-BT	3.160,00	45.430,00	2,0	1,5	12,5	2,0	100,0				12,5		97,1	2																							2						
T13B-BT	3.410,00	45.680,00	2,0	1,5	12,5	2,0	100,0				12,5		97,1	2																							2						
T13B-BT	4.230,00	46.500,00	2,0	1,5	10,0	2,0	100,0				10,0		77,6	2																							2						
T13B-BT	4.960,86	47.230,86	2,0	1,5	10,0	2,0	100,0				10,0		77,6	2																							2						
T13B-BT	5.530,00	47.800,00	2,0	1,5	12,5	2,0	100,0				12,5		97,1	2																													

ARQUETA DE ROTURA													
0,50										15%			
TOTAL Excavación localizada (m3)	Relleno localizado (m3)	Manto esollera s/ Plano (m2)	Manto esollera s/ Plano (m3)	Mín. Manto de esollera = 0,5m L=5,0 m x ancho (m3)	Geotextil (m2)	H/L-150 (m3)	H/L-20 regularizaciones y cufas (m3)	HA-30 solera (m3)	HA-30 Alzado (m3)	Acero B500S (kg) #12/ref en bucos, esquinas y arranques fl 12	Encofrado solera (m2)	Encofrado alzados (m2)	Pates (ud)
857,2	573,2			152,1	334,6	4,4	3,1	13,3	32,1	4.497,3	14,9	107,1	31,0
412,5	288,9			84,3	185,5	1,6	0,9	4,9	13,2	1.828,5	8,5	44,0	21,0
582,2	380,6			95,9	211,0	3,4	2,5	10,1	23,3	3.278,3	9,2	77,7	17,0
137,5	96,3			28,1	61,8	0,5	0,3	1,6	4,4	609,5	2,8	14,7	7,0
127,9	96,3			18,5	40,7	0,5	0,3	1,6	4,4	609,5	2,8	14,7	7,0
161,6	119,7			18,5	40,7	0,9	0,6	2,8	5,9	874,7	3,7	19,7	7,0
127,9	96,3			18,5	40,7	0,5	0,3	1,6	4,4	609,5	2,8	14,7	7,0
1.269,8	862,2			236,4	520,1	6,1	4,0	18,2	45,3	6.325,8	23,3	151,1	52,0
582,2	380,6			95,9	211,0	3,4	2,5	10,1	23,3	3.278,3	9,2	77,7	17,0
554,9	408,6			83,6	183,9	2,6	1,5	7,7	19,1	2.703,3	12,2	63,7	28,0

[illegible]

Tramo	P.K. tramo	P.K. Acumulado	Coord. X	Coord. Y	C. Terreno	C. Rasante Hidráulica	Elemento	Arqueta	N° tuberías	DN ext (mm)	Acero tipo S-	espesor adoptado (mm)	PN Timbraje valvulería (atm)	N° válvulas desagüe	DN Desagüe	Tipo de válvula	Arqueta rotura tipo	Conex. DN 800 mm paso hombre (m)	Conex. DN 800 mm paso hombre: Acero-espesor tubería (mm)
T17-T18	1.480,00	55.052,21	603.477,58	4.655.616,99	367,03	362,78	Desagüe	D2D	2	1.626	275	10,00	16	2	100	Compuerta	N/A	0,80	S275-6,4
T17-T18	2.130,00	55.702,21	604.059,76	4.655.331,97	371,99	367,57	Desagüe	D2D	2	1.626	275	10,00	16	2	100	Compuerta	N/A	1,00	S275-6,4
T17-T18	2.660,00	56.232,21	604.542,21	4.655.118,40	360,44	356,98	Desagüe	D2C	2	1.626	275	10,00	16	2	150	Mariposa	1	0,40	S275-6,4
T18-T19	70,00	56.872,21	605.033,64	4.654.721,06	360,11	356,57	Desagüe	D1D	1	1.829	275	11,50	16	1	100	Compuerta	N/A	0,40	S275-6,4
T18-T19	620,00	57.422,21	605.359,33	4.654.283,39	355,33	351,93	Desagüe	D1D	1	1.829	275	11,50	16	1	100	Compuerta	N/A	0,40	S275-6,4
T18-T19	1.233,65	58.035,85	605.673,67	4.653.771,11	360,39	356,64	Desagüe	D1D	1	1.829	275	11,50	16	1	100	Compuerta	N/A	0,40	S275-6,4
T18-T19	2.170,00	58.972,21	606.092,60	4.653.000,91	365,13	361,09	Desagüe	D1D	1	1.829	275	11,50	16	1	100	Compuerta	N/A	0,40	S275-6,4
T18-T19	3.111,96	59.914,17	606.605,72	4.652.229,67	362,50	357,93	Desagüe	D1D	1	1.829	275	11,50	16	1	100	Compuerta	N/A	0,90	S275-6,4
T18-T19	3.530,00	60.332,21	606.773,03	4.651.861,56	367,93	363,83	Desagüe	D1D	1	1.829	275	11,50	16	1	100	Compuerta	N/A	0,50	S275-6,4
T18-T19	4.035,00	60.837,21	606.843,09	4.651.361,44	371,53	366,82	Desagüe	D1D	1	1.829	275	11,50	16	1	100	Compuerta	N/A	1,10	S275-6,4
T18-T19	4.920,00	61.722,21	607.237,79	4.650.647,15	369,64	364,82	Desagüe	D1C	1	1.829	275	11,50	16	1	150	Mariposa	1	1,20	S275-6,4
T18-T19	5.500,00	62.302,21	607.785,03	4.650.504,50	369,85	365,96	Desagüe	D1D	1	1.829	275	11,50	16	1	100	Compuerta	N/A	0,40	S275-6,4
T19-T20	497,66	62.909,87	608.062,95	4.650.092,43	377,13	367,83	Desagüe	D1D	1	1.524	275	16,00	16	1	100	Compuerta	N/A	5,90	S275-6,4
T19-T20	2.310,00	64.722,21	609.382,34	4.649.168,87	358,72	352,84	Desagüe	D1A	1	1.524	275	9,50	16	1	250	Multitorificio	2	2,50	S275-6,4
T20-T21	210,00	65.062,21	609.720,66	4.649.184,43	359,93	355,50	Desagüe	D1D	1	1.321	275	8,00	16	1	100	Compuerta	N/A	1,30	S275-6,4
T20-T21	1.080,00	65.932,21	610.503,79	4.648.872,04	362,01	358,34	Desagüe	D1D	1	1.321	275	8,00	16	1	100	Compuerta	N/A	0,50	S275-6,4
T20-T21	1.660,00	66.512,21	611.002,40	4.648.582,89	373,98	368,62	Desagüe	D1D	1	1.321	275	10,00	16	1	100	Compuerta	N/A	2,20	S275-6,4
DC-T16	31,44	31,44	603.983,55	4.658.898,68	375,95	371,39	Desagüe	D1D	1	1.829	275	11,50	16	1	100	Compuerta	N/A	0,90	S275-6,4
T16-T14	345,00	1.495,00	603.186,19	4.660.072,91	380,88	376,53	Desagüe	D1D	1	1.626	275	10,00	16	1	100	Compuerta	N/A	0,90	S275-6,4
T16-T14	750,00	1.900,00	603.016,53	4.660.440,18	379,42	375,38	Desagüe	D1D	1	1.626	275	10,00	16	1	100	Compuerta	N/A	0,60	S275-6,4
T16-T14	1.395,00	2.545,00	602.621,02	4.660.925,13	379,04	374,16	Desagüe	D1D	1	1.626	275	10,00	16	1	100	Compuerta	N/A	1,40	S275-6,4
T16-T14	2.670,00	3.820,00	601.373,65	4.661.162,00	379,48	374,53	Desagüe	D1C	1	1.626	275	10,00	16	1	150	Mariposa	1	1,50	S275-6,4
T16-T14	3.060,00	4.210,00	601.049,24	4.661.368,87	377,68	371,27	Desagüe	D1D	1	1.626	275	12,50	16	1	100	Compuerta	N/A	3,00	S275-6,4

ARQUETA DE DESAGÜE

		Arqueta																				S275-6,4	S355-12,5	S355-12,5													
Tipo	Excav. Localizada (m3) cajado 30 cm Relleno loc. (m3) incluido en Mov. Tierras conducción	Arqueta prefabricada DN 1,5m y H=1,5m (Ud)	Tapa desmontable chapa laminada 4/6+argollas y entrada hombre (m2)	Los prefabricada (m2)	Tapa FD (Ud)	Pare (Ud)	HL-150 (m3)	HA-30 alzado muros(m3)	HA-30 solera(m3)	HA-30 Macizo y escalera (m3)	Kg Acero B-500 S	Armadura	Encofrado alzados (m2)	Encofrado soleras(m2)	Pintura bituminosa en muros (m2)	Junta PVC-150	Junta PVC-300	Cordon (m)	Tranex (m2)	Barandilla (m)	Escalera vertical(m)	Escalera inclinada (m)	Cadena (m)	Tubería DN160 PVC conexión dreces (m)	Tubería DN 800 S275 -6,4mm (m)	Tubería DN 800 S355 -12,5mm (m)	Tubería DN 500 S355 -8mm (m)	Tapa ciega DN800 mm PN25+torillería (Ud)	Tapa ciega DN500 mm PN25+torillería (Ud)	Tapa ciega DN 150mm (Ud)	Tapa ciega DN 200mm (Ud)	Tapa ciega DN 250mm (Ud)	Kg andaje tub. Principal	Nº andajes tuberías desagüe	Kg/ andaje	Kg Andajes tuberías desagüe	Total Kg andajes calderería
D		2	5,1			12																			0,8			2,0					80,2				80,2
D		2	5,1			12																			1,0			2,0					80,2				80,2
C	8,6		18,6		16	2,9	13,5	4,7	1,8	2.247,5	#12/15+ ref alzados	59,6	4,6	29,8	18,4				1,2	3,4	2,2			20,0	0,4			2,0	2,0			80,2	3,0	30,0	90,0	203,2	
D		1	2,5		6																				0,4			1,0					51,8				51,8
D		1	2,5		6																				0,4			1,0					51,8				51,8
D		1	2,5		6																				0,4			1,0					51,8				51,8
D		1	2,5		6																				0,4			1,0					51,8				51,8
D		1	2,5		6																				0,9			1,0					51,8				51,8
D		1	2,5		6																				0,5			1,0					51,8				51,8
D		1	2,5		6																				1,1			1,0					51,8				51,8
C	4,8		9,6		16	1,6	9,1	2,4	1,8	1.456,7	#12/15+ ref alzados	42,3	3,1		12,4				1,2	3,4	2,2			20,0	1,2			1,0	1,0			51,8	3,0	30,0	90,0	174,8	
D		1	2,5		6																				0,4			1,0					51,8				51,8
D		1	2,5		6																				5,9			1,0					60,1				60,1
A	4,8		9,6		16	1,6	9,1	2,4	1,8	1.456,7	#12/15+ ref alzados	42,3	3,1		12,4				1,2	3,4	2,2			20,0	2,5			1,0			1,0	35,7	3,0	55,0	165,0	258,7	
D		1	2,5		6																				1,3			1,0					26,0				26,0
D		1	2,5		6																				0,5			1,0					26,0				26,0
D		1	2,5		6																				2,2			1,0					32,6				32,6
D		1	2,5		6																				0,9			1,0					51,8				51,8
D		1	2,5		6																				0,9			1,0					40,1				40,1
D		1	2,5		6																				0,6			1,0					40,1				40,1
D		1	2,5		6																				1,4			1,0					40,1				40,1
C	4,8		9,6		16	1,6	9,1	2,4	1,8	1.456,7	#12/15+ ref alzados	42,3	3,1		12,4				1,2	3,4	2,2			20,0	1,5			1,0	1,0			40,1	3,0	30,0	90,0	163,1	
D		1	2,5		6									15,6											3,0			1,0					50,1				50,1

ARQUETA DE DESAGÜE

ARQUETA DE DESAGÜE

Calderería acero galvanizado												ARQUETA DE DESAGÜE																														
Tramo	P.K. tramo	P.K. Acumulado	Tramo-1 indiv.					Tramo-2 común.					Acero galvanizado (kg) - tuberías+bridas	Valvulería																												
			N° tramos-1	Long. Tubos conex (m)	espesor galvanizado (mm)	N° uniones enbridadas	DN (mm)	N° tramos-2	Long. Tubos conex (m)	DN (mm)	espesor galvanizado (mm)	N° uniones enbridadas		Carrete pasamuros DN 500mm	Válvula compuerta DN 100mm PN16	Válvula compuertaDN 100mm PN25	Válvula mariposa DN 150mm PN16	Válvula mariposa DN 150mm PN25	Válvula mariposa DN 200mm PN16	Válvula mariposa DN 200mm PN25	Válvula mariposa DN 250mm PN16	Válvula mariposa DN 250mm PN25	Válvula multierficio DN 200mm PN16	Válvula multierficio DN 200mm PN25	Válvula multierficio DN 250mm PN16	Válvula multierficio DN 250mm PN25	Carrete desmontaje DN150 PN16	Carrete desmontaje DN150 PN25	Carrete desmontaje DN200 PN16	Carrete desmontaje DN200 PN25	Carrete desmontaje DN250PN16	Carrete desmontaje DN250 PN25	Carrete desmontaje DN500PN16	Carrete desmontaje DN500 PN25	Válv. compensación DN 150 mm	Válv. compensación DN 200 mm	Válv. compensación DN 250 mm	Ventosa DN25 PN16+Válv.corte (Ud)	Ventosa DN25 PN25+válv. corte (Ud)	Enchufe rápido (Ud)		
T17-T18	1.480,00	55.052,21	2,0	1,5	10,0	2,0	100,0				10,0		77,6	2																								2		2		
T17-T18	2.130,00	55.702,21	2,0	1,5	10,0	2,0	100,0				10,0		77,6	2																									2		2	
T17-T18	2.660,00	56.232,21	2,0	1,9	10,0	4,0	150,0	1,0	3,0	150,0	10,0	2,0	276,4	2		2																							2			
T18-T19	70,00	56.872,21	1,0	1,5	11,5	2,0	100,0				11,5		46,8	1		1																							1		1	
T18-T19	620,00	57.422,21	1,0	1,5	11,5	2,0	100,0				11,5		46,8	1		1																							1		1	
T18-T19	1.233,65	58.035,85	1,0	1,5	11,5	2,0	100,0				11,5		46,8	1		1	1	1	1	1	1																		1		1	
T18-T19	2.170,00	58.972,21	1,0	1,5	11,5	2,0	100,0				11,5		46,8	1		1	1	1	1	1	1																		1		1	
T18-T19	3.111,96	59.914,17	1,0	1,5	11,5	2,0	100,0				11,5		46,8	1		1	1	1	1	1	1																		1		1	
T18-T19	3.530,00	60.332,21	1,0	1,5	11,5	2,0	100,0				11,5		46,8	1		1	1	1	1	1	1																		1		1	
T18-T19	4.035,00	60.837,21	1,0	1,5	11,5	2,0	100,0				11,5		46,8	1		1	1	1	1	1	1																		1		1	
T18-T19	4.920,00	61.722,21	1,0	1,9	11,5	4,0	150,0				11,5	2,0	109,5	1		1																								1		
T18-T19	5.500,00	62.302,21	1,0	1,5	11,5	2,0	100,0			150,0	11,5		46,8	1		1																							1		1	
T19-T20	497,66	62.909,87	1,0	1,5	16,0	2,0	100,0				16,0		65,1	1		1																								1		1
T19-T20	2.310,00	64.722,21													1																											
T20-T21	210,00	65.062,21	1,0	1,5	8,0	2,0	100,0				8,0		32,5	1		1																								1		1
T20-T21	1.080,00	65.932,21	1,0	1,5	8,0	2,0	100,0				8,0		32,5	1		1	1	1	1	1	1																		1		1	
T20-T21	1.660,00	66.512,21	1,0	1,5	10,0	2,0	100,0				10,0		40,7	1		1	1	1	1	1	1																		1		1	
DC-T16	31,44	31,44	1,0	1,5	11,5	2,0	100,0				11,5		46,8	1		1	1	1	1	1	1																		1		1	
T16-T14	345,00	1.495,00	1,0	1,5	10,0	2,0	100,0				10,0		40,7	1		1	1	1	1	1	1																		1		1	
T16-T14	750,00	1.900,00	1,0	1,5	10,0	2,0	100,0				10,0		40,7	1		1	1	1	1	1	1																		1		1	
T16-T14	1.395,00	2.545,00	1,0	1,5	10,0	2,0	100,0				10,0		40,7	1		1	1	1	1	1	1																		1		1	
T16-T14	2.670,00	3.820,00	1,0	1,9	10,0	4,0	150,0			150,0	10,0	2,0	95,2	1		1																							1		1	
T16-T14	3.060,00	4.210,00	1,0	1,5	12,5	2,0	100,0				12,5		50,8	1		1																							1		1	

ARQUETA DE ROTURA																	0,50				15%			
Arqueta de onrra	L= largo (m)	W= Ancho (m)	H=Altura (m)	e= espesor (m)	Excavación localizada arqueta (m3)	Excavación localizada manto escollera e=0,5m (m3)	TOTAL Excavación localizada (m3)	Relleno localizado (m3)	Manto escollera s/ Plano (m2)	Manto escollera s/ Plano (m3)	Mín. Manto de escollera e=0,5m L=5,0 m x ancho (m3)	Geotextil (m2)	HL-150 (m3)	HM-20 regularizaciones y culpas (m2)	HA-30 solera (m3)	HA-30 Alzado (m3)	Acero B500S (kg) #12/15+ref en huecos, esquinas y arranques fl 12	Encofrado solera (m2)	Encofrado alzados (m2)	Pases (ud)				
N/A																								
N/A																								
1	2,00	1,50	2,10	0,30	109,42	28,10	137,52	96,31			28,10	61,82	0,55	0,30	1,64	4,40	609,51	2,82	14,68	7,00				
N/A																								
N/A																								
N/A																								
N/A																								
N/A																								
N/A																								
1	2,00	1,50	2,10	0,30	109,42	18,50	127,92	96,31			18,50	40,70	0,55	0,30	1,64	4,40	609,51	2,82	14,68	7,00				
N/A																								
N/A																								
2	3,00	2,00	2,20	0,30	143,10	18,50	161,60	119,70			18,50	40,70	0,94	0,60	2,81	5,91	874,73	3,72	19,70	7,00				
N/A																								
N/A																								
N/A																								
N/A																								
N/A																								
N/A																								
1	2,00	1,50	2,10	0,30	109,42	18,50	127,92	96,31			18,50	40,70	0,55	0,30	1,64	4,40	609,51	2,82	14,68	7,00				
N/A																								

DESAGÜES. RESUMEN

(SIN INCLUIR TOMA 13BIS Y TOMA 21)

RESUMEN MEDICIONES COLECTORES DESAGÜES (SIN INCLUIR TOMA13B Y TOMA21)

	Etiquetas de columna														
	CN-T12		Total CN-T12	DC-T21 y T14/15				Total DC-T21 y T14/15	T12-DC	Total T12-DC	Total general				
Valores	CN-T11	T11-T12		T16-T14/15	T17-T18	T18-T19	T19-T20		T12-T13						
Suma de Cinta tuberías (m)	18,85	119,53	138,38	6,62	21,15	1,81	2,70	32,27	3,72	3,72	174,37				
Suma de Kg acero galv.	3.624,53	22.980,52	26.605,05	1.272,20	4.066,15	347,03	519,11	6.204,49	715,02	715,02	33.524,57				
Suma de Total excavable ripable con empleo de martillo	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00				
Suma de Total excavable con empleo puntual de martillo	30,67	319,58	350,25	12,38	33,09	3,87	5,25	54,59	10,36	10,36	415,20				
Suma de Cama apoyo granular (m3)	8,57	54,32	62,89	3,01	9,61	0,82	1,23	14,67	1,69	1,69	79,24				
Suma de Cama apoyo HM-20(m3)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00				
Suma de Relleno riñonera suelo seleccionado (m3)	18,94	120,08	139,02	6,65	21,25	1,81	2,71	32,42	3,74	3,74	175,17				
Suma de Relleno riñonera garbancillo (m3)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00				
Suma de Relleno cama+riñonera HM-20(m3)	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00				
Suma de Relleno cobertura: c= Suelo seleccionado C/ 95% PN, <= 30 mm	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00				
Suma de Relleno cobertura: d=Garbancillo 5/15	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00				
Suma de Relleno cobertura: e= HM-20;	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00				
Suma de Relleno cobertura: f=Suelo adecuado procedente excavación (<=150mm) c/95% PN	46,79	111,40	158,19	5,76	69,50	0,73	0,55	76,54	3,88	3,88	238,61				
Suma de Excedente de tierras (m3) (esponjamiento aluvial 0%, esponjamiento terciario 5%)	1,93	33,78	35,71	1,59	0,00	0,51	0,76	2,86	1,05	1,05	39,62				

DESAGÜES

DESAGÜES
DATOS DE F

[illegible]

DATOS DE REPLANTEO

Página 3 de 3

DESAGÜES.

TOMA 13 BIS Y TOMA 21

DATOS DE REPLANTEO												TUBERÍAS												MOVIMIENTO DE TIERRAS Y RELLENOS																	
Agrupación	Tramo	PK Tramo	P.K. Desague	Alineación	Coord. X	Coord. Y	Azimut	Cota Terreno	Cota Rasante Hidráulica	Cota Roja Rasante Hidráulica	Pendiente	Vertice en Planta	Vertice en Alzado	Elemento	Zanja Tipo	longitud parcial (m)	longitud tubería total (m)	N° tuberías	DN tuberías (mm)	Material	espesor adoptado (mm)	Kg acero	(m) Tubería HA800	Altura de excavación a TN (m)	Zanja tipo asignada	Talud HW	concatenado zanja	2	3	4	5	6	7	8	9	10	11				
																												A= separación tubo-talud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Berma X1	Berma X2	H1=Cama apoyo (m)	áng. Apoyo	H2=Recubrimiento cobertura mínimo (m)	H3=Profundidad mínima s/ clave (m)	H4= altura de la bermas desde fondo				
T12-DC	T13-T13B	Toma 13B	0,000	Rec	611.405,58	4.661.504,32	93,155310	376,35	375,55	0,80	-0,62		V.	ACØ600	Z-1 1Ø600	0,00	0,00	1	600	Galv.	6,50	0,0		1,00	Z1	0,33	Z1-1-600	0,40	0,00	1,40	0,00	0,00	0,20	120	0,30	1,50	0,00				
T12-DC	T13-T13B	Toma 13B	1,000	Rec	611.406,58	4.661.504,43	93,155310	376,35	374,94	1,42	-0,62			ACØ600	Z-1 1Ø600	1,00	1,00	1	600	Galv.	6,50	192,3		1,62	Z1	0,33	Z1-1-600	0,40	0,00	1,40	0,00	0,00	0,20	120	0,30	1,50	0,00				
T12-DC	T13-T13B	Toma 13B	2,000	Rec	611.407,57	4.661.504,54	93,155310	376,35	374,32	2,03	-0,62			ACØ600	Z-1 1Ø600	1,00	1,00	1	600	Galv.	6,50	192,3		2,23	Z1	0,33	Z1-1-600	0,40	0,00	1,40	0,00	0,00	0,20	120	0,30	1,50	0,00				
T12-DC	T13-T13B	Toma 13B	3,000	Rec	611.408,57	4.661.504,64	93,155310	375,86	373,70	2,15	-0,62			ACØ600	Z-1 1Ø600	1,00	1,00	1	600	Galv.	6,50	192,3		2,35	Z1	0,33	Z1-1-600	0,40	0,00	1,40	0,00	0,00	0,20	120	0,30	1,50	0,00				
T12-DC	T13-T13B	Toma 13B	4,000	Rec	611.409,56	4.661.504,75	93,155310	375,19	373,09	2,10	-0,62		V.	ACØ600	Z-1 1Ø600	1,00	1,00	1	600	Galv.	6,50	192,3		2,30	Z1	0,33	Z1-1-600	0,40	0,00	1,40	0,00	0,00	0,20	120	0,30	1,50	0,00				
T12-DC	T13-T13B	Toma 13B	5,000	Rec	611.410,55	4.661.504,86	93,155310	374,52	373,08	1,45	-0,01			ACØ600	Z-1 1Ø600	1,00	1,00	1	600	Galv.	6,50	192,3		1,65	Z1	0,33	Z1-1-600	0,40	0,00	1,40	0,00	0,00	0,20	120	0,30	1,50	0,00				
T12-DC	T13-T13B	Toma 13B	6,000	Rec	611.411,55	4.661.504,97	93,155310	373,86	373,07	0,79	-0,01			ACØ600	Z-1 1Ø600	1,00	1,00	1	600	Galv.	6,50	192,3		0,99	Z1	0,33	Z1-1-600	0,40	0,00	1,40	0,00	0,00	0,20	120	0,30	1,50	0,00				
T12-DC	T13-T13B	Toma 13B	6,893	Rec	611.412,44	4.661.505,06	93,155310	373,70	373,06	0,64	-0,01		V.	AR Tipo-2	Cielo Abierto	0,89	0,89	1	600	Galv.	6,50	171,7		0,84	Z1	0,33	Z1-1-600	0,40	0,00	1,40	0,00	0,00	0,20	120	0,30	1,50	0,00				
T12-DC	T13-T13B	Toma 13B	7,193	Rec	611.412,73	4.661.505,09	93,182663	373,68	373,06	0,63	-0,01		V.	AR Tipo-2	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B							372,71	0,98	Vertical			AR Tipo-2	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	8,000	Rec	611.413,54	4.661.505,18	93,182663	373,65	372,71	0,94	0,00			AR Tipo-2	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	9,000	Rec	611.414,53	4.661.505,29	93,182663	373,60	372,71	0,90	0,00			AR Tipo-2	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	10,000	Rec	611.415,53	4.661.505,39	93,182663	373,56	372,71	0,85	0,00			AR Tipo-2	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	10,193	Rec	611.415,72	4.661.505,41	93,182664	373,55	372,71	0,85	0,00		V.	AR Tipo-2	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B							373,06	0,50	Vertical			AR Tipo-2	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	10,493	Rec	611.416,02	4.661.505,45	93,182663	373,54	373,06	0,49	0,00		V.	AR Tipo-2	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	11,000	Rec	611.416,52	4.661.505,50	93,182663	373,48	373,05	0,43	-0,01			esc 200kg e=0,5m	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	12,000	Rec	611.417,51	4.661.505,61	93,182663	373,37	373,05	0,33	-0,01			esc 200kg e=0,5m	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	13,000	Rec	611.418,51	4.661.505,71	93,182663	373,26	373,04	0,22	-0,01			esc 200kg e=0,5m	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	14,000	Rec	611.419,50	4.661.505,82	93,182663	373,15	373,04	0,11	-0,01			esc 200kg e=0,5m	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	15,000	Rec	611.420,50	4.661.505,93	93,182663	373,04	373,03	0,01	-0,01			esc 200kg e=0,5m	Cielo Abierto																										
T12-DC	T13-T13B	Toma 13B	15,041		611.420,54	4.661.505,93	93,182663	373,03	373,03	0,00	-0,01		V.	esc 200kg e=0,5m	Cielo Abierto																										
DC-T21 y T14/15	T20-T21	Toma 21	0,000	611.330,393	4.648.711,239	86,311014	0	373,500	372,100	1,400	-4,00%				Z1-1-800	0,00	0,00	1	800	HA			0,0	1,60	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00				
DC-T21 y T14/15	T20-T21	Toma 21	1,000	611.331,370	4.648.711,452	86,311014	0	373,500	372,060	1,440	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	1,64	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00				
DC-T21 y T14/15	T20-T21	Toma 21	2,000	611.332,346	4.648.711,666	86,311014	0	373,500	372,020	1,480	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	1,68	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00				
DC-T21 y T14/15	T20-T21	Toma 21	3,000	611.333,323	4.648.711,879	86,311014	0	373,500	371,980	1,520	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	1,72	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00				
DC-T21 y T14/15	T20-T21	Toma 21	4,000	611.334,300	4.648.712,092	86,311014	0	373,500	371,940	1,560	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	1																	

			13	14	15	17														19,90%		a	b	c	d	e	c	d	e	f	g	5.0%						
Agrupación	Tramo	PK Tramo	P.K. Desagüe	Cama de apoyo: a=cama material granular o arena: b=cama de hormigón HM-20	Relleno ríñoneras: c= Suelo seleccionado C/ 95% PN, <= 30 mm; d=Garbancillo 5/15; e=hormigón HM-20	Relleno cobertura: c= Suelo seleccionado C/ 95% PN, <= 30 mm; e= HM-20; d=Garbancillo 5/15; f=Suelo adecuado procedente excavación (<=150mm) c/95% PN; g= Lecho móvil.	Espesor min. escollera(m)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1+ang (m)	H1+DN+H2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+ríñoneras (m3)	Relleno cama (m3)	Relleno ríñoneras(m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno ríñonera suelo seleccionado (m3)	Relleno ríñonera garbancillo (m3)	Relleno cama+ríñonera HM-20(m3)	Relleno cobertura: c= Suelo seleccionado C/ 95% PN, <= 30 mm	Relleno cobertura: d=Garbancillo 5/15	Relleno cobertura: e= HM-20;	Relleno cobertura: f= Suelo adecuado procedente excavación (<=150mm) c/95% PN	Relleno cobertura: g= Lecho móvil (m3)	Excedente de tierras (m3) (esponjamiento aluvial 0%, esponjamiento terciario 5%)	Cinta tuberías (m)	Altura de pozo	Pozo DN 1,2m cambio dirección	Pozo RESALTO DN 1,2m		
T12-DC	T13-T13B	Toma 13B	0,000	a	c	f	0,00	100%	0%	0.4	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.0	0.0					
T12-DC	T13-T13B	Toma 13B	1,000	a	c	f	0.00	100%	0%	0.4	1.1	1.0	2.7	0.0	2.7	2.7	0.0	1.5	0.5	1.0	1.0	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.3	1.0				
T12-DC	T13-T13B	Toma 13B	2,000	a	c	f	0.00	100%	0%	0.4	1.1	1.0	4.0	0.0	4.0	4.0	0.0	1.5	0.5	1.0	2.2	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.2	0.0	0.3	1.0				
T12-DC	T13-T13B	Toma 13B	3,000	a	c	f	0.00	100%	0%	0.4	1.1	1.0	4.2	0.0	4.2	4.2	0.0	1.5	0.5	1.0	2.5	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0	0.3	1.0				
T12-DC	T13-T13B	Toma 13B	4,000	a	c	f	0.00	100%	0%	0.4	1.1	1.0	4.1	0.0	4.1	4.1	0.0	1.5	0.5	1.0	2.4	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.3	1.0				
T12-DC	T13-T13B	Toma 13B	5,000	a	c	f	0.00	100%	0%	0.4	1.1	1.0	2.8	0.0	2.8	2.8	0.0	1.5	0.5	1.0	1.0	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.3	1.0					
T12-DC	T13-T13B	Toma 13B	6,000	a	c	f	0.00	100%	0%	0.4	1.1	1.0	1.5	0.0	1.5	1.5	0.0	1.5	0.5	1.0	3.1	0.5	0.0	1.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.0	1.0					
T12-DC	T13-T13B	Toma 13B	6,893	a	c	f	0.00	100%	0%	0.4	1.1	0.9	1.1	0.0	1.1	1.1	0.0	1.3	0.4	0.9	3.0	0.4	0.0	0.9	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.0	0.9					
T12-DC	T13-T13B	Toma 13B	7,193																																			
T12-DC	T13-T13B	Toma 13B																																				
T12-DC	T13-T13B	Toma 13B	8,000																																			
T12-DC	T13-T13B	Toma 13B	9,000																																			
T12-DC	T13-T13B	Toma 13B	10,000																																			
T12-DC	T13-T13B	Toma 13B	10,193																																			
T12-DC	T13-T13B	Toma 13B																																				
T12-DC	T13-T13B	Toma 13B	10,493																																			
T12-DC	T13-T13B	Toma 13B	11,000																																			
T12-DC	T13-T13B	Toma 13B	12,000																																			
T12-DC	T13-T13B	Toma 13B	13,000																																			
T12-DC	T13-T13B	Toma 13B	14,000																																			
T12-DC	T13-T13B	Toma 13B	15,000																																			
T12-DC	T13-T13B	Toma 13B	15,041																																			
DC-T21 y T14/15	T20-T21	Toma 21	0,000	a	c	f	0.00	100%	0%	0.4	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0				
DC-T21 y T14/15	T20-T21	Toma 21	1,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	4.3	0.0	4.3	4.3	0.0	2.7	0.7	2.0	1.1	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	2,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	4.4	0.0	4.4	4.4	0.0	2.7	0.7	2.0	1.3	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	3,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	4.6	0.0	4.6	4.6	0.0	2.7	0.7	2.0	1.4	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	4,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	4.7	0.0	4.7	4.7	0.0	2.7	0.7	2.0	1.5	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	5,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	4.9	0.0	4.9	4.9	0.0	2.7	0.7	2.0	1.7	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	6,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	5.0	0.0	5.0	5.0	0.0	2.7	0.7	2.0	1.8	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	7,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	5.2	0.0	5.2	5.2	0.0	2.7	0.7	2.0	2.0	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.5	1.0					
DC-T21 y T14/15	T20-T21	Toma 21	8,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	5.3	0.0	5.3	5.3	0.0	2.7	0.7	2.0	2.1	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	9,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	5.4	0.0	5.4	5.4	0.0	2.7	0.7	2.0	2.3	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	10,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	5.6	0.0	5.6	5.6	0.0	2.7	0.7	2.0	2.4	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	11,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	5.8	0.0	5.8	5.8	0.0	2.7	0.7	2.0	2.6	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.6	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	12,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	5.9	0.0	5.9	5.9	0.0	2.7	0.7	2.0	2.7	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	13,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	6.1	0.0	6.1	6.1	0.0	2.7	0.7	2.0	2.9	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	14,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	6.2	0.0	6.2	6.2	0.0	2.7	0.7	2.0	3.0	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	15,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	6.4	0.0	6.4	6.4	0.0	2.7	0.7	2.0	3.2	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	16,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	6.5	0.0	6.5	6.5	0.0	2.7	0.7	2.0	3.4	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	17,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	6.7	0.0	6.7	6.7	0.0	2.7	0.7	2.0	3.5	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	18,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	6.9	0.0	6.9	6.9	0.0	2.7	0.7	2.0	3.7	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	3.7	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	18,272	a	c	f	0.00	100%	0%	0.4	1.3	0.3	1.9	0.0	1.9	1.9	0.0	0.7	0.2	0.5	1.0	0.2	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.0	0.1	0.3	2.6	1		
DC-T21 y T14/15	T20-T21	Toma 21	19,000	a	c	f	0.00	100%	0%	0.4	1.3	0.7	5.1	0.0	5.1	5.1	0.0	2.0	0.5	1.4	2.8	0.5	0.0	1.4	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.4	0.7					
DC-T21 y T14/15	T20-T21	Toma 21	20,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	6.8	0.0	6.8	6.8	0.0	2.7	0.7	2.0	3.6	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	3.6	0.0	0.5	1.0				
DC-T21 y T14/15	T20-T21	Toma 21	21,000	a	c	f	0.00	100%	0%	0.4	1.3	1.0	6.7	0.0	6.7	6.7	0.0	2.7	0.7	2.0	3.5	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	0.5</					

DESAGÜES de TOMA 13 BIS Y TOMA 21													TUBERÍAS										MOVIMIENTO DE TIERRAS Y RELLENOS														
DATOS DE REPLANTEO																							2	3	4	5	6	7	8	9	10	11					
Agrupación	Tramo	PK Tramo	P.K. Desague	Alineación	Coord. X	Coord. Y	Azímüt	Cota Terreno	Cota Rasante Hidráulica	Cota Roja Rasante Hidráulica	Pendiente	Vertice en Planta	Vertice en Alzado	Elemento	Zanja Tipo	longitud parcial (m)	longitud tubería total (m)	Nº tuberías	DN tuberías (mm)	Material	espesor adoptado (mm)	Kg acero	(m) Tubería HA800	Altura de excavación a TN (m)	Zanja tipo asignada	Talud HW	concatenado zanja	A= separación tubo-talud	S ₂ =Separación entre tuberías	B=Ancho interior (m)	Berna X1	Berna X2	H1=Cama apoyo (m)	áng. Apoyo	H2=Recubrimiento cobertura mínimo (m)	H3=Profundidad mínima s/ clave (m)	H4= altura de la berna desde fondo
DC-T21 y T14/15	T20-T21	Toma 21	24,000	611.353,316	4.648.712,477	130,755459	0	373,292	371,140	2,152	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,35	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	25,000	611.354,202	4.648.712,012	130,755459	0	373,277	371,100	2,177	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,38	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	26,000	611.355,087	4.648.711,548	130,755459	0	373,261	371,060	2,201	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,40	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	27,000	611.355,973	4.648.711,083	130,755459	0	373,246	371,020	2,226	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,43	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	28,000	611.356,858	4.648.710,619	130,755459	0	373,230	370,980	2,250	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,45	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	29,000	611.357,744	4.648.710,154	130,755459	0	373,213	370,940	2,273	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,47	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	30,000	611.358,630	4.648.709,690	130,755459	0	373,197	370,900	2,297	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,50	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	31,000	611.359,515	4.648.709,225	130,755459	0	373,181	370,860	2,321	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,52	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	32,000	611.360,401	4.648.708,760	130,755459	0	373,165	370,820	2,345	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,55	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	33,000	611.361,286	4.648.708,296	130,755459	0	373,149	370,780	2,369	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,57	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	34,000	611.362,172	4.648.707,831	130,755459	0	373,133	370,740	2,393	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,59	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	35,000	611.363,057	4.648.707,367	130,755459	0	373,118	370,700	2,418	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,62	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	36,000	611.363,943	4.648.706,902	130,755459	0	373,102	370,660	2,442	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,64	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	37,000	611.364,828	4.648.706,438	130,755459	0	373,086	370,620	2,466	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,67	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	38,000	611.365,714	4.648.705,973	130,755459	0	373,071	370,580	2,491	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,69	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	39,000	611.366,600	4.648.705,509	130,755459	0	373,055	370,540	2,515	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,72	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	40,000	611.367,485	4.648.705,044	130,755459	0	373,039	370,500	2,539	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,74	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	41,000	611.368,371	4.648.704,580	130,755459	0	373,023	370,460	2,563	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,76	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	42,000	611.369,256	4.648.704,115	130,755459	0	373,006	370,420	2,586	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,79	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	43,000	611.370,142	4.648.703,651	130,755459	0	372,902	370,380	2,522	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,72	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00
DC-T21 y T14/15	T20-T21	Toma 21	44,000	611.371,027	4.648.703,186	130,755459	0	372,737	370,340	2,397	-4,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,60	Z1	1,00	Z1-										

DESAGÜES de TOMA 13 BIS Y TOMA 21			POZOS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
DATOS DE REPLANTEO																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
Agrupación	Tramo	PK Tramo	P.K. Desague	13	14	15	17	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1+ang (m)	H1+DN+H2 (m)	Long (m)	Excavación trapezoidal (m3)	Excavación de bermas (m3)	Total excavación (m3)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+riñoneras (m3)	Relleno cama (m3)	Relleno riñoneras(m3)	Relleno cobertura (m3)	Cama apoyo granular (m3)	Cama apoyo HM-20(m3)	Relleno riñonera suelo seleccionado (m3)	Relleno riñonera garbancillo (m3)	Relleno cama+riñonera HM-20(m3)	Relleno cobertura: c= Suelo seleccionado C/ 95% PN, <= 30 mm	Relleno cobertura: d=Garbancillo 5/15	Relleno cobertura: e= HM-20;	Relleno cobertura: f=Suelo adecuado procedente excavación (<= 150mm) c/95% PN	Relleno cobertura: g= Lecho móvil (m3)	5.0%	Cinta tuberías (m)	Altura de pozo	Pozo DN 1.2m cambio dirección	Pozo RESALTO DN 1.2m																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
				Cama de apoyo: a=cama material granular o arena: b=cama de hormigón HM-20	Relleno riñoneras: c= Suelo seleccionado C/ 95% PN, <= 30 mm: d=Garbancillo 5/15; e=hormigón HM-20	Relleno cobertura: c= Suelo seleccionado C/ 95% PN, <= 30 mm; e= HM-20; d=Garbancillo 5/15; f=Suelo adecuado procedente excavación (<=150mm) c/95% PN; g= Lecho móvil;	Espesor mín. escollera(m)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

DESAGÜES de TOMA 13 BIS Y TOMA 21															TUBERÍAS										MOVIMIENTO DE TIERRAS Y RELLENOS															
DATOS DE REPLANTEO																																								
Agrupación	Tramo	PK Tramo	P.K. Desague	Alineación	Coord. X	Coord. Y	Azimut	Cota Terreno	Cota Rasante Hidraulica	Cota Roja Rasante Hidráulica	Pendiente	Vertice en Planta	Vertice en Alzado	Elemento	Zanja Tipo	longitud parcial (m)	longitud tubería total (m)	Nº tuberías	DN tuberías (mm)	Material	espesor adoptado (mm)	Kg acero	(m) Tubería HA800	Altura de excavación a TN (m)	Zanja tipo asignada	Talud HW	concatenado zanja	A= separación tubo-talud	S ₂ =Separación entre tuberías	B=Ancho inferior (m)	Berma X1	Berma X2	H1= Cama apoyo (m)	áng. Apoyo	H2=Recubrimiento cobertura mínimo (m)	H3=Profundidad mínima si clave (m)	H4= altura de la berna desde fondo			
DC-T21 y T14/15	T20-T21	Toma 21	84,000	611.395,524	4.648.675,786	182,783056	0	368,964	367,070	1,894	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,09	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	85,000	611.395,791	4.648.674,823	182,783056	0	368,930	367,032	1,898	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,10	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	86,000	611.396,058	4.648.673,859	182,783056	0	368,907	366,994	1,913	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,11	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	87,000	611.396,325	4.648.672,895	182,783056	0	368,896	366,956	1,940	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,14	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	88,000	611.396,592	4.648.671,932	182,783056	0	368,892	366,918	1,974	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,17	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	89,000	611.396,860	4.648.670,968	182,783056	0	368,876	366,880	1,996	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,20	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	90,000	611.397,127	4.648.670,004	182,783056	0	368,857	366,842	2,015	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,22	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	91,000	611.397,394	4.648.669,041	182,783056	0	368,836	366,804	2,032	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,23	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	92,000	611.397,661	4.648.668,077	182,783056	0	368,816	366,766	2,050	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,25	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	93,000	611.397,928	4.648.667,113	182,783056	0	368,798	366,728	2,070	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,27	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	94,000	611.398,195	4.648.666,150	182,783056	0	368,793	366,690	2,103	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,30	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	95,000	611.398,462	4.648.665,186	182,783056	0	368,790	366,652	2,138	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,34	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	96,000	611.398,730	4.648.664,223	182,783056	0	368,787	366,614	2,173	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,37	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	97,000	611.398,997	4.648.663,259	182,783056	0	368,784	366,576	2,208	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,41	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	98,000	611.399,264	4.648.662,295	182,783056	0	368,781	366,537	2,244	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,44	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	99,000	611.399,531	4.648.661,332	182,783056	0	368,778	366,499	2,279	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,48	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	100,000	611.399,798	4.648.660,368	182,783056	0	368,775	366,461	2,314	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,51	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	101,000	611.400,065	4.648.659,404	182,783056	0	368,772	366,423	2,349	-3,81%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,55	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	101,666	611.400,243	4.648.658,763	112,775560	0	368,770	366,398	2,372	-3,81%	P.S.	V.	P4	Z1-1-800	0,67	0,67	1	800	HA			0,7	2,57	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	102,000	611.400,571	4.648.658,696	112,775560	0	368,763	366,395	2,368	-1,00%				Z1-1-800	0,33	0,33	1	800	HA			0,3	2,57	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	103,000	611.401,551	4.648.658,497	112,775560	0	368,741	366,385	2,356	-1,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,56	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	104,000	611.402,531	4.648.658,298	112,775560	0	368,720	366,375	2,345	-1,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,55	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,50	0,00			
DC-T21 y T14/15	T20-T21	Toma 21	105,000	611.403,511	4.648.658,098	112,775560	0	368,699	366,365	2,334	-1,00%				Z1-1-800	1,00	1,00	1	800	HA			1,0	2,53	Z1	1,00	Z1-1-800	0,50	0,00	1,80	0,00	0,00	0,20	120	0,30	1,5				

Agrupación	Tramo	PK Tramo	P.K. Desague	13	14	15	17											19,80%	a	b	c	d	e	c	d	e	f	g	5.0%											
				Cama de apoyo: a=cama material granular o arena; b=cama de hormigón HM-20	Relleno rñoneras: c= Suelo seleccionado C/ 95% PN, <= 30 mm; d=Carbancillo 5/15; e=hormigón HM-20	Relleno cobertura: c= Suelo seleccionado C/ 95% PN, <= 30 mm; e= HM-20; d=Carbancillo 5/15; f=Suelo adecuado procedente excavación (<=150mm) c/95% PN; g= Lecho móvil;	Espesor mín. escollera(m)	% Excavable con empleo puntual de martillo	% Excavable ripable con empleo de martillo	H1+ang (m)	H1+DN+H2 (m)	Long (m)	Excavación trapezoidal (m³)	Excavación de bermas (m³)	Total excavación (m³)	Total excavable con empleo puntual de martillo	Total excavable ripable con empleo de martillo	Relleno cama+rñoneras (m³)	Relleno cama (m³)	Relleno rñoneras(m³)	Relleno cobertura (m³)	Cama apoyo granular (m³)	Cama apoyo HM-20(m³)	Relleno rñonera suelo seleccionado (m³)	Relleno rñonera garbancillo (m³)	Relleno cama+rñonera HM-20(m³)	Relleno cobertura: c= Suelo seleccionado C/ 95% PN, <= 30 mm	Relleno cobertura: d= Carbancillo 5/15	Relleno cobertura: e= HM-20;	Relleno cobertura: f=Suelo adecuado procedente excavación (<= 150mm) c/95% PN	Relleno cobertura: g= Lecho móvil (m³)	Excedente de tierras (m³) (esponjamiento aluvial 0%, esponjamiento terciario 5%)	Cinta tuberías (m)	Altura de pozo	Pozo DN 1,2m cambio dirección	Pozo RESAL TO DN 1,2m				
DC-T21 y T14/15	T20-T21	Toma 21	84,000	a	c	f	0,00	100%	0%	0.4	1.3	1.0	6.0	0.0	6.0	6.0	0.0	2.7	0.7	2.0	2.8	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.5	1.0							
DC-T21 y T14/15	T20-T21	Toma 21	85,000	a	c	f	0,00	100%	0%	0.4	1.3	1.0	6.0	0.0	6.0	6.0	0.0	2.7	0.7	2.0	2.8	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.8	0.0	0.5	1.0							
DC-T21 y T14/15	T20-T21	Toma 21	86,000	a	c	f	0,00	100%	0%	0.4	1.3	1.0	6.0	0.0	6.0	6.0	0.0	2.7	0.7	2.0	2.9	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	2.9	0.0	0.5	1.0							
DC-T21 y T14/15	T20-T21	Toma 21	87,000	a	c	f	0,00	100%	0%	0.4	1.3	1.0	6.1	0.0	6.1	6.1	0.0	2.7	0.7	2.0	3.0	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	3.0	0.0	0.5	1.0							
DC-T21 y T14/15	T20-T21	Toma 21	88,000	a	c	f	0,00	100%	0%	0.4	1.3	1.0	6.3	0.0	6.3	6.3	0.0	2.7	0.7	2.0	3.1	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	3.1	0.0	0.5	1.0							
DC-T21 y T14/15	T20-T21	Toma 21	89,000	a	c	f	0,00	100%	0%	0.4	1.3	1.0	6.4	0.0	6.4	6.4	0.0	2.7	0.7	2.0	3.2	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	3.2	0.0	0.5	1.0							
DC-T21 y T14/15	T20-T21	Toma 21	90,000	a	c	f	0,00	100%	0%	0.4	1.3	1.0	6.4	0.0	6.4	6.4	0.0	2.7	0.7	2.0	3.3	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.5	1.0							
DC-T21 y T14/15	T20-T21	Toma 21	91,000	a	c	f	0,00	100%	0%	0.4	1.3	1.0	6.5	0.0	6.5	6.5	0.0	2.7	0.7	2.0	3.3	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	3.3	0.0	0.5	1.0							
DC-T21 y T14/15	T20-T21	Toma 21	92,000	a	c	f	0,00	100%	0%	0.4	1.3	1.0	6.6	0.0	6.6	6.6	0.0	2.7	0.7	2.0	3.4	0.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	3.4	0.0	0.5	1.0							

DESAGÜES. RESUMEN

COLECTORES TOMA 13 BIS Y TOMA 21

RESUMEN MEDICIONES COLECTORES DESAGÜES (TOMA13B Y TOMA21)

Valores	Etiquetas de columna	
	Toma 13B	Toma 21
Suma de Kg acero	1.325,26	
Suma de (m) Tubería HA800		141,81
Suma de Cinta tuberías (m)	6,89	141,81
Suma de Total excavable con empleo puntual de martillo	20,43	941,51
Suma de Total excavable ripable con empleo de martillo	0,00	0,00
Suma de Cama apoyo granular (m3)	3,13	91,64
Suma de Relleno cobertura: d=Garbancillo 5/15	0,00	0,00
Suma de Relleno riñonera garbancillo (m3)	0,00	0,00
Suma de Relleno riñonera suelo seleccionado (m3)	6,92	259,28
Suma de Relleno cobertura: c= Suelo seleccionado C/ 95% PN, <= 30 mm	0,00	0,00
Suma de Cama apoyo HM-20(m3)	0,00	7,71
Suma de Relleno cama+riñonera HM-20(m3)	0,00	48,37
Suma de Relleno cobertura: e= HM-20;	0,00	24,27
Suma de Relleno cobertura: f=Suelo adecuado procedente excavación (<=150mm) c/95% PN	16,82	466,45
Suma de Relleno cobertura: g= Lecho móvil (m3)	0,00	0,00
Suma de Excedente de tierras (m3) (esponjamiento aluvial 0%, esponjamiento terciario 5%)	1,41	69,33
Suma de Pozo DN 1,2m cambio dirección		4,00
Suma de Pozo RESALTO DN 1,2m		1,00

CALDERERÍA. TOMAS

MEDICIONES CALDERERIA TOMAS

		Toma-11				Toma-12				Toma-13				Toma-13b				Der. Corella				Toma-17				Toma-18				Toma-19				Toma-20				Toma-21				Toma-16				Toma-14/15											
Total kg caldereria toma		112.178,87				74.342,59				81.423,88				4.572,94				103.007,07				79.455,67				72.005,31				49.216,92				36.314,96				19.774,50				46.464,86				32.943,97											
		7.850,00				7.850,00				7.850,00				7.850,00				7.850,00				7.850,00				7.850,00				7.850,00				7.850,00				7.850,00				7.850,00				7.850,00				7.850,00							
		DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg	DN (mm)	esp (mm)	Long (m)	kg								
Tuberías																																																									
Pantallanes																																																									
Pantallón Tubería-1 principal entrada		2.032	14,00	10,50	7.362,75	1.829	11,50	10,50	5.443,77	1.829	11,50	10,50	5.443,77					1.900	13,00	10,50	6.392,72	1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32	1.829	11,50	10,50	5.443,77	1.524	9,50	10,50	3.747,12	1.321	10,50	10,50	3.589,89	1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32								
Pantallón Tubería-2 principal entrada		2.032	14,00	10,50	7.362,75	1.829	11,50	10,50	5.443,77	1.829	11,50	10,50	5.443,77					1.900	13,00	10,50	6.392,72	1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32	1.829	11,50	10,50	5.443,77	1.524	9,50	10,50	3.747,12	1.321	10,50	10,50	3.589,89	1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32								
Pantallón Tubería-1 principal salida		2.032	14,00	10,50	7.362,75	1.829	11,50	10,50	5.443,77	1.829	11,50	10,50	5.443,77					1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32	1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32	1.829	11,50	10,50	5.443,77	1.524	9,50	10,50	3.747,12	1.321	10,50	10,50	3.589,89	1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32				
Pantallón Tubería-2 principal salida		2.032	14,00	10,50	7.362,75	1.829	11,50	10,50	5.443,77	1.829	11,50	10,50	5.443,77					1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32	1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32	1.829	11,50	10,50	5.443,77	1.524	9,50	10,50	3.747,12	1.321	10,50	10,50	3.589,89	1.829	11,50	10,50	5.443,77	1.626	10,00	10,50	4.208,32				
Refuerzos pantallanes																																																									
Pantallón Tubería-1 principal entrada		2.032	6,00	10,50	3.155,47	1.829	6,00	10,50	2.840,23	1.829	6,00	10,50	2.840,23					1.900	6,00	10,50	2.950,49	1.829	6,00	10,50	2.840,23	1.626	6,00	10,50	2.524,99	1.829	6,00	10,50	2.840,23	1.524	6,00	10,50	2.366,60	1.321	6,00	10,50	2.051,36	1.829	6,00	10,50	2.840,23	1.626	6,00	10,50	2.524,99								
Pantallón Tubería-2 principal entrada		2.032	6,00	10,50	3.155,47	1.829	6,00	10,50	2.840,23	1.829	6,00	10,50	2.840,23					1.900	6,00	10,50	2.950,49	1.829	6,00	10,50	2.840,23	1.626	6,00	10,50	2.524,99	1.829	6,00	10,50	2.840,23	1.524	6,00	10,50	2.366,60	1.321	6,00	10,50	2.051,36	1.829	6,00	10,50	2.840,23	1.626	6,00	10,50	2.524,99								
Pantallón Tubería-1 principal salida		2.032	6,00	10,50	3.155,47	1.829	6,00	10,50	2.840,23	1.829	6,00	10,50	2.840,23					1.829	6,00	10,50	2.840,23	1.626	6,00	10,50	2.524,99	1.829	6,00	10,50	2.524,99	1.829	6,00	10,50	2.840,23	1.524	6,00	10,50	2.366,60	1.321	6,00	10,50	2.051,36	1.829	6,00	10,50	2.840,23	1.626	6,00	10,50	2.524,99								
Pantallón Tubería-2 principal salida		2.032	6,00	10,50	3.155,47	1.829	6,00	10,50	2.840,23	1.829	6,00	10,50	2.840,23					1.829	6,00	10,50	2.840,23	1.626	6,00	10,50	2.524,99	1.829	6,00	10,50	2.524,99	1.829	6,00	10,50	2.840,23	1.524	6,00	10,50	2.366,60	1.321	6,00	10,50	2.051,36	1.829	6,00	10,50	2.840,23	1.626	6,00	10,50	2.524,99								
Tubería																																																									
Tubería-1 principal		2.032	14,00	14,40	10.097,49	1.829	11,50	11,90	6.169,61	1.829	11,50	15,80	8.191,58	500	6,50	14,00	1.121,53	1.900	13,00	17,40	10.593,65	1.829	11,50	15,80	8.191,58	1.626	10,00	21,50	8.617,04	1.829	11,50	6,50	3.369,96	1.524	9,50	6,50	2.319,64	1.321	10,50	9,00	3.077,05	1.829	11,50	5,00	2.592,27	1.626	10,00	6,20	2.484,91								
Tubería-2 principal		2.032	14,00	14,40	10.097,49	1.829	11,50	11,90	6.169,61	1.829	11,50	15,80	8.191,58					1.900	13,00	17,40	10.593,65	1.829	11,50	15,80	8.191,58	1.626	10,00	21,50	8.617,04	1.829	11,50	10,00	4.951,00	1.524	10,50	10,00	3.944,33	1.321	8,00	11,70	3.047,74	1.626	10,00	11,00	4.408,72	1.321	10,00	7,20	2.344,42								
Conexión-1 a toma		1.524	9,50	8,50	3.033,38	711	6,00	8,50	893,80	1.016	9,00	8,50	1.915,82					1.829	11,50	10,80	5.599,31	1.016	8,00	8,50	1.702,95	1.626	10,00	12,00	4.809,51	1.524	9,00	11,20	3.786,56	1.118	8,00	10,50	2.314,84	1.118	8,00	9,70	3.158,45	1.321	10,00	7,90	1.780,58	914	10,00	7,90	1.780,58								
Conexión-2 a toma		1.524	9,50	8,50	3.033,38	711	6,00	8,50	893,80	1.016	9,00	8,50	1.915,82					1.829	11,50	10,80	5.599,31	1.016	8,00	8,50	1.702,95	1.626	10,00	12,00	4.809,51	1.524	9,00	11,20	3.786,56	1.118	8,00	10,50	2.314,84	1.118	8,00	9,70	3.158,45	1.321	10,00	7,90	1.780,58	914	10,00	7,90	1.780,58								
Toma transmisión diámetros		1.524	9,50	1,50	535,30	711	6,00	1,50	157,73	1.016	9,00	1,50	338,09					1.829	11,50	8,20	4.251,33	1.016	8,00	1,50	300,52	1.626	10,00	1,50	601,19	1.524	9,00	1,50	507,13	1.118	8,00	1,50	330,69	1.321	8,00	1,50	390,74	1.321	10,00	1,50	488,42	1.321	10,00	0,80	260,49	914	10,00	0,80	180,31				
Toma tramo caudalimetro hasta brida		1.321	9,50	10,40	3.217,06	508	4,00	10,40	520,90	813	6,40	10,40	1.333,84					813	6,40	6,40	820,82	1.321	8,00	10,40	2.709,10	1.321	6,40	10,40	2.167,25	1.321	6,40	10,40	2.167,25	914	8,00	7,20	1.297,68	1.118	8,00	8,80	1.940,05	1.118	8,00	10,50	2.314,84	1.118	8,00	11,20	2.469,16	711	6,00	7,30	767,61				
Bypass																																																									
Tubería-1 bypass válv corte		219	4,00	5,50	118,76	219	4,																																																		

PLANTACIONES

PLANTACIÓN TIPO	ÁREA TOTAL (m ²)	Sub-área (m ²) ó (ml)	HIC	SUBTIPO HIC	VEGETACIÓN A UTILIZAR	Nº Pies / Ha O nº Ud/ Ha	Nº PIES-Nº UDS-KG SEMILLA-M3	Nº PIES-Nº UDS-KG SEMILLA-M3 (total)	UNIDAD	Observación
TIPO 1	214.459,97	185.812,60 28.647,36			Extendido de tierra vegetal	0,500		92.906,301 14.323,682		Depósitos de excedentes Acopios intermedios
TIPO 2	214.459,97	185.812,60 28.647,36			Mezcla de semillas		0,035	6.503	kg	Depósitos de excedentes
					Mezcla de semillas		0,035	1.003		Acopios intermedios
					<i>Pinus halepensis</i>	1.000	299	299	ud	1.000 p/ha
					<i>Genista scorpius</i>	1.000	299	75	ud	1.000 p/ha (25%)
					<i>Salvia officinalis</i>	1.000	299	75	ud	1.000 p/ha (25%)
					<i>Thymus vulgaris</i>	1.000	299	75	ud	1.000 p/ha (25%)
					<i>Rosmarinus officinalis</i>	1.000	299	75	ud	1.000 p/ha (25%)
Tipo 3b										
					<i>Salix atrocinerea</i>	280	189	76		Donde los técnicos indiquen
					<i>Salix alba</i>	245	166	58		Donde los técnicos indiquen
					<i>Crataegus monogyna</i>	175	118	30	ud	Donde los técnicos indiquen
					<i>Rubus ulmifolius</i>	2.000	1.353	677		Donde los técnicos indiquen
					<i>Rosa canina</i>	1.250	846	423		Donde los técnicos indiquen
TIPO 5										
		4.174	1420	142074	<i>Suaeda vera var. braun-blauquetii</i>	2.000	835	835	ud	2.000 p/ha
		3.374			<i>Salsola vermiculata</i>	1.000	337	337	ud	1.000 p/ha
		3.374	1430	143026	<i>Santolina chamaecyparissus</i>	1.000	337	337	ud	1.000 p/ha
		10.115			<i>Genista scorpius</i>	800	809	809	ud	800 p/ha
		10.115			<i>Rosmarinus officinalis</i>	800	809	809	ud	800 p/ha
		10.115	4090	309098	<i>Thymus vulgaris</i>	800	809	809	ud	800 p/ha
		10.115			<i>Ononis fruticosa</i>	1.000	1.012	1.012	ud	1.000 p/ha
		18.658			<i>Genista scorpius</i>	800	1.493	1.493	ud	800 p/ha
		18.658			<i>Rosmarinus officinalis</i>	800	1.493	1.493	ud	800 p/ha
		18.658	4090	433466	<i>Thymus vulgaris</i>	800	1.493	1.493	ud	800 p/ha
		18.658			<i>Linum suffuticosum</i>	1.000	1.866	1.866	ud	1.000 p/ha
		18.658			<i>Stipa parviflora</i>	1.000	1.866	1.866	ud	1.000 p/ha
		343			<i>Quercus coccifera</i>	800	27	27	ud	800 p/ha
		343	5210	421014	<i>Rhamnus alaternus</i>	800	27	27	ud	800 p/ha
		343			<i>Juniperus phoenicea</i>	800	27	27	ud	800 p/ha
		8.226			<i>Thymus vulgaris</i>	800	658	658	ud	800 p/ha
		8.226			<i>Genista scorpius</i>	800	658	658	ud	800 p/ha
		8.226	6220*	522079	<i>Artemisia herba-alba</i>	800	658	658	ud	800 p/ha
		8.226			<i>*Brachypodium retusum</i>	2	2	2	ud	2 kg de semilla/ha
TIPO 7a	22.797,17				<i>Pinus halepensis</i>	700	1.596	1.596	ud	700 p/ha ó marco 4x4m
TIPO 7b	7.826,92				<i>Populus alba</i>	1.000	783	783	ud	1.000 p/ha
					<i>Quercus coccifera</i>	800	6.451	3.225	ud	800 p/ha
					<i>Juniperus oxycedrus</i>	800	6.451	3.225	ud	800 p/ha
					<i>Genista scorpius</i>	1.000	8.063	2.016	ud	1.000 p/ha
					<i>Salvia officinalis</i>	1.000	8.063	2.016	ud	1.000 p/ha
					<i>Thymus vulgaris</i>	1.000	8.063	2.016	ud	1.000 p/ha
					<i>Rosmarinus officinalis</i>	1.000	8.063	2.016	ud	1.000 p/ha
TIPO 7c	80.634,60									

PLANTACIÓN TIPO	ÁREA TOTAL (m ²)	Sub-área (m ²) ó (ml)	HIC	SUBTIPO HIC	VEGETACIÓN A UTILIZAR	Nº Pies / Ha O nº Ud/ Ha	Nº PIES-Nº UDS-KG SEMILLA-M3	Nº PIES-Nº UDS-KG SEMILLA-M3 (total)	UNIDAD	Observación
TIPO 1	279.600,61	173.787,94 105.812,67			Extendido de tierra vegetal	0,500		86.893,969 52.906,337		Depósitos de excedentes Acopios intermedios
TIPO 2	279.600,61	173.787,94 105.812,67			Mezcla de semillas Mezcla de semillas		0,035 0,035	6.083 3.703	kg	Acopios intermedios Depósitos de excedentes
TIPO 3a	4.355,56				<i>Pinus halepensis</i> <i>Genista scorpius</i> <i>Salvia officinalis</i> <i>Thymus vulgaris</i> <i>Rosmarinus officinalis</i>	1.000 1.000 1.000 1.000 1.000	436 436 436 436 436	436 109 109 109 109	ud	1.000 p/ha 1.000 p/ha (25%) 1.000 p/ha (25%) 1.000 p/ha (25%) 1.000 p/ha (25%)
Tipo 3b	40.510,89				Mezcla de semillas		0,035	1.418	kg	Zona agrícola en pendiente
TIPO 4	21.842,35				<i>Salix atrocinerea</i> <i>Salix alba</i> <i>Crataegus monogyna</i> <i>Rubus ulmifolius</i> <i>Rosa canina</i>	280 245 175 2.000 1.250	612 535 382 4.368 2.730	245 187 96 2.184 1.365	ud	Donde los técnicos indiquen Donde los técnicos indiquen Donde los técnicos indiquen Donde los técnicos indiquen Donde los técnicos indiquen
TIPO 5	71.890,65				<i>Pinus halepensis</i>	700	5.032	5.032	ud	700 p/ha ó marco 4x4m
TIPO 6	14.146,04	14.146 14.146 14.146 14.146	6220*	522079	<i>Thymus vulgaris</i> <i>Genista scorpius</i> <i>Artemisia herba-alba</i> <i>*Brachypodium retusum</i>	800 800 800 2	1.132 1.132 1.132 3	1.132 1.132 1.132 3	ud	800 p/ha 800 p/ha 800 p/ha 2 kg de semilla/ha
TIPO 7a	97.688,86				<i>Pinus halepensis</i>	700	6.838	6.838	ud	700 p/ha ó marco 4x4m
TIPO 7b										
TIPO 7c	79.726,59				<i>Quercus coccifera</i> <i>Juniperus oxycedrus</i> <i>Genista scorpius</i> <i>Salvia officinalis</i> <i>Thymus vulgaris</i> <i>Rosmarinus officinalis</i>	800 800 1.000 1.000 1.000 1.000	6.378 6.378 7.973 7.973 7.973 7.973	3.189 3.189 1.993 1.993 1.993 1.993	ud	800 p/ha 800 p/ha 1.000 p/ha 1.000 p/ha 1.000 p/ha 1.000 p/ha

PLANTACIÓN TIPO	ÁREA TOTAL (m ²)	Sub-área (m ²) ó (ml)	HIC	SUBTIPO HIC	VEGETACIÓN A UTILIZAR	Nº Pies / Ha O nº Ud/ Ha	Nº PIES-Nº UDS-KG SEMILLA-M3	Nº PIES-Nº UDS-KG SEMILLA-M3 (total)	UNIDAD	Observación
TIPO 1	68.785,13	68.785,13 0,00			Extendido de tierra vegetal	0,500		34.392,565 0,000		Depósitos de excedentes Acopios intermedios
TIPO 2	68.785,13	68.785,13 0,00			Mezcla de semillas Mezcla de semillas		0,035 0,035	2.407 0	kg	Acopios intermedios Depósitos de excedentes
TIPO 3a	4.067,01				<i>Pinus halepensis</i> <i>Genista scorpius</i> <i>Salvia officinalis</i> <i>Thymus vulgaris</i> <i>Rosmarinus officinalis</i>	1.000 1.000 1.000 1.000 1.000	407 407 407 407 407	407 102 102 102 102	ud	1.000 p/ha 1.000 p/ha (25%) 1.000 p/ha (25%) 1.000 p/ha (25%) 1.000 p/ha (25%)
Tipo 3b										
TIPO 4	3.020,44				<i>Salix atracinerea</i> <i>Salix alba</i> <i>Crataegus monogyna</i> <i>Rubus ulmifolius</i> <i>Rosa canina</i>	280 245 175 2.000 1.250	85 74 53 604 378	34 26 13 302 189	ud	Donde los técnicos indiquen Donde los técnicos indiquen Donde los técnicos indiquen Donde los técnicos indiquen Donde los técnicos indiquen
TIPO 5										
TIPO 6	31.666,63	31.667 31.667 31.667 31.667	6220*	522079	<i>Thymus vulgaris</i> <i>Genista scorpius</i> <i>Artemisia herba-alba</i> <i>*Brachypodium retusum</i>	800 800 800 2	2.533 2.533 2.533 6	2.533 2.533 2.533 6	ud	800 p/ha 800 p/ha 800 p/ha 2 kg de semilla/ha
TIPO 7a	3.409,13				<i>Pinus halepensis</i>	700	239	239	ud	700 p/ha ó marco 4x4m
TIPO 7c	80.709,46				<i>Quercus coccifera</i> <i>Juniperus oxycedrus</i> <i>Genista scorpius</i> <i>Salvia officinalis</i> <i>Thymus vulgaris</i> <i>Rosmarinus officinalis</i>	800 800 1.000 1.000 1.000 1.000	6.457 6.457 8.071 8.071 8.071 8.071	3.228 3.228 2.018 2.018 2.018 2.018	ud	800 p/ha 800 p/ha 1.000 p/ha 1.000 p/ha 1.000 p/ha 1.000 p/ha

BALSA DE MOSTRAKAS

PLANTACIÓN TIPO	ÁREA TOTAL (m ²)	Sub-área (m2) ó (ml)	HIC	SUBTIPO HIC	VEGETACIÓN A UTILIZAR	Nº Pies / Ha O nº Ud/ Ha	Nº PIES-Nº UDS-KG SEMILLA-M3	Nº PIES-Nº UDS-KG SEMILLA-M3 (total)	UNIDAD	Observación
Tipo 8	7.842,25	7.842			Hidrosiembra en taludes	1	7.842	7.842	m2	Taludes Balsa de Mostrakas

PLANTACIÓN TIPO	ÁREA TOTAL (m ²)	Sub-área (m2) ó (ml)	HIC	SUBTIPO HIC	VEGETACIÓN A UTILIZAR	Nº Pies / Ha O nº Ud/ Ha	Nº PIES-Nº UDS-KG SEMILLA-M3	Nº PIES-Nº UDS-KG SEMILLA-M3 (total)	UNIDAD	Observación
TIPO 5	71.890,65				<i>Pinus halepensis</i>	700	5.032	5.032	ud	700 p/ha ó marco 4x4m
TIPO 5C	40.932,38				<i>Genista scorpius</i>	1.000	4.093	1.023	ud	1.000 p/ha
					<i>Salvia officinalis</i>	1.000	4.093	1.023	ud	1.000 p/ha
					<i>Thymus vulgaris</i>	1.000	4.093	1.023	ud	1.000 p/ha
					<i>Rosmarinus officinalis</i>	1.000	4.093	1.023	ud	1.000 p/ha
Tipo 8	52.686,62	52.687			Hidrosiembra en taludes	1	52.687	52.687	m2	Taludes Balsa de Tudela

OT-T12

	Ud	Sup (m2)
Superf. excav. vegetal (50%)	0,5	1.633.863,42
a deducir acopios temporales	-0,5	28.647,36
a deducir zonas depósito excedentes	-0,5	185.812,60

T12-DC

	Ud	Sup (m2)
T12-T13	0,5	753.381,94
T12-T13	0,5	52.217,76
T13-T13BIS	0,5	204.659,16
T13-T13BIS	0,5	40.687,15
T13BIS-BT	0,5	411.746,30
T13BIS-BT	0,5	24.489,22
BT-DC	0,5	111.635,75
a deducir zonas depósito excedentes	-0,5	173.787,94
a deducir acopios temporales	-0,5	105.812,67

DC-T21 Y DC-T14/15

	Ud	Sup (m2)
DC-T16	0,5	89.385,34
T16-T14/15	0,5	157.230,37
T16-T14/15	0,5	2.678,56
DC-T17	0,5	113.098,80
DC-T17	0,5	58.970,91
T17-T18	0,5	203.858,55
T18-T19	0,5	196.935,27
T18-T19	0,5	99.548,85
T19-T20	0,5	64.464,50
T19-T20	0,5	15.245,72
T20-T21	0,5	31.099,87
T20-T21	0,5	39.269,57

P1MT01A (m2 desbroce y limpieza con med. Mec. (baja densidad arbórea)**OT-T12**

	Ud	Sup (m2)
CN-T11	1	830.997,72
T11-T12	1	766.410,09
a deducir acopios temporales	-1	28.647,36
a deducir zonas depósito excedentes	-1	185.812,60

T12-DC

	Ud	Sup (m2)
T12-T13	1	753.381,94
T13-T13BIS	1	204.659,16
T13BIS-BT	1	411.746,30
BT-DC	1	111.635,75
a deducir zonas depósito excedentes	-1	173.787,94
a deducir acopios temporales	-1	105.812,67

DC-T21 Y DC-T14/15

	Ud	Sup (m2)
DC-T16	1	89.385,34
T16-T14/15	1	157.230,37
DC-T17	1	113.098,80
T17-T18	1	203.858,55
T18-T19	1	196.935,27
T19-T20	1	64.464,50
T20-T21	1	31.099,87

OT-T12

	Ud	Sup (m2)
CN-T11	1	34.658,80
T11-T12	1	1.796,81

T12-DC

	Ud	Sup (m2)
T12-T13	1	52.217,76
T13-T13BIS	1	40.687,15
T13BIS-BT	1	24.489,22

DC-T21 Y DC-T14/15

	Ud	Sup (m2)
T16-T14/15	1	2.678,56
DC-T17	1	58.970,91
T18-T19	1	99.548,85
T19-T20	1	15.245,72
T20-T21	1	39.269,57

OT-T12

	Ud	Sup (m2)
CN-T11	1	830.997,72
CN-T11	1	34.658,80
T11-T12	1	766.410,09
T11-T12	1	1.796,81
a deducir acopios temporales	-1	28.647,36
a deducir zonas depósito excedentes	-1	185.812,60

T12-DC

	Ud	Sup (m2)
T12-T13	1,00	753.381,94
T12-T13	1,00	52.217,76
T13-T13BIS	1	204.659,16
T13-T13BIS	1	40.687,15
T13BIS-BT	1	411.746,30
T13BIS-BT	1,00	24.489,22
BT-DC	1,00	111.635,75
a deducir zonas depósito excedentes	-1,00	173.787,94
a deducir acopios temporales	-1,00	105.812,67

DC-T21 Y DC-T14/15

	Ud	Sup (m2)
DC-T16	1	89.385,34
T16-T14/15	1	157.230,37
T16-T14/15	1	2.678,56
DC-T17	1	113.098,80
DC-T17	1	58.970,91
T17-T18	1	203.858,55
T18-T19	1	196.935,27
T18-T19	1	99.548,85
T19-T20	1	64.464,50
T19-T20	1	15.245,72
T20-T21	1	31.099,87
T20-T21	1	39.269,57

P1MT02B (m2 extendido tierra vegetal proc excav/acopio 50 cm (medio) en conducciones)

OT-T12		
	Ud	Sup (m2)
CN-T11	1	34.658,80
T11-T12	1	1.796,81
T12-DC		
	Ud	Sup (m2)
T12-T13	1	753.381,94
T12-T13	1	52.217,76
T13-T13BIS	1	204.659,16
T13-T13BIS	1	40.687,15
T13BIS-BT	1	411.746,30
T13BIS-BT	1	24.489,22
BT-DC	1	111.635,75
a deducir zonas depósito excedentes	-1	173.787,94
a deducir acopios temporales	-1	105.812,67
DC-T21 Y DC-T14/15		
	Ud	Sup (m2)
DC-T16	1	89.385,34
T16-T14/15	1	157.230,37
T16-T14/15	1	2.678,56
DC-T17	1	113.098,80
DC-T17	1	58.970,91
T17-T18	1	203.858,55
T18-T19	1	196.935,27
T18-T19	1	99.548,85
T19-T20	1	64.464,50
T19-T20	1	15.245,72
T20-T21	1	31.099,87
T20-T21	1	39.269,57

**MEDICIONES AUXILIARES.
OBRA DE TOMA PIKARANA**

ALMENARA TOMA (ACERO)

PIKARANA. ALMENARA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Losa cimentacion zona D										29.575,96
Superior X	Ø20 a 20	Ø20	0,20	22,5	114	16	1.824,00	2,47	1	4.505,28
Superior Y	Ø20 a 20	Ø20	0,20	16	81	22,5	1.822,50	2,47	1	4.501,58
Inferior X	Ø20 a 20	Ø20	0,20	22,5	114	16	1.824,00	2,47	1	4.505,28
Inferior Y	Ø20 a 20	Ø20	0,20	16	81	22,5	1.822,50	2,47	1	4.501,58
Refuerzos										
zona losa inclinada	Ø20 a 20	Ø20	0,20	22,5	114	6	684,00	2,47	2	3.378,96
Superior transversal	Ø25 a 20	Ø25	0,20	16	81	8,3	672,30	3,85	2	5.176,71
inferior transversal	Ø25 a 20	Ø25	0,20	16	81	4,3	348,30	3,85	2	2.681,91
Cercos	3Ø12 pml a 20	Ø12			61	1,6	97,60	0,89	2	173,73
Cercos	3Ø12 pml a 20	Ø12			53	1,6	84,80	0,89	2	150,94
muros zona D										30.099,89
muro tipo M1 (1 uds) L: 16,0 m H: 7,30 m										
Vertical	Ø16 a 20	Ø16	0,20	16	81	7,3	591,30	1,58	2	1.868,51
Horizontal	Ø16 a 10	Ø16	0,10	7,3	74	16	1.184,00	1,58	2	3.741,44
Refuerzo	3Ø16	Ø16			3	16	48,00	1,58	1	75,84
	Ø25 a 10	Ø25	0,10	16	161	4,5	724,50	3,85	2	5.578,65
Cercos	3Ø12 pml a 20	Ø12			66	1,6	105,60	0,89	1	93,98
muro tipo M2 (1 uds) L: 6,5 m H: 7,30 m										
Vertical	Ø16 a 20	Ø16	0,20	6,5	34	7,3	248,20	1,58	2	784,31
Horizontal	Ø16 a 10	Ø16	0,10	7,3	74	6,5	481,00	1,58	2	1.519,96
Refuerzo	3Ø16	Ø16			3	6,5	19,50	1,58	1	30,81
	Ø25 a 10	Ø25	0,10	6,5	66	4,5	297,00	3,85	2	2.286,90
Cercos	3Ø12 pml a 20	Ø12			37	1,6	59,20	0,89	1	52,69
muro tipo M3 (1 uds) L: 3,25 m H: 7,30 m										
Vertical	Ø16 a 20	Ø16	0,20	3,25	17	7,3	124,10	1,58	2	392,16
Horizontal	Ø16 a 10	Ø16	0,10	7,3	74	3,25	240,50	1,58	2	759,98
Refuerzo	3Ø16	Ø16			3	3,25	9,75	1,58	1	15,41
	Ø25 a 10	Ø25	0,10	3,25	34	4,5	153,00	3,85	2	1.178,10
Cercos	3Ø12 pml a 20	Ø12			27	1,6	43,20	0,89	1	38,45
muro tipo M4 (Filtros. 1 uds) L: 22,5 m H: 7,30 m										
Vertical	Ø16 a 15	Ø16	0,15	22,5	151	7,3	1.102,30	1,58	1	1.741,63
	Ø25 a 15	Ø25	0,15	22,5	151	7,3	1.102,30	3,85	1	4.243,86
Horizontal	Ø12 a 10	Ø12	0,10	7,3	74	22,5	1.665,00	0,89	2	2.963,70
Refuerzo	3Ø16	Ø16			3	22,5	67,50	1,58	1	106,65
	Ø16 a 15	Ø16	0,15	22,5	151	1,5	226,50	1,58	1	357,87
	Ø25 a 15	Ø25	0,15	22,5	151	1,5	226,50	3,85	1	872,03
Cercos	3Ø10 pml a 30	Ø10			80	1,6	128,00	0,62	1	79,36
Refuerzo losa	Ø16 a 20	Ø16	0,20	22,5	114	1,9	216,60	1,58	1	342,23
muro tipo M5 (Tajamares. 5 uds) L: 4 m H: 7,30 m										
Vertical	Ø20 a 20	Ø20	0,20	4	21	7,3	153,30	2,47	1	378,65
	Ø20 a 20	Ø20	0,20	4	21	2	42,00	2,47	1	103,74
Horizontal	Ø20 a 20	Ø20	0,20	7,3	38	5	190,00	2,47	1	469,30
Refuerzo	3Ø16	Ø16			3	5	15,00	1,58	1	23,70
Losa cimentacion zona A1										5.655,07
Superior X	Ø20 a 20	Ø20	0,20	18	91	6,25	568,75	2,47	1	1.404,81
Superior Y	Ø20 a 20	Ø20	0,20	6,25	32	18	576,00	2,47	1	1.422,72
Inferior X	Ø20 a 20	Ø20	0,20	18	91	6,25	568,75	2,47	1	1.404,81
Inferior Y	Ø20 a 20	Ø20	0,20	6,25	32	18	576,00	2,47	1	1.422,72

PIKARANA. ALMENARA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Refuerzos										
inferior transversal	Ø16 a 20	Ø16	0,20	18	91	1,5	136,50	1,58	2	431,34
Cercos	3Ø12 pml a 40	Ø12			20	1,6	32,00	0,89	1	28,48
muros zona A1										13.502,42
muro tipo M1 (1 uds) L: 6,25 m H: 7,30 m										
Vertical	Ø16 a 20	Ø16	0,20	6,25	32	7,3	233,60	1,58	2	738,18
Horizontal	Ø16 a 10	Ø16	0,10	7,3	74	6,25	462,50	1,58	2	1.461,50
Refuerzo	3Ø16	Ø16			3	6,25	18,75	1,58	1	29,63
	Ø25 a 10	Ø25	0,10	6,25	64	4,5	288,00	3,85	2	2.217,60
Cercos	3Ø12 pml a 20	Ø12			36	1,6	57,60	0,89	1	51,26
muro tipo M2 (1 uds) L: 3,25 m H: 7,30 m										
Vertical	Ø16 a 20	Ø16	0,20	3,25	17	7,3	124,10	1,58	2	392,16
Horizontal	Ø16 a 10	Ø16	0,10	7,3	74	3,25	240,50	1,58	2	759,98
Refuerzo	3Ø16	Ø16			3	3,25	9,75	1,58	1	15,41
	Ø25 a 10	Ø25	0,10	3,25	34	4,5	153,00	3,85	2	1.178,10
Cercos	3Ø12 pml a 20	Ø12			36	1,6	57,60	0,89	1	51,26
muro tipo M3 (Vertedero. 1 uds) L: 16 m H: 6,10 m										
Vertical	Ø16 a 10	Ø16	0,10	16	161	6,1	982,10	1,58	1	1.551,72
	Ø16 a 20	Ø16	0,20	16	81	6,1	494,10	1,58	1	780,68
Horizontal	Ø16 a 20	Ø16	0,20	6,1	32	16	512,00	1,58	1	808,96
	Ø16 a 25	Ø16	0,25	6,1	25	16	400,00	1,58	1	632,00
Refuerzo	3Ø16	Ø16			3	16	48,00	1,58	1	75,84
	Ø16 a 10	Ø16	0,10	16	161	2,5	402,50	1,58	1	635,95
	Ø16 a 20	Ø16	0,20	16	81	2,5	202,50	1,58	1	319,95
Cercos	3Ø10 pml a 30	Ø10			56	1,6	89,60	0,62	1	55,55
Refuerzo losa	Ø16 a 20	Ø16	0,20	16	81	2,5	202,50	1,58	1	319,95
Refuerzo curva	2Ø16	Ø16			2	16	32,00	1,58	1	50,56
	Ø16 a 10	Ø16	0,10	16	161	5,41	871,01	1,58	1	1.376,20
Losa cimentacion zona Toma canal										2.007,62
Superior X	Ø20 a 20	Ø20	0,20	8,5	44	4,6	202,40	2,47	1	499,93
Superior Y	Ø20 a 20	Ø20	0,20	4,6	24	8,5	204,00	2,47	1	503,88
Inferior X	Ø20 a 20	Ø20	0,20	8,5	44	4,6	202,40	2,47	1	499,93
Inferior Y	Ø20 a 20	Ø20	0,20	4,6	24	8,5	204,00	2,47	1	503,88
Refuerzos										
zona losa inclinada	Ø20 a 20	Ø20	0,20	8,5	44	6	264,00	2,47	2	1.304,16
Superior transversal	Ø12 a 20	Ø12	0,20	4,6	24	3,1	74,40	0,89	1	66,22
inferior transversal	Ø16 a 20	Ø16	0,20	4,6	24	3,1	74,40	1,58	1	117,55
Cercos	3Ø12 pml a 40	Ø12			20	1,6	32,00	0,89	1	28,48

PIKARANA. ALMENARA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
muros zona Toma canal										6.961,86
muro tipo M4 (1 uds) L: 4,60 m H: 2,50 m										
Vertical	Ø20 a 15	Ø20	0,15	4,6	32	2,5	80,00	2,47	2	395,20
Horizontal	Ø20 a 15	Ø20	0,15	2,5	18	4,6	82,80	2,47	2	409,03
Refuerzo	3Ø16	Ø16			3	4,6	13,80	1,58	1	21,80
	Ø20 a 15	Ø20	0,15	4,6	32	1	32,00	2,47	2	158,08
Cercos	3Ø12 pml a 20	Ø12			36	1,6	57,60	0,89	1	51,26
muro tipo M5 (1 uds) L: 1,60 m H: 9,80 m										
Vertical	Ø16 a 15	Ø16	0,15	1,6	12	9,8	117,60	1,58	1	185,81
	Ø20 a 15	Ø20	0,15	1,6	12	9,8	117,60	2,47	1	290,47
Horizontal	Ø25 a 30	Ø25	0,30	9,8	34	1,6	54,40	3,85	2	418,88
Refuerzo	3Ø16	Ø16			3	1,6	4,80	1,58	1	7,58
muro tipo M6 (1 uds) L: 4,6 m H: 9,80 m										
Vertical	Ø16 a 20	Ø16	0,20	4,6	24	9,8	235,20	1,58	2	743,23
	Ø16 a 20	Ø16	0,20	4,6	24	2	48,00	1,58	2	151,68
Horizontal	Ø25 a 30	Ø25	0,30	9,8	34	4,6	156,40	3,85	2	1.204,28
Refuerzo superior	3Ø16	Ø16			3	4,6	13,80	1,58	1	21,80
muro tipo M1 (2 uds) L: 2,90 m H: 9,80 m										
Vertical	Ø16 a 20	Ø16	0,20	2,9	16	9,8	156,80	1,58	4	990,98
Horizontal	Ø20 a 20	Ø20	0,20	9,8	50	2,9	145,00	2,47	4	1.432,60
Refuerzo curva	Ø16 a 20	Ø16	0,20	2,9	16	3,6	57,60	1,58	2	182,02
	3Ø16	Ø16			3	2,9	8,70	1,58	2	27,49
	5Ø20	Ø20			5	2,9	14,50	2,47	4	143,26
	1rØ16 a 15	Ø16	0,15	2,9	20	1	20,00	1,58	4	126,40
pilar zona Toma canal										1.845,92
Vertical	2 Ø16	Ø16			2	9,8	19,60	1,58	2	61,94
	1 Ø12	Ø12			1	9,8	9,80	0,89	2	17,44
	7 Ø16	Ø16			7	9,8	68,60	1,58	2	216,78
	2 Ø16	Ø16			2	9,8	19,60	1,58	2	61,94
Cercos	Ø16 a 15	Ø16	0,15	9,8	66	13,56	894,96	1,58	1	1.414,04
Arranque pilar	2 Ø16	Ø16			2	2	4,00	1,58	2	12,64
	1 Ø12	Ø12			1	1,6	1,60	0,89	2	2,85
	2 Ø16	Ø16			2	2	4,00	1,58	2	12,64
Cercos	Ø16 a 15	Ø16	0,15	0,6	5	5,78	28,90	1,58	1	45,66
Suma										89.648,74
Total (kg) con % de incremento por solapes, ataduras y despuntes										98.613,62

**ALIVIADERO
(ACERO)**

TOMA DE PIKARANA. ALIVIADERO										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Losa cimentacion A2										12.128,99
Superior X	Ø20 a 20	Ø20	0,20	15,6	79	11,7	924,30	2,47	1	2.283,02
Superior Y	Ø20 a 20	Ø20	0,20	11,7	60	15,6	936,00	2,47	1	2.311,92
Inferior X	Ø20 a 20	Ø20	0,20	15,6	79	11,7	924,30	2,47	1	2.283,02
Inferior Y	Ø20 a 20	Ø20	0,20	11,7	60	15,6	936,00	2,47	1	2.311,92
Refuerzos										
Inferior Y	Ø16 a 20	Ø16	0,20	11,7	60	4,8	288,00	1,58	2	910,08
Superior Y	Ø20 a 20	Ø20	0,20	11,7	60	6	360,00	2,47	2	1.778,40
Cercos	3Ø12 pml a 20	Ø12			48	1,6	76,80	0,89	2	136,70
Cercos	3Ø12 pml a 20	Ø12			40	1,6	64,00	0,89	2	113,92
muros										16.595,86
muro tipo M1 (1 uds) L: 5,35 m H: 7,30 m										
Vertical	Ø16 a 20	Ø16	0,20	5,35	28	7,3	204,40	1,58	2	645,90
Horizontal	Ø16 a 10	Ø16	0,10	7,3	74	5,35	395,90	1,58	2	1.251,04
Refuerzo	3Ø16	Ø16			3	5,35	16,05	1,58	1	25,36
	Ø25 a 10	Ø25	0,10	5,35	55	4,5	247,50	3,85	2	1.905,75
Cercos	3Ø12 pml a 20	Ø12			36	1,6	57,60	0,89	1	51,26
muro tipo M2 (1 uds) L: 18 m H: 7,30 m										
Vertical	Ø16 a 20	Ø16	0,20	18	91	7,3	664,30	1,58	2	2.099,19
Horizontal	Ø16 a 10	Ø16	0,10	7,3	74	18	1.332,00	1,58	2	4.209,12
Refuerzo	3Ø16	Ø16			3	18	54,00	1,58	1	85,32
	Ø25 a 10	Ø25	0,10	18	181	4,5	814,50	3,85	2	6.271,65
Cercos	3Ø12 pml a 20	Ø12			36	1,6	57,60	0,89	1	51,26
Suma										28.724,85
Total (kg) con % de incremento por solapes, ataduras y despuntes										31.597,33

MEDICIONES AUXILIARES.

BALSA DE TUDELA

CUERPO DE PRESA

MOVIMIENTO DE TIERRA

EXCAVACIÓN DE CIMENTO DE NÚCLEO DE BALSA											
pk	Desmonte			Terraplen			diferencia terraplen=desmontado			diferencia desmonte=terraplenado	
	carto 0	carto 1	carto 2	carto 0	carto 1	carto 2	Carto 0->Carto 1	Carto 1->Carto 2		Carto 0->Carto 1	Carto 1->Carto 2
pk 0+000	0,00						0,00	0,00			
pk 0+010	204,15	61,36	16,61	0,00	0,00	14,31	0,00	14,31	14,31	-142,79	-44,75
pk 0+020	404,67	122,51	18,07	0,00	0,00	33,46	0,00	33,46	19,15	-282,16	-104,44
pk 0+030	601,13	183,66	19,47	0,00	0,00	52,73	0,00	52,73	19,27	-417,47	-164,19
pk 0+040	790,78	276,31	21,85	0,00	0,00	72,69	0,00	72,69	19,96	-514,47	-254,46
pk 0+050	956,71	388,46	29,48	0,00	0,00	93,94	0,00	93,94	21,25	-568,25	-358,98
pk 0+060	1.115,98	502,38	35,53	0,00	0,00	115,36	0,00	115,36	21,42	-613,60	-466,85
pk 0+070	1.275,46	613,79	59,51	0,00	0,00	122,33	0,00	122,33	6,97	-661,67	-554,28
pk 0+080	1.425,25	738,96	119,04	0,00	0,00	125,01	0,00	125,01	2,68	-686,29	-619,92
pk 0+090	1.502,05	813,38	133,65	4,69	5,15	214,31	0,46	209,16	84,15	-688,67	-679,73
pk 0+100	1.509,52	818,64	133,65	560,56	1.337,46	1.632,32	776,90	294,86	85,70	-690,88	-684,99
pk 0+110	1.509,52	818,74	133,65	1.976,41	3.708,13	4.114,09	1.731,72	405,96	111,10	-690,78	-685,09
pk 0+120	1.509,53	818,74	133,65	3.897,76	6.240,34	6.814,77	2.342,58	574,43	168,47	-690,79	-685,09
pk 0+130	1.509,54	818,74	133,65	6.121,57	9.065,39	9.843,24	2.943,82	777,85	203,42	-690,80	-685,09
pk 0+140	1.509,54	818,74	133,65	8.835,72	12.777,35	13.739,55	3.941,63	962,20	184,35	-690,80	-685,09
pk 0+150	1.509,54	818,74	133,65	13.178,28	18.020,90	19.141,93	4.842,62	1.121,03	158,83	-690,80	-685,09
pk 0+160	1.509,54	818,74	133,65	20.232,87	25.738,72	27.058,84	5.505,85	1.320,12	199,09	-690,80	-685,09
pk 0+170	1.509,54	818,74	133,65	30.188,69	36.248,26	37.815,21	6.059,57	1.566,95	246,83	-690,80	-685,09
pk 0+180	1.509,54	818,74	133,65	43.599,70	50.244,64	52.134,67	6.644,94	1.890,03	323,08	-690,80	-685,09
pk 0+190	1.509,54	818,74	133,65	60.917,67	68.279,20	70.651,74	7.361,53	2.372,54	482,51	-690,80	-685,09
pk 0+200	1.509,54	818,74	133,65	82.651,36	90.150,64	93.091,36	7.499,28	2.940,72	568,18	-690,80	-685,09
pk 0+210	1.509,54	818,74	133,65	108.882,30	115.969,94	119.442,34	7.087,64	3.472,40	531,68	-690,80	-685,09
pk 0+220	1.509,54	818,74	133,65	139.029,22	145.756,83	149.697,63	6.727,61	3.940,80	468,40	-690,80	-685,09
pk 0+230	1.509,54	818,74	133,65	172.433,25	180.145,57	184.620,73	7.712,32	4.475,16	534,36	-690,80	-685,09
pk 0+240	1.509,54	818,74	133,65	208.646,39	221.312,28	226.691,29	12.665,89	5.379,01	903,85	-690,80	-685,09
pk 0+250	1.509,54	818,74	133,65	247.657,35	267.315,90	273.872,61	19.658,55	6.556,71	1.177,70	-690,80	-685,09
pk 0+260	1.509,54	818,74	133,65	288.997,98	314.652,19	322.402,62	25.654,21	7.750,43	1.193,72	-690,80	-685,09
pk 0+270	1.509,54	818,74	133,65	332.010,23	362.654,85	371.578,36	30.644,62	8.923,51	1.173,08	-690,80	-685,09
pk 0+280	1.509,54	818,74	133,65	376.476,88	411.261,18	421.345,50	34.784,30	10.084,32	1.160,81	-690,80	-685,09
pk 0+290	1.509,54	818,74	133,65	422.287,97	464.369,45	475.382,09	42.081,48	11.012,64	928,32	-690,80	-685,09
pk 0+300	1.509,54	818,74	133,65	469.430,01	523.411,97	535.165,95	53.981,96	11.753,98	741,34	-690,80	-685,09
pk 0+310	1.509,54	818,74	133,65	517.818,29	584.712,92	597.192,31	66.894,63	12.479,39	725,41	-690,80	-685,09
pk 0+320	1.509,54	818,74	133,65	567.363,72	647.142,12	660.264,84	79.778,40	13.122,72	643,33	-690,80	-685,09
pk 0+330	1.509,54	818,74	133,65	617.970,16	710.633,42	724.478,04	92.663,26	13.844,62	721,90	-690,80	-685,09
pk 0+340	1.509,54	818,74	133,65	669.263,96	775.113,10	789.914,23	105.849,14	14.801,13	956,51	-690,80	-685,09
pk 0+350	1.509,54	818,74	133,65	720.855,38	840.235,51	856.032,21	119.380,13	15.796,70	995,57	-690,80	-685,09
pk 0+360	1.509,54	818,74	133,65	772.727,42	906.318,08	923.083,85	133.590,66	16.765,77	969,07	-690,80	-685,09
pk 0+370	1.509,54	818,74	133,65	824.796,94	973.207,98	990.971,04	148.411,04	17.763,06	997,29	-690,80	-685,09
pk 0+380	1.509,54	818,74	133,65	876.706,99	1.039.436,99	1.058.421,85	162.730,00	18.984,86	1.221,80	-690,80	-685,09
pk 0+390	1.509,54	818,74	133,65	928.421,61	1.104.658,55	1.124.880,08	176.236,94	20.221,53	1.236,67	-690,80	-685,09
pk 0+400	1.509,54	818,74	133,65	980.969,25	1.169.265,10	1.190.650,99	188.295,85	21.385,89	1.164,36	-690,80	-685,09
pk 0+410	1.509,54	818,74	133,65	1.035.017,73	1.233.733,39	1.256.176,56	198.715,66	22.443,17	1.057,28	-690,80	-685,09
pk 0+420	1.509,54	818,74	133,65	1.089.902,01	1.298.230,36	1.321.680,83	208.328,35	23.450,47	1.007,30	-690,80	-685,09
pk 0+430	1.509,54	818,74	133,65	1.145.084,49	1.364.008,64	1.388.431,04	218.924,15	24.422,40	971,93	-690,80	-685,09
pk 0+440	1.509,54	818,74	133,65	1.200.327,35	1.430.878,48	1.456.509,23	230.551,13	25.630,75	1.208,35	-690,80	-685,09
pk 0+450	1.509,54	818,74	133,65	1.255.133,59	1.497.212,13	1.523.834,72	242.078,54	26.622,59	991,84	-690,80	-685,09
pk 0+460	1.509,54	818,74	133,65	1.309.087,04	1.562.710,88	1.590.290,28	253.623,84	27.579,40	956,81	-690,80	-685,09
pk 0+470	1.509,54	818,74	133,65	1.361.796,24	1.627.344,19	1.655.720,18	265.547,95	28.375,99	796,59	-690,80	-685,09
pk 0+480	1.509,54	818,74	133,65	1.412.256,31	1.690.931,77	1.719.971,47	278.675,46	29.039,70	663,71	-690,80	-685,09
pk 0+490	1.509,54	818,74	133,65	1.459.555,14	1.751.160,52	1.780.745,88	291.605,38	29.585,36	545,66	-690,80	-685,09
pk 0+500	1.509,54	818,74	133,65	1.504.699,68	1.806.916,55	1.837.002,64	302.216,87	30.086,09	500,73	-690,80	-685,09
pk 0+510	1.509,54	818,74	133,65	1.549.317,99	1.857.893,86	1.888.499,16	308.575,87	30.605,30	519,21	-690,80	-685,09
pk 0+520	1.509,54	818,74	133,65	1.594.143,78	1.907.778,90	1.938.951,07	313.635,12	31.172,17	566,87	-690,80	-685,09
pk 0+530	1.509,54	818,74	133,65	1.638.999,42	1.961.991,63	1.993.797,27	322.992,21	31.805,64	633,47	-690,80	-685,09
pk 0+540	1.509,54	818,74	133,65	1.683.410,99	2.019.806,33	2.052.723,85	336.395,34	32.917,52	1.111,88	-690,80	-685,09
pk 0+550	1.509,54	818,74	133,65	1.726.879,98	2.078.325,06	2.112.912,98	351.445,08	34.587,92	1.670,40	-690,80	-685,09
pk 0+560	1.509,54	818,74	133,65	1.768.964,15	2.136.487,73	2.172.276,28	367.523,58	35.788,55	1.200,63	-690,80	-685,09
pk 0+570	1.509,54	818,74	133,65	1.809.406,97	2.193.571,79	2.230.014,68	384.164,82	36.442,89	654,34	-690,80	-685,09
pk 0+580	1.509,54	818,74	133,65	1.847.853,31	2.246.792,29	2.283.816,79	398.938,98	37.024,50	581,61	-690,80	-685,09
pk 0+590	1.509,54	818,74	133,65	1.884.247,32	2.294.582,52	2.332.153,47	410.335,20	37.570,95	546,45	-690,80	-685,09
pk 0+600	1.509,54	818,74	133,65	1.918.910,86	2.338.088,26	2.376.193,31	419.177,40	38.105,05	534,10	-690,80	-685,09
pk 0+610	1.509,54	818,74	133,65	1.952.174,88	2.378.511,82	2.417.141,54	426.336,94	38.629,72	524,67	-690,80	-685,09
pk 0+620	1.509,54	818,74	133,65	1.984.238,63	2.415.837,47	2.454.955,94	431.598,84	39.118,47	488,75	-690,80	-685,09
pk 0+630	1.509,54	818,74	133,65	2.015.529,90	2.449.132,41	2.488.820,85	433.602,51	39.688,44	569,97	-690,80	-685,09
pk 0+640	1.509,54	818,74	133,65	2.046.111,39	2.479.951,47	2.520.220,70	433.840,08	40.269,23	580,79	-690,80	-685,09
pk 0+650	1.509,54	818,74	133,65	2.075.993,43	2.510.072,16	2.550.783,99	434.078,73	40.711,83	442,60	-690,80	-685,09
pk 0+660	1.509,54	818,74	133,65	2.105.148,43	2.539.615,09	2.580.738,19	434.466,66	41.123,10	411,27	-690,80	-685,09
pk 0+670	1.509,54	818,74	133,65	2.133.605,44	2.568.433,40	2.609.959,78	434.827,96	41.526,38	403,28	-690,80	-685,09
pk 0+680	1.509,54	818,74	133,65	2.160.577,22	2.596.319,15	2.638.320,70	435.741,93	42.001,55	475,17	-690,80	-685,09
pk 0+690	1.509,54	818,74	133,65	2.184.374,52	2.622.677,49	2.665.242,04	438.302,97	42.564,55	563,00	-690,80	-685,09
pk 0+700	1.509,54	818,74	133,65	2.203.209,63	2.646.032,58	2.689.136,78	442.822,95	43.104,20	539,65	-690,80	-685,09
pk 0+710	1.509,54	818,74	133,65	2.216.271,46	2.664.931,24	2.708.457,05	448.659,78	43.525,81	421,61	-690,80	-685,09
pk 0+720	1.509,54	818,74	133,65	2.224.602,49	2.678.186,00	2.722.022,17	453.583,51	43.836,17	310,36	-690,80	-685,09
pk 0+730	1.509,54	818,74	133,65	2.230.554,26	2.686.999,31	2.731.049,71	456.445,05	44.050,40	214,23	-690,80	-685,09
pk 0+740	1.509,54	818,74	133,65	2.235.248,76	2.693.429,37	2.737.611,30	458.180,61	44.181,93	131,53	-690,80	-685,09
pk 0+750	1.509,54	818,74	133,65	2.238.851,69	2.698.587,35	2.742.849,58	459.735,66	44.262,23	80,30	-690,80	-685,09
pk 0+760	1.509,54	818,74	133,65	2.241.834,27	2.702.555,68	2.746.887,86	460.721,41	44.332,18	69,95	-690,80	

EXCAVACIÓN DE CIMENTO DE NÚCLEO DE Balsa											
pk	Desmonte			Terraplen			diferencia terraplen=desmontado			diferencia desmonte=terraplenado	
	carto 0	carto 1	carto 2	carto 0	carto 1	carto 2	Carto 0->Carto 1	Carto 1->Carto 2		Carto 0->Carto 1	Carto 1->Carto 2
pk 0+910	1.509,54	818,74	133,65	2.261.946,81	2.730.122,73	2.777.734,13	468.175,92	47.611,40	318,18	-690,80	-685,09
pk 0+920	1.509,54	818,74	133,65	2.262.475,99	2.730.657,71	2.778.563,41	468.181,72	47.905,70	294,30	-690,80	-685,09
pk 0+930	1.509,54	818,74	133,65	2.262.967,48	2.731.138,24	2.779.342,46	468.170,76	48.204,22	298,52	-690,80	-685,09
pk 0+940	1.509,54	818,74	133,65	2.263.421,37	2.731.578,10	2.780.072,52	468.156,73	48.494,42	290,20	-690,80	-685,09
pk 0+950	1.509,54	818,74	133,65	2.263.833,84	2.731.968,29	2.780.741,36	468.134,45	48.773,07	278,65	-690,80	-685,09
pk 0+960	1.509,54	818,74	133,65	2.264.193,58	2.732.293,47	2.781.330,77	468.099,89	49.037,30	264,23	-690,80	-685,09
pk 0+970	1.509,54	818,74	133,65	2.264.499,49	2.732.573,24	2.781.864,52	468.073,75	49.291,28	253,98	-690,80	-685,09
pk 0+980	1.509,54	818,74	133,65	2.264.765,28	2.732.825,46	2.782.367,26	468.060,18	49.541,80	250,52	-690,80	-685,09
pk 0+990	1.509,54	818,74	133,65	2.264.996,80	2.733.031,19	2.782.828,90	468.034,39	49.797,71	255,91	-690,80	-685,09
pk 1+000	1.509,54	818,74	133,65	2.265.175,98	2.733.161,24	2.783.217,49	467.985,26	50.056,25	258,54	-690,80	-685,09
pk 1+010	1.509,54	818,74	133,65	2.265.286,66	2.733.247,98	2.783.552,92	467.961,32	50.304,94	248,69	-690,80	-685,09
pk 1+020	1.509,54	818,74	133,65	2.265.335,71	2.733.295,05	2.783.842,77	467.959,34	50.547,72	242,78	-690,80	-685,09
pk 1+030	1.529,68	838,88	133,65	2.265.340,56	2.733.299,90	2.784.080,48	467.959,34	50.780,58	232,86	-690,80	-705,23
pk 1+040	1.608,55	917,74	134,14	2.265.340,56	2.733.299,90	2.784.268,66	467.959,34	50.968,76	188,18	-690,81	-783,60
pk 1+050	1.746,51	1.055,70	141,61	2.265.340,56	2.733.299,90	2.784.399,91	467.959,34	51.100,01	131,25	-690,81	-914,09
pk 1+060	1.948,77	1.257,96	173,07	2.265.340,56	2.733.299,90	2.784.475,00	467.959,34	51.175,10	75,09	-690,81	-1.084,89

VOLUMEN DE TIERRAS						
EXCAVACIÓN DE TERRENO NO CLASIFICADO EN EXPLANACIONES						
EJE	PK		D TIERRA		TERRAPLEN	
	INICIAL	FINAL	VOL. PARCIAL	VOL. ACUMUL.	VOL. PARCIAL	VOL. ACUMUL.
1	0+290.000	0+295.000	5.346,690	5.346,69	0,000	0,00
1	0+295.000	0+300.000	8.078,545	13.425,24	0,000	0,00
1	0+300.000	0+303.360	5.862,615	19.287,85	0,000	0,00
1	0+303.360	0+305.000	2.955,098	22.242,95	0,000	0,00
1	0+305.000	0+310.000	8.943,647	31.186,60	0,000	0,00
1	0+310.000	0+315.000	8.848,889	40.035,48	0,000	0,00
1	0+315.000	0+320.000	8.773,674	48.809,16	0,000	0,00
1	0+320.000	0+325.000	8.723,439	57.532,60	0,000	0,00
1	0+325.000	0+330.000	8.690,179	66.222,78	0,000	0,00
1	0+330.000	0+332.160	3.750,458	69.973,23	0,000	0,00
1	0+332.160	0+335.000	4.901,020	74.874,25	0,000	0,00
1	0+335.000	0+340.000	8.492,349	83.366,60	0,000	0,00
1	0+340.000	0+345.000	8.340,806	91.707,41	0,000	0,00
1	0+345.000	0+350.000	8.188,221	99.895,63	0,000	0,00
1	0+350.000	0+355.000	8.038,710	107.934,34	0,000	0,00
1	0+355.000	0+360.000	7.892,193	115.826,53	0,000	0,00
1	0+360.000	0+365.000	7.758,070	123.584,60	0,000	0,00
1	0+365.000	0+367.490	3.825,112	127.409,72	0,000	0,00
1	0+367.490	0+370.000	3.728,680	131.138,40	0,000	0,00
1	0+370.000	0+375.000	6.927,429	138.065,82	0,000	0,00
1	0+375.000	0+380.000	6.405,104	144.470,93	0,000	0,00
1	0+380.000	0+385.000	5.843,541	150.314,47	0,000	0,00
1	0+385.000	0+390.000	5.121,038	155.435,51	0,000	0,00
1	0+390.000	0+395.000	4.202,980	159.638,49	0,000	0,00
1	0+395.000	0+398.585	2.376,681	162.015,17	0,000	0,00
1	0+398.585	0+400.000	901,081	162.916,25	0,000	0,00
1	0+400.000	0+405.000	3.599,027	166.515,28	0,000	0,00
1	0+405.000	0+410.000	3.974,441	170.489,72	0,000	0,00
1	0+410.000	0+414.000	3.884,986	174.374,70	0,000	0,00
1	0+414.000	0+415.000	1.139,480	175.514,18	0,000	0,00
1	0+415.000	0+420.000	6.785,424	182.299,61	0,000	0,00
1	0+420.000	0+420.720	1.127,324	183.426,93	0,000	0,00
1	0+420.720	0+425.000	6.796,026	190.222,96	0,000	0,00
1	0+425.000	0+426.960	3.100,116	193.323,07	0,000	0,00
1	0+426.960	0+430.000	4.760,620	198.083,69	0,000	0,00
1	0+430.000	0+433.380	5.193,449	203.277,14	0,000	0,00
1	0+433.380	0+435.000	2.443,019	205.720,16	0,000	0,00
1	0+435.000	0+440.000	7.304,740	213.024,90	0,000	0,00
1	0+440.000	0+445.000	7.002,607	220.027,51	0,000	0,00
1	0+445.000	0+450.000	6.765,035	226.792,54	0,000	0,00
1	0+450.000	0+455.000	6.575,528	233.368,07	0,000	0,00
1	0+455.000	0+460.000	6.435,153	239.803,23	0,000	0,00
1	0+460.000	0+465.000	6.358,737	246.161,96	0,000	0,00
1	0+465.000	0+469.940	6.277,629	252.439,59	0,000	0,00
1	0+469.940	0+470.000	76,339	252.515,93	0,000	0,00
1	0+470.000	0+475.000	6.296,574	258.812,51	0,000	0,00
1	0+475.000	0+480.000	6.263,491	265.076,00	0,000	0,00
1	0+480.000	0+485.000	5.900,149	270.976,15	0,000	0,00
1	0+485.000	0+490.000	5.063,818	276.039,96	0,000	0,00
1	0+490.000	0+495.000	4.050,311	280.090,27	0,000	0,00
1	0+495.000	0+500.000	2.834,796	282.925,07	0,000	0,00
1	0+500.000	0+501.500	572,540	283.497,61	0,000	0,00
1	0+501.500	0+505.000	1.393,825	284.891,43	0,000	0,00
1	0+505.000	0+510.000	2.820,539	287.711,97	0,000	0,00
1	0+510.000	0+515.000	3.740,648	291.452,62	0,000	0,00
1	0+515.000	0+520.000	4.663,455	296.116,08	0,000	0,00

VOLUMEN DE TIERRAS						
EXCAVACIÓN DE TERRENO NO CLASIFICADO EN EXPLANACIONES						
EJE	PK		D TIERRA		TERRAPLEN	
	INICIAL	FINAL	VOL. PARCIAL	VOL. ACUMUL.	VOL. PARCIAL	VOL. ACUMUL.
1	0+520.000	0+525.000	5.583,508	301.699,58	0,000	0,00
1	0+525.000	0+530.000	6.504,439	308.204,02	0,000	0,00
1	0+530.000	0+530.697	986,262	309.190,28	0,000	0,00
1	0+530.697	0+535.000	6.124,540	315.314,82	0,000	0,00
1	0+535.000	0+540.000	7.039,356	322.354,18	0,000	0,00
1	0+540.000	0+545.000	7.033,940	329.388,12	0,000	0,00
1	0+545.000	0+547.961	4.191,981	333.580,10	0,000	0,00
1	0+547.961	0+550.000	2.918,715	336.498,82	0,000	0,00
1	0+550.000	0+555.000	7.344,662	343.843,48	0,000	0,00
1	0+555.000	0+559.300	6.573,619	350.417,10	0,000	0,00
1	0+559.300	0+560.000	1.097,022	351.514,12	0,000	0,00
1	0+560.000	0+562.430	3.869,474	355.383,59	0,000	0,00
1	0+562.430	0+565.000	3.980,678	359.364,27	0,000	0,00
1	0+565.000	0+570.000	6.982,267	366.346,54	0,000	0,00
1	0+570.000	0+575.000	5.903,351	372.249,89	0,000	0,00
1	0+575.000	0+577.590	2.543,569	374.793,46	0,000	0,00
1	0+577.590	0+580.000	2.183,202	376.976,66	0,000	0,00
1	0+580.000	0+585.000	4.298,064	381.274,72	0,000	0,00
1	0+585.000	0+590.000	3.696,786	384.971,51	0,000	0,00
1	0+590.000	0+592.490	1.623,993	386.595,50	0,000	0,00
1	0+592.490	0+595.000	1.610,170	388.205,67	0,000	0,00
1	0+595.000	0+600.000	3.148,886	391.354,56	0,000	0,00
1	0+600.000	0+600.360	192,593	391.547,15	0,000	0,00
1	0+600.360	0+605.000	1.890,322	393.437,47	0,000	0,00
1	0+605.000	0+610.000	1.599,364	395.036,84	0,000	0,00
1	0+610.000	0+615.000	1.162,827	396.199,67	0,000	0,00
1	0+615.000	0+620.000	742,015	396.941,68	0,000	0,00

DESBROCES EN PRÉSTAMOS. ZONA 2								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
0,00	63,50	64,21	0,00	0,00	0,00	0,00	0,00	0,00
5,00	63,26	63,83	0,00	0,00	316,89	0,00	320,10	0,00
10,00	62,92	63,43	0,00	0,00	632,33	0,00	638,24	0,00
15,00	62,43	62,66	0,00	0,00	945,68	0,00	953,47	0,00
20,00	61,96	62,06	0,00	0,00	1.256,64	0,00	1.265,27	0,00
25,00	61,71	61,75	0,00	0,00	1.565,81	0,00	1.574,78	0,00
30,00	61,92	61,95	0,00	0,00	1.874,87	0,00	1.884,03	0,00
35,00	62,10	62,16	0,00	0,00	2.184,92	0,00	2.194,32	0,00
40,00	62,22	62,32	0,00	0,00	2.495,72	0,00	2.505,53	0,00
45,00	62,12	62,25	0,00	0,00	2.806,55	0,00	2.816,95	0,00
50,00	62,17	62,27	0,00	0,00	3.117,28	0,00	3.128,25	0,00
55,00	62,35	62,48	0,00	0,00	3.428,59	0,00	3.440,14	0,00
60,00	62,18	62,27	0,00	0,00	3.739,91	0,00	3.752,02	0,00
65,00	62,27	62,34	0,00	0,00	4.051,03	0,00	4.063,56	0,00
70,00	62,31	62,39	0,00	0,00	4.362,49	0,00	4.375,39	0,00
75,00	62,09	62,20	0,00	0,00	4.673,48	0,00	4.686,85	0,00
80,00	62,16	62,23	0,00	0,00	4.984,10	0,00	4.997,92	0,00
85,00	62,13	62,19	0,00	0,00	5.294,83	0,00	5.308,97	0,00
90,00	62,13	62,18	0,00	0,00	5.605,49	0,00	5.619,88	0,00
95,00	62,17	62,22	0,00	0,00	5.916,26	0,00	5.930,86	0,00
100,00	62,24	62,28	0,00	0,00	6.227,31	0,00	6.242,11	0,00
105,00	62,22	62,27	0,00	0,00	6.538,47	0,00	6.553,49	0,00
110,00	62,05	62,10	0,00	0,00	6.849,14	0,00	6.864,42	0,00
115,00	62,03	62,07	0,00	0,00	7.159,35	0,00	7.174,86	0,00
120,00	62,04	62,09	0,00	0,00	7.469,55	0,00	7.485,26	0,00
125,00	62,11	62,19	0,00	0,00	7.779,92	0,00	7.795,95	0,00
130,00	62,00	62,06	0,00	0,00	8.090,19	0,00	8.106,55	0,00
135,00	62,12	62,17	0,00	0,00	8.400,49	0,00	8.417,12	0,00
140,00	62,24	62,31	0,00	0,00	8.711,37	0,00	8.728,32	0,00
145,00	62,34	62,42	0,00	0,00	9.022,80	0,00	9.040,14	0,00
150,00	62,52	62,66	0,00	0,00	9.334,94	0,00	9.352,84	0,00
155,00	62,78	62,95	0,00	0,00	9.648,19	0,00	9.666,86	0,00
160,00	63,02	63,21	0,00	0,00	9.962,67	0,00	9.982,26	0,00
165,00	63,25	63,47	0,00	0,00	10.278,33	0,00	10.298,96	0,00
170,00	63,50	63,79	0,00	0,00	10.595,20	0,00	10.617,11	0,00
175,00	63,68	64,08	0,00	0,00	10.913,16	0,00	10.936,78	0,00
180,00	63,83	64,30	0,00	0,00	11.231,93	0,00	11.257,74	0,00
185,00	63,36	63,86	0,00	0,00	11.549,88	0,00	11.578,13	0,00
190,00	63,09	63,43	0,00	0,00	11.865,99	0,00	11.896,35	0,00
195,00	62,81	63,03	0,00	0,00	12.180,72	0,00	12.212,49	0,00
200,00	62,35	62,45	0,00	0,00	12.493,61	0,00	12.526,20	0,00
205,00	62,15	62,22	0,00	0,00	12.804,88	0,00	12.837,88	0,00
210,00	62,12	62,17	0,00	0,00	13.115,56	0,00	13.148,86	0,00
215,00	62,12	62,18	0,00	0,00	13.426,17	0,00	13.459,74	0,00
220,00	62,03	62,08	0,00	0,00	13.736,54	0,00	13.770,37	0,00
225,00	62,21	62,28	0,00	0,00	14.047,13	0,00	14.081,26	0,00
230,00	62,33	62,51	0,00	0,00	14.358,46	0,00	14.393,23	0,00
235,00	62,13	62,19	0,00	0,00	14.669,61	0,00	14.704,98	0,00
240,00	62,20	62,25	0,00	0,00	14.980,45	0,00	15.016,08	0,00
245,00	62,40	62,46	0,00	0,00	15.291,95	0,00	15.327,86	0,00
250,00	62,40	62,46	0,00	0,00	15.603,93	0,00	15.640,14	0,00
255,00	62,28	62,31	0,00	0,00	15.915,61	0,00	15.952,07	0,00
260,00	62,34	62,39	0,00	0,00	16.227,15	0,00	16.263,82	0,00
265,00	62,36	62,41	0,00	0,00	16.538,92	0,00	16.575,80	0,00
270,00	62,37	62,42	0,00	0,00	16.850,77	0,00	16.887,85	0,00
275,00	62,45	62,50	0,00	0,00	17.162,83	0,00	17.200,13	0,00
280,00	62,60	62,65	0,00	0,00	17.475,45	0,00	17.512,99	0,00
285,00	62,81	62,85	0,00	0,00	17.788,87	0,00	17.826,67	0,00
290,00	62,79	62,82	0,00	0,00	18.102,86	0,00	18.140,82	0,00
295,00	62,75	62,77	0,00	0,00	18.416,72	0,00	18.454,79	0,00
300,00	62,78	62,79	0,00	0,00	18.730,54	0,00	18.768,71	0,00
305,00	62,97	63,00	0,00	0,00	19.044,91	0,00	19.083,19	0,00
310,00	63,12	63,16	0,00	0,00	19.360,13	0,00	19.398,59	0,00
315,00	63,24	63,29	0,00	0,00	19.676,05	0,00	19.714,69	0,00
320,00	60,83	61,11	0,00	0,00	19.986,22	0,00	20.025,67	0,00

DESBROCES EN PRÉSTAMOS. ZONA 3								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
0,00	136,73	136,92	0,00	0,00	0,00	0,00	0,00	0,00
5,00	136,48	136,61	0,00	0,00	683,01	0,00	683,81	0,00
10,00	136,64	136,76	0,00	0,00	1.365,79	0,00	1.367,23	0,00
15,00	136,79	137,05	0,00	0,00	2.049,37	0,00	2.051,77	0,00
20,00	136,94	137,14	0,00	0,00	2.733,70	0,00	2.737,24	0,00
25,00	137,08	137,16	0,00	0,00	3.418,75	0,00	3.422,98	0,00
30,00	137,27	137,31	0,00	0,00	4.104,64	0,00	4.109,16	0,00
35,00	137,46	137,49	0,00	0,00	4.791,47	0,00	4.796,15	0,00
40,00	137,64	137,65	0,00	0,00	5.479,20	0,00	5.483,99	0,00
45,00	137,79	137,80	0,00	0,00	6.167,77	0,00	6.172,63	0,00
50,00	137,98	138,00	0,00	0,00	6.857,19	0,00	6.862,12	0,00
55,00	138,33	138,38	0,00	0,00	7.547,95	0,00	7.553,07	0,00
60,00	138,12	138,29	0,00	0,00	8.239,07	0,00	8.244,76	0,00
65,00	137,93	138,20	0,00	0,00	8.929,20	0,00	8.935,99	0,00
70,00	137,99	138,21	0,00	0,00	9.619,01	0,00	9.627,01	0,00
75,00	138,09	138,31	0,00	0,00	10.309,20	0,00	10.318,33	0,00
80,00	138,40	138,59	0,00	0,00	11.000,41	0,00	11.010,59	0,00
85,00	138,75	139,04	0,00	0,00	11.693,26	0,00	11.704,66	0,00
90,00	139,02	139,22	0,00	0,00	12.387,67	0,00	12.400,28	0,00
95,00	139,04	139,31	0,00	0,00	13.082,81	0,00	13.096,60	0,00
100,00	139,21	139,56	0,00	0,00	13.778,43	0,00	13.793,80	0,00
102,00	139,33	139,72	0,00	0,00	14.056,97	0,00	14.073,08	0,00
105,00	136,28	136,67	0,00	0,00	14.470,39	0,00	14.487,67	0,00
106,71	134,57	134,97	0,00	0,00	14.701,96	0,00	14.719,92	0,00
110,00	130,88	131,28	0,00	0,00	15.138,62	0,00	15.157,90	0,00
115,00	125,47	125,80	0,00	0,00	15.779,49	0,00	15.800,59	0,00
120,00	119,94	120,22	0,00	0,00	16.393,01	0,00	16.415,65	0,00
125,00	114,57	114,93	0,00	0,00	16.979,28	0,00	17.003,51	0,00
130,00	109,23	109,32	0,00	0,00	17.538,77	0,00	17.564,12	0,00
135,00	109,06	109,14	0,00	0,00	18.084,49	0,00	18.110,26	0,00
140,00	108,89	108,95	0,00	0,00	18.629,35	0,00	18.655,47	0,00
145,00	108,74	108,79	0,00	0,00	19.173,41	0,00	19.199,79	0,00
150,00	108,65	108,70	0,00	0,00	19.716,89	0,00	19.743,50	0,00
155,00	108,55	108,58	0,00	0,00	20.259,88	0,00	20.286,69	0,00
160,00	108,44	108,46	0,00	0,00	20.802,34	0,00	20.829,29	0,00
165,00	108,38	108,48	0,00	0,00	21.344,37	0,00	21.371,64	0,00
170,00	108,32	108,38	0,00	0,00	21.886,11	0,00	21.913,78	0,00
175,00	108,28	108,30	0,00	0,00	22.427,61	0,00	22.455,49	0,00
180,00	108,25	108,27	0,00	0,00	22.968,92	0,00	22.996,92	0,00
185,00	108,25	108,29	0,00	0,00	23.510,16	0,00	23.538,32	0,00
190,00	108,24	108,30	0,00	0,00	24.051,39	0,00	24.079,79	0,00
195,00	108,25	108,34	0,00	0,00	24.592,63	0,00	24.621,40	0,00
200,00	108,33	108,46	0,00	0,00	25.134,08	0,00	25.163,40	0,00
205,00	108,11	108,43	0,00	0,00	25.675,18	0,00	25.705,62	0,00
210,00	105,61	106,18	0,00	0,00	26.209,47	0,00	26.242,13	0,00
215,00	92,15	92,24	11,51	11,71	26.703,87	28,77	26.738,17	29,28
220,00	76,93	76,96	26,80	26,94	27.126,57	124,54	27.161,16	125,91
225,00	77,27	77,30	26,54	26,61	27.512,05	257,88	27.546,79	259,79
230,00	77,47	77,50	26,41	26,53	27.898,88	390,24	27.933,79	392,64
235,00	75,40	75,44	28,54	28,76	28.281,05	527,62	28.316,15	530,86
240,00	73,73	73,80	30,28	30,58	28.653,90	674,68	28.689,26	679,21
245,00	73,80	74,11	30,27	30,66	29.022,74	826,07	29.059,04	832,30
250,00	74,29	74,82	30,15	30,57	29.392,96	977,14	29.431,35	985,37
252,00	74,99	75,62	29,62	29,96	29.542,24	1.036,90	29.581,79	1.045,91
255,00	75,93	76,98	31,83	32,25	29.768,61	1.129,07	29.810,68	1.139,22
260,00	77,02	77,87	36,05	36,41	30.150,98	1.298,78	30.197,80	1.310,86
265,00	72,78	73,92	45,63	46,32	30.525,47	1.502,98	30.577,28	1.517,69
270,00	38,34	39,88	85,36	85,94	30.803,25	1.830,46	30.861,78	1.848,36
275,00	17,89	19,69	111,15	111,93	30.943,82	2.321,73	31.010,70	2.343,05
280,00	18,85	20,92	115,49	116,70	31.035,68	2.888,33	31.112,21	2.914,63
285,00	19,83	22,21	114,84	116,04	31.132,40	3.464,17	31.220,02	3.496,49
290,00	20,81	23,49	114,19	115,38	31.234,00	4.036,74	31.334,28	4.075,05

DESBROCES EN PRÉSTAMOS. ZONA 4								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
0,00	78,17	78,82	0,00	0,00	0,00	0,00	0,00	0,00
5,00	77,79	78,20	0,00	0,00	389,88	0,00	392,55	0,00
10,00	77,54	77,78	0,00	0,00	778,19	0,00	782,49	0,00
15,00	77,55	77,78	0,00	0,00	1.165,92	0,00	1.171,39	0,00
20,00	77,61	78,05	0,00	0,00	1.553,83	0,00	1.560,98	0,00
25,00	77,64	78,34	0,00	0,00	1.941,94	0,00	1.951,96	0,00
30,00	77,75	78,64	0,00	0,00	2.330,40	0,00	2.344,41	0,00
35,00	77,96	79,03	0,00	0,00	2.719,65	0,00	2.738,57	0,00
40,00	78,10	79,17	0,00	0,00	3.109,80	0,00	3.134,06	0,00
45,00	78,25	79,40	0,00	0,00	3.500,69	0,00	3.530,48	0,00
50,00	78,05	79,09	0,00	0,00	3.891,45	0,00	3.926,70	0,00
55,00	77,59	78,52	0,00	0,00	4.280,53	0,00	4.320,72	0,00
60,00	77,18	77,85	0,00	0,00	4.667,45	0,00	4.711,63	0,00
65,00	77,83	78,51	0,00	0,00	5.053,42	0,00	5.100,64	0,00
70,00	80,22	81,01	0,00	0,00	5.448,54	0,00	5.499,44	0,00
75,00	82,42	82,99	0,00	0,00	5.855,12	0,00	5.909,44	0,00
80,00	84,83	85,45	0,00	0,00	6.273,24	0,00	6.330,55	0,00
85,00	87,30	87,83	0,00	0,00	6.703,56	0,00	6.763,76	0,00
90,00	89,64	90,21	0,00	0,00	7.145,90	0,00	7.208,87	0,00
95,00	92,40	93,08	0,00	0,00	7.601,00	0,00	7.667,10	0,00
100,00	94,85	95,52	0,00	0,00	8.069,12	0,00	8.138,61	0,00
105,00	97,32	97,92	0,00	0,00	8.549,56	0,00	8.622,21	0,00
110,00	99,81	100,33	0,00	0,00	9.042,38	0,00	9.117,83	0,00
115,00	101,39	101,76	0,00	0,00	9.546,83	0,00	9.624,57	0,00
120,00	97,68	97,82	0,00	0,00	10.046,15	0,00	10.125,16	0,00
125,00	93,73	93,85	0,00	0,00	10.524,67	0,00	10.604,34	0,00
130,00	89,81	89,93	0,00	0,00	10.983,51	0,00	11.063,80	0,00
135,00	85,87	86,00	0,00	0,00	11.422,71	0,00	11.503,62	0,00
140,00	81,72	81,80	0,00	0,00	11.841,68	0,00	11.923,10	0,00
145,00	79,23	79,30	0,00	0,00	12.241,77	0,00	12.323,56	0,00
150,00	78,92	78,97	0,00	0,00	12.637,13	0,00	12.719,23	0,00
155,00	78,68	78,72	0,00	0,00	13.031,12	0,00	13.113,46	0,00
160,00	78,41	78,44	0,00	0,00	13.423,84	0,00	13.506,36	0,00
165,00	78,31	78,34	0,00	0,00	13.815,64	0,00	13.898,30	0,00
170,00	78,29	78,32	0,00	0,00	14.207,16	0,00	14.289,95	0,00
175,00	78,30	78,34	0,00	0,00	14.598,65	0,00	14.681,60	0,00
180,00	78,32	78,36	0,00	0,00	14.990,20	0,00	15.073,32	0,00
185,00	78,35	78,39	0,00	0,00	15.381,85	0,00	15.465,19	0,00
190,00	78,38	78,44	0,00	0,00	15.773,67	0,00	15.857,29	0,00
195,00	78,33	78,39	0,00	0,00	16.165,46	0,00	16.249,37	0,00
200,00	78,31	78,37	0,00	0,00	16.557,07	0,00	16.641,28	0,00
205,00	78,42	78,51	0,00	0,00	16.948,91	0,00	17.033,48	0,00
210,00	78,57	78,68	0,00	0,00	17.341,39	0,00	17.426,45	0,00
215,00	78,78	78,96	0,00	0,00	17.734,77	0,00	17.820,55	0,00
220,00	78,90	79,18	0,00	0,00	18.128,96	0,00	18.215,88	0,00
225,00	79,02	79,27	0,00	0,00	18.523,75	0,00	18.611,99	0,00
230,00	79,07	79,24	0,00	0,00	18.918,98	0,00	19.008,26	0,00
235,00	78,94	79,28	0,00	0,00	19.313,99	0,00	19.404,57	0,00
240,00	72,95	73,76	0,00	0,00	19.697,70	1,50	19.792,48	2,18
245,00	64,99	65,78	0,00	0,00	20.042,56	1,50	20.141,32	2,18
250,00	60,18	60,66	0,00	0,00	20.354,69	1,50	20.456,43	2,18
255,00	55,64	56,20	0,00	0,00	20.644,24	1,50	20.748,57	2,18
260,00	51,07	51,68	0,00	0,00	20.911,00	1,50	21.018,26	2,18
265,00	46,38	47,02	0,00	0,00	21.154,63	1,50	21.265,04	2,18
270,00	43,40	45,69	0,00	0,00	21.375,55	1,50	21.490,93	2,18
275,00	46,38	49,22	0,00	0,00	21.600,01	1,50	21.728,18	2,18
275,50	46,71	49,46	0,00	0,00	21.623,28	1,50	21.752,85	2,18
280,00	45,70	48,50	0,96	1,04	21.831,22	3,67	21.973,25	4,51
285,00	35,32	36,15	11,41	11,54	22.033,77	34,59	22.184,88	35,95
290,00	24,65	25,08	22,20	22,23	22.183,67	118,60	22.337,96	120,36
295,00	14,00	14,33	32,29	32,30	22.280,28	254,82	22.436,48	256,67
300,00	40,85	40,94	4,68	4,72	22.417,40	347,26	22.574,64	349,20

DESBROCES EN PRÉSTAMOS. ZONA 5								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
0,00	9,39	9,39	0,00	0,00	0,00	0,00	0,00	0,00
5,00	17,13	17,14	0,00	0,00	66,30	0,00	66,33	0,00
10,00	24,59	24,60	0,00	0,00	170,62	0,00	170,69	0,00
15,00	38,54	38,80	0,00	0,00	328,46	0,00	329,21	0,00
20,00	51,59	51,94	0,00	0,00	553,80	0,00	556,08	0,00
25,00	56,32	56,65	0,00	0,00	823,58	0,00	827,55	0,00
30,00	61,17	61,30	0,00	0,00	1.117,31	0,00	1.122,40	0,00
35,00	62,75	63,21	0,00	0,00	1.427,11	0,00	1.433,67	0,00
40,00	64,38	64,91	0,00	0,00	1.744,94	0,00	1.753,97	0,00
45,00	63,28	63,63	0,00	0,00	2.064,09	0,00	2.075,33	0,00
50,00	62,49	62,87	0,00	0,00	2.378,53	0,00	2.391,58	0,00
55,00	61,54	61,64	0,00	0,00	2.688,61	0,00	2.702,84	0,00
60,00	60,48	60,82	0,00	0,00	2.993,65	0,00	3.008,99	0,00
65,00	59,35	59,44	0,00	0,00	3.293,23	0,00	3.309,65	0,00
70,00	58,27	58,36	0,00	0,00	3.587,28	0,00	3.604,15	0,00
75,00	57,31	57,41	0,00	0,00	3.876,22	0,00	3.893,57	0,00
80,00	56,22	56,59	0,00	0,00	4.160,06	0,00	4.178,59	0,00
85,00	55,69	55,87	0,00	0,00	4.439,84	0,00	4.459,74	0,00
90,00	54,78	54,85	0,00	0,00	4.716,02	0,00	4.736,52	0,00
95,00	54,58	54,91	0,00	0,00	4.989,42	0,00	5.010,92	0,00
100,00	54,72	55,04	0,00	0,00	5.262,67	0,00	5.285,81	0,00
105,00	54,42	54,68	0,00	0,00	5.535,51	0,00	5.560,12	0,00
110,00	54,09	54,36	0,00	0,00	5.806,79	0,00	5.832,72	0,00
115,00	55,41	55,72	0,00	0,00	6.080,54	0,00	6.107,92	0,00
120,00	57,17	57,35	0,00	0,00	6.361,98	0,00	6.390,59	0,00
125,00	61,32	61,72	0,00	0,00	6.658,19	0,00	6.688,27	0,00
130,00	64,99	65,40	0,00	0,00	6.973,96	0,00	7.006,09	0,00
135,00	73,71	73,89	0,00	0,00	7.320,72	0,00	7.354,33	0,00
140,00	82,78	83,00	0,00	0,00	7.711,93	0,00	7.746,55	0,00
145,00	89,46	89,72	0,00	0,00	8.142,51	0,00	8.178,34	0,00
150,00	95,81	96,10	0,00	0,00	8.605,68	0,00	8.642,89	0,00
155,00	100,50	101,01	0,00	0,00	9.096,43	0,00	9.135,67	0,00
160,00	104,51	104,61	0,00	0,00	9.608,96	0,00	9.649,71	0,00
165,00	107,10	107,17	0,00	0,00	10.137,99	0,00	10.179,16	0,00
170,00	109,69	109,74	0,00	0,00	10.679,95	0,00	10.721,46	0,00
175,00	112,01	112,06	0,00	0,00	11.234,18	0,00	11.275,96	0,00
180,00	115,04	115,29	0,00	0,00	11.801,79	0,00	11.844,34	0,00
185,00	116,56	116,92	0,00	0,00	12.380,79	0,00	12.424,86	0,00
190,00	117,49	117,88	0,00	0,00	12.965,92	0,00	13.011,86	0,00
195,00	118,46	118,71	0,00	0,00	13.555,81	0,00	13.603,34	0,00
200,00	119,84	119,88	0,00	0,00	14.151,58	0,00	14.199,80	0,00
205,00	120,65	120,68	0,00	0,00	14.752,81	0,00	14.801,18	0,00
210,00	121,66	121,69	0,00	0,00	15.358,59	0,00	15.407,09	0,00
215,00	122,64	122,81	0,00	0,00	15.969,36	0,00	16.018,33	0,00
220,00	123,60	123,90	0,00	0,00	16.584,96	0,00	16.635,11	0,00
225,00	124,48	124,85	0,00	0,00	17.205,16	0,00	17.256,99	0,00
230,00	125,10	125,60	0,00	0,00	17.829,11	0,00	17.883,13	0,00
235,00	124,76	125,37	0,00	0,00	18.453,76	0,00	18.510,57	0,00
240,00	124,41	124,93	0,00	0,00	19.076,69	0,00	19.136,34	0,00
245,00	123,67	124,09	0,00	0,00	19.696,90	0,00	19.758,90	0,00
250,00	122,93	123,26	0,00	0,00	20.313,41	0,00	20.377,28	0,00
255,00	121,97	122,35	0,00	0,00	20.925,67	0,00	20.991,30	0,00
260,00	121,06	121,55	0,00	0,00	21.533,26	0,00	21.601,03	0,00
265,00	119,99	120,12	0,00	0,00	22.135,89	0,00	22.205,21	0,00
270,00	118,80	118,93	0,00	0,00	22.732,87	0,00	22.802,83	0,00
275,00	117,64	117,76	0,00	0,00	23.323,96	0,00	23.394,55	0,00
280,00	116,39	116,51	0,00	0,00	23.909,03	0,00	23.980,23	0,00
285,00	115,20	115,32	0,00	0,00	24.487,99	0,00	24.559,82	0,00
290,00	113,99	114,11	0,00	0,00	25.060,96	0,00	25.133,40	0,00
295,00	113,85	114,10	0,00	0,00	25.630,54	0,00	25.703,92	0,00
300,00	113,41	113,99	0,00	0,00	26.198,67	0,00	26.274,15	0,00
305,00	114,70	115,31	0,00	0,00	26.768,93	0,00	26.847,41	0,00
310,00	115,80	116,41	0,00	0,00	27.345,16	0,00	27.426,71	0,00
315,00	118,90	119,51	0,00	0,00	27.931,91	0,00	28.016,51	0,00
320,00	122,01	122,34	0,00	0,00	28.534,20	0,00	28.621,12	0,00
325,00	127,35	127,67	0,00	0,00	29.157,59	0,00	29.246,13	0,00
330,00	132,68	133,00	0,00	0,00	29.807,65	0,00	29.897,80	0,00
335,00	135,30	135,62	0,00	0,00	30.477,60	0,00	30.569,34	0,00
340,00	137,93	138,24	0,00	0,00	31.160,67	0,00	31.253,97	0,00
345,00	139,81	140,11	0,00	0,00	31.855,00	0,00	31.949,85	0,00
350,00	141,66	141,97	0,00	0,00	32.558,66	0,00	32.655,06	0,00
355,00	146,33	146,64	0,00	0,00	33.278,62	0,00	33.376,57	0,00
360,00	151,00	151,31	0,00	0,00	34.021,94	0,00	34.121,44	0,00
365,00	155,57	155,88	0,00	0,00	34.788,36	0,00	34.889,42	0,00
370,00	160,14	160,45	0,00	0,00	35.577,64	0,00	35.680,25	0,00
375,00	163,14	163,45	0,00	0,00	36.385,83	0,00	36.489,99	0,00

DESBROCES EN PRÉSTAMOS. ZONA 5								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
380,000	166,135	166,440	0,000	0,000	37.209,008	0,000	37.314,710	0,000
385,000	167,591	167,900	0,000	0,000	38.043,324	0,000	38.150,562	0,000
390,000	169,048	169,368	0,000	0,000	38.884,922	0,000	38.993,732	0,000
395,000	170,242	170,386	0,000	0,000	39.733,147	0,000	39.843,115	0,000
400,000	171,437	171,460	0,000	0,000	40.587,344	0,000	40.697,730	0,000
405,000	172,354	172,364	0,000	0,000	41.446,821	0,000	41.557,291	0,000
410,000	173,271	173,278	0,000	0,000	42.310,885	0,000	42.421,395	0,000
415,000	173,957	173,962	0,000	0,000	43.178,958	0,000	43.289,493	0,000
420,000	174,643	174,646	0,000	0,000	44.050,458	0,000	44.161,013	0,000
425,000	175,339	175,342	0,000	0,000	44.925,411	0,000	45.035,985	0,000
430,000	176,034	176,038	0,000	0,000	45.803,843	0,000	45.914,435	0,000
435,000	178,135	178,139	0,000	0,000	46.689,267	0,000	46.799,877	0,000
440,000	180,237	180,240	0,000	0,000	47.585,198	0,000	47.695,826	0,000
445,000	184,460	184,466	0,000	0,000	48.496,940	0,000	48.607,592	0,000
450,000	188,706	188,712	0,000	0,000	49.429,854	0,000	49.540,539	0,000
455,000	195,789	195,800	0,000	0,000	50.391,090	0,000	50.501,821	0,000
460,000	202,677	202,685	0,000	0,000	51.387,255	0,000	51.498,035	0,000
465,000	214,540	214,564	0,000	0,000	52.430,298	0,000	52.541,157	0,000
470,000	226,365	226,425	0,000	0,000	53.532,562	0,000	53.643,629	0,000
475,000	248,204	248,547	0,000	0,000	54.718,985	0,000	54.831,058	0,000
480,000	270,605	271,526	0,000	0,000	56.016,006	0,000	56.131,239	0,000
485,000	323,202	324,119	0,000	0,000	57.500,522	0,000	57.620,351	0,000
490,000	374,944	375,662	0,000	0,000	59.245,887	0,000	59.369,805	0,000
495,000	406,032	406,391	0,000	0,000	61.198,329	0,000	61.324,938	0,000
500,000	412,469	413,101	0,000	0,000	63.244,582	0,000	63.373,669	0,000
505,000	393,253	393,902	0,000	0,000	65.258,886	0,000	65.391,178	0,000
510,000	288,854	289,178	0,000	0,000	66.964,153	0,000	67.098,879	0,000
515,000	258,672	258,711	0,000	0,000	68.332,969	0,000	68.468,603	0,000
520,000	229,348	229,421	0,000	0,000	69.553,019	0,000	69.688,933	0,000
525,000	215,086	215,400	0,000	0,000	70.664,105	0,000	70.800,984	0,000
530,000	200,797	201,111	0,000	0,000	71.703,813	0,000	71.842,262	0,000
535,000	191,711	192,025	0,000	0,000	72.685,083	0,000	72.825,104	0,000
540,000	182,716	183,031	0,000	0,000	73.621,151	0,000	73.762,745	0,000
545,000	176,614	176,920	0,000	0,000	74.519,476	0,000	74.662,623	0,000
550,000	170,511	170,680	0,000	0,000	75.387,289	0,000	75.531,621	0,000
555,000	165,872	165,944	0,000	0,000	76.228,246	0,000	76.373,180	0,000
560,000	161,736	161,816	0,000	0,000	77.047,269	0,000	77.192,580	0,000
565,000	158,790	158,862	0,000	0,000	77.848,586	0,000	77.994,277	0,000
570,000	155,808	155,868	0,000	0,000	78.635,081	0,000	78.781,103	0,000
575,000	154,323	154,409	0,000	0,000	79.410,408	0,000	79.556,797	0,000
580,000	152,839	152,988	0,000	0,000	80.178,312	0,000	80.325,289	0,000
585,000	149,035	149,285	0,000	0,000	80.932,995	0,000	81.080,973	0,000
590,000	145,231	145,549	0,000	0,000	81.668,659	0,000	81.818,058	0,000
595,000	142,159	142,477	0,000	0,000	82.387,134	0,000	82.538,124	0,000
600,000	139,089	139,406	0,000	0,000	83.090,254	0,000	83.242,832	0,000
605,000	137,019	137,336	0,000	0,000	83.780,523	0,000	83.934,687	0,000
610,000	134,954	135,270	0,000	0,000	84.460,455	0,000	84.616,204	0,000
615,000	133,713	134,029	0,000	0,000	85.132,123	0,000	85.289,453	0,000
620,000	132,484	132,800	0,000	0,000	85.797,615	0,000	85.956,525	0,000
625,000	149,083	149,399	0,000	0,000	86.501,531	0,000	86.662,022	0,000
630,000	165,818	166,135	0,000	0,000	87.288,783	0,000	87.450,856	0,000
635,000	163,790	164,106	0,000	0,000	88.112,805	0,000	88.276,458	0,000
640,000	161,808	162,123	0,000	0,000	88.926,801	0,000	89.092,031	0,000
645,000	160,028	160,342	0,000	0,000	89.731,392	0,000	89.898,196	0,000
650,000	158,247	158,561	0,000	0,000	90.527,080	0,000	90.695,456	0,000
655,000	156,827	157,141	0,000	0,000	91.314,767	0,000	91.484,712	0,000
660,000	155,430	155,744	0,000	0,000	92.095,409	0,000	92.266,925	0,000
665,000	154,446	154,760	0,000	0,000	92.870,098	0,000	93.043,182	0,000
670,000	153,456	153,770	0,000	0,000	93.639,854	0,000	93.814,507	0,000
675,000	152,884	153,198	0,000	0,000	94.405,706	0,000	94.581,927	0,000
680,000	152,322	152,635	0,000	0,000	95.168,722	0,000	95.346,510	0,000
685,000	152,160	152,474	0,000	0,000	95.929,928	0,000	96.109,283	0,000
690,000	152,003	152,317	0,000	0,000	96.690,337	0,000	96.871,258	0,000
695,000	152,244	152,557	0,000	0,000	97.450,956	0,000	97.633,443	0,000
700,000	152,492	152,805	0,000	0,000	98.212,795	0,000	98.396,848	0,000
705,000	153,146	153,459	0,000	0,000	98.976,889	0,000	99.162,508	0,000
710,000	153,794	154,107	0,000	0,000	99.744,237	0,000	99.931,422	0,000
715,000	154,880	155,194	0,000	0,000	100.515,922	0,000	100.704,674	0,000
720,000	155,959	156,273	0,000	0,000	101.293,020	0,000	101.483,340	0,000
725,000	157,525	157,839	0,000	0,000	102.076,731	0,000	102.268,620	0,000
730,000	159,124	159,438	0,000	0,000	102.868,354	0,000	103.061,813	0,000
735,000	161,431	161,623	0,000	0,000	103.669,741	0,000	103.864,467	0,000
740,000	162,799	162,827	0,000	0,000	104.480,316	0,000	104.675,592	0,000
745,000	165,706	165,734	0,000	0,000	105.301,579	0,000	105.496,995	0,000
750,000	168,533	168,563	0,000	0,000	106.137,176	0,000	106.332,740	0,000
755,000	172,215	172,247	0,000	0,000	106.989,044	0,000	107.184,767	0,000

DESBROCES EN PRÉSTAMOS. ZONA 5								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
760,000	175,766	175,797	0,000	0,000	107.858,995	0,000	108.054,878	0,000
765,000	179,747	179,783	0,000	0,000	108.747,777	0,000	108.943,828	0,000
770,000	183,496	183,531	0,000	0,000	109.655,886	0,000	109.852,112	0,000
775,000	187,202	187,237	0,000	0,000	110.582,632	0,000	110.779,031	0,000
780,000	190,875	190,919	0,000	0,000	111.527,825	0,000	111.724,421	0,000
785,000	195,341	195,476	0,000	0,000	112.493,365	0,000	112.690,408	0,000
790,000	199,732	200,041	0,000	0,000	113.481,045	0,000	113.679,200	0,000
795,000	204,374	204,685	0,000	0,000	114.491,309	0,000	114.691,014	0,000
800,000	209,023	209,335	0,000	0,000	115.524,801	0,000	115.726,063	0,000
805,000	213,954	214,268	0,000	0,000	116.582,244	0,000	116.785,071	0,000
810,000	218,835	219,150	0,000	0,000	117.664,217	0,000	117.868,616	0,000
815,000	223,929	224,246	0,000	0,000	118.771,128	0,000	118.977,105	0,000
820,000	229,182	229,502	0,000	0,000	119.903,907	0,000	120.111,474	0,000
825,000	234,785	235,116	0,000	0,000	121.063,825	0,000	121.273,018	0,000
830,000	240,394	241,043	0,000	0,000	122.251,773	0,000	122.463,416	0,000
835,000	246,390	247,023	0,000	0,000	123.468,735	0,000	123.683,581	0,000
840,000	252,393	253,017	0,000	0,000	124.715,693	0,000	124.933,681	0,000
845,000	258,839	259,325	0,000	0,000	125.993,773	0,000	126.214,535	0,000
850,000	264,763	265,383	0,000	0,000	127.302,779	0,000	127.526,305	0,000
855,000	272,229	273,157	0,000	0,000	128.645,260	0,000	128.872,657	0,000
860,000	280,337	281,647	0,000	0,000	130.026,676	0,000	130.259,667	0,000
865,000	281,695	283,000	0,000	0,000	131.431,758	0,000	131.671,285	0,000
870,000	283,057	284,355	0,000	0,000	132.843,640	0,000	133.089,673	0,000
875,000	284,526	285,823	0,000	0,000	134.262,597	0,000	134.515,118	0,000
880,000	285,825	287,110	0,000	0,000	135.688,474	0,000	135.947,450	0,000
885,000	286,730	288,015	0,000	0,000	137.119,863	0,000	137.385,262	0,000
890,000	287,517	288,797	0,000	0,000	138.555,481	0,000	138.827,291	0,000
895,000	198,958	199,035	0,000	0,000	139.771,666	0,000	140.046,871	0,000
900,000	118,582	118,782	0,000	0,000	140.565,516	0,000	140.841,413	0,000
905,000	111,386	111,790	0,000	0,000	141.140,436	0,000	141.417,842	0,000
910,000	105,399	105,866	0,000	0,000	141.682,399	0,000	141.961,982	0,000
915,000	100,617	100,953	0,000	0,000	142.197,440	0,000	142.479,028	0,000
920,000	95,835	96,148	0,000	0,000	142.688,572	0,000	142.971,779	0,000
925,000	93,336	93,648	0,000	0,000	143.161,499	0,000	143.446,269	0,000
930,000	90,819	91,132	0,000	0,000	143.621,886	0,000	143.908,220	0,000
935,000	89,703	90,015	0,000	0,000	144.073,191	0,000	144.361,089	0,000
940,000	88,590	88,905	0,000	0,000	144.518,923	0,000	144.808,389	0,000
945,000	88,711	89,033	0,000	0,000	144.962,175	0,000	145.253,233	0,000
950,000	88,887	89,218	0,000	0,000	145.406,171	0,000	145.698,859	0,000
955,000	89,576	89,909	0,000	0,000	145.852,328	0,000	146.146,675	0,000
960,000	90,265	90,602	0,000	0,000	146.301,931	0,000	146.597,954	0,000
965,000	90,323	90,666	0,000	0,000	146.753,403	0,000	147.051,123	0,000
970,000	90,381	90,728	0,000	0,000	147.205,163	0,000	147.504,608	0,000
975,000	89,824	90,181	0,000	0,000	147.655,677	0,000	147.956,881	0,000
980,000	89,249	89,614	0,000	0,000	148.103,360	0,000	148.406,370	0,000
985,000	88,047	88,429	0,000	0,000	148.546,598	0,000	148.851,478	0,000
990,000	86,837	87,236	0,000	0,000	148.983,807	0,000	149.290,643	0,000
995,000	84,347	84,817	0,000	0,000	149.411,767	0,000	149.720,776	0,000
1.000,000	81,237	81,667	0,000	0,000	149.825,725	0,000	150.136,986	0,000
1.005,000	72,859	73,201	0,000	0,000	150.210,964	0,000	150.524,156	0,000
1.010,000	64,223	64,558	0,000	0,000	150.553,668	0,000	150.868,553	0,000
1.015,000	59,219	59,553	0,000	0,000	150.862,272	0,000	151.178,831	0,000
1.020,000	53,305	53,414	0,000	0,000	151.143,581	0,000	151.461,250	0,000
1.025,000	57,470	57,515	0,000	0,000	151.420,517	0,000	151.738,574	0,000
1.030,000	61,636	61,676	0,000	0,000	151.718,282	0,000	152.036,554	0,000
1.035,000	61,540	61,579	0,000	0,000	152.026,222	0,000	152.344,692	0,000
1.040,000	61,532	61,565	0,000	0,000	152.333,902	0,000	152.652,552	0,000
1.045,000	64,512	64,545	0,000	0,000	152.649,014	0,000	152.967,828	0,000
1.050,000	67,627	67,657	0,000	0,000	152.979,362	0,000	153.298,333	0,000
1.055,000	67,572	67,600	0,000	0,000	153.317,357	0,000	153.636,474	0,000
1.060,000	67,477	67,505	0,000	0,000	153.654,979	0,000	153.974,234	0,000
1.065,000	67,320	67,348	0,000	0,000	153.991,972	0,000	154.311,366	0,000
1.070,000	67,169	67,198	0,000	0,000	154.328,195	0,000	154.647,732	0,000
1.075,000	67,013	67,042	0,000	0,000	154.663,652	0,000	154.983,332	0,000
1.080,000	66,856	66,886	0,000	0,000	154.998,326	0,000	155.318,151	0,000
1.085,000	66,512	66,540	0,000	0,000	155.331,747	0,000	155.651,717	0,000
1.090,000	66,255	66,285	0,000	0,000	155.663,663	0,000	155.983,781	0,000
1.095,000	66,025	66,057	0,000	0,000	155.994,362	0,000	156.314,637	0,000
1.100,000	65,745	65,779	0,000	0,000	156.323,788	0,000	156.644,229	0,000
1.105,000	65,475	65,510	0,000	0,000	156.651,837	0,000	156.972,452	0,000
1.110,000	65,249	65,285	0,000	0,000	156.978,648	0,000	157.299,439	0,000
1.115,000	65,390	65,426	0,000	0,000	157.305,247	0,000	157.626,215	0,000
1.120,000	65,524	65,559	0,000	0,000	157.632,532	0,000	157.953,677	0,000
1.125,000	66,064	66,099	0,000	0,000	157.961,502	0,000	158.282,822	0,000
1.130,000	66,607	66,643	0,000	0,000	158.293,179	0,000	158.614,678	0,000
1.135,000	67,604	67,641	0,000	0,000	158.628,705	0,000	158.950,389	0,000

DESBROCES EN PRÉSTAMOS. ZONA 5								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
1.140,000	68,601	68,641	0,000	0,000	158.969,217	0,000	159.291,095	0,000
1.145,000	70,212	70,273	0,000	0,000	159.316,249	0,000	159.638,380	0,000
1.150,000	71,855	71,939	0,000	0,000	159.671,416	0,000	159.993,910	0,000
1.155,000	74,220	74,306	0,000	0,000	160.036,604	0,000	160.359,522	0,000
1.160,000	77,371	77,502	0,000	0,000	160.415,582	0,000	160.739,043	0,000
1.165,000	80,660	80,698	0,000	0,000	160.810,662	0,000	161.134,542	0,000
1.170,000	83,798	83,838	0,000	0,000	161.221,809	0,000	161.545,881	0,000
1.175,000	87,658	87,704	0,000	0,000	161.650,449	0,000	161.974,736	0,000
1.180,000	91,514	91,569	0,000	0,000	162.098,378	0,000	162.422,917	0,000
1.185,000	95,998	96,161	0,000	0,000	162.567,157	0,000	162.892,242	0,000
1.190,000	100,324	100,645	0,000	0,000	163.057,960	0,000	163.384,258	0,000
1.195,000	105,897	106,218	0,000	0,000	163.573,511	0,000	163.901,417	0,000
1.200,000	111,018	111,108	0,000	0,000	164.115,800	0,000	164.444,731	0,000
1.205,000	117,038	117,064	0,000	0,000	164.685,941	0,000	165.015,162	0,000
1.210,000	123,779	123,809	0,000	0,000	165.287,984	0,000	165.617,345	0,000
1.215,000	130,140	130,182	0,000	0,000	165.922,780	0,000	166.252,321	0,000
1.220,000	136,517	136,726	0,000	0,000	166.589,422	0,000	166.919,590	0,000
1.225,000	140,884	141,222	0,000	0,000	167.282,924	0,000	167.614,459	0,000
1.230,000	145,158	145,498	0,000	0,000	167.998,028	0,000	168.331,259	0,000
1.235,000	148,263	148,604	0,000	0,000	168.731,580	0,000	169.066,514	0,000
1.240,000	151,257	151,604	0,000	0,000	169.480,378	0,000	169.817,036	0,000
1.245,000	152,681	152,883	0,000	0,000	170.240,222	0,000	170.578,255	0,000
1.250,000	154,089	154,148	0,000	0,000	171.007,149	0,000	171.345,833	0,000
1.255,000	155,196	155,268	0,000	0,000	171.780,361	0,000	172.119,373	0,000
1.260,000	156,303	156,392	0,000	0,000	172.559,109	0,000	172.898,522	0,000
1.265,000	156,558	156,723	0,000	0,000	173.341,263	0,000	173.681,310	0,000
1.270,000	156,577	156,972	0,000	0,000	174.124,100	0,000	174.465,548	0,000
1.275,000	156,182	156,525	0,000	0,000	174.905,995	0,000	175.249,293	0,000
1.280,000	155,852	156,180	0,000	0,000	175.686,079	0,000	176.031,055	0,000
1.285,000	155,585	155,915	0,000	0,000	176.464,671	0,000	176.811,291	0,000
1.290,000	155,318	155,650	0,000	0,000	177.241,930	0,000	177.590,202	0,000
1.295,000	152,144	152,478	0,000	0,000	178.010,586	0,000	178.360,520	0,000
1.300,000	148,943	149,078	0,000	0,000	178.763,303	0,000	179.114,410	0,000
1.305,000	140,719	140,760	0,000	0,000	179.487,459	0,000	179.839,007	0,000
1.310,000	133,639	133,683	0,000	0,000	180.173,354	0,000	180.525,116	0,000
1.315,000	128,995	129,045	0,000	0,000	180.829,937	0,000	181.181,936	0,000
1.320,000	124,316	124,373	0,000	0,000	181.463,213	0,000	181.815,480	0,000
1.325,000	121,117	121,184	0,000	0,000	182.076,796	0,000	182.429,372	0,000
1.330,000	117,661	117,733	0,000	0,000	182.673,743	0,000	183.026,665	0,000
1.335,000	115,164	115,243	0,000	0,000	183.255,806	0,000	183.609,105	0,000
1.340,000	112,607	112,694	0,000	0,000	183.825,232	0,000	184.178,946	0,000
1.345,000	111,181	111,270	0,000	0,000	184.384,701	0,000	184.738,855	0,000
1.350,000	109,870	109,962	0,000	0,000	184.937,329	0,000	185.291,935	0,000
1.355,000	108,854	108,949	0,000	0,000	185.484,139	0,000	185.839,214	0,000
1.360,000	107,792	107,934	0,000	0,000	186.025,754	0,000	186.381,422	0,000
1.365,000	106,514	106,915	0,000	0,000	186.561,520	0,000	186.918,546	0,000
1.370,000	105,237	105,576	0,000	0,000	187.090,899	0,000	187.449,773	0,000
1.375,000	103,955	104,296	0,000	0,000	187.613,880	0,000	187.974,451	0,000
1.380,000	102,673	103,016	0,000	0,000	188.130,451	0,000	188.492,731	0,000
1.385,000	101,463	101,808	0,000	0,000	188.640,791	0,000	189.004,790	0,000
1.390,000	100,252	100,599	0,000	0,000	189.145,077	0,000	189.510,808	0,000
1.395,000	99,642	99,992	0,000	0,000	189.644,812	0,000	190.012,285	0,000
1.400,000	99,105	99,438	0,000	0,000	190.141,679	0,000	190.510,860	0,000
1.405,000	99,590	99,924	0,000	0,000	190.638,417	0,000	191.009,267	0,000
1.410,000	100,049	100,381	0,000	0,000	191.137,515	0,000	191.510,029	0,000
1.415,000	100,939	101,270	0,000	0,000	191.639,984	0,000	192.014,157	0,000
1.420,000	101,833	102,041	0,000	0,000	192.146,915	0,000	192.522,435	0,000
1.425,000	102,832	102,954	0,000	0,000	192.658,576	0,000	193.034,924	0,000
1.430,000	103,636	103,731	0,000	0,000	193.174,745	0,000	193.551,637	0,000
1.435,000	105,752	105,823	0,000	0,000	193.698,215	0,000	194.075,522	0,000
1.440,000	107,982	108,030	0,000	0,000	194.232,550	0,000	194.610,157	0,000
1.445,000	110,938	110,981	0,000	0,000	194.779,853	0,000	195.157,686	0,000
1.450,000	113,987	114,031	0,000	0,000	195.342,167	0,000	195.720,217	0,000
1.455,000	116,054	116,126	0,000	0,000	195.917,270	0,000	196.295,610	0,000
1.460,000	117,997	118,073	0,000	0,000	196.502,399	0,000	196.881,107	0,000
1.465,000	118,181	118,255	0,000	0,000	197.092,844	0,000	197.471,925	0,000
1.470,000	118,372	118,423	0,000	0,000	197.684,227	0,000	198.063,621	0,000
1.475,000	116,791	116,844	0,000	0,000	198.272,135	0,000	198.651,790	0,000
1.480,000	115,389	115,577	0,000	0,000	198.852,585	0,000	199.232,843	0,000
1.485,000	112,242	112,341	0,000	0,000	199.421,661	0,000	199.802,637	0,000
1.490,000	109,277	109,520	0,000	0,000	199.975,457	0,000	200.357,288	0,000
1.495,000	104,369	104,698	0,000	0,000	200.509,570	0,000	200.892,833	0,000
1.500,000	99,462	99,880	0,000	0,000	201.019,147	0,000	201.404,278	0,000
1.505,000	95,376	96,012	0,000	0,000	201.506,244	0,000	201.894,007	0,000
1.510,000	91,780	92,291	0,000	0,000	201.974,135	0,000	202.364,764	0,000
1.515,000	88,549	88,884	0,000	0,000	202.424,956	0,000	202.817,701	0,000

DESBROCES EN PRÉSTAMOS. ZONA 5								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
1.520,000	85,323	85,568	0,000	0,000	202.859,635	0,000	203.253,833	0,000
1.525,000	82,998	83,398	0,000	0,000	203.280,436	0,000	203.676,249	0,000
1.530,000	80,837	81,353	0,000	0,000	203.690,023	0,000	204.088,127	0,000
1.535,000	78,921	79,329	0,000	0,000	204.089,418	0,000	204.489,832	0,000
1.540,000	76,854	77,091	0,000	0,000	204.478,854	0,000	204.880,882	0,000
1.545,000	74,707	74,920	0,000	0,000	204.857,757	0,000	205.260,910	0,000
1.550,000	72,546	72,738	0,000	0,000	205.225,889	0,000	205.630,055	0,000
1.555,000	69,699	69,881	0,000	0,000	205.581,501	0,000	205.986,603	0,000
1.560,000	66,859	67,037	0,000	0,000	205.922,898	0,000	206.328,897	0,000
1.565,000	63,233	63,375	0,000	0,000	206.248,129	0,000	206.654,927	0,000
1.570,000	59,610	59,728	0,000	0,000	206.555,236	0,000	206.962,685	0,000
1.575,000	55,836	55,962	0,000	0,000	206.843,852	0,000	207.251,909	0,000
1.580,000	52,117	52,251	0,000	0,000	207.113,736	0,000	207.522,442	0,000
1.585,000	49,062	49,200	0,000	0,000	207.366,684	0,000	207.776,071	0,000
1.590,000	46,102	46,242	0,000	0,000	207.604,593	0,000	208.014,676	0,000
1.595,000	44,147	44,313	0,000	0,000	207.830,216	0,000	208.241,064	0,000
1.600,000	42,131	42,351	0,000	0,000	208.045,912	0,000	208.457,724	0,000
1.605,000	40,604	40,967	0,000	0,000	208.252,751	0,000	208.666,018	0,000
1.610,000	39,339	39,709	0,000	0,000	208.452,610	0,000	208.867,707	0,000
1.615,000	39,090	39,466	0,000	0,000	208.648,682	0,000	209.065,645	0,000
1.620,000	38,840	39,230	0,000	0,000	208.843,505	0,000	209.262,384	0,000
1.625,000	38,729	39,167	0,000	0,000	209.037,427	0,000	209.458,377	0,000
1.630,000	38,618	38,994	0,000	0,000	209.230,795	0,000	209.653,779	0,000
1.635,000	38,361	38,760	0,000	0,000	209.423,244	0,000	209.848,165	0,000
1.640,000	37,941	38,393	0,000	0,000	209.614,001	0,000	210.041,048	0,000
1.645,000	36,927	37,498	0,000	0,000	209.801,172	0,000	210.230,777	0,000
1.650,000	36,316	36,926	0,000	0,000	209.984,279	0,000	210.416,837	0,000
1.655,000	35,738	36,401	0,000	0,000	210.164,414	0,000	210.600,153	0,000
1.660,000	34,830	35,526	0,000	0,000	210.340,836	0,000	210.779,970	0,000
1.665,000	33,825	34,466	0,000	0,000	210.512,474	0,000	210.954,950	0,000
1.670,000	30,835	31,507	0,000	0,000	210.674,125	0,000	211.119,881	0,000
1.675,000	27,783	28,125	0,000	0,000	210.820,671	0,000	211.268,962	0,000
1.680,000	28,115	28,476	0,000	0,000	210.960,417	0,000	211.410,467	0,000
1.685,000	28,997	29,323	0,000	0,000	211.103,198	0,000	211.554,966	0,000
1.690,000	29,822	30,089	0,000	0,000	211.250,245	0,000	211.703,496	0,000
1.695,000	30,623	31,094	0,000	0,000	211.401,357	0,000	211.856,454	0,000
1.700,000	30,373	30,669	0,000	0,000	211.553,848	0,000	212.010,863	0,000
1.705,000	30,719	30,896	0,000	0,000	211.706,578	0,000	212.164,776	0,000
1.710,000	31,158	31,261	0,000	0,000	211.861,271	0,000	212.320,168	0,000
1.715,000	32,011	32,072	0,000	0,000	212.019,193	0,000	212.478,500	0,000
1.720,000	33,835	33,925	0,000	0,000	212.183,807	0,000	212.643,492	0,000
1.725,000	35,746	35,901	0,000	0,000	212.357,761	0,000	212.818,058	0,000
1.730,000	37,654	38,041	0,000	0,000	212.541,262	0,000	213.002,915	0,000
1.735,000	37,780	37,912	0,000	0,000	212.729,847	0,000	213.192,799	0,000
1.740,000	39,324	39,645	0,000	0,000	212.922,609	0,000	213.386,691	0,000
1.745,000	41,214	41,625	0,000	0,000	213.123,955	0,000	213.589,867	0,000
1.750,000	42,981	43,092	0,000	0,000	213.334,442	0,000	213.801,662	0,000
1.755,000	44,820	44,988	0,000	0,000	213.553,945	0,000	214.021,861	0,000
1.760,000	46,350	46,684	0,000	0,000	213.781,870	0,000	214.251,039	0,000
1.765,000	48,795	49,150	0,000	0,000	214.019,731	0,000	214.490,623	0,000
1.770,000	50,514	50,729	0,000	0,000	214.268,003	0,000	214.740,319	0,000
1.775,000	51,864	51,959	0,000	0,000	214.523,948	0,000	214.997,038	0,000
1.780,000	52,951	53,020	0,000	0,000	214.785,987	0,000	215.259,486	0,000
1.785,000	54,602	54,825	0,000	0,000	215.054,871	0,000	215.529,099	0,000
1.790,000	56,281	56,897	0,000	0,000	215.332,079	0,000	215.808,405	0,000
1.795,000	58,251	58,865	0,000	0,000	215.618,408	0,000	216.097,812	0,000
1.800,000	60,021	60,618	0,000	0,000	215.914,090	0,000	216.396,520	0,000
1.805,000	61,727	62,187	0,000	0,000	216.218,461	0,000	216.703,532	0,000
1.810,000	63,422	63,867	0,000	0,000	216.531,336	0,000	217.018,667	0,000
1.815,000	65,096	65,533	0,000	0,000	216.852,633	0,000	217.342,167	0,000
1.820,000	65,926	66,243	0,000	0,000	217.180,188	0,000	217.671,606	0,000
1.825,000	67,074	67,194	0,000	0,000	217.512,686	0,000	218.005,198	0,000
1.830,000	68,588	69,056	0,000	0,000	217.851,842	0,000	218.345,823	0,000
1.835,000	69,662	70,284	0,000	0,000	218.197,468	0,000	218.694,173	0,000
1.840,000	70,726	71,359	0,000	0,000	218.548,437	0,000	219.048,280	0,000
1.845,000	70,568	71,074	0,000	0,000	218.901,672	0,000	219.404,363	0,000
1.850,000	71,083	71,712	0,000	0,000	219.255,801	0,000	219.761,328	0,000
1.855,000	70,387	71,015	0,000	0,000	219.609,478	0,000	220.118,146	0,000
1.860,000	69,333	69,959	0,000	0,000	219.958,778	0,000	220.470,580	0,000
1.865,000	66,754	67,213	0,000	0,000	220.298,994	0,000	220.813,509	0,000
1.870,000	63,897	64,243	0,000	0,000	220.625,621	0,000	221.142,150	0,000
1.875,000	58,964	59,312	0,000	0,000	220.932,773	0,000	221.451,037	0,000
1.880,000	54,051	54,391	0,000	0,000	221.215,311	0,000	221.735,294	0,000
1.885,000	46,659	47,046	0,000	0,000	221.467,087	0,000	221.988,887	0,000
1.890,000	38,157	38,707	0,000	0,000	221.679,129	0,000	222.203,270	0,000
1.894,915	9,357	9,357	0,000	0,000	221.795,894	0,000	222.321,386	0,000

DESBROCES EN PRÉSTAMOS. ZONA 6								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
0,00	39,62	39,70	12,10	12,12	0,00	0,00	0,00	0,00
5,00	78,29	78,42	0,00	0,00	294,77	30,24	295,29	30,29
10,00	80,43	80,58	0,00	0,00	691,59	30,24	692,76	30,29
15,00	82,38	82,54	0,00	0,00	1.098,61	30,24	1.100,55	30,29
20,00	84,42	84,59	0,00	0,00	1.515,60	30,24	1.518,37	30,29
25,00	114,53	114,74	0,00	0,00	2.012,96	30,24	2.016,69	30,29
30,00	125,76	126,09	0,00	0,00	2.613,68	30,24	2.618,77	30,29
35,00	124,61	125,50	0,00	0,00	3.239,62	30,24	3.247,76	30,29
40,00	135,19	136,29	0,00	0,00	3.889,14	30,24	3.902,24	30,29
45,00	133,82	135,18	0,00	0,00	4.561,68	30,24	4.580,92	30,29
50,00	132,25	133,90	0,00	0,00	5.226,85	30,24	5.253,63	30,29
55,00	131,08	132,90	0,00	0,00	5.885,16	30,24	5.920,64	30,29
60,00	129,32	131,67	0,00	0,00	6.536,16	30,24	6.582,05	30,29
65,00	128,18	130,72	0,00	0,00	7.179,92	30,24	7.238,02	30,29
70,00	122,21	124,70	0,00	0,00	7.805,91	30,24	7.876,57	30,29
75,00	120,67	123,44	0,00	0,00	8.413,10	30,24	8.496,90	30,29
80,00	119,22	122,49	0,00	0,00	9.012,82	30,24	9.111,72	30,29
85,00	118,10	121,70	0,00	0,00	9.606,13	30,24	9.722,20	30,29
90,00	116,80	120,74	0,00	0,00	10.193,38	30,24	10.328,30	30,29
95,00	115,67	119,69	0,00	0,00	10.774,55	30,24	10.929,38	30,29
100,00	114,09	118,68	0,00	0,00	11.348,95	30,24	11.525,32	30,29
105,00	111,82	116,72	0,00	0,00	11.913,73	30,24	12.113,83	30,29
110,00	110,51	114,57	0,00	0,00	12.469,55	30,24	12.692,06	30,29
115,00	108,66	112,16	0,00	0,00	13.017,48	30,24	13.258,89	30,29
120,00	106,97	109,70	0,00	0,00	13.556,56	30,24	13.813,53	30,29
125,00	103,20	105,43	0,00	0,00	14.081,98	30,24	14.351,35	30,29
130,00	95,69	97,34	0,00	0,00	14.579,20	30,24	14.858,29	30,29
135,00	92,38	93,90	0,00	0,00	15.049,39	30,24	15.336,40	30,29
140,00	90,80	91,69	0,00	0,00	15.507,35	30,24	15.800,36	30,29
145,00	89,08	89,85	0,00	0,00	15.957,03	30,24	16.254,20	30,29
150,00	87,32	87,76	0,00	0,00	16.398,02	30,24	16.698,23	30,29
155,00	86,26	86,51	0,00	0,00	16.831,98	30,24	17.133,91	30,29
160,00	85,53	85,62	0,00	0,00	17.261,45	30,24	17.564,24	30,29
165,00	85,06	85,16	0,00	0,00	17.687,93	30,24	17.991,20	30,29
170,00	84,40	84,49	0,00	0,00	18.111,59	30,24	18.415,33	30,29
175,00	83,63	83,69	0,00	0,00	18.531,66	30,24	18.835,77	30,29
180,00	83,15	83,23	0,00	0,00	18.948,60	30,24	19.253,04	30,29
185,00	82,68	82,76	0,00	0,00	19.363,15	30,24	19.668,01	30,29
190,00	81,64	82,03	0,00	0,00	19.773,95	30,24	20.079,99	30,29
195,00	80,55	81,26	0,00	0,00	20.179,43	30,24	20.488,23	30,29
200,00	80,21	81,04	0,00	0,00	20.581,31	30,24	20.893,99	30,29
205,00	79,85	80,77	0,00	0,00	20.981,45	30,24	21.298,52	30,29
210,00	79,00	79,95	0,00	0,00	21.378,57	30,24	21.700,31	30,29
215,00	78,72	79,40	0,00	0,00	21.772,86	30,24	22.098,69	30,29
220,00	78,54	79,43	0,00	0,00	22.166,00	30,24	22.495,77	30,29
225,00	77,86	78,87	0,00	0,00	22.556,98	30,24	22.891,53	30,29
230,00	76,36	76,56	0,00	0,00	22.942,51	30,24	23.280,11	30,29
235,00	76,27	76,40	0,00	0,00	23.324,09	30,24	23.662,50	30,29
240,00	76,19	76,30	0,00	0,00	23.705,24	30,24	24.044,25	30,29
245,00	76,11	76,22	0,00	0,00	24.086,00	30,24	24.425,56	30,29
250,00	76,09	76,23	0,00	0,00	24.466,52	30,24	24.806,69	30,29
252,59	76,24	76,45	0,00	0,00	24.663,63	30,24	25.004,25	30,29

DESBROCES EN PRÉSTAMOS. ZONA 7								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
0,00	18,82	18,98	8,29	9,44	0,00	0,00	0,00	0,00
5,00	26,14	27,16	5,02	5,58	112,40	33,29	115,33	37,57
10,00	35,37	36,57	0,00	0,00	266,17	45,84	274,65	51,52
15,00	39,22	40,80	0,00	0,00	452,65	45,84	468,09	51,52
20,00	42,79	44,45	0,00	0,00	657,69	45,84	681,21	51,52
25,00	45,31	46,79	0,00	0,00	877,94	45,84	909,29	51,52
30,00	47,78	49,59	0,00	0,00	1.110,67	45,84	1.150,25	51,52
35,00	32,22	37,10	0,00	0,00	1.310,67	45,84	1.366,97	51,52
40,00	33,35	38,11	0,00	0,00	1.474,59	45,84	1.554,99	51,52
45,00	34,02	39,03	0,00	0,00	1.643,02	45,84	1.747,84	51,52
50,00	34,68	39,67	0,00	0,00	1.814,78	45,84	1.944,59	51,52
55,00	35,56	40,64	0,00	0,00	1.990,38	45,84	2.145,37	51,52
60,00	36,43	41,58	0,00	0,00	2.170,35	45,84	2.350,93	51,52
65,00	37,31	42,17	0,00	0,00	2.354,70	45,84	2.560,30	51,52
70,00	38,18	43,43	0,00	0,00	2.543,43	45,84	2.774,29	51,52
75,00	39,18	44,73	0,00	0,00	2.736,82	45,84	2.994,69	51,52
80,00	41,75	46,62	0,00	0,00	2.939,13	45,84	3.223,05	51,52
85,00	42,43	47,06	0,00	0,00	3.149,57	45,84	3.457,24	51,52
90,00	42,94	48,94	0,00	0,00	3.362,99	45,84	3.697,24	51,52
95,00	42,97	48,65	0,00	0,00	3.577,77	45,84	3.941,22	51,52
100,00	43,43	49,80	0,00	0,00	3.793,78	45,84	4.187,35	51,52
105,00	44,34	51,28	0,00	0,00	4.013,21	45,84	4.440,05	51,52
110,00	43,63	50,50	1,78	1,85	4.233,12	50,29	4.694,51	56,14
115,00	44,46	51,65	2,00	2,14	4.453,34	59,76	4.949,87	66,11
120,00	44,85	52,87	2,23	2,44	4.676,63	70,33	5.211,17	77,55
125,00	45,42	53,82	2,45	2,73	4.902,31	82,03	5.477,90	90,48
130,00	46,30	54,96	2,67	3,03	5.131,60	94,84	5.749,86	104,89
135,00	47,02	55,57	2,90	3,09	5.364,90	108,76	6.026,18	120,20
140,00	45,31	48,15	5,11	5,13	5.595,73	128,78	6.285,48	140,75
145,00	50,35	52,84	5,32	5,33	5.834,85	154,87	6.537,97	166,88
150,00	61,10	64,75	0,00	0,00	6.113,47	168,18	6.831,94	180,19
155,00	67,08	71,09	0,00	0,00	6.433,91	168,18	7.171,54	180,19
160,00	73,05	77,11	0,00	0,00	6.784,24	168,18	7.542,04	180,19
165,00	79,03	83,25	0,00	0,00	7.164,45	168,18	7.942,93	180,19
170,00	82,84	90,15	0,00	0,00	7.569,12	168,18	8.376,41	180,19
175,00	83,55	90,12	0,00	0,00	7.985,08	168,18	8.827,08	180,19
180,00	84,66	90,27	0,00	0,00	8.405,61	168,18	9.278,06	180,19
185,00	85,21	90,52	0,00	0,00	8.830,29	168,18	9.730,05	180,19
190,00	86,34	91,76	0,00	0,00	9.259,15	168,18	10.185,77	180,19
195,00	87,46	92,32	0,00	0,00	9.693,64	168,18	10.645,97	180,19
200,00	88,18	92,13	0,00	0,00	10.132,75	168,18	11.107,09	180,19
205,00	88,99	93,12	0,00	0,00	10.575,69	168,18	11.570,21	180,19
210,00	89,69	94,29	0,00	0,00	11.022,39	168,18	12.038,73	180,19
215,00	90,64	94,87	0,00	0,00	11.473,21	168,18	12.511,62	180,19
220,00	91,15	95,08	0,00	0,00	11.927,68	168,18	12.986,48	180,19
225,00	91,18	94,89	0,00	0,00	12.383,51	168,18	13.461,39	180,19
230,00	90,68	94,85	0,00	0,00	12.838,17	168,18	13.935,75	180,19
235,00	90,21	94,84	0,00	0,00	13.290,40	168,18	14.409,97	180,19
240,00	89,52	94,57	0,00	0,00	13.739,72	168,18	14.883,48	180,19
245,00	88,49	92,80	0,00	0,00	14.184,76	168,18	15.351,89	180,19
250,00	87,93	89,74	0,00	0,00	14.625,83	168,18	15.808,24	180,19
255,00	86,36	86,41	0,00	0,00	15.061,56	168,18	16.248,62	180,19
260,00	85,47	85,54	0,00	0,00	15.491,14	168,18	16.678,51	180,19
265,00	84,61	84,75	0,00	0,00	15.916,34	168,18	17.104,23	180,19
270,00	84,29	84,49	0,00	0,00	16.338,59	168,18	17.527,32	180,19
275,00	76,64	76,93	6,66	6,68	16.740,90	184,83	17.930,87	196,89
280,00	75,04	75,39	8,21	8,22	17.120,08	222,00	18.311,65	234,12
285,00	67,67	67,78	10,16	10,18	17.476,83	267,92	18.669,57	280,13
290,00	59,25	59,54	14,62	14,65	17.794,11	329,89	18.987,87	342,21
295,00	53,79	53,98	15,51	15,54	18.076,70	405,21	19.271,68	417,68
300,00	38,72	38,72	25,60	25,63	18.307,98	507,99	19.503,44	520,58
305,00	32,79	32,81	26,54	26,58	18.486,76	638,33	19.682,28	651,09
310,00	28,92	29,04	26,02	26,06	18.641,03	769,73	19.836,91	782,70
315,00	20,00	20,24	30,50	30,56	18.763,32	911,04	19.960,09	924,24
320,00	14,70	14,87	31,18	31,23	18.850,05	1.065,26	20.047,86	1.078,72
325,00	9,03	9,24	37,32	37,40	18.909,35	1.236,50	20.108,14	1.250,30
330,00	8,35	8,96	37,81	37,95	18.952,79	1.424,32	20.153,64	1.438,70
335,00	14,39	15,21	32,14	32,27	19.009,65	1.599,19	20.214,05	1.614,26
340,00	16,46	17,48	30,40	30,48	19.086,77	1.755,53	20.295,77	1.771,15
345,00	18,89	19,79	28,00	28,07	19.175,15	1.901,52	20.388,96	1.917,52
350,00	4,19	4,22	40,95	41,58	19.232,86	2.073,89	20.448,98	2.091,65

DESBROCES EN PRÉSTAMOS. ZONA 8								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
120,00	0,00	0,00	128,00	130,45	0,00	0,00	0,00	0,00
125,00	134,93	138,46	0,00	0,00	337,33	320,00	346,15	326,13
130,00	138,21	143,23	0,00	0,00	1.020,20	320,00	1.050,39	326,13
135,00	136,99	141,96	0,00	0,00	1.708,20	320,00	1.763,38	326,13
140,00	144,28	149,95	0,00	0,00	2.411,36	320,00	2.493,16	326,13
145,00	152,69	158,46	0,00	0,00	3.153,79	320,00	3.264,17	326,13
150,00	151,64	157,62	0,00	0,00	3.914,62	320,00	4.054,35	326,13
155,00	151,52	157,69	0,00	0,00	4.672,51	320,00	4.842,60	326,13
160,00	151,31	157,83	0,00	0,00	5.429,57	320,00	5.631,38	326,13
165,00	150,39	157,62	0,00	0,00	6.183,81	320,00	6.420,00	326,13
170,00	148,65	156,47	0,00	0,00	6.931,41	320,00	7.205,24	326,13
175,00	147,66	155,97	0,00	0,00	7.672,18	320,00	7.986,34	326,13
180,00	146,63	155,21	0,00	0,00	8.407,89	320,00	8.764,29	326,13
185,00	145,69	154,55	0,00	0,00	9.138,68	320,00	9.538,69	326,13
190,00	145,12	154,68	0,00	0,00	9.865,72	320,00	10.311,76	326,13
195,00	144,56	154,08	0,00	0,00	10.589,93	320,00	11.083,66	326,13
200,00	144,03	153,59	0,00	0,00	11.311,40	320,00	11.852,83	326,13
205,00	143,36	153,46	0,00	0,00	12.029,86	320,00	12.620,47	326,13
210,00	142,59	153,43	0,00	0,00	12.744,72	320,00	13.387,69	326,13
215,00	141,85	153,48	0,00	0,00	13.455,81	320,00	14.154,96	326,13
220,00	141,02	153,17	0,00	0,00	14.162,97	320,00	14.921,60	326,13
225,00	140,00	151,76	0,00	0,00	14.865,51	320,00	15.683,92	326,13
230,00	139,62	149,02	0,00	0,00	15.564,56	320,00	16.435,87	326,13
235,00	139,48	146,42	0,00	0,00	16.262,32	320,00	17.174,48	326,13
240,00	139,15	144,17	0,00	0,00	16.958,90	320,00	17.900,95	326,13
245,00	138,59	142,71	0,00	0,00	17.653,24	320,00	18.618,15	326,13
250,00	137,02	141,47	0,00	0,00	18.342,25	320,00	19.328,59	326,13
255,00	134,98	140,05	0,00	0,00	19.022,26	320,00	20.032,39	326,13
260,00	132,96	138,91	0,00	0,00	19.692,13	320,00	20.729,79	326,13
265,00	132,32	138,08	0,00	0,00	20.355,34	320,00	21.422,26	326,13
270,00	127,20	132,48	4,89	5,05	21.004,13	332,22	22.098,66	338,76
275,00	124,82	129,55	7,17	7,23	21.634,18	362,36	22.753,75	369,46
280,00	129,20	129,25	0,00	0,00	22.269,24	380,29	23.400,75	387,52
285,00	129,37	129,38	0,00	0,00	22.915,66	380,29	24.047,31	387,52
290,00	128,63	128,63	0,00	0,00	23.560,65	380,29	24.692,31	387,52
295,00	122,65	122,65	5,52	5,52	24.188,83	394,08	25.320,51	401,32
300,00	0,00	0,00	128,00	128,00	24.495,45	727,87	25.627,14	735,12

DESBROCES EN PRÉSTAMOS. ZONA 9								
P.K.	ANCHOS OCUPADOS				AREA DE DESBROCE EN PLANTA		SUPERFICIE REAL	
	DESMONTE		TERRAPLEN		DESMONTE	TERRAPLEN	DESMONTE	TERRAPLEN
	PLANTA	REAL	PLANTA	REAL				
100,00	0,00	0,00	49,00	49,01	0,00	0,00	0,00	0,00
105,00	84,32	85,08	0,00	0,00	210,80	122,50	212,70	122,52
110,00	104,67	107,60	0,00	0,00	683,27	122,50	694,41	122,52
115,00	119,63	124,09	0,00	0,00	1.244,01	122,50	1.273,65	122,52
120,00	145,53	152,13	0,00	0,00	1.906,90	122,50	1.964,21	122,52
125,00	159,37	167,33	0,00	0,00	2.669,16	122,50	2.762,87	122,52
130,00	162,54	171,18	0,00	0,00	3.473,93	122,50	3.609,16	122,52
135,00	165,67	174,87	0,00	0,00	4.294,46	122,50	4.474,30	122,52
140,00	168,95	178,77	0,00	0,00	5.131,02	122,50	5.358,40	122,52
145,00	172,40	182,96	0,00	0,00	5.984,38	122,50	6.262,72	122,52
150,00	175,92	186,84	0,00	0,00	6.855,18	122,50	7.187,22	122,52
155,00	179,95	191,20	0,00	0,00	7.744,85	122,50	8.132,33	122,52
160,00	184,08	195,85	0,00	0,00	8.654,91	122,50	9.099,97	122,52
165,00	179,25	193,21	0,00	0,00	9.563,23	122,50	10.072,61	122,52
170,00	176,60	191,04	0,00	0,00	10.452,86	122,50	11.033,22	122,52
175,00	172,94	187,33	0,00	0,00	11.326,70	122,50	11.979,14	122,52
180,00	169,31	183,62	0,00	0,00	12.182,31	122,50	12.906,51	122,52
185,00	165,90	179,94	0,00	0,00	13.020,32	122,50	13.815,40	122,52
190,00	162,57	176,81	0,00	0,00	13.841,47	122,50	14.707,26	122,52
195,00	159,30	173,31	0,00	0,00	14.646,13	122,50	15.582,55	122,52
200,00	155,97	169,38	0,00	0,00	15.434,29	122,50	16.439,29	122,52
205,00	152,60	164,99	0,00	0,00	16.205,71	122,50	17.275,22	122,52
210,00	149,14	159,78	0,00	0,00	16.960,05	122,50	18.087,15	122,52
215,00	146,12	155,67	0,00	0,00	17.698,18	122,50	18.875,78	122,52
220,00	143,14	151,46	0,00	0,00	18.421,31	122,50	19.643,62	122,52
225,00	139,83	147,19	0,00	0,00	19.128,72	122,50	20.390,25	122,52
230,00	135,04	142,20	0,00	0,00	19.815,88	122,50	21.113,72	122,52
235,00	128,27	133,70	0,00	0,00	20.474,15	122,50	21.803,45	122,52
240,00	121,47	125,82	0,00	0,00	21.098,49	122,50	22.452,24	122,52
245,00	114,84	118,49	0,00	0,00	21.689,27	122,50	23.063,01	122,52
250,00	108,15	111,27	0,00	0,00	22.246,74	122,50	23.637,42	122,52
255,00	101,59	104,17	0,00	0,00	22.771,08	122,50	24.176,02	122,52
260,00	94,94	96,99	0,00	0,00	23.262,41	122,50	24.678,92	122,52
265,00	88,65	90,76	0,38	0,75	23.721,38	123,45	25.148,30	124,40
270,00	83,45	85,25	0,00	0,00	24.151,62	124,40	25.588,34	126,28
275,00	80,06	81,90	0,00	0,00	24.560,38	124,40	26.006,22	126,28
280,00	76,66	78,01	0,00	0,00	24.952,17	124,40	26.405,99	126,28
285,00	73,40	74,74	0,00	0,00	25.327,32	124,40	26.787,85	126,28
290,00	70,07	71,01	0,00	0,00	25.685,99	124,40	27.152,21	126,28
295,00	66,61	67,45	0,00	0,00	26.027,69	124,40	27.498,34	126,28
300,00	63,38	63,73	0,00	0,00	26.352,67	124,40	27.826,29	126,28
305,00	59,83	59,91	0,00	0,00	26.660,69	124,40	28.135,40	126,28
310,00	55,88	55,94	0,00	0,00	26.949,96	124,40	28.425,03	126,28
313,03	53,95	54,19	0,00	0,00	27.116,47	124,40	28.591,98	126,28

BALSA DE TUDELA. RELLENOS DEL CUERPO DE PRESA																	
MATERIALES SUPERFICIE (m²)										MATERIALES VOLUMENES (m³)							
P.K.	RIP-RAP	GRAVAS	TODO-UNO	MAT-TRANSICIÓN	NUCLEO	FILTRO	DREN	GRAVAS CEMENTADAS	DISTANCIA PARCIAL	RIP-RAP	GRAVAS	TODO-UNO	MAT-TRANSICIÓN	NUCLEO	FILTRO	DREN	GRAVAS CEMENTADAS
0+000	0,00	0,00	4,15	0,00	0,82	0,00	0,00	0,00	-	-	-	-	-	-	-	-	-
0+010	0,00	0,00	4,18	0,00	0,88	0,00	0,00	0,00	10,00	0,00	0,00	41,65	0,00	8,50	0,00	0,00	0,00
0+020	0,00	0,00	4,21	0,00	0,97	0,00	0,00	0,00	10,00	0,00	0,00	41,95	0,00	9,25	0,00	0,00	0,00
0+030	0,00	0,00	4,24	0,00	1,08	0,00	0,00	0,00	10,00	0,00	0,00	42,25	0,00	10,25	0,00	0,00	0,00
0+040	0,00	0,00	4,77	0,00	2,65	0,00	0,00	0,00	10,00	0,00	0,00	45,05	0,00	18,65	0,00	0,00	0,00
0+050	0,00	0,00	5,44	0,00	3,50	1,50	0,00	0,00	10,00	0,00	0,00	51,05	0,00	30,75	7,50	0,00	0,00
0+060	0,00	0,00	5,44	0,00	3,50	1,50	0,00	0,00	10,00	0,00	0,00	54,40	0,00	35,00	15,00	0,00	0,00
0+070	0,00	0,00	5,44	0,00	3,50	1,50	0,00	0,00	10,00	0,00	0,00	54,40	0,00	35,00	15,00	0,00	0,00
0+080	0,00	0,00	5,87	0,00	4,77	1,90	0,00	0,00	10,00	0,00	0,00	56,55	0,00	41,35	17,00	0,00	0,00
0+090	0,00	0,00	6,91	0,00	8,48	2,88	0,00	0,00	10,00	0,00	0,00	63,90	0,00	66,25	23,90	0,00	0,00
0+100	83,45	136,78	6,60	1,93	14,59	4,18	0,00	0,00	10,00	417,25	683,90	67,55	9,65	115,35	35,30	0,00	0,00
0+110	88,33	140,27	8,99	0,86	17,42	5,38	0,00	0,00	10,00	858,90	1.385,25	77,95	13,95	160,05	47,80	0,00	0,00
0+120	86,99	153,82	11,32	2,13	22,49	6,63	0,00	0,00	10,00	876,60	1.470,45	101,55	14,95	199,55	60,05	0,00	0,00
0+130	89,27	191,33	11,06	2,97	25,71	7,39	0,00	0,00	10,00	881,30	1.725,75	111,90	25,50	241,00	70,10	0,00	0,00
0+140	92,28	300,79	13,03	4,60	34,03	9,23	5,58	0,00	10,00	907,75	2.460,60	120,45	37,85	298,70	83,10	27,90	0,00
0+150	96,22	395,77	24,00	9,81	60,82	14,13	9,50	0,00	10,00	942,50	3.482,80	185,15	72,05	474,25	116,80	75,40	0,00
0+160	106,50	573,80	78,00	12,36	79,98	18,86	12,87	0,00	10,00	1.013,60	4.847,85	510,00	110,85	704,00	164,95	111,85	0,00
0+170	117,02	741,72	187,99	19,40	135,02	25,83	19,85	0,00	10,00	1.117,60	6.577,60	1.329,95	158,80	1.075,00	223,45	163,60	0,00
0+180	130,20	483,60	549,87	49,73	223,10	34,94	28,95	0,00	10,00	1.236,10	6.126,61	3.689,31	345,65	1.790,60	303,85	244,00	0,00
0+190	150,75	514,04	834,27	52,15	309,54	43,53	33,85	0,00	10,00	1.404,75	4.988,22	6.920,73	509,40	2.663,20	392,35	314,00	0,00
0+200	152,49	576,09	1.079,73	53,98	404,57	52,13	42,02	30,32	10,00	1.516,20	5.450,65	9.570,02	530,65	3.570,55	478,30	379,35	151,60
0+210	152,18	620,43	1.288,53	57,05	453,35	54,24	47,66	82,62	10,00	1.523,35	5.982,58	11.841,28	555,15	4.289,60	531,85	448,40	564,70
0+220	149,66	647,60	1.504,66	58,78	514,09	56,85	52,66	151,24	10,00	1.509,20	6.340,12	13.965,92	579,15	4.837,20	555,45	501,60	1.169,30
0+230	154,35	764,71	1.781,53	68,00	586,62	61,58	55,44	193,57	10,00	1.520,05	7.061,55	16.430,92	633,90	5.503,55	592,15	540,50	1.724,05
0+240	147,10	774,06	2.237,33	71,52	883,61	78,94	68,31	236,87	10,00	1.507,25	7.693,84	20.094,26	697,60	7.351,15	702,60	618,75	2.152,20
0+250	148,45	776,84	2.316,08	68,91	881,20	78,82	67,95	290,59	10,00	1.477,75	7.754,46	22.767,04	702,15	8.824,05	788,80	681,30	2.637,30
0+260	151,60	789,11	2.388,42	69,49	878,66	78,70	67,59	320,50	10,00	1.500,25	7.829,74	23.522,50	692,00	8.799,30	787,60	677,70	3.055,45
0+270	149,87	801,49	2.437,12	70,07	876,00	78,59	67,24	339,39	10,00	1.507,35	7.953,00	24.127,68	697,80	8.773,30	786,45	674,15	3.299,45
0+280	151,41	814,30	2.464,71	70,77	873,08	78,47	66,88	395,57	10,00	1.506,40	8.078,95	24.509,13	704,20	8.745,40	785,30	670,60	3.674,80
0+290	151,94	829,77	2.864,76	71,58	899,90	121,18	120,74	675,49	10,00	1.516,75	8.220,35	26.647,35	711,75	8.864,90	998,25	938,10	5.355,30
0+300	153,35	844,19	2.983,69	72,33	981,53	127,20	125,65	758,96	10,00	1.526,45	8.369,77	29.242,24	719,55	9.407,15	1.241,90	1.231,95	7.172,25
0+310	154,28	847,77	3.032,33	72,36	994,91	128,47	127,75	796,37	10,00	1.538,15	8.459,76	30.080,08	723,45	9.882,20	1.278,35	1.267,00	7.776,65
0+320	154,24	851,19	3.066,44	72,29	1.004,81	129,49	129,08	820,04	10,00	1.542,60	8.494,78	30.493,85	723,25	9.998,60	1.289,80	1.284,15	8.082,05
0+330	159,06	872,87	3.089,84	72,09	1.015,93	130,24	129,80	833,17	10,00	1.566,50	8.620,33	30.781,39	721,90	10.103,70	1.298,65	1.294,40	8.266,05
0+340	165,61	1.022,19	3.103,03	80,90	1.025,96	130,95	130,37	843,60	10,00	1.623,35	9.475,34	30.964,35	764,95	10.209,45	1.305,95	1.300,85	8.383,85
0+350	164,29	1.006,69	3.215,90	80,30	1.036,03	131,66	130,94	854,09	10,00	1.649,50	10.144,43	31.594,67	806,00	10.309,95	1.313,05	1.306,55	8.488,45
0+360	163,19	991,97	3.295,52	79,70	1.045,34	132,28	131,21	859,12	10,00	1.637,40	9.993,30	32.557,12	800,00	10.406,85	1.319,70	1.310,75	8.566,05
0+370	162,60	977,03	3.422,78	79,07	1.092,01	133,05	127,29	801,04	10,00	1.628,95	9.844,99	33.591,52	793,85	10.686,75	1.326,65	1.292,50	8.300,80
0+380	161,00	962,21	3.405,53	78,44	1.067,67	133,52	126,45	744,23	10,00	1.618,00	9.696,22	34.141,56	787,55	10.798,40	1.332,85	1.268,70	7.726,35
0+390	159,12	947,52	3.375,83	77,81	1.042,90	134,13	125,42	684,02	10,00	1.600,60	9.548,64	33.906,77	781,25	10.552,85	1.338,25	1.259,35	7.141,25
0+400	158,41	932,94	3.385,78	77,18	1.027,85	133,72	125,09	669,92	10,00	1.587,65	9.402,26	33.808,02	774,95	10.353,75	1.339,25	1.252,55	6.769,70
0+410	157,83	916,35	3.244														

Balsa de Tudela. Rellenos del cuerpo de presa																	
Materiales Superficie (m²)										Materiales Volúmenes (m³)							
P.K.	RIP-RAP	Gravas	Todo-uno	Mat-transición	Núcleo	Filtro	Dren	Gravas Cementadas	Distancia Parcial	RIP-RAP	Gravas	Todo-uno	Mat-transición	Núcleo	Filtro	Dren	Gravas Cementadas
0+650	9,29	518,76	1.456,37	54,73	478,65	54,46	165,16	167,90	10,00	98,90	5.278,04	14.607,31	551,85	4.883,75	551,05	1.666,40	1.777,05
0+660	8,20	500,54	1.445,76	53,45	459,08	53,17	161,50	155,18	10,00	87,45	5.096,49	14.510,63	540,90	4.688,65	538,15	1.633,30	1.615,40
0+670	10,80	485,32	1.422,80	52,46	435,29	51,88	156,70	113,55	10,00	95,00	4.929,28	14.342,79	529,55	4.471,85	525,25	1.591,00	1.343,65
0+680	5,14	464,92	1.307,29	50,08	896,78	79,31	184,23	70,48	10,00	79,70	4.751,16	13.650,44	512,70	6.660,35	655,95	1.704,65	920,15
0+690	5,26	436,26	1.110,66	47,82	314,16	72,87	174,77	14,49	10,00	52,00	4.505,87	12.089,75	489,50	6.054,70	760,90	1.795,00	424,85
0+700	4,71	415,96	694,81	46,26	218,00	62,39	163,92	0,00	10,00	49,85	4.261,09	9.027,35	470,40	2.660,80	676,30	1.693,45	72,45
0+710	4,23	396,13	301,44	44,95	121,80	24,27	153,69	0,00	10,00	44,70	4.060,44	4.981,25	456,05	1.699,00	433,30	1.588,05	0,00
0+720	0,00	382,48	91,54	38,54	64,83	14,21	112,39	0,00	10,00	21,15	3.893,06	1.964,88	417,45	933,15	192,40	1.330,40	0,00
0+730	0,00	424,87	12,47	3,59	27,46	7,74	104,45	0,00	10,00	0,00	4.036,77	520,05	210,65	461,45	109,75	1.084,20	0,00
0+740	98,67	340,21	11,44	2,81	25,26	7,30	3,98	0,00	10,00	493,35	3.825,40	119,55	32,00	263,60	75,20	542,15	0,00
0+750	97,50	236,00	8,79	1,35	19,91	6,00	2,66	0,00	10,00	980,85	2.881,05	101,15	20,80	225,85	66,50	33,20	0,00
0+760	96,35	227,09	10,24	2,11	23,86	6,95	3,42	0,00	10,00	969,25	2.315,45	95,15	17,30	218,85	64,75	30,40	0,00
0+770	94,92	215,70	12,42	2,85	27,83	7,87	4,15	0,00	10,00	956,35	2.213,95	113,30	24,80	258,45	74,10	37,85	0,00
0+780	93,09	198,62	15,09	3,47	31,30	8,65	4,77	0,00	10,00	940,05	2.071,60	137,55	31,60	295,65	82,60	44,60	0,00
0+790	91,15	204,03	22,57	4,03	34,54	9,35	5,34	0,00	10,00	921,20	2.013,25	188,30	37,50	329,20	90,00	50,55	0,00
0+800	84,95	173,56	25,46	4,39	36,66	9,81	5,79	0,00	10,00	880,50	1.887,95	240,15	42,10	356,00	95,80	55,65	0,00
0+810	76,02	152,20	28,78	4,48	37,20	9,92	6,18	0,00	10,00	804,85	1.628,80	271,20	44,35	369,30	98,65	59,85	0,00
0+820	17,68	16,19	23,71	4,29	36,05	9,68	5,90	0,00	10,00	468,50	841,95	262,45	43,85	366,25	98,00	60,40	0,00
0+830	16,95	14,30	21,08	3,92	33,91	9,22	5,51	0,00	10,00	173,15	152,45	223,95	41,05	349,80	94,50	57,05	0,00
0+840	16,60	13,45	17,61	3,75	32,90	9,00	5,19	0,00	10,00	167,75	138,75	193,45	38,35	334,05	91,10	53,50	0,00
0+850	17,09	14,65	18,12	3,99	34,31	9,30	5,43	0,00	10,00	168,45	140,50	178,65	38,70	336,05	91,50	53,10	0,00
0+860	17,72	16,28	20,19	4,31	36,15	9,70	5,77	0,00	10,00	174,05	154,65	191,55	41,50	352,30	95,00	56,00	0,00
0+870	17,71	16,27	21,96	4,31	36,14	9,70	5,85	0,00	10,00	177,15	162,75	210,75	43,10	361,45	97,00	58,10	0,00
0+880	18,06	17,21	22,49	4,48	37,18	9,90	6,00	0,00	10,00	178,85	167,40	222,25	43,95	366,60	98,00	59,25	0,00
0+890	17,81	16,53	21,15	4,36	36,43	9,76	5,85	0,00	10,00	179,35	168,70	218,20	44,20	368,05	98,30	59,25	0,00
0+900	17,71	16,27	18,72	4,31	36,14	9,69	5,70	0,00	10,00	177,60	164,00	199,35	43,35	362,85	97,25	57,75	0,00
0+910	16,79	13,91	15,87	3,84	33,45	9,12	5,17	0,00	10,00	172,50	150,90	172,95	40,75	347,95	94,05	54,35	0,00
0+920	15,93	11,88	13,69	3,41	30,99	8,58	4,70	0,00	10,00	163,60	128,95	147,80	36,25	322,20	88,50	49,35	0,00
0+930	13,67	12,19	12,31	3,11	29,28	8,20	4,32	0,00	10,00	148,00	120,35	130,00	32,60	301,35	83,90	45,10	0,00
0+940	13,13	11,07	11,40	2,84	27,79	7,86	4,06	0,00	10,00	134,00	116,30	118,55	29,75	285,35	80,30	41,90	0,00
0+950	12,56	9,94	10,98	2,55	26,22	7,51	3,83	0,00	10,00	128,45	105,05	111,90	26,95	270,05	76,85	39,45	0,00
0+960	12,22	9,31	10,21	2,39	25,31	7,29	3,60	0,00	10,00	123,90	96,25	105,95	24,70	257,65	74,00	37,15	0,00
0+970	11,90	8,74	9,71	2,23	24,46	7,10	3,42	0,00	10,00	120,60	90,25	99,60	23,10	248,85	71,95	35,10	0,00
0+980	11,94	8,81	9,62	2,25	24,57	7,12	3,42	0,00	10,00	119,20	87,75	96,65	22,40	245,15	71,10	34,20	0,00
0+990	10,09	5,91	8,73	1,32	19,74	5,96	2,62	0,00	10,00	110,15	73,60	91,75	17,85	221,55	65,40	30,20	0,00
1+000	8,52	4,57	7,51	0,00	15,84	4,98	1,75	0,00	10,00	93,05	52,40	81,20	6,60	177,90	54,70	21,85	0,00
1+010	7,25	2,81	6,30	0,00	13,48	4,19	0,00	0,00	10,00	78,85	36,90	69,05	0,00	146,60	45,85	8,75	0,00
1+020	0,00	0,00	6,21	0,00	12,50	3,75	0,00	0,00	10,00	36,25	14,05	62,55	0,00	129,90	39,70	0,00	0,00
1+030	0,00	0,00	6,83	0,00	8,32	2,84	0,00	0,00	10,00	0,00	0,00	65,20	0,00	104,10	32,95	0,00	0,00
1+040	0,00	0,00	5,47	0,00	3,60	1,53	0,00	0,00	10,00	0,00	0,00	61,50	0,00	59,60	21,85	0,00	0,00
1+050	0,00	0,00	3,71	0,00	0,93	0,49	0,00	0,00	10,00	0,00	0,00	45,90	0,00	22,65	10,10	0,00	0,00
1+060	0,00	0,00	4,15	0,00	2,04	0,97	0,00	0,00	10,00	0,00	0,00	39,30	0,00	14,85	7,30	0,00	0,00
VOLUMENES TOTALES										88.268,20	457.208,82	1.287.077,49	37.852,20	435.170,50	55.964,75	64.467,70	261.671,70

BALSA DE TUDELA. RELLENOS DEL CUERPO DE PRESA																	
MATERIALES SUPERFICIE (m²)										MATERIALES VOLUMENES (m³)							
P.K.	RIP-RAP	GRAVAS	TODO-UNO	MAT-TRANSICIÓN	NUCLEO	FILTRO	DREN	GRAVAS CEMENTADAS	DISTANCIA PARCIAL	RIP-RAP	GRAVAS	TODO-UNO	MAT-TRANSICIÓN	NUCLEO	FILTRO	DREN	GRAVAS CEMENTADAS
0+000	0,00	0,00	4,15	0,00	0,82	0,00	0,00	0,00	-	-	-	-	-	-	-	-	-
0+010	0,00	0,00	4,18	0,00	0,88	0,00	0,00	0,00	10,00	0,00	0,00	41,65	0,00	8,50	0,00	0,00	0,00
0+020	0,00	0,00	4,21	0,00	0,97	0,00	0,00	0,00	10,00	0,00	0,00	41,95	0,00	9,25	0,00	0,00	0,00
0+030	0,00	0,00	4,24	0,00	1,08	0,00	0,00	0,00	10,00	0,00	0,00	42,25	0,00	10,25	0,00	0,00	0,00
0+040	0,00	0,00	4,77	0,00	2,65	0,00	0,00	0,00	10,00	0,00	0,00	45,05	0,00	18,65	0,00	0,00	0,00
0+050	0,00	0,00	5,44	0,00	3,50	1,50	0,00	0,00	10,00	0,00	0,00	51,05	0,00	30,75	7,50	0,00	0,00
0+060	0,00	0,00	5,44	0,00	3,50	1,50	0,00	0,00	10,00	0,00	0,00	54,40	0,00	35,00	15,00	0,00	0,00
0+070	0,00	0,00	5,44	0,00	3,50	1,50	0,00	0,00	10,00	0,00	0,00	54,40	0,00	35,00	15,00	0,00	0,00
0+080	0,00	0,00	5,87	0,00	4,77	1,90	0,00	0,00	10,00	0,00	0,00	56,55	0,00	41,35	17,00	0,00	0,00
0+090	0,00	0,00	6,91	0,00	8,48	2,88	0,00	0,00	10,00	0,00	0,00	63,90	0,00	66,25	23,90	0,00	0,00
0+100	83,45	136,78	6,60	1,93	14,59	4,18	0,00	0,00	10,00	417,25	683,90	67,55	9,65	115,35	35,30	0,00	0,00
0+110	88,33	140,27	8,99	0,86	17,42	5,38	0,00	0,00	10,00	858,90	1.385,25	77,95	13,95	160,05	47,80	0,00	0,00
0+120	86,99	153,82	11,32	2,13	22,49	6,63	0,00	0,00	10,00	876,60	1.470,45	101,55	14,95	199,55	60,05	0,00	0,00
0+130	89,27	191,33	11,06	2,97	25,71	7,39	0,00	0,00	10,00	881,30	1.725,75	111,90	25,50	241,00	70,10	0,00	0,00
0+140	92,28	300,79	13,03	4,60	34,03	9,23	5,58	0,00	10,00	907,75	2.460,60	120,45	37,85	298,70	83,10	27,90	0,00
0+150	96,22	395,77	24,00	9,81	60,82	14,13	9,50	0,00	10,00	942,50	3.482,80	185,15	72,05	474,25	116,80	75,40	0,00
0+160	106,50	573,80	78,00	12,36	79,98	18,86	12,87	0,00	10,00	1.013,60	4.847,85	510,00	110,85	704,00	164,95	111,85	0,00
0+170	117,02	741,72	187,99	19,40	135,02	25,83	19,85	0,00	10,00	1.117,60	6.577,60	1.329,95	158,80	1.075,00	223,45	163,60	0,00
0+180	130,20	483,60	549,87	49,73	223,10	34,94	28,95	0,00	10,00	1.236,10	6.126,61	3.689,31	345,65	1.790,60	303,85	244,00	0,00
0+190	150,75	514,04	834,27	52,15	309,54	43,53	33,85	0,00	10,00	1.404,75	4.988,22	6.920,73	509,40	2.663,20	392,35	314,00	0,00
0+200	152,49	576,09	1.079,73	53,98	404,57	52,13	42,02	30,32	10,00	1.516,20	5.450,65	9.570,02	530,65	3.570,55	478,30	379,35	151,60
0+210	152,18	620,43	1.288,53	57,05	453,35	54,24	47,66	82,62	10,00	1.523,35	5.982,58	11.841,28	555,15	4.289,60	531,85	448,40	564,70
0+220	149,66	647,60	1.504,66	58,78	514,09	56,85	52,66	151,24	10,00	1.509,20	6.340,12	13.965,92	579,15	4.837,20	555,45	501,60	1.169,30
0+230	154,35	764,71	1.781,53	68,00	586,62	61,58	55,44	193,57	10,00	1.520,05	7.061,55	16.430,92	633,90	5.503,55	592,15	540,50	1.724,05
0+240	147,10	774,06	2.237,33	71,52	883,61	78,94	68,31	236,87	10,00	1.507,25	7.693,84	20.094,26	697,60	7.351,15	702,60	618,75	2.152,20
0+250	148,45	776,84	2.316,08	68,91	881,20	78,82	67,95	290,59	10,00	1.477,75	7.754,46	22.767,04	702,15	8.824,05	788,80	681,30	2.637,30
0+260	151,60	789,11	2.388,42	69,49	878,66	78,70	67,59	320,50	10,00	1.500,25	7.829,74	23.522,50	692,00	8.799,30	787,60	677,70	3.055,45
0+270	149,87	801,49	2.437,12	70,07	876,00	78,59	67,24	339,39	10,00	1.507,35	7.953,00	24.127,68	697,80	8.773,30	786,45	674,15	3.299,45
0+280	151,41	814,30	2.464,71	70,77	873,08	78,47	66,88	395,57	10,00	1.506,40	8.078,95	24.509,13	704,20	8.745,40	785,30	670,60	3.674,80
0+290	151,94	829,77	2.864,76	71,58	899,90	121,18	120,74	675,49	10,00	1.516,75	8.220,35	26.647,35	711,75	8.864,90	998,25	938,10	5.355,30
0+300	153,35	844,19	2.983,69	72,33	981,53	127,20	125,65	758,96	10,00	1.526,45	8.369,77	29.242,24	719,55	9.407,15	1.241,90	1.231,95	7.172,25
0+310	154,28	847,77	3.032,33	72,36	994,91	128,47	127,75	796,37	10,00	1.538,15	8.459,76	30.080,08	723,45	9.882,20	1.278,35	1.267,00	7.776,65
0+320	154,24	851,19	3.066,44	72,29	1.004,81	129,49	129,08	820,04	10,00	1.542,60	8.494,78	30.493,85	723,25	9.998,60	1.289,80	1.284,15	8.082,05
0+330	159,06	872,87	3.089,84	72,09	1.015,93	130,24	129,80	833,17	10,00	1.566,50	8.620,33	30.781,39	721,90	10.103,70	1.298,65	1.294,40	8.266,05
0+340	165,61	1.022,19	3.103,03	80,90	1.025,96	130,95	130,37	843,60	10,00	1.623,35	9.475,34	30.964,35	764,95	10.209,45	1.305,95	1.300,85	8.383,85
0+350	164,29	1.006,69	3.215,90	80,30	1.036,03	131,66	130,94	854,09	10,00	1.649,50	10.144,43	31.594,67	806,00	10.309,95	1.313,05	1.306,55	8.488,45
0+360	163,19	991,97	3.295,52	79,70	1.045,34	132,28	131,21	859,12	10,00	1.637,40	9.993,30	32.557,12	800,00	10.406,85	1.319,70	1.310,75	8.566,05
0+370	162,60	977,03	3.422,78	79,07	1.092,01	133,05	127,29	801,04	10,00	1.628,95	9.844,99	33.591,52	793,85	10.686,75	1.326,65	1.292,50	8.300,80
0+380	161,00	962,21	3.405,53	78,44	1.067,67	133,52	126,45	744,23	10,00	1.618,00	9.696,22	34.141,56	787,55	10.798,40	1.332,85	1.268,70	7.726,35
0+390	159,12	947,52	3.375,83	77,81	1.042,90	134,13	125,42	684,02	10,00	1.600,60	9.548,64	33.906,77	781,25	10.552,85	1.338,25	1.259,35	7.141,25
0+400	158,41	932,94	3.385,78	77,18	1.027,85	133,72	125,09	669,92	10,00	1.587,65	9.402,26	33.808,02	774,95	10.353,75	1.339,25	1.252,55	6.769,70
0+410	157,83	916,35	3.244														

Balsa de Tudela. Rellenos del cuerpo de presa																	
Materiales Superficie (m²)										Materiales Volúmenes (m³)							
P.K.	RIP-RAP	Gravas	Todo-uno	Mat-transición	Núcleo	Filtro	Dren	Gravas Cementadas	Distancia Parcial	RIP-RAP	Gravas	Todo-uno	Mat-transición	Núcleo	Filtro	Dren	Gravas Cementadas
0+650	9,29	518,76	1.456,37	54,73	478,65	54,46	165,16	167,90	10,00	98,90	5.278,04	14.607,31	551,85	4.883,75	551,05	1.666,40	1.777,05
0+660	8,20	500,54	1.445,76	53,45	459,08	53,17	161,50	155,18	10,00	87,45	5.096,49	14.510,63	540,90	4.688,65	538,15	1.633,30	1.615,40
0+670	10,80	485,32	1.422,80	52,46	435,29	51,88	156,70	113,55	10,00	95,00	4.929,28	14.342,79	529,55	4.471,85	525,25	1.591,00	1.343,65
0+680	5,14	464,92	1.307,29	50,08	896,78	79,31	184,23	70,48	10,00	79,70	4.751,16	13.650,44	512,70	6.660,35	655,95	1.704,65	920,15
0+690	5,26	436,26	1.110,66	47,82	314,16	72,87	174,77	14,49	10,00	52,00	4.505,87	12.089,75	489,50	6.054,70	760,90	1.795,00	424,85
0+700	4,71	415,96	694,81	46,26	218,00	62,39	163,92	0,00	10,00	49,85	4.261,09	9.027,35	470,40	2.660,80	676,30	1.693,45	72,45
0+710	4,23	396,13	301,44	44,95	121,80	24,27	153,69	0,00	10,00	44,70	4.060,44	4.981,25	456,05	1.699,00	433,30	1.588,05	0,00
0+720	0,00	382,48	91,54	38,54	64,83	14,21	112,39	0,00	10,00	21,15	3.893,06	1.964,88	417,45	933,15	192,40	1.330,40	0,00
0+730	0,00	424,87	12,47	3,59	27,46	7,74	104,45	0,00	10,00	0,00	4.036,77	520,05	210,65	461,45	109,75	1.084,20	0,00
0+740	98,67	340,21	11,44	2,81	25,26	7,30	3,98	0,00	10,00	493,35	3.825,40	119,55	32,00	263,60	75,20	542,15	0,00
0+750	97,50	236,00	8,79	1,35	19,91	6,00	2,66	0,00	10,00	980,85	2.881,05	101,15	20,80	225,85	66,50	33,20	0,00
0+760	96,35	227,09	10,24	2,11	23,86	6,95	3,42	0,00	10,00	969,25	2.315,45	95,15	17,30	218,85	64,75	30,40	0,00
0+770	94,92	215,70	12,42	2,85	27,83	7,87	4,15	0,00	10,00	956,35	2.213,95	113,30	24,80	258,45	74,10	37,85	0,00
0+780	93,09	198,62	15,09	3,47	31,30	8,65	4,77	0,00	10,00	940,05	2.071,60	137,55	31,60	295,65	82,60	44,60	0,00
0+790	91,15	204,03	22,57	4,03	34,54	9,35	5,34	0,00	10,00	921,20	2.013,25	188,30	37,50	329,20	90,00	50,55	0,00
0+800	84,95	173,56	25,46	4,39	36,66	9,81	5,79	0,00	10,00	880,50	1.887,95	240,15	42,10	356,00	95,80	55,65	0,00
0+810	76,02	152,20	28,78	4,48	37,20	9,92	6,18	0,00	10,00	804,85	1.628,80	271,20	44,35	369,30	98,65	59,85	0,00
0+820	17,68	16,19	23,71	4,29	36,05	9,68	5,90	0,00	10,00	468,50	841,95	262,45	43,85	366,25	98,00	60,40	0,00
0+830	16,95	14,30	21,08	3,92	33,91	9,22	5,51	0,00	10,00	173,15	152,45	223,95	41,05	349,80	94,50	57,05	0,00
0+840	16,60	13,45	17,61	3,75	32,90	9,00	5,19	0,00	10,00	167,75	138,75	193,45	38,35	334,05	91,10	53,50	0,00
0+850	17,09	14,65	18,12	3,99	34,31	9,30	5,43	0,00	10,00	168,45	140,50	178,65	38,70	336,05	91,50	53,10	0,00
0+860	17,72	16,28	20,19	4,31	36,15	9,70	5,77	0,00	10,00	174,05	154,65	191,55	41,50	352,30	95,00	56,00	0,00
0+870	17,71	16,27	21,96	4,31	36,14	9,70	5,85	0,00	10,00	177,15	162,75	210,75	43,10	361,45	97,00	58,10	0,00
0+880	18,06	17,21	22,49	4,48	37,18	9,90	6,00	0,00	10,00	178,85	167,40	222,25	43,95	366,60	98,00	59,25	0,00
0+890	17,81	16,53	21,15	4,36	36,43	9,76	5,85	0,00	10,00	179,35	168,70	218,20	44,20	368,05	98,30	59,25	0,00
0+900	17,71	16,27	18,72	4,31	36,14	9,69	5,70	0,00	10,00	177,60	164,00	199,35	43,35	362,85	97,25	57,75	0,00
0+910	16,79	13,91	15,87	3,84	33,45	9,12	5,17	0,00	10,00	172,50	150,90	172,95	40,75	347,95	94,05	54,35	0,00
0+920	15,93	11,88	13,69	3,41	30,99	8,58	4,70	0,00	10,00	163,60	128,95	147,80	36,25	322,20	88,50	49,35	0,00
0+930	13,67	12,19	12,31	3,11	29,28	8,20	4,32	0,00	10,00	148,00	120,35	130,00	32,60	301,35	83,90	45,10	0,00
0+940	13,13	11,07	11,40	2,84	27,79	7,86	4,06	0,00	10,00	134,00	116,30	118,55	29,75	285,35	80,30	41,90	0,00
0+950	12,56	9,94	10,98	2,55	26,22	7,51	3,83	0,00	10,00	128,45	105,05	111,90	26,95	270,05	76,85	39,45	0,00
0+960	12,22	9,31	10,21	2,39	25,31	7,29	3,60	0,00	10,00	123,90	96,25	105,95	24,70	257,65	74,00	37,15	0,00
0+970	11,90	8,74	9,71	2,23	24,46	7,10	3,42	0,00	10,00	120,60	90,25	99,60	23,10	248,85	71,95	35,10	0,00
0+980	11,94	8,81	9,62	2,25	24,57	7,12	3,42	0,00	10,00	119,20	87,75	96,65	22,40	245,15	71,10	34,20	0,00
0+990	10,09	5,91	8,73	1,32	19,74	5,96	2,62	0,00	10,00	110,15	73,60	91,75	17,85	221,55	65,40	30,20	0,00
1+000	8,52	4,57	7,51	0,00	15,84	4,98	1,75	0,00	10,00	93,05	52,40	81,20	6,60	177,90	54,70	21,85	0,00
1+010	7,25	2,81	6,30	0,00	13,48	4,19	0,00	0,00	10,00	78,85	36,90	69,05	0,00	146,60	45,85	8,75	0,00
1+020	0,00	0,00	6,21	0,00	12,50	3,75	0,00	0,00	10,00	36,25	14,05	62,55	0,00	129,90	39,70	0,00	0,00
1+030	0,00	0,00	6,83	0,00	8,32	2,84	0,00	0,00	10,00	0,00	0,00	65,20	0,00	104,10	32,95	0,00	0,00
1+040	0,00	0,00	5,47	0,00	3,60	1,53	0,00	0,00	10,00	0,00	0,00	61,50	0,00	59,60	21,85	0,00	0,00
1+050	0,00	0,00	3,71	0,00	0,93	0,49	0,00	0,00	10,00	0,00	0,00	45,90	0,00	22,65	10,10	0,00	0,00
1+060	0,00	0,00	4,15	0,00	2,04	0,97	0,00	0,00	10,00	0,00	0,00	39,30	0,00	14,85	7,30	0,00	0,00
									VOLUMENES TOTALES	88.268,20	457.208,82	1.287.077,49	37.852,20	435.170,50	55.964,75	64.467,70	261.671,70

ARQUETA DE FILTRACIONES (ACERO)

TUDELA. ARQUETA FILTRACIONES										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
ARQUETA AFOROS MD										952,82
Losa cimentacion										143,47
Superior X	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Superior Y	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Inferior X	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Inferior Y	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Losa superior										143,47
Superior X	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Superior Y	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Inferior X	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Inferior Y	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
muros										665,88
muro tipo M1 L: 3,10 m H: 3,00 m										
Vertical	Ø10 a 25	Ø10	0,25	3,1	13	3	39,00	0,62	4	96,72
	Ø10 a 25	Ø10	0,25	3,1	13	1,85	24,05	0,62	4	59,64
Horizontal	Ø12 a 20	Ø12	0,20	3	16	3,1	49,60	0,89	4	176,58
muro tipo M2 L: 3,10 m H: 3,00 m										
Vertical	Ø10 a 25	Ø10	0,25	3,1	13	3	39,00	0,62	4	96,72
	Ø10 a 25	Ø10	0,25	3,1	13	1,85	24,05	0,62	4	59,64
Horizontal	Ø12 a 20	Ø12	0,20	3	16	3,1	49,60	0,89	4	176,58
ARQUETA AFOROS MI										876,43
Losa cimentacion										143,47
Superior X	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Superior Y	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Inferior X	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Inferior Y	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Losa superior										143,47
Superior X	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Superior Y	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Inferior X	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
Inferior Y	Ø12 a 25	Ø12	0,25	3,1	13	3,1	40,30	0,89	1	35,87
muros										589,50
muro tipo M1 L: 3,10 m H: 2,5 m										
Vertical	Ø10 a 25	Ø10	0,25	3,1	13	2,5	32,50	0,62	4	80,60
	Ø10 a 25	Ø10	0,25	3,1	13	1,85	24,05	0,62	4	59,64
Horizontal	Ø12 a 20	Ø12	0,20	2,5	14	3,1	43,40	0,89	4	154,50
muro tipo M2 L: 3,10 m H: 2,5 m										
Vertical	Ø10 a 25	Ø10	0,25	3,1	13	2,5	32,50	0,62	4	80,60
	Ø10 a 25	Ø10	0,25	3,1	13	1,85	24,05	0,62	4	59,64
Horizontal	Ø12 a 20	Ø12	0,20	2,5	14	3,1	43,40	0,89	4	154,50
ARQUETA CONEXIÓN										896,90
Losa cimentacion										117,48
Superior X	Ø12 a 25	Ø12	0,25	2,75	12	2,75	33,00	0,89	1	29,37

TUDELA. ARQUETA FILTRACIONES										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Superior Y	Ø12 a 25	Ø12	0,25	2,75	12	2,75	33,00	0,89	1	29,37
Inferior X	Ø12 a 25	Ø12	0,25	2,75	12	2,75	33,00	0,89	1	29,37
Inferior Y	Ø12 a 25	Ø12	0,25	2,75	12	2,75	33,00	0,89	1	29,37
Losa superior										117,48
Superior X	Ø12 a 25	Ø12	0,25	2,75	12	2,75	33,00	0,89	1	29,37
Superior Y	Ø12 a 25	Ø12	0,25	2,75	12	2,75	33,00	0,89	1	29,37
Inferior X	Ø12 a 25	Ø12	0,25	2,75	12	2,75	33,00	0,89	1	29,37
Inferior Y	Ø12 a 25	Ø12	0,25	2,75	12	2,75	33,00	0,89	1	29,37
muros										661,94
muro tipo M1 L: 2,75 m H: 3,35 m										
Vertical	Ø10 a 25	Ø10	0,25	2,75	12	3,35	40,20	0,62	4	99,70
	Ø10 a 25	Ø10	0,25	2,75	12	1,85	22,20	0,62	4	55,06
Horizontal	Ø12 a 20	Ø12	0,20	3,35	18	2,75	49,50	0,89	4	176,22
muro tipo M2 L: 2,75 m H: 3,35 m										
Vertical	Ø10 a 25	Ø10	0,25	2,75	12	3,35	40,20	0,62	4	99,70
	Ø10 a 25	Ø10	0,25	2,75	12	1,85	22,20	0,62	4	55,06
Horizontal	Ø12 a 20	Ø12	0,20	3,35	18	2,75	49,50	0,89	4	176,22
Suma										2.726,15
Total (kg) con % de incremento por solapes, ataduras y despuntes										2.998,77

CÁMARA DE COMPUERTAS DEL DESAGÜE DE FONDO

BALSA DE TUDELA. CÁMARA DE COMPUERTAS										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso lineal (kg/m)	Nº	Peso Total (kg)
Losa solera										51.897,57
Refuerzos Cercos	Ø25 a 10	Ø25	0,10	12,6	126	12,4	1.562,40	3,85	2	12.030,48
	Ø25 a 10	Ø25	0,10	12,4	124	12,6	1.562,40	3,85	2	12.030,48
		Ø25			6	12,6	75,60	3,85	2	582,12
		Ø25	0,10	12,4	124	2,25	279,00	3,85	2	2.148,30
	Ø25 a 10	Ø25	0,10	12,4	124	8,75	1.085,00	3,85	4	16.709,00
		Ø16			1398,6	3,8	5.314,68	1,58	1	8.397,19
Muros										113.693,95
Cercos	Ø25 a 15	Ø25	0,15	12,6	84	13,05	1.096,20	3,85	4	16.881,48
	Ø25 a 10	Ø25	0,10	12,6	126	18,48	2.328,48	3,85	4	35.858,59
	Ø25 a 10	Ø25	0,10	8	80	12,6	1.008,00	3,85	4	15.523,20
	Ø25 a 15	Ø25	0,15	8	53	12,6	672,00	3,85	4	10.348,80
		Ø16			3364	3,3	11.101,86	1,58	2	35.081,88
Losa intermedia y embocadura										9.733,81
Cercos	Ø20 a 15	Ø20	0,15	7,4	49,333	12,6	621,60	2,47	2	3.070,70
	Ø25 a 10	Ø25	0,10	9,96	99,6	7,4	737,04	3,85	2	5.675,21
		Ø12			740	1,5	1.110,00	0,89	1	987,90
Frontal, trasera y embocadura										28.639,07
Cercos	Ø25 a 10	Ø25	0,10	7,4	74	12,4	917,60	3,85	2	7.065,52
	Ø25 a 10	Ø25	0,10	12,4	124	7,4	917,60	3,85	2	7.065,52
	Ø25 a 10	Ø25	0,10	7,4	74	4,3	318,20	3,85	2	2.450,14
	Ø25 a 10	Ø25	0,10	4,4	44	7,4	325,60	3,85	2	2.507,12
	Ø20 a 10	Ø20	0,10	5,5	55	6,5	357,50	2,47	2	1.766,05
	Ø20 a 10	Ø20	0,10	3,2	32	4,3	137,60	2,47	2	679,74
		Ø12			1376,4	2,9	3.991,56	0,89	2	7.104,98
Suma										203.964,41
Total (kg) con % de incremento por solapes, ataduras y despuntes										214.162,63

ESTRUCTURA METÁLICA. CÁMARA DE COMPUERTAS DEL DESAGÜE DE FONDO. ACERO LAMINADO S-275JR + PINTURA EPOXY+PINTURA IGNÍFUGA						
	Ud	L (m)	A (m)	H (m)		Total (kg)
Rejas y perfiles de soportes						1.249,28
UPN 180	3,00	3,37	22,55			227,98
	8,00	1,50	22,55			270,60
Piezas auxiliares						149,57
Pletinas	13,00	3,37	0,10	0,01	7.850,00	343,91
	8,00	1,36	0,10	0,01	7.850,00	85,47
Piezas auxiliares						171,75

GALERÍA DEL DESAGÜE DE FONDO

EXCAVACIONES					
	P.K	AREA PERFIL	VOL. PARCIAL	VOL. ACUMUL.	VOL. TOTAL
GALERIA DEL DESAGÜE DE FONDO	-95.000	161.387,0	415,6	2.266,0	30.431,70
	-90.000	162.656,0	810,1	3.076,1	
	-85.000	163.277,0	814,8	3.890,9	
	-80.000	162.555,0	814,6	4.705,5	
	-75.000	162.103,0	811,6	5.517,1	
	-70.000	161.846,0	809,9	6.327,0	
	-66.000	161.672,0	647,0	6.974,0	
	-66.000	165.637,0	0,0	6.974,0	
	-65.000	170.536,0	168,1	7.142,1	
	-60.000	170.267,0	852,0	7.994,1	
	-55.000	170.049,0	850,8	8.844,9	
	-50.000	169.746,0	849,5	9.694,4	
	-45.000	169.286,0	847,6	10.542,0	
	-40.000	168.963,0	845,6	11.387,6	
	-35.000	168.665,0	844,1	12.231,7	
	-30.000	168.337,0	842,5	13.074,2	
	-30.000	172.405,0	0,0	13.074,2	
	-25.000	172.061,0	861,2	13.935,4	
	-20.000	171.709,0	859,4	14.794,8	
	-15.000	171.352,0	857,7	15.652,4	
	-10.000	128.877,0	750,6	16.403,0	
	-5.000	125.339,0	635,5	17.038,6	
	0	125.638,0	627,4	17.666,0	
	5.000	127.438,0	632,7	18.298,7	
	10.000	131.046,0	646,2	18.944,9	
	15.000	141.180,0	680,6	19.625,5	
	20.000	159.181,0	750,9	20.376,4	
	25.000	155.870,0	787,6	21.164,0	
	30.000	152.500,0	770,9	21.934,9	
	30.000	148.530,0	0,0	21.934,9	
	35.000	145.223,0	734,4	22.669,3	
	40.000	142.025,0	718,1	23.387,4	
	45.000	138.891,0	702,3	24.089,7	
	50.000	135.625,0	686,3	24.776,0	
	55.000	132.338,0	669,9	25.445,9	
	60.000	129.049,0	653,5	26.099,4	
	65.000	125.841,0	637,2	26.736,6	
	66.000	125.235,0	125,5	26.862,1	
	66.000	121.410,0	0,0	26.862,1	
	70.000	115.466,0	473,8	27.335,9	
	75.000	112.405,0	569,7	27.905,6	
	80.000	109.091,0	553,7	28.459,3	
	85.000	105.887,0	537,4	28.996,7	
	90.000	103.095,0	522,5	29.519,2	
	95.000	100.293,0	508,5	30.027,7	
	100.000	96.962,0	493,1	30.520,8	
	105.000	92.358,0	473,3	30.994,1	
	110.000	87.290,0	449,1	31.443,2	
	115.000	81.720,0	422,5	31.865,7	
	120.000	84.772,0	416,2	32.282,0	

BALSA DE TUDELA. GALERIA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso lineal (kg/m)	Nº	Peso Total (kg)
SECCIÓN 1										
Losa solera										234.204,60
Cercos	Ø25 a 10	Ø25	0,10	13	130	60	7.800,00	3,85	2	60.060,00
	Ø25 a 10	Ø25	0,10	60	600	19,75	11.850,00	3,85	2	91.245,00
		Ø25			6	60	360,00	3,85	2	2.772,00
		Ø25	0,10	60	600	0,7	420,00	3,85	4	6.468,00
		Ø16			11100	4,2	46.620,00	1,58	1	73.659,60
Muro bajo										114.928,80
Cercos	Ø25 a 10	Ø25	0,10	2,1	21	60	1.260,00	3,85	4	19.404,00
		Ø25			8	60	480,00	3,85	1	1.848,00
	Ø25 a 10	Ø25	0,10	60	600	7,05	4.230,00	3,85	2	32.571,00
	Ø25 a 10	Ø25	0,10	60	600	6,55	3.930,00	3,85	2	30.261,00
	Ø25 a 10	Ø25	0,10	60	600	1,29	774,00	3,85	2	5.959,80
		Ø16			2250	3,5	7.875,00	1,58	2	24.885,00
Muro alto										235.656,36
Cercos	Ø25 a 10	Ø25	0,10	9,3	93	60	5.580,00	3,85	2	42.966,00
	Ø25 a 10	Ø25	0,10	7,7	77	60	4.620,00	3,85	2	35.574,00
	Ø25 a 10	Ø25	0,10	60	600	13,12	7.872,00	3,85	2	60.614,40
	Ø25 a 10	Ø25	0,10	60	600	10,55	6.330,00	3,85	2	48.741,00
		Ø12			10320	2,6	26.832,00	0,89	2	47.760,96
Losa intermedia										53.552,32
Cercos	Ø20 a 15	Ø20	0,15	7,4	49	60	2.960,00	2,47	2	14.622,40
	Ø25 a 10	Ø25	0,10	60	600	7,4	4.440,00	3,85	2	34.188,00
		Ø12			4440	1,2	5.328,00	0,89	1	4.741,92
Suma										638.342,08
Total (kg) con % de incremento por solapes, ataduras y despuntes										670.259,18

BALSA DE TUDELA. GALERIA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso lineal (kg/m)	Nº	Peso Total (kg)
SECCIÓN 2										
Losa solera										263.367,22
Cercos	Ø25 a 10	Ø25	0,10	13	130	72	9.360,00	3,85	2	72.072,00
	Ø25 a 10	Ø25	0,10	72	720	19,75	14.220,00	3,85	2	109.494,00
		Ø25			6	72	432,00	3,85	2	3.326,40
		Ø25	0,10	72	720	0,7	504,00	3,85	4	7.761,60
		Ø16			10656	4,2	44.755,20	1,58	1	70.713,22
Muro bajo										138.484,08
Cercos	Ø25 a 10	Ø25	0,10	2,1	21	72	1.512,00	3,85	4	23.284,80
		Ø25			8	72	576,00	3,85	1	2.217,60
	Ø25 a 10	Ø25	0,10	72	720	6,85	4.932,00	3,85	2	37.976,40
	Ø25 a 10	Ø25	0,10	72	720	6,35	4.572,00	3,85	2	35.204,40
	Ø25 a 10	Ø25	0,10	72	720	1,29	928,80	3,85	2	7.151,76
		Ø16			2952	3,5	10.332,00	1,58	2	32.649,12
Muro alto										265.290,48
Cercos	Ø25 a 10	Ø25	0,10	9,3	93	72	6.696,00	3,85	2	51.559,20
	Ø25 a 10	Ø25	0,10	7,6	76	72	5.472,00	3,85	2	42.134,40
	Ø25 a 10	Ø25	0,10	72	720	13,12	9.446,40	3,85	2	72.737,28
	Ø25 a 10	Ø25	0,10	72	720	10,55	7.596,00	3,85	2	58.489,20
		Ø12			9072	2,5	22.680,00	0,89	2	40.370,40
Losa intermedia										64.736,98
Cercos	Ø20 a 15	Ø20	0,15	7,4	49	72	3.552,00	2,47	2	17.546,88
	Ø25 a 10	Ø25	0,10	72	720	7,4	5.328,00	3,85	2	41.025,60
		Ø12			5328	1,3	6.926,40	0,89	1	6.164,50
Suma									731.878,75	
Total (kg) con % de incremento por solapes, ataduras y despuntes										768.472,69

BALSA DE TUDELA. GALERIA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso lineal (kg/m)	Nº	Peso Total (kg)
SECCIÓN 3										
Losa solera										103.466,90
Cercos	Ø25 a 10	Ø25	0,10	12,4	124	31,75	3.937,00	3,85	2	30.314,90
	Ø25 a 10	Ø25	0,10	31,75	318	19,15	6.080,13	3,85	2	46.816,96
		Ø25			6	31,75	190,50	3,85	2	1.466,85
		Ø25	0,10	31,75	318	0,7	222,25	3,85	4	3.422,65
		Ø16			3572	3,8	13.573,13	1,58	1	21.445,54
Muro bajo										51.329,38
Cercos	Ø25 a 10	Ø25	0,10	2,1	21	31,75	666,75	3,85	4	10.267,95
		Ø25			8	31,75	254,00	3,85	1	977,90
	Ø25 a 10	Ø25	0,10	31,75	318	5,43	1.724,03	3,85	2	13.274,99
	Ø25 a 10	Ø25	0,10	31,75	318	6,15	1.952,63	3,85	2	15.035,21
	Ø25 a 10	Ø25	0,10	31,75	318	1,29	409,58	3,85	2	3.153,73
		Ø16			940,59	2,9	2.727,72	1,58	2	8.619,60
Muro alto										77.041,04
Cercos	Ø25 a 15	Ø25	0,15	9,3	62	31,75	1.968,50	3,85	2	15.157,45
	Ø25 a 15	Ø25	0,15	7,6	51	31,75	1.608,67	3,85	2	12.386,73
	Ø25 a 15	Ø25	0,15	31,75	212	13,12	2.777,07	3,85	2	21.383,41
	Ø25 a 15	Ø25	0,15	31,75	212	10,55	2.233,08	3,85	2	17.194,74
		Ø12			2667	2,3	6.134,10	0,89	2	10.918,70
Losa intermedia										28.547,21
Cercos	Ø20 a 15	Ø20	0,15	7,4	49	31,75	1.566,33	2,47	2	7.737,69
	Ø25 a 10	Ø25	0,10	31,75	318	7,4	2.349,50	3,85	2	18.091,15
		Ø12			2349,5	1,3	3.054,35	0,89	1	2.718,37
Suma										260.384,53
Total (kg) con % de incremento por solapes, ataduras y despuntes										273.403,75

BALSA DE TUDELA. GALERIA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso lineal (kg/m)	Nº	Peso Total (kg)
SECCIÓN 4										
Losa solera										117.316,80
Cercos	Ø25 a 10	Ø25	0,10	12,4	124	36	4.464,00	3,85	2	34.372,80
	Ø25 a 10	Ø25	0,10	36	360	19,15	6.894,00	3,85	2	53.083,80
		Ø25			6	36	216,00	3,85	2	1.663,20
		Ø25	0,10	36	360	0,7	252,00	3,85	4	3.880,80
		Ø16			4050	3,8	15.390,00	1,58	1	24.316,20
Muro bajo										58.200,25
Cercos	Ø25 a 10	Ø25	0,10	2,1	21	36	756,00	3,85	4	11.642,40
		Ø25			8	36	288,00	3,85	1	1.108,80
	Ø25 a 10	Ø25	0,10	36	360	5,43	1.954,80	3,85	2	15.051,96
	Ø25 a 10	Ø25	0,10	36	360	6,15	2.214,00	3,85	2	17.047,80
	Ø25 a 10	Ø25	0,10	36	360	1,29	464,40	3,85	2	3.575,88
		Ø16			1066,5	2,9	3.092,85	1,58	2	9.773,41
Muro alto										87.501,00
Cercos	Ø25 a 15	Ø25	0,15	9,3	62	36	2.232,00	3,85	2	17.186,40
	Ø25 a 15	Ø25	0,15	7,6	51	36	1.824,00	3,85	2	14.044,80
	Ø25 a 15	Ø25	0,15	36	240	13,12	3.148,80	3,85	2	24.245,76
	Ø25 a 15	Ø25	0,15	36	240	10,55	2.532,00	3,85	2	19.496,40
		Ø12			3060	2,3	7.038,00	0,89	2	12.527,64
Losa intermedia										32.368,49
Cercos	Ø20 a 15	Ø20	0,15	7,4	49	36	1.776,00	2,47	2	8.773,44
	Ø25 a 10	Ø25	0,10	36	360	7,4	2.664,00	3,85	2	20.512,80
		Ø12			2664	1,3	3.463,20	0,89	1	3.082,25
Suma										295.386,53
Total (kg) con % de incremento por solapes, ataduras y despuntes										310.155,86

BALSA DE TUDELA. GALERIA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso lineal (kg/m)	Nº	Peso Total (kg)
SECCIÓN 5										
Losa solera										80.492,36
Cercos	Ø25 a 10	Ø25	0,10	12,4	124	24,7	3.062,80	3,85	2	23.583,56
	Ø25 a 10	Ø25	0,10	24,7	247	19,15	4.730,05	3,85	2	36.421,39
		Ø25			6	24,7	148,20	3,85	2	1.141,14
		Ø25	0,10	24,7	247	0,7	172,90	3,85	4	2.662,66
		Ø16			2779	3,8	10.559,25	1,58	1	16.683,62
Muro bajo										39.988,89
Cercos	Ø25 a 10	Ø25	0,10	2,1	21	24,7	518,70	3,85	4	7.987,98
		Ø25			8	24,7	197,60	3,85	1	760,76
	Ø25 a 10	Ø25	0,10	24,7	247	5,46	1.348,62	3,85	2	10.384,37
	Ø25 a 10	Ø25	0,10	24,7	247	6,15	1.519,05	3,85	2	11.696,69
	Ø25 a 10	Ø25	0,10	24,7	247	1,29	318,63	3,85	2	2.453,45
		Ø16			731,74	2,9	2.122,04	1,58	2	6.705,64
Muro alto										74.533,37
Cercos	Ø25 a 15	Ø25	0,15	11,7	78	24,7	1.926,60	3,85	2	14.834,82
	Ø25 a 15	Ø25	0,15	10	67	24,7	1.646,67	3,85	2	12.679,33
	Ø25 a 15	Ø25	0,15	24,7	165	15,52	2.555,63	3,85	2	19.678,33
	Ø25 a 15	Ø25	0,15	24,7	165	12,95	2.132,43	3,85	2	16.419,74
		Ø12			2667,6	2,3	6.135,48	0,89	2	10.921,15
Losa intermedia										22.208,38
Cercos	Ø20 a 15	Ø20	0,15	7,4	49	24,7	1.218,53	2,47	2	6.019,55
	Ø25 a 10	Ø25	0,10	24,7	247	7,4	1.827,80	3,85	2	14.074,06
		Ø12			1827,8	1,3	2.376,14	0,89	1	2.114,76
Suma									217.223,00	
Total (kg) con % de incremento por solapes, ataduras y despuntes										228.084,15

ARQUETA Y EDIFICIO DE TOMAS

EXCAVACIONES					
	P.K	AREA PERFIL	VOL. PARCIAL	VOL. ACUMUL.	VOL. TOTAL
ARQUETA DE TOMA	140.000	119.003,0	459,4	34.788,3	4.101,20
	145.000	116.557,0	588,9	35.377,2	
	145.650	116.241,0	75,7	35.452,8	
	145.650	116.241,0	0,0	35.452,8	
	145.660	218.438,0	1,7	35.454,5	
	145.660	218.438,0	0,0	35.454,5	
	150.000	213.138,0	936,5	36.391,0	
	155.000	206.975,0	1.050,3	37.441,3	
	157.805	203.073,0	575,1	38.016,4	
	157.805	203.073,0	0,0	38.016,4	
	157.815	109.496,0	1,6	38.018,0	
	157.815	109.496,0	0,0	38.018,0	
	160.000	108.162,0	237,8	38.255,8	
	161.610	107.190,0	173,4	38.429,1	
	161.610	107.190,0	0,0	38.429,1	
	161.620	96.387,0	1,0	38.430,1	
	161.620	96.387,0	0,0	38.430,1	

BALSA DE TUDELA. ARQUETA DE TOMA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Losa cimentacion nivel 369,759										10.226,39
Superior X	Ø16 a 15	Ø16	0,15	9,4	64	25,45	1.628,80	1,58	1	2.573,50
Superior Y	Ø16 a 15	Ø16	0,15	25,45	171	9,4	1.607,40	1,58	1	2.539,69
Inferior X	Ø16 a 15	Ø16	0,15	9,4	64	25,45	1.628,80	1,58	1	2.573,50
Inferior Y	Ø16 a 15	Ø16	0,15	25,45	171	9,4	1.607,40	1,58	1	2.539,69
Vigas cimentacion nivel 369,759										58.620,11
Vigas X										
Superior X	Ø20 a 20	Ø20	0,20	1	5	25,45	127,25	2,47	1	314,31
Inferior X	Ø20 a 20	Ø20	0,20	1	5	25,45	127,25	2,47	1	314,31
Piel X	2 Ø12	Ø12			2	25,45	50,90	0,89	2	90,60
Estribos	Ø10 a 30	Ø10	0,30	25,45	85	3,2	272,00	0,62	1	168,64
	3 Ø10 a 30	Ø10	0,30	25,45	85	0,6	51,00	0,62	3	94,86
Vigas Y										
Superior Y	Ø20 a 20	Ø20	0,20	0,6	3	9,4	28,20	2,47	1	69,65
Inferior Y	Ø20 a 20	Ø20	0,20	0,6	3	9,4	28,20	2,47	1	69,65
Piel Y	2 Ø12	Ø12			2	9,4	18,80	0,89	2	33,46
Estribos	Ø10 a 30	Ø10	0,30	9,4	31	2,4	74,40	0,62	1	46,13
	3 Ø10 a 30	Ø10	0,30	9,4	31	0,6	18,60	0,62	3	34,60
Losa cimentacion nivel 371,856										28.691,95
losa 1 18,35x12,15										
Superior X	Ø16 a 15	Ø16	0,15	12,15	82	18,35	1.504,70	1,58	1	2.377,43
Superior Y	Ø16 a 15	Ø16	0,15	18,35	123	12,15	1.494,45	1,58	1	2.361,23
Inferior X	Ø16 a 15	Ø16	0,15	12,15	82	18,35	1.504,70	1,58	1	2.377,43
Inferior Y	Ø16 a 15	Ø16	0,15	18,35	123	12,15	1.494,45	1,58	1	2.361,23
losa 2 16,90x25,45										
Superior X	Ø16 a 15	Ø16	0,15	25,45	171	16,9	2.889,90	1,58	1	4.566,04
Superior Y	Ø16 a 15	Ø16	0,15	16,9	114	25,45	2.901,30	1,58	1	4.584,05
Inferior X	Ø16 a 15	Ø16	0,15	25,45	171	16,9	2.889,90	1,58	1	4.566,04
Inferior Y	Ø16 a 15	Ø16	0,15	16,9	114	25,45	2.901,30	1,58	1	4.584,05
Refuerzos forjado										
Inferior X	Ø12 a 15	Ø12	0,15	25,45	171	5,6	957,60	0,89	1	852,26
Cruceta pilares Y	Ø08 a 15	Ø08	0,15	2,5	18	1,58	28,44	0,4	2	22,75
	4 Ø08	Ø08			4	3	12,00	0,4	2	9,60
Cruceta pilares X	Ø08 a 15	Ø08	0,15	2,25	16	1,58	25,28	0,4	2	20,22
	4 Ø08	Ø08			4	3	12,00	0,4	2	9,60
Vigas cimentacion nivel 371,856										3.359,78
Vigas X										
Viga D6-D5b										
Superior X	Ø20 a 20	Ø20	0,20	0,6	3	6,5	19,50	2,47	1	48,17
Inferior X	Ø20 a 20	Ø20	0,20	0,6	3	6,5	19,50	2,47	1	48,17
Piel X	1 Ø08	Ø08			1	6,5	6,50	0,4	2	5,20
Estribos	Ø10 a 30	Ø10	0,30	6,5	22	2,4	52,80	0,62	1	32,74
	1 Ø10 a 30	Ø10	0,30	6,5	22	0,6	13,20	0,62	1	8,18
Viga D5b-D5a										
Superior X	Ø25 a 15	Ø25	0,15	0,6	4	8,4	33,60	3,85	1	129,36

BALSA DE TUDELA. ARQUETA DE TOMA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Inferior X	Ø25 a 15	Ø25	0,15	0,6	4	8,4	33,60	3,85	1	129,36
Piel X	2 Ø08	Ø08			2	8,4	16,80	0,4	2	13,44
Estribos	Ø10 a 30	Ø10	0,30	8,4	28	2,4	67,20	0,62	1	41,66
	1 Ø10 a 30	Ø10	0,30	8,4	28	0,6	16,80	0,62	1	10,42
Viga D5a-D4										
Superior X	Ø20 a 12	Ø20	0,12	0,6	5	3	15,00	2,47	1	37,05
Inferior X	Ø20 a 12	Ø20	0,12	0,6	5	3	15,00	2,47	1	37,05
Piel X	1 Ø08	Ø08			1	3	3,00	0,4	2	2,40
Estribos	Ø12 a 13	Ø12	0,13	3	23	2,4	55,20	0,89	1	49,13
	1 Ø12 a 13	Ø12	0,13	3	23	0,6	13,80	0,89	1	12,28
Viga M3-M5										
Superior X	Ø16 a 12	Ø16	0,12	0,5	4	18,35	73,40	1,58	1	115,97
	4 Ø10	Ø10			4	5,7	22,80	0,62	1	14,14
Inferior X	Ø16 a 12	Ø16	0,12	0,5	4	18,35	73,40	1,58	1	115,97
Piel X	2 Ø12	Ø12			2	18,35	36,70	0,89	2	65,33
Estribos	Ø10 a 20	Ø10	0,20	18,35	92	2,2	202,40	0,62	1	125,49
Viga A6-A5b										
Superior X	Ø20 a 20	Ø20	0,20	0,6	3	6,5	19,50	2,47	1	48,17
Inferior X	Ø20 a 20	Ø20	0,20	0,6	3	6,5	19,50	2,47	1	48,17
Piel X	1 Ø08	Ø08			1	6,5	6,50	0,4	2	5,20
Estribos	Ø10 a 30	Ø10	0,30	6,5	22	2,4	52,80	0,62	1	32,74
	1 Ø10 a 30	Ø10	0,30	6,5	22	0,6	13,20	0,62	1	8,18
Viga A5b-A5a										
Superior X	Ø20 a 15	Ø20	0,15	0,6	4	8,4	33,60	2,47	1	82,99
Inferior X	Ø20 a 15	Ø20	0,15	0,6	4	8,4	33,60	2,47	1	82,99
Piel X	2 Ø12	Ø12			2	8,4	16,80	0,89	2	29,90
Estribos	Ø10 a 30	Ø10	0,30	8,4	28	2,4	67,20	0,62	1	41,66
	1 Ø10 a 30	Ø10	0,30	8,4	28	1,6	44,80	0,62	1	27,78
Viga A5a-A4										
Superior X	Ø20 a 12	Ø20	0,12	0,6	5	3	15,00	2,47	1	37,05
Inferior X	Ø20 a 12	Ø20	0,12	0,6	5	3	15,00	2,47	1	37,05
Piel X	1 Ø08	Ø08			1	3	3,00	0,4	2	2,40
Estribos	Ø12 a 13	Ø12	0,13	3	23	2,4	55,20	0,89	1	49,13
	Ø12 a 13	Ø12	0,13	3	23	0,6	13,80	0,89	1	12,28
Viga B4-B3										
Superior X	Ø16 a 15	Ø16	0,15	0,6	4	6,2	24,80	1,58	1	39,18
Inferior X	Ø16 a 15	Ø16	0,15	0,6	4	6,2	24,80	1,58	1	39,18
Piel X	1 Ø08	Ø08			1	6,2	6,20	0,4	2	4,96
Estribos	Ø10 a 20	Ø10	0,20	6,2	31	2,4	74,40	0,62	1	46,13
	Ø10 a 20	Ø10	0,20	6,2	31	1,6	49,60	0,62	1	30,75
Viga B3-B2										
Superior X	Ø16 a 15	Ø16	0,15	0,6	4	5,95	23,80	1,58	1	37,60
Inferior X	Ø16 a 15	Ø16	0,15	0,6	4	5,95	23,80	1,58	1	37,60
Piel X	1 Ø08	Ø08			1	5,95	5,95	0,4	2	4,76
Estribos	Ø10 a 20	Ø10	0,20	5,95	30	2,4	72,00	0,62	1	44,64
	Ø10 a 20	Ø10	0,20	5,95	30	1,6	48,00	0,62	1	29,76
Viga B2-B1										
Superior X	Ø16 a 15	Ø16	0,15	0,6	4	6,2	24,80	1,58	1	39,18

BALSA DE TUDELA. ARQUETA DE TOMA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
	4 Ø10	Ø10			4	4,35	17,40	0,62	1	10,79
Inferior X	Ø16 a 15	Ø16	0,15	0,6	4	6,2	24,80	1,58	1	39,18
Piel X	1 Ø08	Ø08			1	6,2	6,20	0,4	2	4,96
Estribos	Ø10 a 20	Ø10	0,20	6,2	31	2,4	74,40	0,62	1	46,13
	Ø10 a 20	Ø10	0,20	6,2	31	1,6	49,60	0,62	1	30,75
Vigas Y										
Viga D6-C6										
Superior Y	Ø20 a 20	Ø20	0,20	0,5	3	6,2	18,60	2,47	1	45,94
Inferior Y	Ø20 a 20	Ø20	0,20	0,5	3	6,2	18,60	2,47	1	45,94
	4 Ø10	Ø10			4	1,1	4,40	0,62	1	2,73
Piel Y	2 Ø12	Ø12			2	6,2	12,40	0,89	2	22,07
Estribos	Ø10 a 30	Ø10	0,30	6,2	21	2,2	46,20	0,62	1	28,64
	1 Ø10 a 30	Ø10	0,30	6,2	21	0,6	12,60	0,62	1	7,81
Viga C6-B6										
Superior Y	Ø20 a 20	Ø20	0,20	0,5	3	15,15	45,45	2,47	1	112,26
Inferior Y	Ø20 a 20	Ø20	0,20	0,5	3	15,15	45,45	2,47	1	112,26
Piel Y	2 Ø12	Ø12			2	15,15	30,30	0,89	2	53,93
Estribos	Ø10 a 30	Ø10	0,30	15,15	51	2,2	112,20	0,62	1	69,56
	1 Ø10 a 30	Ø10	0,30	15,15	51	0,6	30,60	0,62	1	18,97
Viga B6-A6										
Superior Y	Ø20 a 20	Ø20	0,20	0,5	3	3,7	11,10	2,47	1	27,42
Inferior Y	Ø20 a 20	Ø20	0,20	0,5	3	3,7	11,10	2,47	1	27,42
Piel Y	2 Ø12	Ø12			2	3,7	7,40	0,89	2	13,17
Estribos	Ø10 a 30	Ø10	0,30	3,7	12	2,2	26,40	0,62	1	16,37
	1 Ø10 a 30	Ø10	0,30	3,7	12	0,6	7,20	0,62	1	4,46
Viga D4-C4										
Superior Y	Ø20 a 20	Ø20	0,20	0,5	3	6,2	18,60	2,47	1	45,94
Inferior Y	Ø20 a 20	Ø20	0,20	0,5	3	6,2	18,60	2,47	1	45,94
Piel Y	2 Ø12	Ø12			2	6,2	12,40	0,89	2	22,07
Estribos	Ø10 a 30	Ø10	0,30	6,2	21	2,2	46,20	0,62	1	28,64
	1 Ø10 a 30	Ø10	0,30	6,2	21	0,6	12,60	0,62	1	7,81
Viga C4-M4										
Superior Y	Ø20 a 20	Ø20	0,20	0,5	3	3,8	11,40	2,47	1	28,16
Inferior Y	Ø20 a 20	Ø20	0,20	0,5	3	3,8	11,40	2,47	1	28,16
Piel Y	2 Ø12	Ø12			2	3,8	7,60	0,89	2	13,53
Estribos	Ø10 a 30	Ø10	0,30	3,8	13	2,2	28,60	0,62	1	17,73
	1 Ø10 a 30	Ø10	0,30	3,8	13	0,6	7,80	0,62	1	4,84
Viga B4-A4										
Superior Y	Ø20 a 12	Ø20	0,12	0,5	4	4	16,00	2,47	1	39,52
Inferior Y	Ø20 a 20	Ø20	0,12	0,5	4	4	16,00	2,47	1	39,52
Piel Y	2 Ø12	Ø12			2	4	8,00	0,89	2	14,24
Estribos	Ø10 a 15	Ø10	0,15	4	27	2,2	59,40	0,62	1	36,83
Viga M4-B1										
Superior Y	Ø16 a 12	Ø16	0,12	0,5	4	12,15	48,60	1,58	1	76,79
Inferior Y	Ø16 a 12	Ø16	0,12	0,5	4	12,15	48,60	1,58	1	76,79
Piel Y	1 Ø08	Ø08			1	12,15	12,15	0,4	2	9,72
Estribos	Ø10 a 20	Ø10	0,20	12,15	61	2,2	134,20	0,62	1	83,20
	Ø10 a 20	Ø10	0,20	12,15	61	1,55	94,55	0,62	1	58,62

BALSA DE TUDELA. ARQUETA DE TOMA										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
muros										26.791,83
muro tipo 1 L: 25,45 m H: 1,60 m										
Vertical	Ø16 a 20	Ø16	0,20	25,45	128	3	384,00	1,58	4	2.426,88
	Ø16 a 20	Ø16	0,20	25,45	128	1,4	179,20	1,58	4	1.132,54
Horizontal	Ø16 a 20	Ø16	0,20	1,6	9	25,45	229,05	1,58	4	1.447,60
muro tipo 2 L: 16,90 m H: 4,50 m										
Vertical	Ø16 a 20	Ø16	0,20	16,9	86	4,5	387,00	1,58	2	1.222,92
	Ø16 a 20	Ø16	0,20	16,9	86	1,4	120,40	1,58	2	380,46
Horizontal	Ø16 a 20	Ø16	0,20	4,5	24	25,45	610,80	1,58	2	1.930,13
muro tipo 2 L: 18,35 m H: 4,50 m										
Vertical	Ø16 a 20	Ø16	0,20	18,35	93	4,5	418,50	1,58	2	1.322,46
	Ø16 a 20	Ø16	0,20	18,35	93	1,4	130,20	1,58	2	411,43
Horizontal	Ø16 a 20	Ø16	0,20	4,5	24	18,35	440,40	1,58	2	1.391,66
muro tipo 3 L: 23,85 m H: 4,50 m										
Vertical	Ø16 a 20	Ø16	0,20	23,85	120	4,5	540,00	1,58	2	1.706,40
	Ø16 a 20	Ø16	0,20	23,85	120	1,4	168,00	1,58	2	530,88
Horizontal	Ø16 a 20	Ø16	0,20	4,5	24	23,85	572,40	1,58	2	1.808,78
Refuerzos	5 Ø20	Ø20			5	3	15,00	2,47	8	296,40
muro tipo 3 L: 9,40 m H: 4,50 m										
Vertical	Ø16 a 20	Ø16	0,20	9,4	48	4,5	216,00	1,58	2	682,56
	Ø16 a 20	Ø16	0,20	9,4	48	1,4	67,20	1,58	2	212,35
Horizontal	Ø16 a 20	Ø16	0,20	4,5	24	9,4	225,60	1,58	2	712,90
muro tipo 3 L: 18,35 m H: 4,50 m										
Vertical	Ø16 a 20	Ø16	0,20	18,35	93	4,5	418,50	1,58	2	1.322,46
	Ø16 a 20	Ø16	0,20	18,35	93	1,4	130,20	1,58	2	411,43
Horizontal	Ø16 a 20	Ø16	0,20	4,5	24	18,35	440,40	1,58	2	1.391,66
muro tipo 3 L: 12,15 m H: 4,50 m										
Vertical	Ø16 a 20	Ø16	0,20	12,15	62	4,5	279,00	1,58	2	881,64
	Ø16 a 20	Ø16	0,20	12,15	62	1,4	86,80	1,58	2	274,29
Horizontal	Ø16 a 20	Ø16	0,20	4,5	24	12,15	291,60	1,58	2	921,46
Refuerzos	5 Ø20	Ø20			5	3	15,00	2,47	8	296,40
muro tipo 3 L: 3,40 m H: 4,50 m										
Vertical	Ø16 a 20	Ø16	0,20	3,4	18	4,5	81,00	1,58	2	255,96
	Ø16 a 20	Ø16	0,20	3,4	18	1,4	25,20	1,58	2	79,63
Horizontal	Ø16 a 20	Ø16	0,20	4,5	24	3,4	81,60	1,58	2	257,86
muro tipo 4 L: 16,90 m H: 4,50 m										
Vertical	Ø16 a 20	Ø16	0,20	16,9	86	4,5	387,00	1,58	2	1.222,92
	Ø16 a 20	Ø16	0,20	16,9	86	1,4	120,40	1,58	2	380,46
Horizontal	Ø16 a 20	Ø16	0,20	4,5	24	16,9	405,60	1,58	2	1.281,70
Refuerzos	5 Ø20	Ø20			5	2	10,00	2,47	8	197,60
Suma										127.690,05
Total (kg) con % de incremento por solapes, ataduras y despuntes										140.459,05

BALSA DE TUDELA. LOSA DE TRANSICION										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Losa										7.222,56
Superior X	Ø16 a 20	Ø16	0,20	7,4	38	8,5	323,00	1,58	1	510,34
	Ø16 a 20	Ø16	0,20	7,4	38	1	38,00	1,58	2	120,08
Superior Y	Ø25 a 20	Ø25	0,20	8,5	44	7,4	325,60	3,85	1	1.253,56
solape central	Ø25 a 20	Ø25	0,20	8,5	44	2,25	99,00	3,85	1	381,15
solape lateral	Ø25 a 20	Ø25	0,20	8,5	44	3,5	154,00	3,85	2	1.185,80
Inferior X	Ø16 a 20	Ø16	0,20	7,4	38	8,5	323,00	1,58	1	510,34
	Ø16 a 20	Ø16	0,20	7,4	38	1	38,00	1,58	2	120,08
Inferior Y	Ø25 a 20	Ø25	0,20	8,5	44	7,4	325,60	3,85	1	1.253,56
solape central	Ø25 a 20	Ø25	0,20	8,5	44	2,25	99,00	3,85	1	381,15
solape lateral	Ø25 a 20	Ø25	0,20	8,5	44	3,5	154,00	3,85	2	1.185,80
Cercos	3Ø12 a 1 m	Ø12	1,00	8,5	10	4,2	42,00	0,89	3	112,14
Refuerzo	Ø16 a 20	Ø16	0,20	8,5	44	1,5	66,00	1,58	2	208,56
Losa transición 1										1.339,80
Superior X	Ø10 a 20	Ø10	0,20	5	26	8,5	221,00	0,62	1	137,02
Superior Y	Ø10 a 20	Ø10	0,20	8,5	44	5	220,00	0,62	1	136,40
Inferior X	Ø10 a 20	Ø10	0,20	5	26	8,5	221,00	0,62	1	137,02
Inferior Y	Ø10 a 20	Ø10	0,20	8,5	44	5	220,00	0,62	1	136,40
Refuerzos	Ø20 a 15	Ø20	0,15	8,5	58	5	290,00	2,47	1	716,30
	Ø16 a 20	Ø16	0,20	8,5	44	0,3	13,20	1,58	1	20,86
	3c Ø10 pml	Ø10	1,00	8,5	10	3	30,00	0,62	3	55,80
Losa transición 2										1.339,80
Superior X	Ø10 a 20	Ø10	0,20	5	26	8,5	221,00	0,62	1	137,02
Superior Y	Ø10 a 20	Ø10	0,20	8,5	44	5	220,00	0,62	1	136,40
Inferior X	Ø10 a 20	Ø10	0,20	5	26	8,5	221,00	0,62	1	137,02
Inferior Y	Ø10 a 20	Ø10	0,20	8,5	44	5	220,00	0,62	1	136,40
Refuerzos	Ø20 a 15	Ø20	0,15	8,5	58	5	290,00	2,47	1	716,30
	Ø16 a 20	Ø16	0,20	8,5	44	0,3	13,20	1,58	1	20,86
	3c Ø10 pml	Ø10	1,00	8,5	10	3	30,00	0,62	3	55,80
Suma										9.902,15
Total (kg) con % de incremento por solapes, ataduras y despuntes										10.892,37

BALSA DE TUDELA. ESTRUCTURA SUPERIOR										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Zapatillas cimentacion nivel 376,356										439,53
Inferior X	Ø16 a 15	Ø16	0,15	2	14	2	28,00	1,58	4	176,96
Inferior Y	Ø16 a 15	Ø16	0,15	2	14	2	28,00	1,58	4	176,96
caliz										
Inferior X	Ø10 a 10	Ø10	0,10	0,7	8	0,8	6,40	0,62	4	15,87
Inferior Y	Ø10 a 10	Ø10	0,10	0,8	9	0,7	6,30	0,62	4	15,62
vertical X	Ø10 a 10	Ø10	0,10	0,8	9	0,6	5,40	0,62	8	26,78
vertical y	Ø10 a 10	Ø10	0,10	0,4	5	0,7	3,50	0,62	8	17,36
	2 Ø12	Ø12			2	0,7	1,40	0,89	8	9,97
Vigas cimentacion nivel 376,356										383,92
Vigas X										
Viga V2 L 2,70										
Superior X	Ø16 a 10	Ø16	0,10	0,4	4	2,7	10,80	1,58	1	17,06
Inferior X	Ø16 a 15	Ø16	0,15	0,4	3	2,7	8,10	1,58	1	12,80
Piel X	1 Ø12	Ø12			1	2,7	2,70	0,89	2	4,81
Estribos	Ø8 a 20	Ø8	0,20	2,7	14	2	28,00	6,31	1	176,68
Viga V2 L 3,95										
Superior X	Ø16 a 10	Ø16	0,10	0,4	4	3,95	15,80	1,58	2	49,93
Inferior X	Ø16 a 15	Ø16	0,15	0,4	3	3,95	11,85	1,58	2	37,45
Piel X	1 Ø12	Ø12			1	3,95	3,95	0,89	4	14,06
Estribos	Ø8 a 20	Ø8	0,20	3,95	20	2	40,00	0,4	2	32,00
Vigas Y										
Viga V2 L 2,30										
Superior Y	Ø16 a 10	Ø16	0,10	0,4	4	2,3	9,20	1,58	1	14,54
Inferior Y	Ø16 a 15	Ø16	0,15	0,4	3	2,3	6,90	1,58	1	10,90
Piel Y	1 Ø12	Ø12			1	2,3	2,30	0,89	2	4,09
Estribos	Ø8 a 20	Ø8	0,20	2,3	12	2	24,00	0,4	1	9,60
Losa cimentacion nivel 376,356										709,28
losa 1 17,45x3,70										
Superior X	Ø8 a 15	Ø8	0,15	3,7	26	17,45	453,70	0,4	1	181,48
Superior Y	Ø8 a 15	Ø8	0,15	17,45	117	3,7	432,90	0,4	1	173,16
Inferior X	Ø8 a 15	Ø8	0,15	3,7	26	17,45	453,70	0,4	1	181,48
Inferior Y	Ø8 a 15	Ø8	0,15	17,45	117	3,7	432,90	0,4	1	173,16
Suma										1.532,72
Total (kg) con % de incremento por solapes, ataduras y despuntes										1.686,00

ARQUETA DE CAUDALÍMETRO

BALSA DE TUDELA. ARQUETA DE CAUDALÍMETROS										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Losa cimentacion										2.100,13
Superior X	Ø16 a 15	Ø16	0,10	4,2	43	7,2	309,60	1,58	1	489,17
Superior Y	Ø16 a 15	Ø16	0,10	7,2	73	4,2	306,60	1,58	1	484,43
Inferior X	Ø16 a 15	Ø16	0,10	4,2	43	7,2	309,60	1,58	1	489,17
Inferior Y	Ø16 a 15	Ø16	0,10	7,2	73	4,2	306,60	1,58	1	484,43
Vigas X										
Superior X	Ø10 a 10	Ø10	0,10	0,35	4	7,2	28,80	0,62	2	35,71
Inferior X	Ø10 a 12	Ø10	0,12	0,35	3	7,2	21,60	0,62	2	26,78
Estribos	Ø06 a 15	Ø06	0,15	7,2	48	1,6	76,80	0,222	2	34,10
Vigas Y										
Superior X	Ø10 a 10	Ø10	0,10	0,35	4	4,2	16,80	0,62	2	20,83
Inferior X	Ø10 a 12	Ø10	0,12	0,35	3	4,2	12,60	0,62	2	15,62
Estribos	Ø06 a 15	Ø06	0,15	4,2	28	1,6	44,80	0,222	2	19,89
Losa superior										1.052,59
Superior X	Ø16 a 25	Ø16	0,25	4,2	18	7,2	129,60	1,58	1	204,77
Superior Y	Ø16 a 25	Ø16	0,25	7,2	30	4,2	126,00	1,58	1	199,08
Inferior X	Ø16 a 25	Ø16	0,20	4,2	22	7,2	158,40	1,58	1	250,27
Inferior Y	Ø16 a 25	Ø16	0,20	7,2	37	4,2	155,40	1,58	1	245,53
Vigas X										
Superior X	Ø10 a 10	Ø10	0,10	0,35	4	7,2	28,80	0,62	2	35,71
Inferior X	Ø10 a 12	Ø10	0,12	0,35	3	7,2	21,60	0,62	2	26,78
Estribos	Ø06 a 15	Ø06	0,15	7,2	48	1,6	76,80	0,222	2	34,10
Vigas Y										
Superior X	Ø10 a 10	Ø10	0,10	0,35	4	4,2	16,80	0,62	2	20,83
Inferior X	Ø10 a 12	Ø10	0,12	0,35	3	4,2	12,60	0,62	2	15,62
Estribos	Ø06 a 15	Ø06	0,15	4,2	28	1,6	44,80	0,222	2	19,89
Vigas refuerzo huecos										274,28
Vigas X										
Superior X	Ø10 a 10	Ø10	0,10	0,35	4	1,7	6,80	0,62	6	25,30
Inferior X	Ø10 a 12	Ø10	0,12	0,35	3	1,7	5,10	0,62	6	18,97
Estribos	Ø06 a 15	Ø06	0,15	1,7	11	1,6	17,60	0,222	6	23,44
Vigas Y										
Superior X	Ø10 a 10	Ø10	0,10	0,35	4	1,7	6,80	0,62	6	25,30
Inferior X	Ø10 a 12	Ø10	0,12	0,35	3	1,7	5,10	0,62	6	18,97
Estribos	Ø06 a 15	Ø06	0,15	1,7	11	1,6	17,60	0,222	6	23,44
Viga circular										
Superior X	Ø10 a 10	Ø10	0,10	0,35	4	3,45	13,80	0,62	6	51,34
Inferior X	Ø10 a 12	Ø10	0,12	0,35	3	3,45	10,35	0,62	6	38,50
Estribos	Ø06 a 15	Ø06	0,15	3,45	23	1,6	36,80	0,222	6	49,02

BALSA DE TUDELA. ARQUETA DE CAUDALÍMETROS										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
muros										2.212,91
muro tipo M1 L: 4,20 m H: 4,48 m										
Vertical	Ø12 a 30	Ø12	0,20	4,2	22	4,48	98,56	0,89	4	350,87
	Ø12 a 30	Ø12	0,20	4,2	22	0,75	16,50	0,89	4	58,74
Horizontal	Ø12 a 20	Ø12	0,20	4,48	23	4,2	96,60	0,89	4	343,90
muro tipo M2 L: 7,20 m H: 4,48 m										
Vertical	Ø12 a 30	Ø12	0,20	7,2	37	4,48	165,76	0,89	4	590,11
	Ø12 a 30	Ø12	0,20	7,2	37	0,75	27,75	0,89	4	98,79
Horizontal	Ø12 a 20	Ø12	0,20	4,48	23	7,2	165,60	0,89	4	589,54
Refuerzo en huecos										
Superior X	Ø10 a 12	Ø10	0,12	0,35	3	7,55	22,65	0,62	4	56,17
Inferior X	Ø10 a 12	Ø10	0,12	0,35	3	7,55	22,65	0,62	4	56,17
Estribos	Ø06 a 15	Ø06	0,15	7,55	50	1,6	80,00	0,222	4	68,62
Suma										5.639,91
Total (kg) con % de incremento por solapes, ataduras y despuntes										6.203,90

ELEMENTOS DE ROTURA DE CARGA

EXCAVACIONES					
	P.K	AREA PERFIL	VOL. PARCIAL	VOL. ACUMUL.	VOL. TOTAL
CUENCO DEFLECTOR	165.000	94.762,0	323,0	38.753,2	1.307,70
	170.000	92.216,0	467,5	39.220,6	
	170.383	92.012,0	35,3	39.255,9	
	171.000	91.682,0	56,7	39.312,6	
	171.000	91.682,0	0,0	39.312,6	
	171.100	80.126,0	8,6	39.321,2	
	171.100	80.126,0	0,0	39.321,2	
	175.000	78.409,0	309,1	39.630,3	
	176.162	77.887,0	90,8	39.721,1	
	176.374	79.793,0	16,7	39.737,8	

EXCAVACIONES					
	P.K	AREA PERFIL	VOL. PARCIAL	VOL. ACUMUL.	VOL. TOTAL
CUENCO AMORTIGUADOR	177.668	91.671,0	110,9	39.848,8	1.328,90
	180.000	89.848,0	211,7	40.060,4	
	185.000	85.976,0	439,6	40.500,0	
	190.000	82.400,0	420,9	40.920,9	
	190.592	81.984,0	48,7	40.969,6	
	190.883	78.933,0	23,4	40.993,0	
	191.870	68.790,0	72,9	41.065,9	
	191.870	68.790,0	0,0	41.065,9	
	191.874	77.258,0	0,3	41.066,2	
	191.880	84.932,0	0,5	41.066,7	
	191.880	84.932,0	0,0	41.066,7	

EXCAVACIÓN. CANAL DE DESCARGA					
	P.K	AREA PERFIL	VOL. PARCIAL	VOL. ACUMUL.	VOL. TOTAL
CANAL DE DESCARGA	195.000	79.975,0	257,3	41.323,9	27.091,90
	200.000	72.073,0	380,1	41.704,0	
	205.000	63.982,0	340,1	42.044,2	
	210.000	56.360,0	300,9	42.345,0	
	215.000	48.984,0	263,4	42.608,4	
	220.000	41.833,0	227,0	42.835,4	
	225.000	35.404,0	193,1	43.028,5	
	230.000	29.552,0	162,4	43.190,9	
	230.480	29.014,0	14,1	43.205,0	
	234.229	26.928,0	104,9	43.309,8	
	235.000	37.227,0	24,7	43.334,6	
	238.002	91.126,0	192,7	43.527,2	
	240.000	88.768,0	179,7	43.706,9	
	245.000	82.849,0	429,0	44.136,0	
	250.000	77.325,0	400,4	44.536,4	
	251.220	76.037,0	93,6	44.630,0	
	252.719	49.503,0	94,1	44.724,1	
	255.000	48.237,0	111,5	44.835,5	
	260.000	46.361,0	236,5	45.072,0	
	265.000	44.802,0	227,9	45.299,9	
	270.000	43.241,0	220,1	45.520,0	
	275.000	42.327,0	213,9	45.734,0	
	280.000	42.189,0	211,3	45.945,3	
	285.000	45.634,0	219,6	46.164,8	
	290.000	49.442,0	237,7	46.402,5	
	295.000	56.464,0	264,8	46.667,3	
	300.000	68.591,0	312,6	46.979,9	
	305.000	81.238,0	374,6	47.354,5	
	310.000	91.931,0	432,9	47.787,4	
	315.000	96.662,0	471,5	48.258,9	
	320.000	92.782,0	473,6	48.732,5	
	325.000	89.794,0	456,4	49.188,9	
	330.000	86.173,0	439,9	49.628,8	
	335.000	80.265,0	416,1	50.044,9	
	340.000	73.147,0	383,5	50.428,5	
	345.000	62.220,0	338,4	50.766,9	
	350.000	51.489,0	284,3	51.051,2	
	355.000	40.939,0	231,1	51.282,2	
	360.000	33.197,0	185,3	51.467,6	
	365.000	25.810,0	147,5	51.615,1	
	365.586	25.188,0	14,9	51.630,0	
	370.000	85.710,0	244,8	51.874,8	
	370.657	97.518,0	60,2	51.935,0	
	375.000	89.384,0	405,9	52.340,8	
	380.000	81.231,0	426,5	52.767,4	
	382.085	78.077,0	166,1	52.933,4	
	383.576	51.201,0	96,4	53.029,8	
	385.000	49.576,0	71,8	53.101,6	
	390.000	44.463,0	235,1	53.336,7	
	395.000	40.346,0	212,0	53.548,7	
	400.000	36.407,0	191,9	53.740,6	
	405.000	33.604,0	175,0	53.915,6	
	410.000	33.819,0	168,6	54.084,2	
	415.000	34.131,0	169,9	54.254,0	
	420.000	34.445,0	171,4	54.425,5	
	425.000	34.760,0	173,0	54.598,5	
	430.000	35.076,0	174,6	54.773,1	
	435.000	35.393,0	176,2	54.949,3	
	440.000	35.712,0	177,8	55.127,0	
	445.000	35.269,0	177,5	55.304,5	

EXCAVACIÓN. CANAL DE DESCARGA					
	P.K	AREA PERFIL	VOL. PARCIAL	VOL. ACUMUL.	VOL. TOTAL
	450.000	34.873,0	175,4	55.479,8	
	455.000	35.290,0	175,4	55.655,2	
	460.000	36.129,0	178,6	55.833,8	
	465.000	34.137,0	175,7	56.009,4	
	470.000	31.161,0	163,3	56.172,7	
	475.000	30.546,0	154,3	56.327,0	
	480.000	32.616,0	157,9	56.484,9	
	485.000	35.263,0	169,7	56.654,6	
	490.000	35.152,0	176,0	56.830,6	
	491.431	34.681,0	50,0	56.880,6	
	495.000	32.558,0	120,0	57.000,6	
	500.000	29.628,0	155,5	57.156,0	
	505.000	25.103,0	136,8	57.292,8	
	507.108	24.060,0	51,8	57.344,7	
	510.000	61.587,0	123,9	57.468,5	
	514.784	158.207,0	525,8	57.994,3	
	515.000	158.092,0	34,2	58.028,4	
	520.000	154.891,0	782,5	58.810,9	
	523.597	152.242,0	552,4	59.363,3	
	525.000	118.379,0	189,8	59.553,1	
	525.098	116.166,0	11,5	59.564,6	
	530.000	113.395,0	562,7	60.127,2	
	535.000	110.995,0	561,0	60.688,2	
	540.000	108.529,0	548,8	61.237,0	
	544.679	106.246,0	502,5	61.739,5	
	545.000	106.092,0	34,1	61.773,6	
	550.000	103.692,0	524,5	62.298,0	
	555.000	101.306,0	512,5	62.810,5	
	560.000	98.896,0	500,5	63.311,0	
	565.000	96.293,0	488,0	63.799,0	
	570.000	93.000,0	473,2	64.272,2	
	575.000	90.018,0	457,6	64.729,8	
	580.000	87.861,0	444,7	65.174,5	
	584.350	86.284,0	378,8	65.553,3	
	585.000	86.074,0	56,0	65.609,3	
	590.000	84.451,0	426,3	66.035,6	
	594.350	82.711,0	363,6	66.399,2	
	658.662	49.408,0	0,0	66.399,2	
	660.000	48.365,0	65,4	66.464,6	
	665.000	44.258,0	231,6	66.696,1	
	668.662	42.557,0	159,0	66.855,1	
	670.000	42.326,0	56,8	66.911,9	
	675.000	41.799,0	210,3	67.122,2	
	678.114	41.576,0	129,8	67.252,0	
	679.615	64.124,0	79,3	67.331,3	
	680.000	64.062,0	24,7	67.356,0	
	685.000	63.427,0	318,7	67.674,7	
	690.000	62.970,0	316,0	67.990,7	
	692.671	62.731,0	167,9	68.158,6	

ELEMENTOS DE ROTURA DE CARGA (CIMENTACIÓN. NIVEL 369,247-367,952)									
LOSA INCLINADA . TRAMO 1 (14,78 X 7,4).DEFLECTOR . ARMADURA SUP.									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#20@15	Ø20	0,15	14,78	100	7,25	725	2,47	1.790,75	
#20@15	Ø20	0,15	7,4	50	14,63	731,5	2,47	1.806,81	
Total losa*1,05								7.554,87	
LOSA INCLINADA . TRAMO 1 (14,78 X 7,4). DEFLECTOR . ARMADURA INF									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#20@15	Ø20	0,15	14,78	100	7,25	725	2,47	1.790,75	
#20@15	Ø20	0,15	7,4	50	14,63	731,5	2,47	1.806,81	
Total losa*1,05								7.554,87	
LOSA INCLINADA . TRAMO 2 (1,50X 7,4). TRANSICIÓN. ARMADURA SUP.									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#20@15	Ø20	0,15	1,5	11	7,25	79,75	2,47	196,98	
#20@15	Ø20	0,15	7,4	50	1,35	67,5	2,47	166,73	
Total losa*1,05								763,79	
LOSA INCLINADA . TRAMO 2 (1,50X 7,4). TRANSICIÓN. ARMADURA INF									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#20@15	Ø20	0,15	1,5	11	7,25	79,75	2,47	196,98	
#20@15	Ø20	0,15	7,4	50	1,35	67,5	2,47	166,73	
Total losa*1,05								763,79	
LOSA PLANA . TRAMO 3 (11,50* 7,4) CUENCO AMORTIGUADOR. ARMADURA SUP.									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#20@15	Ø20	0,15	11,5	78	7,25	565,5	2,47	1.396,79	
#20@15	Ø20	0,15	7,4	50	11,35	567,5	2,47	1.401,73	
Total losa*1,05								5.876,87	
LOSA PLANA . TRAMO 3 (11,50* 7,4) CUENCO AMORTIGUADOR. ARMADURA INF									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#20@15	Ø20	0,15	11,5	78	7,25	565,5	2,47	1.396,79	
#20@15	Ø20	0,15	7,4	50	11,35	567,5	2,47	1.401,73	
Total losa*1,05								5.876,87	
LOSA INCLINADA . TRAMO 4 (1,5* 7,4). CUENCO AMORTIGUADOR. ARMADURA SUP									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#20@15	Ø20	0,15	1,5	11	7,25	79,75	2,47	196,98	
#20@15	Ø20	0,15	7,4	50	1,35	67,5	2,47	166,73	
Total losa*1,05								763,79	
LOSA INCLINADA . TRAMO 4 (1,5* 7,4). CUENCO AMORTIGUADOR. ARMADURA INF									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#20@15	Ø20	0,15	1,5	11	7,25	79,75	2,47	196,98	
#20@15	Ø20	0,15	7,4	50	1,35	67,5	2,47	166,73	
Total losa*1,05								763,79	
refuerzo DEFLECTOR + TRANSICION									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#4@12	Ø20			12	16,28	195,36	2,47	482,54	
#4@12	Ø20			12	16,28	195,36	2,47	482,54	
								2.026,66	
refuerzo CUENCO AMORTIGUADOR									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
#4@12	Ø20			12	13	156	2,47	385,32	
#4@12	Ø20			12	13	156	2,47	385,32	
								1.618,34	
armadura de piel 4Ø12 DEFLECTOR + TRANSICION									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
4@12	Ø12		16,28	65	16,28	1058,2	0,89	941,80	
armadura de piel 4Ø12 CUENCO AMORTIGUADOR									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)	
4@12	Ø12		13	52	13	676	0,89	601,64	
estribos DEFLECTOR + TRANS Ø10c/20	Ø10	0,20	16,28	82	6,9415	569,203	0,62	352,91	
estribos Ø10c/20 TRANS	Ø10	0,20	13	66	7,9415	524,139	0,62	324,97	

MURO TIPO A. DEFLECTOR + TRANSICION (HMED=2,5X16,28)									
		Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m2)	Peso Total (kg)
		Ø16	0,15	16,28	110	2,35	258,5	1,58	1.633,72
		Ø16	0,15	2,5	18	16,13	290,34	1,58	1.834,95
		Ø8	0,15	2,5	18	1,7195	30,951	3,85	238,32
Total MURO*1,05								3.892,34	
MURO TIPO B. CUENCO MORTIGUADOR (HMED=3,3X13)									
		Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m2)	Peso Total (kg)
		Ø20	0,15	13	88	3,15	277,2	2,47	2.738,74
		Ø20	0,15	3,3	23	12,85	295,55	2,47	2.920,03
		Ø8	0,15	3,3	23	1,7195	39,5485	3,85	304,52
Total MURO*1,05								6.261,46	

ELEMENTOS DE ROTURA DE CARGA (FORJADO NIVEL 371,856-372,2)

LOSA FORJADO (13,4 X 7,8). ARMADURA SUPERIOR. DEFLECTOR								
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)
#20@15	Ø20	0,15	13,4	90	7,65	688,5	2,47	1.700,60
#20@15	Ø20	0,15	7,8	53	13,25	702,25	2,47	1.734,56
Total losa*1,05								7.213,82

LOSA FORJADO (13,4 X 7,8). ARMADURA INFERIOR. DEFLECTOR								
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)
#20@15	Ø20	0,15	13,4	90	7,65	688,5	2,47	1.700,60
#20@15	Ø20	0,15	7,8	53	13,25	702,25	2,47	1.734,56
Total losa*1,05								7.213,82

LOSA INCLINADA FORJADO . (1,50X 7,8). ARMADURA SUP.								
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)
#20@15	Ø20	0,15	1,5	11	7,65	84,15	2,47	207,85
#20@15	Ø20	0,15	7,8	53	1,35	71,55	2,47	176,73
Total losa*1,05								807,62

LOSA INCLINADA FORJADO . (1,50X 7,8)ARMADURA INF								
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)
#20@15	Ø20	0,15	1,5	11	7,65	84,15	2,47	207,85
#20@15	Ø20	0,15	7,8	53	1,35	71,55	2,47	176,73
Total losa*1,05								807,62

LOSA FORJADO . TRANSICION (LMED 10* 5) ARMADURA SUP.								
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)
#20@15	Ø20	0,15	10	68	4,85	329,8	2,47	814,61
#20@15	Ø20	0,15	5	34	9,85	334,9	2,47	827,20
Total losa*1,05								3.447,80

LOSA FORJADO . TRANSICION (LMED 10* 5) ARMADURA INF								
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m)	Peso Total (kg)
#20@15	Ø20	0,15	10	68	4,85	329,8	2,47	814,61
#20@15	Ø20	0,15	5	34	9,85	334,9	2,47	827,20
Total losa*1,05								3.447,80

MURO TIPO C. DEFLECTOR (4,54X8,775)								
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m2)	Peso Total (kg)
	Ø20	0,15	8,78	60	4,39	263,4	2,47	2.602,39
	Ø20	0,15	4,54	31	8,625	267,375	2,47	2.641,67
	Ø8	0,15	8,78	60	0,775	46,5	3,85	358,05
Total MURO*1,05								11.764,42

MURO TIPO C. TRANSICION (5X H1MED 2,5)								
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m2)	Peso Total (kg.)
	Ø20	0,15	5	34	2,35	79,9	2,47	789,41
	Ø20	0,15	2,5	18	4,85	87,3	2,47	862,52
	Ø8	0,15	5	34	0,775	26,35	3,85	202,90
Total MURO*1,05								3.895,15

LOSA FORJADO DEFLECTOR								
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m2)	Peso Total (kg)
SUPERIOR	Ø10		4,52	3	4,52	13,56	0,62	8,41
SUPERIOR	Ø10		2,15	3	2,15	6,45	0,62	4,00
INFERIOR	Ø10		5,32	3	5,32	15,96	0,62	9,90
INFERIOR	Ø10		2,15	4	2,15	8,6	0,62	5,33
ESTRIBOS	Ø6	0,19	4,58	25	4,58	114,5	3,85	440,83
ESTRIBOS	Ø6	0,19	4,58	25	5,58	139,5	3,85	537,08
Total LOSA*1,05								2.111,62

VIGA DEFLECTOR (0,5*1,95/2,70) L 13,4									
	Diámetro	@	L (m)	Nº	Long barra (m)	Total (m)	Peso (kg/m2)	Peso Total (kg)	
SUP	Ø20		7,56	4	7,56	30,24	2,47	74,69	
	Ø20		7,56	4	7,56	30,24	2,47	74,69	
	Ø20		4,72	24	4,72	113,28	2,47	279,80	
	Ø20		6	24	6	144	2,47	355,68	
	Ø20		4,72	24	4,72	113,28	2,47	279,80	
	Ø20		6	4	6	24	2,47	59,28	
	INF	Ø20		5	4	5	20	2,47	49,40
	Ø20		5	4	5	20	2,47	49,40	
ALMENAS INVERTIDA	Ø20		1,45	2	1,45	2,9	2,47	7,16	
	Ø20		2,9	2	2,9	5,8	2,47	14,33	
	Ø20		3,4	2	3,4	6,8	2,47	16,80	
	Ø20		2,9	2	2,9	5,8	2,47	14,33	
	Ø20		1,45	2	1,45	2,9	2,47	7,16	
	Ø20		2,8	4	2,8	11,2	2,47	27,66	
	Ø20		5,55	4	5,55	22,2	2,47	54,83	
	Ø20		6,1	4	6,1	24,4	2,47	60,27	
	Ø20		5,55	4	5,55	22,2	2,47	54,83	
	Ø20		2,8	4	2,8	11,2	2,47	27,66	
	ESTRIBOS								
	VIGA HORIZONTAL								
ESTRIBOS V	Ø20		0,5	83	0,5	41,5	2,47	102,51	
ESTRIBOS H	Ø8		13,4	6	13,4	80,4	3,85	309,54	
ALMENAS INVERTIDA	Ø20	0,15	13,4	90	13,4	1206	2,47	2.978,82	
	Ø8	0,15	2,5	18	2,5	45	3,85	173,25	
Total *1,05								5.325,50	

ALIVIADERO

BALSA DE TUDELA. ALIVIADERO										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso lineal (kg/m)	Nº	Peso Total (kg)
Obra circular										23.789,41
Chimenea	Ø25 a 15	Ø25	0,15	7,73	52	33,2	1.710,91	3,85	1	6.586,99
	Ø25 a 15	Ø25	0,15	2,15	14	33,2	475,87	3,85	1	1.832,09
	Ø25 a 15	Ø25	0,15	33,2	221	7,73	1.710,91	3,85	1	6.586,99
	Ø25 a 15	Ø25	0,15	33,2	221	2,95	652,93	3,85	1	2.513,79
	Ø25 a 15	Ø25	0,15	7,9	53	7,73	407,11	3,85	2	3.134,77
	Ø25 a 15	Ø25	0,15	7,73	52	7,9	407,11	3,85	2	3.134,77

MEDICIONES AUXILIARES

BALSA DE MOSTRAKAS

MOVIMIENTO DE TIERRAS

BALSA DE MOSTRAKAS EXCAVACIÓN DEL VASO			
P.K	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
54,12	236,58	0,00	0,00
55	239,39	209,43	209,40
56	242,61	241,00	450,40
57	251,72	247,16	697,60
58	261,21	256,47	954,10
59	269,82	265,51	1.219,60
60	278,71	274,26	1.493,80
60	278,71	0,00	1.493,80
61	287,29	283,00	1.776,80
62	299,01	293,15	2.070,00
63	307,07	303,04	2.373,00
64	315,21	311,14	2.684,20
65	322,43	318,82	3.003,00
66	329,68	326,05	3.329,00
67	336,81	333,24	3.662,30
68	344,01	340,41	4.002,70
69	350,83	347,42	4.350,10
70	357,62	354,22	4.704,30
70	357,62	0,00	4.704,30
71	362,81	360,21	5.064,50
72	367,90	365,35	5.429,90
73	372,76	370,33	5.800,20
74	377,55	375,15	6.175,40
75	382,09	379,82	6.555,20
76	386,55	384,32	6.939,50
77	390,79	388,67	7.328,20
78	394,98	392,88	7.721,10
79	398,99	396,98	8.118,00
80	403,00	400,99	8.519,00
80	403,00	0,00	8.519,00
81	408,59	405,79	8.924,80
82	414,19	411,39	9.336,20
83	419,61	416,90	9.753,10
84	425,14	422,37	10.175,50
85	430,40	427,77	10.603,30
86	435,84	433,12	11.036,40
87	441,25	438,54	11.474,90
88	446,44	443,84	11.918,80
89	451,38	448,91	12.367,70
90	456,37	453,88	12.821,60
90	456,37	0,00	12.821,60
91	459,93	458,15	13.279,70
92	463,38	461,65	13.741,40
93	466,76	465,07	14.206,40
94	470,25	468,51	14.674,90
95	473,66	471,95	15.146,90
96	477,17	475,41	15.622,30

BALSA DE MOSTRAKAS EXCAVACIÓN DEL VASO			
P.K	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
97	480,60	478,88	16.101,20
98	484,10	482,35	16.583,50
99	487,49	485,79	17.069,30
100	490,99	489,24	17.558,60
100	490,99	0,00	17.558,60
101	494,59	492,79	18.051,30
102	498,18	496,39	18.547,70
102,53	500,15	264,56	18.812,30
103	501,58	235,41	19.047,70
104	504,61	503,09	19.550,80
105	507,74	506,17	20.057,00
106	510,84	509,29	20.566,20
107	513,96	512,40	21.078,60
108	517,00	515,48	21.594,10
109	519,99	518,49	22.112,60
110	522,87	521,43	22.634,00
110	522,87	0,00	22.634,00
111	525,61	524,24	23.158,30
112	528,20	526,90	23.685,20
113	530,67	529,43	24.214,60
114	532,97	531,82	24.746,40
115	535,15	534,06	25.280,50
116	537,19	536,17	25.816,70
117	539,02	538,10	26.354,80
118	540,68	539,85	26.894,60
119	542,09	541,38	27.436,00
120	543,13	542,61	27.978,60
120	543,13	0,00	27.978,60
121	545,01	544,07	28.522,70
122	546,62	545,81	29.068,50
123	548,07	547,34	29.615,80
124	549,21	548,64	30.164,50
125	550,12	549,66	30.714,10
126	550,80	550,46	31.264,60
127	551,42	551,11	31.815,70
128	551,79	551,61	32.367,30
129	551,94	551,87	32.919,20
130	551,83	551,89	33.471,10
130	551,83	0,00	33.471,10
131	551,57	551,70	34.022,80
132	551,09	551,33	34.574,10
133	550,44	550,76	35.124,90
134	549,55	549,99	35.674,90
135	548,41	548,98	36.223,80
136	547,08	547,74	36.771,60
137	545,65	546,37	37.317,90
138	544,05	544,85	37.862,80

BALSA DE MOSTRAKAS EXCAVACIÓN DEL VASO			
P.K	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
139	542,42	543,24	38.406,00
140	540,67	541,55	38.947,60
140	540,67	0,00	38.947,60
141	537,44	539,05	39.486,60
142	534,33	535,89	40.022,50
143	531,41	532,87	40.555,40
144	528,63	530,02	41.085,40
145	526,11	527,37	41.612,80
146	523,86	524,99	42.137,80
147	522,03	522,94	42.660,70
148	520,42	521,22	43.181,90
149	518,99	519,70	43.701,60
150	517,71	518,35	44.220,00
150	517,71	0,00	44.220,00
151	517,47	517,59	44.737,60
152	517,31	517,39	45.255,00
153	517,38	517,35	45.772,30
154	517,71	517,55	46.289,90
155	518,13	517,92	46.807,80
156	518,64	518,38	47.326,20
157	519,33	518,98	47.845,10
158	519,93	519,63	48.364,80
159	520,70	520,31	48.885,10
160	521,39	521,04	49.406,10
160	521,39	0,00	49.406,10
161	521,04	521,21	49.927,30
162	520,75	520,90	50.448,20
163	520,68	520,72	50.968,90
164	520,85	520,77	51.489,70
165	521,33	521,09	52.010,80
166	522,25	521,79	52.532,60
167	523,51	522,88	53.055,50
168	524,88	524,19	53.579,70
169	526,35	525,62	54.105,30
170	527,75	527,05	54.632,30
170	527,75	0,00	54.632,30
171	529,22	528,48	55.160,80
172	530,24	529,73	55.690,50
173	530,67	530,45	56.221,00
174	530,27	530,47	56.751,50
175	529,27	529,77	57.281,20
176	527,66	528,46	57.809,70
177	525,78	526,72	58.336,40
178	523,61	524,70	58.861,10
179	521,24	522,42	59.383,50
180	518,76	520,00	59.903,50
180	518,76	0,00	59.903,50

BALSA DE MOSTRAKAS EXCAVACIÓN DEL VASO			
P.K	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
181	512,88	515,82	60.419,30
182	507,52	510,20	60.929,50
183	502,82	505,17	61.434,70
184	497,63	500,22	61.934,90
185	493,10	495,36	62.430,30
186	491,14	492,12	62.922,40
187	490,97	491,05	63.413,50
188	491,15	491,06	63.904,50
189	490,26	490,70	64.395,20
190	488,26	489,26	64.884,50
190	488,26	0,00	64.884,50
191	482,91	485,59	65.370,10
192	477,28	480,09	65.850,20
193	471,14	474,21	66.324,40
194	463,67	467,40	66.791,80
195	454,87	459,27	67.251,10
196	445,78	450,33	67.701,40
197	436,99	441,39	68.142,80
198	428,98	432,99	68.575,80
199	422,04	425,51	69.001,30
200	419,34	420,69	69.422,00
200	419,34	0,00	69.422,00
201	417,15	418,24	69.840,20
201,748	414,82	311,16	70.151,40
202	414,22	104,46	70.255,80
203	411,80	413,01	70.668,80
204	409,65	410,72	71.079,50
205	407,90	408,78	71.488,30
206	407,07	407,48	71.895,80
207	406,34	406,71	72.302,50
208	406,03	406,19	72.708,70
209	405,95	405,99	73.114,70
210	406,29	406,12	73.520,80
210	406,29	0,00	73.520,80
211	379,30	392,79	73.913,60
212	374,70	377,00	74.290,60
213	372,95	373,83	74.664,40
214	372,01	372,48	75.036,90
215	371,49	371,75	75.408,70
216	371,06	371,28	75.779,90
217	370,67	370,86	76.150,80
218	370,28	370,47	76.521,30
219	369,80	370,04	76.891,30
220	369,64	369,72	77.261,00
220	369,64	0,00	77.261,00
221	368,62	369,13	77.630,20
222	368,24	368,43	77.998,60

BALSA DE MOSTRAKAS EXCAVACIÓN DEL VASO			
P.K	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
223	367,59	367,92	78.366,50
224	366,74	367,16	78.733,70
225	365,43	366,09	79.099,80
226	364,08	364,76	79.464,50
227	362,28	363,18	79.827,70
228	360,45	361,36	80.189,10
229	358,44	359,44	80.548,50
230	356,75	357,60	80.906,10
231	355,50	356,13	81.262,20
232	355,45	355,48	81.617,70
233	354,84	355,15	81.972,90
234	354,58	354,71	82.327,60
235	354,23	354,40	82.682,00
236	353,62	353,92	83.035,90
237	351,74	352,68	83.388,60
238	350,54	351,14	83.739,70
239	348,99	349,76	84.089,50
240	346,00	347,49	84.437,00
241	343,80	344,90	84.781,90
242	341,19	342,49	85.124,40
243	338,01	339,60	85.464,00
244	335,30	336,66	85.800,60
245	333,19	334,24	86.134,90
246	331,26	332,23	86.467,10
247	330,77	331,02	86.798,10
248	330,52	330,64	87.128,70
249	330,04	330,28	87.459,00
250	329,39	329,72	87.788,70
250	329,39	0,00	87.788,70
251	327,92	328,66	88.117,40
252	326,08	327,00	88.444,40
253	324,27	325,17	88.769,60
254	322,50	323,38	89.093,00
255	320,24	321,37	89.414,30
256	317,62	318,93	89.733,30
257	314,95	316,28	90.049,50
258	312,16	313,55	90.363,10
259	310,45	311,31	90.674,40
260	309,22	309,83	90.984,20
260	309,22	0,00	90.984,20
261	312,26	310,74	91.295,00
262	310,19	311,23	91.606,20
263	309,33	309,76	91.916,00
264	308,50	308,92	92.224,90
265	308,16	308,33	92.533,20
266	308,03	308,09	92.841,30
267	307,89	307,96	93.149,30

BALSA DE MOSTRAKAS EXCAVACIÓN DEL VASO			
P.K	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
268	308,27	308,08	93.457,30
269	309,75	309,01	93.766,40
270	311,58	310,66	94.077,00
271	313,64	312,61	94.389,60
271,881	315,85	277,29	94.666,90
272	316,00	37,59	94.704,50
273	317,18	316,59	95.021,10
274	318,42	317,80	95.338,90
275	319,80	319,11	95.658,00
276	320,84	320,32	95.978,30
277	321,70	321,27	96.299,60
278	322,50	322,10	96.621,70
279	323,17	322,84	96.944,50
280	323,74	323,46	97.268,00
281	323,84	323,79	97.591,80
282	323,79	323,81	97.915,60
283	323,15	323,47	98.239,10
284	323,04	323,09	98.562,20
285	323,15	323,10	98.885,30
286	324,28	323,72	99.209,00
287	325,92	325,10	99.534,10
288	328,05	326,99	99.861,10
289	331,13	329,59	100.190,70
290	334,53	332,83	100.523,50
291	337,32	335,93	100.859,40
292	340,32	338,82	101.198,20
293	343,15	341,73	101.540,00
294	345,01	344,08	101.884,00
295	346,22	345,61	102.229,70
296	348,41	347,31	102.577,00
297	352,31	350,36	102.927,30
298	356,24	354,28	103.281,60
299	360,18	358,21	103.639,80
300	363,89	362,04	104.001,90
301	368,40	366,14	104.368,00
302	376,46	372,43	104.740,40
303	385,77	381,12	105.121,50
304	396,78	391,28	105.512,80
305	407,49	402,14	105.915,00
306	418,21	412,85	106.327,80
307	428,88	423,55	106.751,30
308	437,48	433,18	107.184,50
309	444,79	441,13	107.625,70
310	450,60	447,69	108.073,30
311	454,21	452,41	108.525,80
312	456,92	455,57	108.981,30
313	458,36	457,64	109.439,00

BALSA DE MOSTRAKAS EXCAVACIÓN DEL VASO			
P.K	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
314	459,96	459,16	109.898,10
315	459,64	459,80	110.357,90
316	457,98	458,81	110.816,70
317	454,80	456,39	111.273,10
318	449,92	452,36	111.725,50
319	443,68	446,80	112.172,30
320	437,00	440,34	112.612,60
321	429,32	433,16	113.045,80
322	421,97	425,64	113.471,40
323	415,95	418,96	113.890,40
324	410,68	413,31	114.303,70
325	406,03	408,35	114.712,00
326	402,41	404,22	115.116,30
327	399,85	401,13	115.517,40
328	397,97	398,91	115.916,30
329	396,21	397,09	116.313,40
330	394,76	395,48	116.708,90
331	393,33	394,04	117.102,90
332	392,12	392,72	117.495,60
333	390,70	391,41	117.887,10
334	389,66	390,18	118.277,20
335	388,79	389,23	118.666,50
336	388,08	388,44	119.054,90
337	387,42	387,75	119.442,70
338	386,86	387,14	119.829,80
339	386,40	386,63	120.216,40
340	385,75	386,08	120.602,50
341	384,30	385,02	120.987,50
342	382,09	383,19	121.370,70
343	379,43	380,76	121.751,50
344	376,70	378,06	122.129,50
344,085	376,46	32,01	122.161,60
345	375,07	343,82	122.505,40
346	373,36	374,22	122.879,60
347	371,74	372,55	123.252,10
348	370,48	371,11	123.623,30
349	369,74	370,11	123.993,40
350	369,45	369,60	124.363,00
351	368,52	368,99	124.731,90
352	367,59	368,06	125.100,00
353	365,46	366,53	125.466,50
354	363,06	364,26	125.830,80
355	355,56	359,31	126.190,10
356	347,29	351,42	126.541,50
357	331,61	339,45	126.881,00
358	315,40	323,50	127.204,50
359	286,85	301,12	127.505,60

Balsa de Mostrakas Excavación del Vaso			
P.K	Área (m2)	Vol Parcial (m3)	Vol Acumulado (m3)
360	258,81	272,83	127.778,40
VOL TOTAL EXCAVACIÓN			127.778,40

EXCAVACIÓN CUNETA DE GUARDA			
PK	ÁREA	VOL PARCIAL (M2)	VOL. ACUMULADO (M3)
0	0,062	0	0
1	0,316	0,19	0,2
2	0,739	0,53	0,7
3	1,86	1,3	2
4	2,845	2,35	4,4
5	3,275	3,06	7,4
6	3,274	3,27	10,7
7	3,166	3,22	13,9
8	3,071	3,12	17
9	2,988	3,03	20,1
10	2,915	2,95	23
11	2,85	2,88	25,9
12	2,792	2,82	28,7
13	2,739	2,77	31,5
14	2,696	2,72	34,2
15	2,663	2,68	36,9
16	2,639	2,65	39,5
17	2,626	2,63	42,2
18	2,648	2,64	44,8
19	2,899	2,77	47,6
20	3,174	3,04	50,6
21	3,462	3,32	53,9
22	3,761	3,61	57,5
23	4,071	3,92	61,5
24	4,397	4,23	65,7
24,234	4,495	1,04	66,7
25	5,009	3,64	70,4
26	5,71	5,36	75,7
27	6,42	6,07	81,8
28	7,021	6,72	88,5
29	7,285	7,15	95,7
30	7,437	7,36	103
31	7,597	7,52	110,6
31,244	7,658	1,86	112,4
32	7,973	5,91	118,3
33	8,571	8,27	126,6
33,001	8,572	0,01	126,6
34	8,742	8,65	135,3
35	8,868	8,81	144,1
36	9,313	9,09	153,1
37	10,124	9,72	162,9
38	11,029	10,58	173,4
39	12,116	11,57	185
40	13,211	12,66	197,7
41	14,115	13,66	211,3
42	14,598	14,36	225,7
43	14,648	14,62	240,3
44	14,105	14,38	254,7
45	14,099	14,1	268,8
46	13,342	13,72	282,5
47	12,678	13,01	295,5
48	11,896	12,29	307,8
49	11,091	11,49	319,3
50	10,366	10,73	330
50,546	9,988	5,56	335,6
51	9,683	4,47	340,1
52	9,053	9,37	349,4
53	8,433	8,74	358,2
54	7,837	8,14	366,3
55	7,634	7,74	374
56	7,851	7,74	381,8
57	8,076	7,96	389,7
58	8,252	8,16	397,9

EXCAVACIÓN CUNETA DE GUARDA			
PK	ÁREA	VOL PARCIAL (M2)	VOL. ACUMULADO (M3)
59	8,344	8,3	406,2
60	8,385	8,36	414,6
61	8,437	8,41	423
62	8,438	8,44	431,4
63	8,568	8,5	439,9
64	8,662	8,62	448,5
65	9,266	8,96	457,5
66	9,602	9,43	466,9
67	10,106	9,85	476,8
68	10,26	10,18	487
69	10,308	10,28	497,3
70	10,43	10,37	507,6
71	11,007	10,72	518,3
72	11,37	11,19	529,5
73	11,714	11,54	541,1
74	12,277	12	553,1
75	12,54	12,41	565,5
76	13,165	12,85	578,3
77	13,711	13,44	591,8
78	14,272	13,99	605,8
79	14,74	14,51	620,3
80	15,124	14,93	635,2
81	15,578	15,35	650,6
81,214	15,631	3,34	653,9
82	15,757	12,34	666,2
83	16,742	16,25	682,5
84	16,524	16,63	699,1
85	16,394	16,46	715,6
86	16,615	16,5	732,1
87	16,11	16,36	748,4
88	15,448	15,78	764,2
89	14,786	15,12	779,3
90	14,068	14,43	793,8
91	13,36	13,71	807,5
91,475	13,008	6,26	813,7
92	12,632	6,73	820,5
93	11,912	12,27	832,7
94	11,258	11,58	844,3
95	10,557	10,91	855,2
96	9,854	10,21	865,4
97	9,083	9,47	874,9
98	8,237	8,66	883,6
98,142	8,171	1,16	884,7
99	8,323	7,08	891,8
100	8,302	8,31	900,1
101	8,364	8,33	908,5
102	8,523	8,44	916,9
103	8,781	8,65	925,5
104	9,154	8,97	934,5
105	9,621	9,39	943,9
106	10,188	9,9	953,8
107	10,62	10,4	964,2
108	10,798	10,71	974,9
108,412	10,741	4,44	979,4
109	10,646	6,29	985,6
110	10,238	10,44	996,1
111	9,839	10,04	1006,1
112	9,671	9,75	1015,9
113	9,585	9,63	1025,5
114	9,43	9,51	1035
115	9,202	9,32	1044,3
116	8,958	9,08	1053,4
117	8,727	8,84	1062,3

EXCAVACIÓN CUNETA DE GUARDA			
PK	ÁREA	VOL PARCIAL (M2)	VOL. ACUMULADO (M3)
117,994	8,481	8,55	1070,8
118	8,481	0,05	1070,9
119	8,221	8,35	1079,2
119,163	8,18	1,34	1080,5
120	7,993	6,77	1087,3
121	7,76	7,88	1095,2
122	7,554	7,66	1102,8
123	7,351	7,45	1110,3
124	7,148	7,25	1117,5
125	6,953	7,05	1124,6
126	6,953	6,95	1131,6
127	7,079	7,02	1138,6
128	6,972	7,03	1145,6
129	6,845	6,91	1152,5
130	6,752	6,8	1159,3
131	6,662	6,71	1166
132	6,544	6,6	1172,6
133	6,428	6,49	1179,1
134	6,324	6,38	1185,5
135	6,223	6,27	1191,7
136	6,121	6,17	1197,9
137	6,047	6,08	1204
138	5,974	6,01	1210
139	5,915	5,94	1216
140	5,869	5,89	1221,8
141	5,872	5,87	1227,7
142	5,799	5,84	1233,6
142,609	5,755	3,52	1237,1
143	5,768	2,25	1239,3
144	5,567	5,67	1245
145	5,993	5,78	1250,8
146	6,416	6,2	1257
147	6,47	6,44	1263,4
148	6,024	6,25	1269,7
149	5,093	5,56	1275,2
150	4,767	4,93	1280,2
151	2,463	3,61	1283,8
152	1,989	2,23	1286
153	1,839	1,91	1287,9
154	1,395	1,62	1289,5
155	1,271	1,33	1290,9
156	1,182	1,23	1292,1
156,673	1,137	0,78	1292,9
157	1,087	0,36	1293,2
158	1,422	1,25	1294,5
158,965	4,952	3,08	1297,6
159	4,948	0,17	1297,7
160	4,573	4,76	1302,5
161	4,056	4,31	1306,8
162	3,675	3,87	1310,7
163	3,542	3,61	1314,3
164	3,563	3,55	1317,8
165	3,48	3,52	1321,4
166	3,513	3,5	1324,9
167	3,541	3,53	1328,4
168	3,335	3,44	1331,8
169	3,133	3,23	1335,1
169,401	3,077	1,25	1336,3
170	3,049	1,83	1338,1
171	3,086	3,07	1341,2
172	3,143	3,11	1344,3
173	3,227	3,18	1347,5
174	3,302	3,26	1350,8

EXCAVACIÓN CUNETA DE GUARDA			
PK	ÁREA	VOL PARCIAL (M2)	VOL. ACUMULADO (M3)
175	3,44	3,37	1354,1
176	3,571	3,51	1357,6
177	3,74	3,66	1361,3
178	3,895	3,82	1365,1
179	3,998	3,95	1369,1
180	4,011	4	1373,1
181	4,036	4,02	1377,1
182	4,044	4,04	1381,1
183	4,053	4,05	1385,2
184	4,056	4,05	1389,2
184,35	4,059	1,42	1390,7
185	4,04	2,63	1393,3
186	3,918	3,98	1397,3
187	3,795	3,86	1401,1
188	3,645	3,72	1404,8
189	3,421	3,53	1408,4
190	3,349	3,38	1411,8
191	3,186	3,27	1415
192	3,122	3,15	1418,2
193	3,037	3,08	1421,3
194	2,957	3	1424,3
195	2,914	2,94	1427,2
196	3,202	3,06	1430,2
197	3,507	3,35	1433,6
198	3,605	3,56	1437,2
199	3,162	3,38	1440,5
200	2,435	2,8	1443,3
201	1,619	2,03	1445,4
202	1,599	1,61	1447
203	2,161	1,88	1448,9
204	2,813	2,49	1451,3
205	3,545	3,18	1454,5
206	4,286	3,92	1458,4
207	5,065	4,68	1463,1
208	5,793	5,43	1468,5
209	6,578	6,19	1474,7
210	7,336	6,96	1481,7
211	8,099	7,72	1489,4
212	8,964	8,53	1497,9
213	10,076	9,52	1507,5
214	11,527	10,8	1518,3
215	13,01	12,27	1530,5
216	14,032	13,52	1544
217	14,833	14,43	1558,5
218	15,538	15,19	1573,7
219	16,248	15,89	1589,6
220	16,949	16,6	1606,2
221	17,665	17,31	1623,5
222	18,418	18,04	1641,5
223	18,962	18,69	1660,2
224	19,707	19,33	1679,5
225	20,226	19,97	1699,5
226	20,561	20,39	1719,9
227	20,745	20,65	1740,5
228	20,745	20,75	1761,3
229	20,721	20,73	1782
230	20,716	20,72	1802,7
231	20,81	20,76	1823,5
232	21,025	20,92	1844,4
232,284	21,087	5,98	1850,4
233	20,896	15,03	1865,4
234	19,545	20,22	1885,7
235	18,608	19,08	1904,7

EXCAVACIÓN CUNETA DE GUARDA			
PK	ÁREA	VOL PARCIAL (M2)	VOL. ACUMULADO (M3)
236	17,71	18,16	1922,9
237	16,677	17,19	1940,1
238	15,658	16,17	1956,2
239	14,59	15,12	1971,4
240	13,451	14,02	1985,4
241	12,239	12,85	1998,2
242	11,077	11,66	2009,9
243	10,064	10,57	2020,5
244	9,284	9,67	2030,1
245	8,712	9	2039,1
246	8,274	8,49	2047,6
247	8,037	8,16	2055,8
248	7,966	8	2063,8
249	7,939	7,95	2071,7
250	7,656	7,8	2079,5
251	6,835	7,25	2086,8
252	6,102	6,47	2093,3
253	5,398	5,75	2099
254	4,908	5,15	2104,2
255	4,666	4,79	2108,9
256	4,542	4,6	2113,5
257	4,406	4,47	2118
258	4,39	4,4	2122,4
259	4,527	4,46	2126,9
260	4,662	4,59	2131,5
261	4,742	4,7	2136,2
262	4,894	4,82	2141
263	4,993	4,94	2145,9
264	5	5	2150,9
265	5,019	5,01	2155,9
266	5,004	5,01	2161
266,615	4,973	3,07	2164
267	4,946	1,91	2165,9
268	4,804	4,87	2170,8
269	4,538	4,67	2175,5
270	4,193	4,37	2179,8
271	3,796	3,99	2183,8
272	3,405	3,6	2187,4
273	3,06	3,23	2190,7
274	2,758	2,91	2193,6
275	2,606	2,68	2196,3
276	2,502	2,55	2198,8
277	2,456	2,48	2201,3
278	2,317	2,39	2203,7
279	2	2,16	2205,8
280	1,861	1,93	2207,8
281	1,832	1,85	2209,6
282	1,867	1,85	2211,5
283	1,937	1,9	2213,4
284	2,036	1,99	2215,4
285	2,142	2,09	2217,4
286	2,216	2,18	2219,6
287	2,261	2,24	2221,9
288	2,274	2,27	2224,1
289	2,223	2,25	2226,4
290	2,091	2,16	2228,5
291	1,989	2,04	2230,6
292	1,884	1,94	2232,5
293	1,727	1,81	2234,3
294	1,666	1,7	2236
295	1,729	1,7	2237,7
296	1,873	1,8	2239,5
297	1,95	1,91	2241,4

EXCAVACIÓN CUNETA DE GUARDA			
PK	ÁREA	VOL PARCIAL (M2)	VOL. ACUMULADO (M3)
298	2,041	2	2243,4
299	2,173	2,11	2245,5
300	2,283	2,23	2247,7
301	2,407	2,34	2250,1
302	2,525	2,47	2252,6
303	2,656	2,59	2255,2
304	2,79	2,72	2257,9
305	2,926	2,86	2260,7
306	3,093	3,01	2263,7
307	3,253	3,17	2266,9
308	3,412	3,33	2270,2
309	3,573	3,49	2273,7
310	3,733	3,65	2277,4
311	3,889	3,81	2281,2
312	4,048	3,97	2285,2
313	4,198	4,12	2289,3
314	4,353	4,28	2293,6
315	4,503	4,43	2298
316	4,676	4,59	2302,6
317	4,823	4,75	2307,3
318	4,989	4,91	2312,2
319	5,11	5,05	2317,3
320	5,257	5,18	2322,5
321	5,405	5,33	2327,8
322	5,534	5,47	2333,3
323	5,694	5,61	2338,9
324	5,83	5,76	2344,7
325	5,932	5,88	2350,5
326	6,059	6	2356,5
327	6,171	6,11	2362,6
328	6,282	6,23	2368,9
328,437	6,332	2,76	2371,6
329	6,397	3,58	2375,2
330	6,472	6,43	2381,6
331	6,537	6,5	2388,2
332	6,57	6,55	2394,7
333	6,593	6,58	2401,3
334	6,563	6,58	2407,9
335	6,532	6,55	2414,4
336	6,451	6,49	2420,9
337	6,367	6,41	2427,3
338	6,247	6,31	2433,6
339	6,119	6,18	2439,8
340	5,977	6,05	2445,9
341	5,794	5,89	2451,7
342	5,61	5,7	2457,4
343	5,428	5,52	2463
344	5,243	5,34	2468,3
345	5,057	5,15	2473,4
346	4,88	4,97	2478,4
347	4,711	4,8	2483,2
348	4,567	4,64	2487,8
349	4,436	4,5	2492,3
350	4,332	4,38	2496,7
351	4,226	4,28	2501
352	4,18	4,2	2505,2
353	4,135	4,16	2509,4
354	4,074	4,1	2513,5
355	4,072	4,07	2517,5
356	4,138	4,11	2521,7
357	4,187	4,16	2525,8
358	4,27	4,23	2530
359	4,311	4,29	2534,3

EXCAVACIÓN CUNETA DE GUARDA			
PK	ÁREA	VOL PARCIAL (M2)	VOL. ACUMULADO (M3)
360	4,324	4,32	2538,7
361	4,66	4,49	2543,1
362	5,061	4,86	2548
363	4,836	4,95	2553
364	4,407	4,62	2557,6
365	3,937	4,17	2561,7
366	3,481	3,71	2565,5
367	2,951	3,22	2568,7
368	2,297	2,62	2571,3
369	1,645	1,97	2573,3
370	1,363	1,5	2574,8
371	1,539	1,45	2576,2
371,301	1,585	0,47	2576,7
372	1,734	1,16	2577,8
373	2,335	2,03	2579,9
374	2,338	2,34	2582,2
374,976	1,741	1,99	2584,2
375	1,756	0,04	2584,3
376	2,126	1,94	2586,2
377	2,389	2,26	2588,5
378	2,669	2,53	2591
379	2,765	2,72	2593,7
380	2,732	2,75	2596,4
381	2,752	2,74	2599,2
382	2,862	2,81	2602
383	2,944	2,9	2604,9
384	3,044	2,99	2607,9
385	3,504	3,27	2611,2
386	3,875	3,69	2614,9
387	4,061	3,97	2618,8
388	3,735	3,9	2622,7
389	3,382	3,56	2626,3
390	3,423	3,4	2629,7
391	3,566	3,49	2633,2
392	3,404	3,49	2636,7
393	3,239	3,32	2640
394	3,46	3,35	2643,3
395	4,984	4,22	2647,6
395,566	5,369	2,93	2650,5
396	5,668	2,4	2652,9
397	6,608	6,14	2659
398	7,813	7,21	2666,2
399	9,278	8,55	2674,8
400	10,667	9,97	2684,7
401	11,978	11,32	2696,1
402	13,095	12,54	2708,6
403	14,258	13,68	2722,3
404	15,474	14,87	2737,2
405	16,687	16,08	2753,2
405,265	17,006	4,46	2757,7
406	17,911	12,83	2770,5
407	19,003	18,46	2789
408	19,963	19,48	2808,5
409	20,587	20,28	2828,7
410	20,801	20,69	2849,4
411	20,755	20,78	2870,2
412	20,44	20,6	2890,8
413	19,873	20,16	2911
414	18,777	19,32	2930,3
415	17,539	18,16	2948,4
416	16,313	16,93	2965,4
417	14,736	15,52	2980,9
418	13,275	14,01	2994,9

EXCAVACIÓN CUNETA DE GUARDA			
PK	ÁREA	VOL PARCIAL (M2)	VOL. ACUMULADO (M3)
419	12,2	12,74	3007,6
420	11,462	11,83	3019,5
420,148	11,372	1,69	3021,2
421	10,859	9,47	3030,6
422	10,375	10,62	3041,3
423	9,882	10,13	3051,4
424	9,469	9,68	3061,1
425	9,01	9,24	3070,3
426	8,504	8,76	3079,1
427	7,964	8,23	3087,3
428	7,571	7,77	3095,1
429	7,252	7,41	3102,5
430	6,94	7,1	3109,6
431	6,464	6,7	3116,3
432	6,366	6,41	3122,7
433	6,075	6,22	3128,9
434	5,882	5,98	3134,9
435	5,865	5,87	3140,7
436	6,041	5,95	3146,7
437	6,271	6,16	3152,9
438	6,317	6,29	3159,2
439	6,196	6,26	3165,4
440	5,885	6,04	3171,4
441	5,386	5,64	3177,1
442	5,072	5,23	3182,3
443	5,167	5,12	3187,4
443,602	5,217	3,13	3190,6
443,666	5,22	0,33	3190,9

BALSA DE MOSTRAKAS. RELLENO DEL DIQUE			
P.K	AREA (M2)	VOL. PARCIAL (M3)	VOL.ACUMULADO
0	150,09	0,00	0,00
5	137,39	718,71	718,70
10	123,83	653,06	1.371,80
15	108,97	581,99	1.953,80
20	92,58	503,86	2.457,60
25	78,30	427,19	2.884,80
30	64,30	356,50	3.241,30
35	51,29	288,98	3.530,30
40	39,62	227,28	3.757,60
45	32,12	179,36	3.936,90
50	22,91	137,59	4.074,50
55	14,85	94,39	4.168,90
60	9,11	59,88	4.228,80
65	7,15	40,64	4.269,40
69,418	7,98	33,42	4.302,90
70	7,92	4,63	4.307,50
75	9,42	43,36	4.350,80
80	10,16	48,96	4.399,80
85	10,86	52,55	4.452,40
90	11,54	55,99	4.508,30
95	11,95	58,72	4.567,10
100	12,24	60,47	4.627,50
105	12,45	61,71	4.689,20
110	12,55	62,48	4.751,70
115	12,60	62,87	4.814,60
120	12,61	63,02	4.877,60
125	12,60	63,01	4.940,60
130	12,60	62,98	5.003,60
135	12,59	62,98	5.066,60
140	12,59	62,96	5.129,50
145	12,60	62,96	5.192,50
150	12,58	62,95	5.255,40
155	12,58	62,92	5.318,40
160	12,58	62,92	5.381,30
165	12,58	62,90	5.444,20
170	12,58	62,90	5.507,10
175	12,57	62,90	5.570,00
180	12,58	62,87	5.632,90
185	12,58	62,87	5.695,70
190	12,57	62,86	5.758,60
195	12,58	62,86	5.821,50
200	12,57	62,86	5.884,30
205	12,57	62,84	5.947,20
210	12,57	62,85	6.010,00
215	12,57	62,84	6.072,80
220	12,57	62,84	6.135,70
225	12,56	62,84	6.198,50
230	12,57	62,84	6.261,40

BALSA DE MOSTRAKAS. RELLENO DEL DIQUE			
P.K	AREA (M2)	VOL. PARCIAL (M3)	VOL.ACUMULADO
235	12,57	62,84	6.324,20
240	12,57	62,84	6.387,00
245	12,57	62,85	6.449,90
250	12,57	62,84	6.512,70
255	12,59	62,90	6.575,60
260	12,57	62,90	6.638,50
265	12,49	62,64	6.701,20
270	12,31	62,00	6.763,20
275	12,05	60,89	6.824,10
280	11,71	59,38	6.883,40
285	11,28	57,46	6.940,90
290	10,85	55,32	6.996,20
295	11,79	56,59	7.052,80
296,172	12,36	14,15	7.067,00
300	14,63	51,65	7.118,60
305	17,00	79,08	7.197,70
310	18,69	89,22	7.286,90
315	19,71	96,00	7.382,90
320	20,04	99,38	7.482,30
325	19,75	99,47	7.581,80
330	19,00	96,88	7.678,60
335	17,66	91,66	7.770,30
340	15,73	83,47	7.853,80
345	13,22	72,35	7.926,10
350	10,12	58,33	7.984,50
355	6,40	41,29	8.025,70
360	2,81	23,03	8.048,80
365	TIERRA	2,16	5,41
370	TIERRA	2,70	12,16
375	TIERRA	2,99	14,23
377,23	TIERRA	3,05	6,74
380	TIERRA	1,61	6,45
385	TIERRA	1,49	7,75
390	TIERRA	1,29	6,95
395	TIERRA	1,14	6,06
400	TIERRA	1,04	5,45
405	TIERRA	0,00	2,61
410	3,40	15,26	8.156,60
415	8,73	30,30	8.186,90
420	16,21	62,35	8.249,20
425	26,85	107,65	8.356,90
430	43,49	175,84	8.532,70
435	71,06	286,37	8.819,10
440	95,88	417,35	9.236,40
445	110,21	515,23	9.751,70
450	122,82	582,57	10.334,20
455	133,42	640,59	10.974,80
460	139,93	683,37	11.658,20

BALSA DE MOSTRAKAS. RELLENO DEL DIQUE			
P.K	AREA (M2)	VOL. PARCIAL (M3)	VOL.ACUMULADO
460,382	140,36	53,54	11.711,70
465	144,72	658,24	12.370,00
470	146,53	728,11	13.098,10
475	146,04	731,41	13.829,50
480	148,64	736,70	14.566,20
485	150,07	746,78	15.313,00
490	150,51	751,44	16.064,40
495	148,63	747,84	16.812,20
500	144,51	732,86	17.545,10
505	131,56	690,17	18.235,30
510	129,17	651,80	18.887,10
515	133,39	656,40	19.543,50
520	144,51	694,76	20.238,20
525	147,37	729,70	20.967,90
530	150,71	745,19	21.713,10
535	152,53	758,11	22.471,20
540	151,88	761,02	23.232,20
545	149,89	754,41	23.986,70
550	148,75	746,60	24.733,30
555	148,82	743,94	25.477,20
560	149,53	745,87	26.223,10
565	150,40	749,81	26.972,90
570	152,93	758,31	27.731,20
575	155,32	770,62	28.501,80
580	156,79	780,27	29.282,10
585	155,25	780,09	30.062,20
590	151,64	767,22	30.829,40
595	147,90	748,84	31.578,20
596,091	147,11	160,93	31.739,20
600	145,66	572,20	32.311,40
605	146,32	729,94	33.041,30
610	150,68	742,51	33.783,80
615	156,26	767,36	34.551,20
620	161,93	795,48	35.346,70
625	177,63	848,91	36.195,60
630	213,77	978,52	37.174,10
635	237,26	1.127,58	38.301,70
640	256,50	1.234,39	39.536,10
645	264,96	1.303,64	40.839,70
650	270,66	1.339,06	42.178,80
655	274,30	1.362,41	43.541,20
660	276,65	1.377,37	44.918,50
665	277,34	1.384,97	46.303,50
670	273,72	1.377,65	47.681,20
675	267,11	1.352,07	49.033,20
680	262,66	1.324,42	50.357,70
681	262,60	262,63	50.620,30
685	263,98	1.053,17	51.673,50

BALSA DE MOSTRAKAS. RELLENO DEL DIQUE			
P.K	AREA (M2)	VOL. PARCIAL (M3)	VOL.ACUMULADO
690	265,41	1.323,48	52.996,90
695	265,45	1.327,15	54.324,10
700	263,54	1.322,48	55.646,60
705	261,06	1.311,50	56.958,10
710	259,29	1.300,86	58.258,90
715	257,54	1.292,07	59.551,00
720	252,98	1.276,30	60.827,30
725	239,87	1.232,13	62.059,40
730	222,42	1.155,74	63.215,20
735	204,10	1.066,32	64.281,50
740	185,70	974,50	65.256,00
745	168,42	885,30	66.141,30
748,35	157,80	546,41	66.687,70

BALSA DE MOSTRAKAS. MURO DE ESCOLLERA				
SECCIÓN	ÁREA (m ²)	LONGITUD (m)	VOLUMEN (m ³)	VOLUMEN ACUMULADO (m ³)
1	5,542			
2	6,999	5,000	31,353	31,353
3	8,080	5,000	37,698	69,050
4	9,151	5,000	43,078	112,128
5	9,927	5,000	47,695	159,823
6	10,356	5,000	50,708	210,530
7	10,191	5,000	51,368	261,898
8	9,396	5,000	48,968	310,865
9	8,308	5,000	44,260	355,125
10	6,961	5,000	38,173	393,298

BALSA DE MOSTRAKAS DRENAJE INTERIOR.CONDUCCIONES DE DRENAJE Relleno localizado con grava/gravilla/garbancillo 5/15					
	N	Longitud	Anchura	Altura	Total (m3)
Sector 1					
Talud izquierdo	5	17,50	0,50	0,60	26,25
A deducir	-5	17,5		0,02	-1,75
Talud Derecho	5	17,50	0,50	0,60	26,25
A deducir	-5	17,5		0,02	-1,75
Fondo Izquierda	1	47,00	0,50	0,60	14,1
A deducir	-1	47		0,02	-0,94
Fondo derecha	1	54	0,5	0,6	16,2
A deducir	-1	54		0,02	-1,08
Sector 2					
Talud izquierdo	3	17,50	0,50	0,60	15,75
A deducir	-3	17,5		0,02	-1,05
Talud Derecho	3	17,50	0,50	0,60	15,75
A deducir	-3	17,5		0,02	-1,05
Fondo Izquierda	1	64,00	0,50	0,60	19,2
A deducir	-1	64		0,02	-1,28
Fondo derecha	1	83,00	0,50	0,60	24,9
A deducir	-1	83		0,02	-1,66
Sector 3					
Talud izquierdo	4	17,50	0,50	0,60	21
A deducir	-4	17,5		0,02	-1,4
Talud Derecho	4	17,50	0,50	0,60	21
A deducir	-4	17,5		0,02	-1,4
Fondo Izquierda	1	62,00	5,00	0,60	186
A deducir	-1	62		0,02	-1,24
Fondo derecha	1	97,00	0,50	0,60	29,1
A deducir	-1	97		0,02	-1,94
Sector 1. margen izquierda					
Pie talud	1	88,00	0,50	0,30	13,2
A deducir	-1	88		0,02	-1,76
Fondo	1	90,00	0,30	0,60	16,2
A deducir	-1	90		0,02	-1,8
Recogida talud	1	18,00	0,50	0,60	5,4
A deducir	-2	18		0,02	-0,72
Sector 1. margen derecha					
Pie talud	1	96,00	0,50	0,30	14,4
A deducir	-1	96		0,02	-1,92
Fondo	1	96,00	0,30	0,60	17,28
A deducir	-1	96		0,02	-1,92
Recogida talud	1	22,00	0,50	0,60	6,6
A deducir	-2	22		0,02	-0,88
Sector 2. margen izquierda					
Pie talud	1	110,00	0,50	0,30	16,5
A deducir	-1	110,00		0,02	-2,2
Recogida talud	1	20,00	0,50	0,60	6
A deducir	-2	20,00		0,02	-0,8
Sector 2. margen derecha					
Pie talud	1	98,00	0,50	0,30	14,7
A deducir	-1	98,00		0,02	-1,96
Recogida talud	1	32,00	0,50	0,60	9,6
A deducir	-1	32,00		0,02	-0,64
Fondo conjunto	1	105,00	1,34	0,60	84,42
A deducir	-2	105,00		0,02	-4,2
A deducir dado de hormigón	-1	105,00	0,62	0,30	-19,53
Sector 3. margen izquierda					
Pie talud	1	128,00	0,50	0,30	19,2
A deducir	-1	128,00		0,02	-2,56
Recogida talud	1	19,00	0,50	0,60	5,7
A deducir	-2	19,00			-38
Sector 3. margen derecha				0,02	0,02
Pie talud	1	110,00	0,50	0,30	16,5
A deducir	-1	110,00		0,02	-2,2
Recogida talud	1	29,00	0,50	0,60	8,7
A deducir	-2	29,00		0,02	-1,16
Fondo conjunto	1	110,00	2,06	0,60	135,96
A deducir dado de hormigón	-1	110,00	1,34	0,30	-44,22
Total (m3)					662,87

ARQUETAS DE FILTRACIONES (ACERO)

MOSTRAKAS. CUENCO DEFLECTOR										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Losa cimentacion										341,12
Superior X	Ø16 a 20	Ø16	0,20	3,1	17	3,25	55,25	1,58	1	87,30
Superior Y	Ø16 a 20	Ø16	0,20	3,25	17	3,1	52,70	1,58	1	83,27
Inferior X	Ø16 a 20	Ø16	0,20	3,1	17	3,25	55,25	1,58	1	87,30
Inferior Y	Ø16 a 20	Ø16	0,20	3,25	17	3,1	52,70	1,58	1	83,27
Vigas cimentacion										79,56
Vigas X										
Superior X	Ø12 a 15	Ø12	0,15	0,4	3	3,25	9,75	0,89	1	8,68
Inferior X	Ø12 a 15	Ø12	0,15	0,4	3	3,25	9,75	0,89	1	8,68
Piel X	2 Ø12	Ø12			2	3,25	6,50	0,89	2	11,57
Estribos	Ø08 a 20	Ø08	0,20	3,25	16	1,8	28,80	0,4	1	11,52
Vigas Y										
Superior Y	Ø12 a 15	Ø12	0,15	0,4	3	3,1	9,30	0,89	1	8,28
Inferior Y	Ø12 a 15	Ø12	0,15	0,4	3	3,1	9,30	0,89	1	8,28
Piel Y	2 Ø12	Ø12			2	3,1	6,20	0,89	2	11,04
Estribos	Ø08 a 20	Ø08	0,20	3,1	16	1,8	28,80	0,4	1	11,52
muros										708,80
muro tipo B L: 3,25 m H: 2,00 m										
Vertical	Ø12 a 15	Ø12	0,15	3,25	23	2	46,00	0,89	4	163,76
	Ø12 a 15	Ø12	0,15	3,25	23	1,3	29,90	0,89	4	106,44
Horizontal	Ø12 a 15	Ø12	0,15	2	14	5,8	81,20	0,89	4	289,07
muro tipo B L: 3,10 m H: 0,4 m										
Vertical	Ø12 a 15	Ø12	0,15	3,1	22	0,4	8,80	0,89	2	15,66
	Ø12 a 15	Ø12	0,15	3,1	22	1,3	28,60	0,89	2	50,91
Horizontal	Ø12 a 15	Ø12	0,15	0,4	4	3,1	12,40	0,89	2	22,07
muro tipo B aletas L: 1,25 m H: 1,25 m										
Vertical	Ø12 a 15	Ø12	0,15	1,25	9	1,25	11,25	0,89	2	20,03
	Ø12 a 15	Ø12	0,15	1,25	9	1,3	11,70	0,89	2	20,83
Horizontal	Ø12 a 15	Ø12	0,15	1,25	9	1,25	11,25	0,89	2	20,03
Vigas coronacion										14,06
Vigas X										
Superior X	Ø12 a 10	Ø12	0,10	0,15	2	3,25	6,50	0,89	1	5,79
Inferior X	Ø12 a 10	Ø12	0,10	0,15	2	3,25	6,50	0,89	1	5,79
Estribos	Ø06 a 20	Ø06	0,20	3,25	16	0,7	11,20	0,222	1	2,49
Forjado coronación										177,07
Superior X	Ø10 a 15	Ø10	0,15	3,1	22	3,25	71,50	0,62	1	44,33
Superior Y	Ø10 a 15	Ø10	0,15	3,25	23	3,1	71,30	0,62	1	44,21
Inferior X	Ø10 a 15	Ø10	0,15	3,1	22	3,25	71,50	0,62	1	44,33
Inferior Y	Ø10 a 15	Ø10	0,15	3,25	23	3,1	71,30	0,62	1	44,21
viga horizontal										558,79
Viga horizontal										
Superior Y	Ø20 a 10	Ø20	0,10	0,3	3	3,54	10,62	2,47	1	26,23
Inferior Y	Ø20 a 10	Ø20	0,10	0,3	3	3,54	10,62	2,47	2	52,46

MOSTRAKAS. CUENCO DEFLECTOR										
		Diám.	Sep.	L (m)	Nº barras	Long barra (m)	Total (m)	Peso (kg/m)	Nº	Peso Total (kg)
Piel Y	2 Ø20	Ø20			2	3,54	7,08	2,47	4	69,95
	3 Ø20	Ø20			3	2,65	7,95	2,47	1	19,64
	3 Ø20	Ø20			3	1,35	4,05	2,47	2	20,01
Estribos	Ø20 a 15	Ø20	0,15	3,54	30	5	150,00	2,47	1	370,50
Suma										1.879,39
Total (kg) con % de incremento por solapes, ataduras y despuntes										2.067,33

ARQUETAS EN ALMENARA (ACERO)

BALSA DE MOSTRAKAS
EXCAVACIÓN DEL CANAL DE DESCARGA

P.K	Área (m2)	Vol. parcial (m3)	Vol. acumulado (m3)
0,00	9,72	0,00	0,00
1,00	9,71	9,72	9,70
2,00	9,70	9,71	19,40
3,00	9,69	9,69	29,10
4,00	9,66	9,67	38,80
5,00	9,61	9,63	48,40
6,00	9,56	9,58	58,00
7,00	9,48	9,52	67,50
7,37	9,42	3,50	71,00
8,00	9,23	5,87	76,90
9,00	8,73	8,98	85,90
10,00	8,38	8,55	94,40
11,00	8,21	8,29	102,70
12,00	8,20	8,20	110,90
13,00	8,26	8,23	119,10
14,00	8,36	8,31	127,50
15,00	8,50	8,43	135,90
16,00	8,66	8,58	144,50
16,58	8,74	5,08	149,50
17,00	8,80	3,65	153,20
18,00	8,93	8,86	162,00
19,00	9,06	9,00	171,00
20,00	9,19	9,12	180,20
21,00	9,29	9,24	189,40
22,00	9,32	9,30	198,70
23,00	9,19	9,26	208,00
24,00	9,05	9,12	217,10
25,00	9,09	9,07	226,10
25,06	9,09	0,51	226,70
26,00	9,01	8,55	235,20
27,00	8,35	8,68	243,90
28,00	7,44	7,90	251,80
29,00	7,34	7,39	259,20
30,00	7,53	7,43	266,60
31,00	7,72	7,62	274,20
32,00	7,91	7,82	282,00
33,00	8,04	7,98	290,00
34,00	8,09	8,07	298,10
34,97	8,12	7,85	305,90
35,00	8,12	0,25	306,20
36,00	7,90	8,01	314,20
37,00	7,70	7,80	322,00
38,00	7,56	7,63	329,60
39,00	7,12	7,34	337,00
40,00	6,83	6,97	343,90
41,00	6,79	6,81	350,80

BALSA DE MOSTRAKAS EXCAVACIÓN DEL CANAL DE DESCARGA			
P.K	Área (m2)	Vol. parcial (m3)	Vol. acumulado (m3)
42,00	6,99	6,89	357,60
43,00	7,10	7,04	364,70
44,00	7,17	7,14	371,80
45,00	7,21	7,19	379,00
46,00	7,32	7,26	386,30
47,00	7,46	7,39	393,70
48,00	7,63	7,55	401,20
49,00	7,83	7,73	408,90
50,00	8,01	7,92	416,90
51,00	8,08	8,05	424,90
52,00	8,23	8,16	433,10
52,99	8,19	8,15	441,20
53,00	8,19	0,06	441,30
54,00	7,99	8,09	449,40
55,00	7,76	7,88	457,20
56,00	7,79	7,78	465,00
57,00	7,54	7,67	472,70
58,00	7,40	7,47	480,20
59,00	7,20	7,30	487,40
60,00	7,01	7,10	494,50
60,94	6,85	6,50	501,10
61,00	6,83	0,42	501,50
62,00	6,59	6,71	508,20
63,00	6,43	6,51	514,70
64,00	6,38	6,40	521,10
65,00	6,67	6,52	527,60
66,00	6,89	6,78	534,40
67,00	6,96	6,93	541,30
68,00	6,90	6,93	548,20
69,00	6,80	6,85	555,10
69,71	6,73	4,82	559,90
70,00	6,70	1,93	561,80
71,00	6,58	6,64	568,50
72,00	6,46	6,52	575,00
73,00	6,33	6,39	581,40
74,00	6,19	6,26	587,70
75,00	6,06	6,12	593,80
76,00	5,93	5,99	599,80
77,00	5,80	5,87	605,60
78,00	5,68	5,74	611,40
79,00	5,54	5,61	617,00
80,00	5,41	5,48	622,50
81,00	5,29	5,35	627,80
82,00	5,19	5,24	633,10
83,00	5,11	5,15	638,20
84,00	5,05	5,08	643,30

BALSA DE MOSTRAKAS
EXCAVACIÓN DEL CANAL DE DESCARGA

P.K	Área (m2)	Vol. parcial (m3)	Vol. acumulado (m3)
85,00	5,01	5,03	648,30
86,00	4,97	4,99	653,30
87,00	4,96	4,97	658,30
88,00	4,97	4,97	663,20
88,19	4,97	0,96	664,20
89,00	4,99	4,02	668,20
90,00	4,93	4,96	673,20
91,00	4,66	4,79	678,00
92,00	4,31	4,49	682,50
92,38	4,18	1,60	684,10
93,00	3,96	2,54	686,60
94,00	3,58	3,77	690,40
95,00	3,22	3,40	693,80
96,00	2,92	3,07	696,80
96,56	2,80	1,60	698,40
97,00	2,74	1,22	699,70
98,00	2,68	2,71	702,40
99,00	2,72	2,70	705,10
100,00	2,85	2,78	707,80
100,58	2,95	1,68	709,50
101,00	3,02	1,25	710,80
102,00	3,19	3,10	713,90
103,00	3,35	3,27	717,20
104,00	3,52	3,43	720,60
105,00	3,68	3,60	724,20
106,00	3,84	3,76	727,90
107,00	3,99	3,92	731,90
108,00	4,12	4,05	735,90
109,00	4,25	4,18	740,10
110,00	4,39	4,32	744,40
111,00	4,48	4,44	748,90
112,00	4,48	4,48	753,30
113,00	4,41	4,44	757,80
114,00	4,29	4,35	762,10
115,00	4,14	4,21	766,30
116,00	4,07	4,11	770,40
117,00	4,14	4,11	774,60
118,00	4,28	4,21	778,80
119,00	4,42	4,35	783,10
120,00	4,51	4,47	787,60
121,00	4,51	4,51	792,10
122,00	4,43	4,47	796,60
122,40	4,38	1,78	798,30
123,00	4,36	2,61	800,90
124,00	4,37	4,37	805,30
125,00	4,42	4,39	809,70

BALSA DE MOSTRAKAS
EXCAVACIÓN DEL CANAL DE DESCARGA

P.K	Área (m2)	Vol. parcial (m3)	Vol. acumulado (m3)
126,00	4,56	4,49	814,20
127,00	4,70	4,63	818,80
127,93	4,78	4,42	823,20
128,00	4,79	0,33	823,60
129,00	4,89	4,84	828,40
130,00	4,96	4,92	833,30
130,78	4,99	3,90	837,20
131,00	5,00	1,08	838,30
132,00	4,96	4,98	843,30
133,00	4,81	4,89	848,20
134,00	4,54	4,67	852,90
135,00	4,15	4,34	857,20
135,20	4,08	0,81	858,00
136,00	3,78	3,16	861,20
137,00	3,50	3,64	864,80
138,00	3,33	3,42	868,20
139,00	3,25	3,29	871,50
139,16	3,24	0,53	872,00
140,00	3,22	2,70	874,70
141,00	3,24	3,23	878,00
142,00	3,29	3,26	881,20
143,00	3,36	3,32	884,60
144,00	3,46	3,41	888,00
145,00	3,60	3,53	891,50
146,00	3,76	3,68	895,20
147,00	3,93	3,85	899,00
148,00	4,11	4,02	903,10
149,00	4,28	4,20	907,30
150,00	4,43	4,36	911,60
151,00	4,55	4,49	916,10
152,00	4,73	4,64	920,70
153,00	4,86	4,80	925,50
154,00	4,80	4,83	930,40
155,00	4,66	4,73	935,10
156,00	4,52	4,59	939,70
157,00	4,49	4,51	944,20
158,00	4,77	4,63	948,80
159,00	4,97	4,87	953,70
160,00	5,08	5,02	958,70
161,00	5,01	5,04	963,80
162,00	4,92	4,97	968,70
163,00	4,85	4,89	973,60
164,00	4,81	4,83	978,50
165,00	4,88	4,84	983,30
166,00	4,96	4,92	988,20
167,00	5,00	4,98	993,20

BALSA DE MOSTRAKAS EXCAVACIÓN DEL CANAL DE DESCARGA			
P.K	Área (m2)	Vol. parcial (m3)	Vol. acumulado (m3)
168,00	5,01	5,00	998,20
169,00	5,03	5,02	1.003,20
170,00	5,00	5,01	1.008,20
171,00	4,88	4,94	1.013,20
172,00	4,70	4,79	1.018,00
173,00	5,12	4,91	1.022,90
174,00	5,34	5,23	1.028,10
175,00	5,32	5,33	1.033,40
176,00	5,16	5,24	1.038,70
177,00	5,29	5,22	1.043,90
178,00	5,56	5,42	1.049,30
179,00	5,69	5,63	1.054,90
180,00	5,87	5,78	1.060,70
181,00	6,15	6,01	1.066,70
182,00	6,20	6,18	1.072,90
183,00	5,86	6,03	1.078,90
184,00	5,04	5,45	1.084,40
185,00	4,10	4,57	1.089,00
186,00	3,16	3,63	1.092,60
186,80	2,45	2,24	1.094,80

CONDUCCION DE LLENADO -VACIADO (EXCAVACIÓN)

BALSA DE MOSTRAKAS
EXCAVACIÓN ZANJA CONDUCCIÓN LLENADO - VACIADO

P.K	ÁREA (M2)	VOL. PARCIAL (M3)	VOL. ACUMULADO (M3)
0	116,71	0,00	0,00
1	120,02	118,37	118,40
2	121,66	120,84	239,20
3	120,08	120,87	360,10
4	120,26	120,17	480,20
4,6	120,88	72,34	552,60
4,6	119,25	0,00	552,60
5	108,46	45,54	598,10
5,5	93,61	50,52	648,60
6	92,41	46,51	695,20
7	90,69	91,55	786,70
8	84,75	87,72	874,40
9	77,26	81,00	955,40
10	71,03	74,15	1.029,60
11	65,26	68,15	1.097,70
12	59,99	62,63	1.160,40
13	55,30	57,65	1.218,00
14	50,99	53,14	1.271,10
15	47,92	49,45	1.320,60
16	45,41	46,67	1.367,30
17	43,63	44,52	1.411,80
18	42,53	43,08	1.454,90
19	42,06	42,29	1.497,20
20	41,81	41,93	1.539,10
21	41,41	41,61	1.580,70
22	41,45	41,43	1.622,10
23	41,72	41,59	1.663,70
24	42,06	41,89	1.705,60
25	42,44	42,25	1.747,80
26	42,84	42,64	1.790,50
27	43,26	43,05	1.833,50
28	43,68	43,47	1.877,00
29	44,07	43,87	1.920,90
30	44,45	44,26	1.965,10
31	44,77	44,61	2.009,70
32	45,06	44,91	2.054,70
33	45,31	45,18	2.099,80
34	45,53	45,42	2.145,30
35	45,73	45,63	2.190,90
36	45,91	45,82	2.236,70
37	46,11	46,01	2.282,70
38	46,26	46,18	2.328,90
39	46,50	46,38	2.375,30
40	46,69	46,60	2.421,90
41	47,05	46,87	2.468,70

BALSA DE MOSTRAKAS
EXCAVACIÓN ZANJA CONDUCCIÓN LLENADO - VACIADO

P.K	ÁREA (M2)	VOL. PARCIAL (M3)	VOL. ACUMULADO (M3)
42	47,41	47,23	2.516,00
43	47,80	47,61	2.563,60
44	48,24	48,02	2.611,60
45	48,73	48,49	2.660,10
46	49,18	48,95	2.709,00
47	49,61	49,39	2.758,40
48	49,96	49,79	2.808,20
49	50,28	50,12	2.858,30
50	50,54	50,41	2.908,80
51	50,78	50,66	2.959,40
52	51,00	50,89	3.010,30
53	51,26	51,13	3.061,40
54	51,51	51,38	3.112,80
55	51,80	51,65	3.164,50
56	52,08	51,94	3.216,40
57	52,39	52,23	3.268,70
58	52,69	52,54	3.321,20
59	52,97	52,83	3.374,00
60	53,22	53,09	3.427,10
61	53,48	53,35	3.480,50
62	53,83	53,65	3.534,10
63	54,33	54,08	3.588,20
64	55,09	54,71	3.642,90
65	55,88	55,49	3.698,40
66	56,59	56,23	3.754,60
67	59,33	57,96	3.812,60
68	62,37	60,85	3.873,40
69	65,33	63,85	3.937,30
70	68,17	66,75	4.004,00
71	70,82	69,50	4.073,50
72	73,20	72,01	4.145,50
73	75,52	74,36	4.219,90
74	78,06	76,79	4.296,70
75	80,92	79,49	4.376,20
76	83,94	82,43	4.458,60
77	86,69	85,31	4.543,90
78	89,06	87,87	4.631,80
79	91,09	90,07	4.721,90
80	92,92	92,01	4.813,90
81	93,91	93,42	4.907,30
82	94,63	94,27	5.001,60
83	94,31	94,47	5.096,00
84	93,02	93,67	5.189,70
84,759	91,27	69,94	5.259,60
85	90,51	21,90	5.281,50

BALSA DE MOSTRAKAS
EXCAVACIÓN ZANJA CONDUCCIÓN LLENADO - VACIADO

P.K	ÁREA (M2)	VOL. PARCIAL (M3)	VOL. ACUMULADO (M3)
86	87,15	88,83	5.370,40
87	83,58	85,36	5.455,70
88	79,59	81,58	5.537,30
89	74,86	77,22	5.614,50
90	69,84	72,35	5.686,90
91	65,12	67,48	5.754,40
92	60,75	62,93	5.817,30
93	56,79	58,77	5.876,10
94	53,26	55,02	5.931,10
95	49,85	51,55	5.982,60
96	46,24	48,04	6.030,70
97	42,26	44,25	6.074,90
98	37,98	40,12	6.115,10
99	36,92	37,45	6.152,50
100	38,85	37,89	6.190,40
101	41,28	40,07	6.230,50
102	43,81	42,55	6.273,00
103	45,74	44,78	6.317,80
104	46,83	46,29	6.364,10
105	47,28	47,06	6.411,10
106	47,40	47,34	6.458,50
107	47,79	47,60	6.506,10
108	48,27	48,03	6.554,10
109	48,77	48,52	6.602,60
110	49,24	49,00	6.651,60
111	49,67	49,45	6.701,10
112	50,17	49,92	6.751,00
113	50,65	50,41	6.801,40
114	51,10	50,88	6.852,30
115	51,55	51,32	6.903,60
116	52,09	51,82	6.955,40
117	52,63	52,36	7.007,80
118	53,12	52,88	7.060,70
119	53,54	53,33	7.114,00
120	53,91	53,73	7.167,70
121	54,24	54,07	7.221,80
122	54,55	54,40	7.276,20
123	54,83	54,69	7.330,90
124	55,09	54,96	7.385,80
125	55,30	55,19	7.441,00
126	55,47	55,39	7.496,40
127	55,54	55,51	7.551,90
128	55,56	55,55	7.607,50
129	55,49	55,52	7.663,00
130	55,39	55,44	7.718,40

BALSA DE MOSTRAKAS
EXCAVACIÓN ZANJA CONDUCCIÓN LLENADO - VACIADO

P.K	ÁREA (M2)	VOL. PARCIAL (M3)	VOL. ACUMULADO (M3)
131	55,25	55,32	7.773,80
132	55,11	55,18	7.828,90
133	54,91	55,01	7.884,00
134	54,69	54,80	7.938,80
135	54,42	54,55	7.993,30
136	54,12	54,27	8.047,60
137	53,83	53,97	8.101,60
138	53,50	53,66	8.155,20
139	53,18	53,34	8.208,60
140	52,91	53,04	8.261,60
141	52,84	52,87	8.314,50
142	52,53	52,68	8.367,20
143	52,34	52,43	8.419,60
144	51,91	52,12	8.471,70
145	51,53	51,72	8.523,40
146	51,11	51,32	8.574,80
147	50,66	50,89	8.625,60
148	50,25	50,45	8.676,10
149	49,83	50,04	8.726,10
150	49,40	49,62	8.775,70
151	49,03	49,22	8.825,00
152	48,70	48,86	8.873,80
153	48,41	48,55	8.922,40
154	48,33	48,37	8.970,80
155	48,31	48,32	9.019,10
156	48,44	48,37	9.067,40
157	48,64	48,54	9.116,00
158	48,91	48,78	9.164,80
159	49,20	49,05	9.213,80
160	49,42	49,31	9.263,10
161	49,59	49,50	9.312,60
162	49,60	49,60	9.362,20
163	49,53	49,57	9.411,80
164	49,50	49,52	9.461,30
165	49,49	49,49	9.510,80
166	49,49	49,49	9.560,30
167	49,56	49,53	9.609,80
168	49,78	49,67	9.659,50
169	49,84	49,81	9.709,30
170	50,12	49,98	9.759,30
171	50,29	50,20	9.809,50
172	50,59	50,44	9.859,90
173	51,04	50,82	9.910,70
174	51,44	51,24	9.962,00
175	52,04	51,74	10.013,70

BALSA DE MOSTRAKAS
EXCAVACIÓN ZANJA CONDUCCIÓN LLENADO - VACIADO

P.K	ÁREA (M2)	VOL. PARCIAL (M3)	VOL. ACUMULADO (M3)
176	52,73	52,38	10.066,10
177	53,57	53,15	10.119,30
178	54,55	54,06	10.173,30
179	55,72	55,13	10.228,50
180	56,69	56,20	10.284,70
181	57,15	56,92	10.341,60
182	57,06	57,10	10.398,70
183	56,81	56,93	10.455,60
184	56,52	56,66	10.512,30
185	56,52	56,52	10.568,80
186	56,42	56,47	10.625,30
187	56,42	56,42	10.681,70
188	56,76	56,59	10.738,30
189	57,22	56,99	10.795,30
190	57,80	57,51	10.852,80
191	58,36	58,08	10.910,90
192	58,94	58,65	10.969,50
193	59,53	59,24	11.028,80
194	60,09	59,81	11.088,60
195	60,67	60,38	11.148,90
196	61,31	60,99	11.209,90
197	61,96	61,63	11.271,60
198	62,59	62,27	11.333,80
199	63,19	62,89	11.396,70
200	63,80	63,49	11.460,20
201	64,41	64,10	11.524,30
202	65,02	64,71	11.589,00
203	65,62	65,32	11.654,40
204	66,19	65,90	11.720,30
205	66,68	66,43	11.786,70
206	67,08	66,88	11.853,60
207	67,43	67,26	11.920,80
208	67,76	67,59	11.988,40
209	68,05	67,90	12.056,30
210	68,31	68,18	12.124,50
211	68,52	68,42	12.192,90
212	68,65	68,59	12.261,50
213	68,76	68,71	12.330,20
214	68,85	68,80	12.399,00
214,853	68,91	58,76	12.457,80
215	68,92	10,13	12.467,90
216	68,97	68,94	12.536,80
217	69,02	68,99	12.605,80
218	69,03	69,02	12.674,90
219	69,01	69,02	12.743,90

BALSA DE MOSTRAKAS
EXCAVACIÓN ZANJA CONDUCCIÓN LLENADO - VACIADO

P.K	ÁREA (M2)	VOL. PARCIAL (M3)	VOL. ACUMULADO (M3)
220	68,99	69,00	12.812,90
221	68,94	68,97	12.881,80
222	68,90	68,92	12.950,80
223	68,80	68,85	13.019,60
224	68,72	68,76	13.088,40
225	68,59	68,66	13.157,00
226	68,45	68,52	13.225,60
227	68,28	68,37	13.293,90
228	68,07	68,18	13.362,10
229	67,81	67,94	13.430,00
230	67,53	67,67	13.497,70
231	67,24	67,38	13.565,10
232	66,94	67,09	13.632,20
233	66,66	66,80	13.699,00
234	66,37	66,51	13.765,50
235	66,10	66,23	13.831,70
236	65,82	65,96	13.897,70
237	65,54	65,68	13.963,40
238	65,27	65,40	14.028,80
239	65,01	65,14	14.093,90
240	64,75	64,88	14.158,80
241	64,50	64,62	14.223,40
242	64,25	64,37	14.287,80
243	64,02	64,13	14.351,90
244	63,80	63,91	14.415,80
245	63,60	63,70	14.479,50
246	63,35	63,48	14.543,00
247	63,08	63,22	14.606,20
248	62,79	62,94	14.669,20
249	62,50	62,65	14.731,80
250	62,20	62,35	14.794,20
251	61,90	62,05	14.856,20
252	61,59	61,75	14.918,00
253	61,27	61,43	14.979,40
254	60,96	61,12	15.040,50
255	60,65	60,81	15.101,30
256	60,36	60,51	15.161,80
257	60,09	60,23	15.222,00
258	59,85	59,97	15.282,00
259	59,63	59,74	15.341,70
260	59,43	59,53	15.401,30
261	59,25	59,34	15.460,60
262	59,09	59,17	15.519,80
263	59,05	59,07	15.578,90
264	59,01	59,03	15.637,90

BALSA DE MOSTRAKAS
EXCAVACIÓN ZANJA CONDUCCIÓN LLENADO - VACIADO

P.K	ÁREA (M2)	VOL. PARCIAL (M3)	VOL. ACUMULADO (M3)
265	59,06	59,04	15.696,90
266	59,15	59,10	15.756,00
267	59,33	59,24	15.815,30
268	59,51	59,42	15.874,70
269	59,76	59,64	15.934,30
270	60,03	59,89	15.994,20
271	60,33	60,18	16.054,40
272	60,68	60,51	16.114,90
273	61,04	60,86	16.175,80
274	61,49	61,27	16.237,00
275	61,98	61,74	16.298,80
276	62,54	62,26	16.361,00
277	63,11	62,82	16.423,90
278	63,76	63,43	16.487,30
279	64,44	64,10	16.551,40
280	65,13	64,79	16.616,20
281	65,84	65,49	16.681,70
282	66,61	66,22	16.747,90
283	67,44	67,02	16.814,90
284	68,33	67,88	16.882,80
285	69,28	68,81	16.951,60
286	70,24	69,76	17.021,40
287	71,05	70,64	17.092,00
288	71,00	71,02	17.163,00
289	68,63	69,81	17.232,80
290	64,34	66,48	17.299,30
291	59,46	61,90	17.361,20
292	55,18	57,32	17.418,50
293	52,80	53,99	17.472,50
293,375	52,68	19,78	17.492,30
294	52,68	32,93	17.525,20
295	52,43	52,55	17.577,80
296	52,80	52,61	17.630,40
297	57,21	55,00	17.685,40
298	62,79	60,00	17.745,40
299	66,42	64,61	17.810,00
300	72,11	69,26	17.879,30
301	75,02	73,56	17.952,80
302	76,98	76,00	18.028,80
303	78,56	77,77	18.106,60
304	79,70	79,13	18.185,70
305	80,75	80,22	18.266,00
306	81,42	81,08	18.347,00
307	82,01	81,71	18.428,80
308	82,52	82,26	18.511,00

BALSA DE MOSTRAKAS
EXCAVACIÓN ZANJA CONDUCCIÓN LLENADO - VACIADO

P.K	ÁREA (M2)	VOL. PARCIAL (M3)	VOL. ACUMULADO (M3)
308,04	82,54	3,30	18.514,30
308,04	82,54	0,00	18.514,30
308,561	126,70	54,51	18.568,80
308,561	126,70	0,00	18.568,80
309	127,27	55,75	18.624,60
310	128,51	127,89	18.752,50
311	129,70	129,10	18.881,60
312	130,89	130,29	19.011,90
313	132,10	131,50	19.143,40
314	133,32	132,71	19.276,10
315	134,57	133,94	19.410,00
316	135,85	135,21	19.545,20
317	137,16	136,51	19.681,70
318	138,46	137,81	19.819,50
319	139,74	139,10	19.958,60
320	141,02	140,38	20.099,00
321	142,27	141,64	20.240,70
322	143,53	142,90	20.383,60
323	144,81	144,17	20.527,70
324	146,08	145,44	20.673,20
325	147,33	146,70	20.819,90
326	148,55	147,94	20.967,80
327	149,75	149,15	21.117,00
328	150,91	150,33	21.267,30
329	152,04	151,47	21.418,80
330	152,76	152,40	21.571,20
331	150,31	151,53	21.722,70
332	145,31	147,81	21.870,50
333	136,17	140,74	22.011,30
334	124,87	130,52	22.141,80
335	112,54	118,70	22.260,50
336	100,34	106,44	22.366,90
337	88,22	94,28	22.461,20
338	80,47	84,34	22.545,50
339	77,26	78,86	22.624,40
340	75,35	76,30	22.700,70
341	74,21	74,78	22.775,50
342	73,60	73,91	22.849,40
342,04	73,57	2,94	22.852,30
342,04	73,57	0,00	22.852,30
343	69,46	68,66	22.921,00
344	67,61	68,53	22.989,50
345	67,37	67,49	23.057,00
345,04	67,38	2,69	23.059,70
345,04	67,38	0,00	23.059,70

BALSA DE MOSTRAKAS
EXCAVACIÓN ZANJA CONDUCCIÓN LLENADO - VACIADO

P.K	ÁREA (M2)	VOL. PARCIAL (M3)	VOL. ACUMULADO (M3)
346	68,44	65,19	23.124,90
347	68,12	68,28	23.193,20
348	67,85	67,99	23.261,20
349	67,57	67,71	23.328,90
349,297	67,50	20,06	23.348,90
350	51,19	41,72	23.390,70
351	29,67	40,43	23.431,10
352	10,10	19,88	23.451,00
352,561	0,36	2,93	23.453,90

ACCESOS

MOVIMIENTO DE TIERRAS

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
5,36	9,08	0,00	0,00				1,92	0,00	0,00
6,00	6,47	4,97	5,00				1,92	1,22	1,20
7,00	2,44	4,45	9,40				1,85	1,89	3,10
8,00	0,06	1,25	10,70				1,91	1,88	5,00
				1,22	0,61	0,60			
9,00	0,00	0,03	10,70				1,92	1,91	6,90
				1,29	1,25	1,90			
10,00	2,63	1,96	3,80				1,92	1,92	8,80
11,00	3,78	3,21	7,00				1,92	1,92	10,70
12,00	4,61	4,20	11,20				1,92	1,92	12,70
13,00	4,52	4,56	15,80				1,92	1,92	14,60
14,00	4,45	4,48	20,30				1,92	1,92	16,50
15,00	4,38	4,41	24,70				1,92	1,92	18,40
16,00	3,83	4,11	28,80				1,92	1,92	20,30
17,00	2,99	3,41	32,20				1,92	1,92	22,20
18,00	2,00	2,49	34,70				1,92	1,92	24,20
19,00	0,05	0,03	10,70				1,92	1,92	26,10
				1,06	1,53	36,20			
20,00	0,46	0,26	11,00				1,92	1,92	28,00
				0,54	0,80	37,00			
21,00	0,61	0,53	11,50				1,92	1,92	29,90
				0,35	0,45	37,50			
22,00	0,75	0,68	12,20				1,91	1,91	31,80
				0,19	0,27	37,80			
23,00	0,90	0,82	13,00				1,90	1,90	33,70
				0,06	0,12	37,90			
24,00	1,03	0,96	14,00				1,89	1,89	35,60
				0,01	0,03	37,90			
25,00	1,17	1,10	15,10				1,88	1,88	37,50
26,00	1,30	1,24	16,30				1,86	1,87	39,40
27,00	1,42	1,36	17,70				1,85	1,85	41,20
28,00	1,48	1,45	19,10				1,79	1,82	43,00
29,00	1,56	1,52	20,60				1,78	1,79	44,80
30,00	1,64	1,60	22,20				1,77	1,77	46,60
31,00	2,05	1,85	24,10				1,84	1,80	48,40
32,00	2,48	2,27	26,40				1,92	1,88	50,30
33,00	2,62	2,55	28,90				1,92	1,92	52,20
33,36	2,66	0,94	29,80				1,92	0,68	52,90
34,00	2,74	1,74	31,60				1,92	1,24	54,10
35,00	2,87	2,81	34,40				1,92	1,92	56,00
35,00							1,25	0,00	56,00
36,00							1,25	1,25	57,30
37,00							1,25	1,25	58,50
38,00							1,25	1,25	59,80
39,00							1,25	1,25	61,00
40,00							1,25	1,25	62,30
41,00							1,25	1,25	63,50
42,00							1,25	1,25	64,80

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
43,00							1,25	1,25	66,00
44,00							1,25	1,25	67,30
45,00							1,25	1,25	68,50
46,00							1,25	1,25	69,80
47,00							1,25	1,25	71,00
48,00							1,25	1,25	72,30
49,00							1,25	1,25	73,50
50,00							1,25	1,25	74,80
51,00							1,25	1,25	76,00
52,00							1,25	1,25	77,30
53,00							1,25	1,25	78,50
54,00							1,25	1,25	79,80
55,00							1,25	1,25	81,00
55,00	3,99	0,00	34,40				1,92	0,00	81,00
56,00	3,19	3,59	38,00				1,92	1,92	83,00
57,00	2,55	2,87	40,80				1,92	1,92	84,90
58,00	1,65	2,10	42,90				1,81	1,86	86,70
59,00	1,46	1,55	44,50				1,83	1,82	88,60
60,00	1,36	1,41	45,90				1,85	1,84	90,40
61,00	1,51	1,43	47,30				1,83	1,84	92,20
62,00	1,61	1,56	48,90				1,85	1,84	94,10
63,00	1,65	1,63	50,50				1,84	1,84	95,90
64,00	2,06	1,86	52,40				1,91	1,88	97,80
65,00	2,21	2,14	54,50				1,90	1,90	99,70
66,00	2,46	2,33	56,90				1,86	1,88	101,60
67,00	3,15	2,80	59,70				1,92	1,89	103,50
68,00	3,05	3,10	62,80				1,92	1,92	105,40
69,00	2,63	2,84	65,60				1,84	1,88	107,30
70,00	2,48	2,56	68,20				1,88	1,86	109,10
71,00	2,31	2,40	70,50				1,90	1,89	111,00
72,00	2,20	2,25	72,80				1,91	1,91	112,90
73,00	2,21	2,20	75,00				1,90	1,90	114,80
74,00	2,33	2,27	77,30				1,88	1,89	116,70
75,00	2,52	2,42	79,70				1,85	1,86	118,60
76,00	3,32	2,92	82,60				1,92	1,88	120,50
77,00	4,12	3,72	86,30				1,92	1,92	122,40
78,00	4,93	4,53	90,90				1,92	1,92	124,30
79,00	5,25	5,09	95,90				1,92	1,92	126,20
79,62	5,51	3,35	99,30				1,92	1,19	127,40
80,00	5,67	2,11	101,40				1,92	0,72	128,10
81,00	5,31	5,49	106,90				1,92	1,92	130,00
82,00	3,46	4,38	111,30				1,88	1,90	131,90
83,00	2,64	3,05	114,30				1,90	1,89	133,80
84,00	1,57	2,11	116,40				1,84	1,87	135,70
85,00	0,72	1,15	117,60				1,89	1,87	137,60
86,00	0,03	0,37	118,00				1,92	1,90	139,50
				0,23	0,12	38,00			
87,00	0,00	0,01	118,00				1,92	1,92	141,40

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
				1,11	0,67	38,70			
88,00	1,98	1,54	40,20				1,92	1,92	143,30
89,00	3,03	2,50	42,70				1,92	1,92	145,20
90,00	3,53	3,28	46,00				1,92	1,92	147,10
91,00	3,72	3,63	49,70				1,92	1,92	149,00
92,00	0,12	0,06	118,00				1,92	1,92	151,00
				3,08	3,40	53,10			
93,00	0,35	0,23	118,30				1,90	1,91	152,90
				2,02	2,55	55,60			
94,00	0,58	0,46	118,70				1,87	1,89	154,80
				1,43	1,73	57,30			
95,00	0,84	0,71	119,40				1,85	1,86	156,60
				0,91	1,17	58,50			
96,00	1,49	1,17	120,60				1,92	1,88	158,50
				0,48	0,69	59,20			
97,00	1,90	1,70	122,30				1,92	1,92	160,40
				0,24	0,36	59,60			
98,00	2,30	2,10	124,40				1,92	1,92	162,30
				0,11	0,17	59,70			
99,00	2,68	2,49	126,90				1,92	1,92	164,30
				0,03	0,07	59,80			
100,00	3,03	2,86	129,80				1,92	1,92	166,20
				0,00	0,02	59,80			
101,00	3,34	3,19	132,90				1,92	1,92	168,10
102,00	3,57	3,46	136,40				1,91	1,91	170,00
103,00	3,74	3,65	140,10				1,91	1,91	171,90
104,00	3,91	3,82	143,90				1,92	1,91	173,80
105,00	3,94	3,93	147,80				1,92	1,92	175,70
106,00	3,88	3,91	151,70				1,92	1,92	177,70
107,00	3,77	3,82	155,50				1,92	1,92	179,60
108,00	3,62	3,70	159,20				1,92	1,92	181,50
109,00	3,45	3,54	162,80				1,92	1,92	183,40
110,00	3,26	3,35	166,10				1,92	1,92	185,30
111,00	3,05	3,15	169,30				1,92	1,92	187,20
112,00	2,85	2,95	172,20				1,92	1,92	189,20
113,00	2,65	2,75	175,00				1,92	1,92	191,10
114,00	2,11	2,38	177,30				1,83	1,87	192,90
115,00	1,64	1,88	179,20				1,77	1,80	194,70
116,00	1,52	1,58	180,80				1,79	1,78	196,50
117,00	1,39	1,46	182,30				1,81	1,80	198,30
118,00	1,27	1,33	183,60				1,82	1,81	200,10
119,00	1,82	1,54	185,10				1,88	1,85	202,00
120,00	4,56	3,19	188,30				1,92	1,90	203,90
121,00	3,65	4,10	192,40				1,92	1,92	205,80
122,00	1,19	2,42	194,80				1,83	1,87	207,70
123,00	1,21	1,20	196,00				1,83	1,83	209,50
124,00	1,22	1,21	197,20				1,83	1,83	211,30
125,00	1,24	1,23	198,50				1,83	1,83	213,20

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
126,00	1,26	1,25	199,70				1,82	1,82	215,00
127,00	1,28	1,27	201,00				1,82	1,82	216,80
128,00	1,29	1,28	202,30				1,82	1,82	218,60
129,00	1,31	1,30	203,60				1,82	1,82	220,40
130,00	1,33	1,32	204,90				1,82	1,82	222,30
131,00	1,35	1,34	206,20				1,81	1,81	224,10
132,00	1,36	1,35	207,60				1,81	1,81	225,90
133,00	1,38	1,37	209,00				1,81	1,81	227,70
134,00	1,40	1,39	210,30				1,81	1,81	229,50
135,00	1,41	1,41	211,80				1,80	1,80	231,30
136,00	1,43	1,42	213,20				1,80	1,80	233,10
137,00	1,45	1,44	214,60				1,80	1,80	234,90
138,00	1,47	1,46	216,10				1,80	1,80	236,70
139,00	1,49	1,48	217,60				1,80	1,80	238,50
140,00	1,50	1,49	219,00				1,79	1,79	240,30
141,00	1,52	1,51	220,60				1,79	1,79	242,10
142,00	1,54	1,53	222,10				1,79	1,79	243,90
143,00	1,55	1,54	223,60				1,78	1,79	245,60
144,00	1,57	1,56	225,20				1,78	1,78	247,40
145,00	1,59	1,58	226,80				1,78	1,78	249,20
146,00	1,60	1,59	228,40				1,78	1,78	251,00
147,00	1,62	1,61	230,00				1,77	1,77	252,80
148,00	1,64	1,63	231,60				1,77	1,77	254,50
149,00	1,66	1,64	233,20				1,77	1,77	256,30
150,00	1,64	1,65	234,90				1,80	1,79	258,10
151,00	1,63	1,64	236,50				1,81	1,81	259,90
152,00	1,62	1,63	238,20				1,82	1,81	261,70
153,00	1,62	1,62	239,80				1,82	1,82	263,50
154,00	1,60	1,61	241,40				1,82	1,82	265,30
155,00	1,93	1,77	243,20				1,90	1,86	267,20
155,00							1,25	0,00	267,20
156,00							1,25	1,25	268,50
157,00							1,25	1,25	269,70
158,00							1,25	1,25	271,00
159,00							1,25	1,25	272,20
160,00							1,25	1,25	273,50
161,00							1,25	1,25	274,70
162,00							1,25	1,25	276,00
163,00							1,25	1,25	277,20
164,00							1,25	1,25	278,50
165,00							1,25	1,25	279,70
166,00							1,25	1,25	281,00
167,00							1,25	1,25	282,20
168,00							1,25	1,25	283,50
169,00							1,25	1,25	284,70
170,00							1,25	1,25	286,00
171,00							1,25	1,25	287,20
172,00							1,25	1,25	288,50

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
173,00							1,25	1,25	289,70
174,00							1,25	1,25	291,00
175,00							1,25	1,25	292,20
175,00	3,49	0,00	243,20				1,92	0,00	292,20
176,00	3,55	3,52	246,70				1,92	1,92	294,10
177,00	3,62	3,58	250,30				1,92	1,92	296,10
178,00	3,68	3,65	253,90				1,92	1,92	298,00
179,00	3,74	3,71	257,60				1,92	1,92	299,90
180,00	3,81	3,78	261,40				1,92	1,92	301,80
181,00	3,87	3,84	265,20				1,92	1,92	303,70
182,00	3,92	3,90	269,10				1,92	1,92	305,60
183,00	3,96	3,94	273,10				1,92	1,92	307,60
184,00	3,98	3,97	277,00				1,92	1,92	309,50
185,00	3,98	3,98	281,00				1,92	1,92	311,40
186,00	3,97	3,98	285,00				1,92	1,92	313,30
187,00	3,94	3,96	289,00				1,92	1,92	315,20
188,00	3,96	3,95	292,90				1,92	1,92	317,10
189,00	4,05	4,00	296,90				1,92	1,92	319,10
190,00	4,25	4,15	301,00				1,92	1,92	321,00
191,00	4,55	4,40	305,40				1,92	1,92	322,90
192,00	4,61	4,58	310,00				1,92	1,92	324,80
193,00	4,38	4,50	314,50				1,92	1,92	326,70
194,00	4,08	4,23	318,80				1,92	1,92	328,60
195,00	3,79	3,93	322,70				1,92	1,92	330,60
196,00	3,50	3,64	326,30				1,92	1,92	332,50
197,00	3,23	3,36	329,70				1,92	1,92	334,40
198,00	2,97	3,10	332,80				1,92	1,92	336,30
199,00	2,69	2,83	335,60				1,92	1,92	338,20
200,00	2,42	2,55	338,20				1,92	1,92	340,10
201,00	2,42	2,42	340,60				1,92	1,92	342,10
202,00	2,42	2,42	343,00				1,92	1,92	344,00
203,00	2,42	2,42	345,40				1,92	1,92	345,90
204,00	2,42	2,42	347,80				1,92	1,92	347,80
205,00	2,42	2,42	350,30				1,92	1,92	349,70
206,00	2,42	2,42	352,70				1,92	1,92	351,60
207,00	2,42	2,42	355,10				1,92	1,92	353,60
208,00	2,42	2,42	357,50				1,92	1,92	355,50
209,00	2,42	2,42	359,90				1,92	1,92	357,40
209,56	2,42	1,35	361,30				1,92	1,07	358,50
210,00	2,42	1,07	362,30				1,92	0,85	359,30
211,00	2,42	2,42	364,80				1,92	1,92	361,20
212,00	2,42	2,42	367,20				1,92	1,92	363,10
213,00	2,42	2,42	369,60				1,92	1,92	365,10
214,00	2,42	2,42	372,00				1,92	1,92	367,00
215,00	2,41	2,41	374,40				1,92	1,92	368,90
216,00	2,41	2,41	376,80				1,92	1,92	370,80
217,00	2,40	2,40	379,20				1,92	1,92	372,70
218,00	2,39	2,40	381,60				1,92	1,92	374,60

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
219,00	2,38	2,39	384,00				1,92	1,92	376,60
220,00	2,37	2,37	386,40				1,92	1,92	378,50
221,00	2,62	2,49	388,90				1,92	1,92	380,40
222,00	2,88	2,75	391,60				1,92	1,92	382,30
223,00	3,15	3,02	394,70				1,92	1,92	384,20
224,00	3,42	3,28	397,90				1,92	1,92	386,10
225,00	3,69	3,56	401,50				1,92	1,92	388,10
226,00	3,97	3,83	405,30				1,92	1,92	390,00
227,00	4,25	4,11	409,40				1,92	1,92	391,90
228,00	4,52	4,39	413,80				1,92	1,92	393,80
229,00	4,70	4,61	418,40				1,92	1,92	395,70
230,00	4,68	4,69	423,10				1,92	1,92	397,60
231,00	4,45	4,56	427,70				1,92	1,92	399,60
232,00	4,13	4,29	432,00				1,92	1,92	401,50
233,00	3,80	3,96	435,90				1,92	1,92	403,40
234,00	3,63	3,72	439,70				1,92	1,92	405,30
235,00	3,52	3,57	443,20				1,92	1,92	407,20
236,00	3,46	3,49	446,70				1,92	1,92	409,10
237,00	3,46	3,46	450,20				1,92	1,92	411,10
238,00	3,21	3,33	453,50				1,85	1,88	412,90
239,00	3,77	3,49	457,00				1,92	1,88	414,80
240,00	4,07	3,92	460,90				1,92	1,92	416,70
240,00							1,25	0,00	416,70
241,00							1,25	1,25	418,00
242,00							1,25	1,25	419,20
243,00							1,25	1,25	420,50
244,00							1,25	1,25	421,70
245,00							1,25	1,25	423,00
246,00							1,25	1,25	424,20
247,00							1,25	1,25	425,50
248,00							1,25	1,25	426,70
249,00							1,25	1,25	428,00
250,00							1,25	1,25	429,20
251,00							1,25	1,25	430,50
252,00							1,25	1,25	431,70
253,00							1,25	1,25	433,00
254,00							1,25	1,25	434,20
255,00							1,25	1,25	435,50
256,00							1,25	1,25	436,70
257,00							1,25	1,25	438,00
258,00							1,25	1,25	439,20
259,00							1,25	1,25	440,50
260,00							1,25	1,25	441,70
260,00	3,16	0,00	460,90				1,86	0,00	441,70
261,00	3,10	3,13	464,00				1,88	1,87	443,60
262,00	3,02	3,06	467,10				1,89	1,88	445,50
263,00	2,94	2,98	470,10				1,90	1,89	447,40
264,00	2,86	2,90	473,00				1,90	1,90	449,30

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
265,00	2,78	2,82	475,80				1,90	1,90	451,20
266,00	2,70	2,74	478,60				1,90	1,90	453,10
267,00	2,63	2,67	481,20				1,91	1,90	455,00
267,72	2,57	1,86	483,10				1,91	1,36	456,40
268,00	2,54	0,73	483,80				1,91	0,54	456,90
269,00	2,47	2,51	486,30				1,91	1,91	458,80
270,00	2,41	2,44	488,80				1,90	1,90	460,70
271,00	2,18	2,29	491,00				1,90	1,90	462,60
272,00	1,72	1,95	493,00				1,83	1,86	464,50
273,00	1,60	1,66	494,70				1,86	1,84	466,30
274,00	1,47	1,54	496,20				1,86	1,86	468,20
275,00	1,51	1,49	497,70				1,83	1,85	470,00
276,00	1,74	1,62	499,30				1,79	1,81	471,80
277,00	1,88	1,81	501,10				1,78	1,78	473,60
278,00	2,39	2,14	503,30				1,84	1,81	475,40
279,00	2,92	2,66	505,90				1,92	1,88	477,30
280,00	3,19	3,06	509,00				1,92	1,92	479,20
281,00	3,23	3,21	512,20				1,92	1,92	481,10
282,00	3,26	3,25	515,40				1,92	1,92	483,10
283,00	3,22	3,24	518,70				1,92	1,92	485,00
284,00	2,88	3,05	521,70				1,87	1,89	486,90
285,00	2,80	2,84	524,60				1,91	1,89	488,80
286,00	3,19	2,99	527,50				1,91	1,91	490,70
287,00	3,31	3,25	530,80				1,89	1,90	492,60
288,00	3,26	3,29	534,10				1,87	1,88	494,40
288,27	3,24	0,88	535,00				1,88	0,51	494,90
289,00	3,17	2,34	537,30				1,89	1,37	496,30
290,00	2,99	3,08	540,40				1,90	1,89	498,20
291,00	2,44	2,71	543,10				1,92	1,91	500,10
292,00	1,52	1,98	545,10				1,92	1,92	502,00
				0,74	0,37	60,20			
293,00	1,70	1,61	546,70				1,92	1,92	504,00
				0,89	0,82	61,00			
294,00	2,41	2,06	548,70				1,92	1,92	505,90
				0,13	0,51	61,50			
295,00	3,51	2,96	551,70				1,91	1,91	507,80
				0,00	0,06	61,60			
296,00	4,26	3,88	555,60				1,83	1,87	509,70
297,00	5,11	4,68	560,30				1,92	1,87	511,50
298,00	5,52	5,31	565,60				1,92	1,92	513,50
299,00	5,66	5,59	571,20				1,92	1,92	515,40
300,00	5,57	5,61	576,80				1,92	1,92	517,30
301,00	5,30	5,43	582,20				1,92	1,92	519,20
301,50	5,13	2,59	584,80				1,92	0,95	520,20
302,00	4,70	2,47	587,30				1,84	0,94	521,10
303,00	4,37	4,53	591,80				1,88	1,86	523,00
304,00	4,09	4,23	596,00				1,88	1,88	524,80
305,00	4,27	4,18	600,20				1,89	1,88	526,70

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
306,00	4,59	4,43	604,60				1,89	1,89	528,60
307,00	5,02	4,80	609,40				1,88	1,88	530,50
308,00	5,64	5,33	614,80				1,88	1,88	532,40
309,00	6,36	6,00	620,80				1,89	1,88	534,20
310,00	6,98	6,67	627,40				1,90	1,89	536,10
311,00	7,57	7,27	634,70				1,91	1,90	538,00
312,00	8,07	7,82	642,50				1,92	1,91	540,00
313,00	8,55	8,31	650,80				1,92	1,92	541,90
				0,01	0,01	61,60			
314,00	9,07	8,81	659,70				1,92	1,92	543,80
				0,08	0,05	61,60			
315,00	9,58	9,32	669,00				1,92	1,92	545,70
				0,17	0,12	61,80			
316,00	0,06	9,82	678,80				1,92	1,92	547,60
				0,30	0,24	62,00			
317,00	1,25	10,65	689,50				1,92	1,92	549,50
				0,61	0,46	62,50	0,61	0,46	62,50
318,00	3,33	12,29	701,70				1,92	1,92	551,50
				1,32	0,96	63,40			
319,00	4,33	13,83	715,60				1,92	1,92	553,40
				2,43	1,87	65,30			
320,00	3,51	13,92	729,50				1,92	1,92	555,30
				3,53	2,98	68,30			
321,00	1,12	12,31	741,80				1,92	1,92	557,20
				4,72	4,13	72,40			
321,22	0,39	2,39	744,20				1,92	0,43	557,60
				4,95	1,07	73,50			
322,00	8,31	7,27	751,50				1,92	1,49	559,10
				5,69	4,14	77,60			
322,04	8,19	0,36	751,80				1,92	0,08	559,20
				5,72	0,25	77,90			
323,00	5,62	6,60	758,40				1,92	1,83	561,00
				6,40	5,79	83,70			
324,00	3,68	4,65	763,10				1,92	1,92	563,00
				6,83	6,61	90,30			
325,00	2,51	3,09	766,20				1,92	1,92	564,90
				6,47	6,65	96,90			
326,00	1,66	2,08	768,20				1,92	1,92	566,80
				4,70	5,58	102,50			
327,00	0,98	1,32	769,60				1,92	1,92	568,70
				4,43	4,56	107,10			
328,00	0,14	0,56	770,10				1,86	1,89	570,60
				4,40	4,41	111,50			
329,00	0,06	0,10	770,20				1,90	1,88	572,50
				4,03	4,21	115,70			
330,00	0,01	0,03	770,30				1,91	1,90	574,40
				4,11	4,07	119,70			
331,00	4,35	4,23	124,00				1,92	1,92	576,30

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
331,03	4,36	0,15	124,10				1,92	0,07	576,40
332,00	4,16	4,11	128,20				1,92	1,85	578,20
333,00	3,65	3,90	132,10				1,92	1,92	580,10
334,00	3,12	3,38	135,50				1,92	1,92	582,00
335,00	2,84	2,98	138,50				1,92	1,92	584,00
336,00	2,56	2,70	141,20				1,92	1,92	585,90
336,22	2,50	0,56	141,80				1,92	0,43	586,30
337,00	2,20	1,83	143,60				1,92	1,49	587,80
337,61	2,00	1,27	144,90				1,92	1,16	589,00
338,00	1,88	0,76	145,60				1,92	0,75	589,70
339,00	1,57	1,73	147,40				1,92	1,92	591,60
340,00	0,01	0,01	770,30				1,92	1,92	593,50
				1,27	1,42	148,80			
341,00	0,07	0,04	770,30				1,92	1,92	595,50
				1,03	1,15	149,90			
342,00	0,17	0,12	770,40				1,91	1,91	597,40
				0,85	0,94	150,90			
343,00	0,24	0,20	770,60				1,89	1,90	599,30
				0,69	0,77	151,60			
344,00	0,28	0,26	770,90				1,89	1,89	601,20
				0,55	0,62	152,30			
345,00	0,36	0,32	771,20				1,85	1,87	603,00
				0,44	0,49	152,80			
346,00	0,45	0,40	771,60				1,84	1,84	604,90
				0,32	0,38	153,10			
347,00	0,94	0,69	772,30				1,92	1,88	606,80
				0,20	0,26	153,40			
348,00	1,16	1,05	773,40				1,92	1,92	608,70
				0,07	0,13	153,50			
349,00	1,48	1,32	774,70				1,92	1,92	610,60
				0,00	0,03	153,60			
350,00	1,89	1,68	776,40				1,92	1,92	612,50
351,00	2,32	2,11	778,50				1,91	1,91	614,40
352,00	2,75	2,54	781,00				1,89	1,90	616,30
353,00	3,18	2,97	784,00				1,86	1,87	618,20
353,17	3,25	0,55	784,50				1,85	0,32	618,50
354,00	3,91	2,97	787,50				1,92	1,56	620,10
355,00	4,44	4,18	791,70				1,92	1,92	622,00
356,00	4,97	4,70	796,40				1,92	1,92	623,90
357,00	5,44	5,20	801,60				1,92	1,92	625,80
358,00	5,97	5,71	807,30				1,92	1,92	627,70
359,00	6,23	6,10	813,40				1,92	1,92	629,60
360,00	6,50	6,36	819,70				1,92	1,92	631,60
361,00	6,84	6,67	826,40				1,92	1,92	633,50
362,00	7,05	6,94	833,40				1,92	1,92	635,40
363,00	7,25	7,15	840,50				1,92	1,92	637,30
364,00	8,30	7,78	848,30				1,92	1,92	639,20
365,00	8,68	8,49	856,80				1,92	1,92	641,10

ACCESO EJE 1. ACCESO A CORONACIÓN									
P.K	EXCAVACIÓN			TERRAPLEN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
366,00	9,10	8,89	865,70				1,92	1,92	643,10
367,00	9,51	9,31	875,00				1,92	1,92	645,00
368,00	9,94	9,73	884,70				1,92	1,92	646,90
368,50	0,18	5,06	889,80				1,92	0,96	647,90

ACCESO EJE 2. ACCESO A ARQUETA DE DESAGÜE						
P.K	EXCAVACIÓN			FIRME		
	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)	ÁREA (M2)	VOL PARCIAL (M3)	VOL ACUMULADO (M3)
0	2,445	0	0	1,753	0	0
0,016	2,457	0,04	0	1,753	0,03	0
1	2,821	2,6	2,6	1,753	1,72	1,8
2	2,601	2,71	5,3	1,753	1,75	3,5
3	2,38	2,49	7,8	1,753	1,75	5,3
3,556	2,255	1,29	9,1	1,752	0,97	6,2
4	1,851	0,91	10	1,69	0,76	7
5	1,737	1,79	11,8	1,726	1,71	8,7
5,676	1,657	1,15	13	1,746	1,17	9,9
6	1,618	0,53	13,5	1,753	0,57	10,4
6,837	1,523	1,31	14,8	1,77	1,47	11,9
7	1,507	0,25	15,1	1,771	0,29	12,2
7,997	1,476	1,49	16,6	1,776	1,77	14
8	1,476	0	16,6	1,776	0,01	14
9	1,535	1,51	18,1	1,778	1,78	15,8
10	1,638	1,59	19,7	1,78	1,78	17,5
11	1,773	1,71	21,4	1,779	1,78	19,3
12	1,942	1,86	23,2	1,779	1,78	21,1
13	2,141	2,04	25,3	1,777	1,78	22,9
13,868	2,333	1,94	27,2	1,772	1,54	24,4
14	2,364	0,31	27,5	1,772	0,23	24,6
15	2,622	2,49	30	1,763	1,77	26,4
16	2,918	2,77	32,8	1,748	1,76	28,2
17	3,26	3,09	35,9	1,727	1,74	29,9
17,026	3,27	0,08	35,9	1,726	0,04	30
18	3,638	3,36	39,3	1,697	1,67	31,6
19	4,383	4,01	43,3	1,753	1,73	33,3
20	4,936	4,66	48	1,753	1,75	35,1
20,185	5,017	0,92	48,9	1,753	0,32	35,4
21	5,56	4,31	53,2	1,753	1,43	36,8
21,167	5,662	0,94	54,1	1,753	0,29	37,1
22	6,245	4,96	59,1	1,753	1,46	38,6
23	7,004	6,62	65,7	1,753	1,75	40,4
23,854	7,711	6,28	72	1,753	1,5	41,9
24	7,838	1,14	73,2	1,753	0,26	42,1
24,869	8,635	7,16	80,3	1,753	1,52	43,6
25	8,764	1,14	81,4	1,752	0,23	43,9
26	9,808	9,29	90,7	1,753	1,75	45,6
26,541	10,408	5,47	96,2	1,753	0,95	46,6
27	10,935	4,9	101,1	1,753	0,8	47,4
27,531	11,544	5,97	107,1	1,753	0,93	48,3
27,535	11,548	0,05	107,1	1,753	0,01	48,3
28	12,085	5,49	112,6	1,753	0,81	49,1
28,097	12,195	1,18	113,8	1,753	0,17	49,3
29	13,251	11,49	125,3	1,753	1,58	50,9
30	14,422	13,84	139,1	1,753	1,75	52,6
31	15,556	14,99	154,1	1,753	1,75	54,4
32	16,593	16,07	170,2	1,753	1,75	56,1
33	17,461	17,03	187,2	1,753	1,75	57,9
34	18,378	17,92	205,1	1,753	1,75	59,6
35	19,051	18,71	223,8	1,753	1,75	61,4
36	19,588	19,32	243,2	1,753	1,75	63,1
37	19,95	19,77	262,9	1,753	1,75	64,9
38	20,181	20,07	283	1,753	1,75	66,6
38,247	20,221	4,99	288	1,753	0,43	67,1
39	20,347	15,27	303,3	1,753	1,32	68,4
40	20,487	20,42	323,7	1,753	1,75	70,1
41	20,601	20,54	344,2	1,753	1,75	71,9
42	20,671	20,64	364,9	1,753	1,75	73,7
43	20,638	20,65	385,5	1,753	1,75	75,4
44	20,511	20,57	406,1	1,753	1,75	77,2
45	20,298	20,4	426,5	1,753	1,75	78,9
46	20,027	20,16	446,7	1,753	1,75	80,7
47	19,714	19,87	466,5	1,753	1,75	82,4
48	19,367	19,54	486,1	1,753	1,75	84,2
49	19,057	19,21	505,3	1,753	1,75	85,9
50	18,553	18,81	524,1	1,753	1,75	87,7
51	18,107	18,33	542,4	1,753	1,75	89,4
52	17,654	17,88	560,3	1,753	1,75	91,2
53	17,185	17,42	577,7	1,753	1,75	92,9
54	16,669	16,93	594,6	1,753	1,75	94,7
55	16,176	16,42	611,1	1,753	1,75	96,4
56	15,784	15,98	627	1,752	1,75	98,2
57	15,548	15,67	642,7	1,753	1,75	99,9
57,87	15,372	13,45	656,2	1,753	1,52	101,5

MEDICIONES

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01	SUBTRAMO O.T. PIKARANA-T12					
01.01	OBRA DE TOMA PIKARANA (OT-T12)					
01.01.01	ALMENARA TOMA CANAL DE NAVARRA					
01.01.01.01	DEMOLICIONES					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	Cajeros almenara existente	2	10,00	0,50	5,00	50,00
	Solera almenara existente	1	10,00	0,60	22,50	135,00
	Tacón en solera 1	1	22,50	0,34		7,65
	Tacón en solera 2	1	22,50	0,30		6,75
						199,40
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	Cajeros plataforma					
	Margen izquierda	1	13,32	1,05	3,00	41,96
	Margen derecha	1	2,92	1,05	3,00	9,20
	Solera	1	310,43		1,00	310,43
	Rampa de caída					
	Cajeros	2	25,00	1,05	3,00	157,50
	Solera	1	25,00	8,00	1,00	200,00
						719,09
P5CERRAM0A	m Desmontaje de cerramiento metálico, vallado y barandillas. Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar, existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos.					
	Cajeros	2	10,00			20,00
	Pasarela	1	21,60			21,60
						41,60
01.01.01.02	MOVIMIENTO DE TIERRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Almenara					
	Cuerpo principal hasta aliviadero	1	19,02	24,50	2,41	1.123,04

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Taludes despues de demolición	2	19,02	2,09	6,51	517,57
	Pozo tuberías	1	1,83	6,00	3,10	34,04
		1	0,83	6,00	1,55	7,72
						1.682,37
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN					
	Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares.					
	Unidad totalmente terminada.					
	Taludes obra de fábrica	2	19,02	2,09	6,51	517,57
	Plataforma sobre obra nueva					
	Margen izquierda	1	229,98		1,20	275,98
	Margen derecha	1	218,31			218,31
	Derrame MI	1	22,19	1,08		23,97
		1	11,63	2,43		28,26
	Derrame MD	1	22,30	1,08		24,08
		1	14,07	2,43		34,19
	Plataforma sobre obra existente					
	Margen izquierda	1	419,85		1,20	503,82
	Derrame	1	31,43	1,08		33,94
	Margen derecha	1	445,09		1,20	534,11
	Derrame		33,00	1,08		35,64
	A deducir arqueta	-1	69,67		1,20	-83,60
						2.146,27
P1MTTU003	m² Geodrén PEAD 200 gr/m2					
	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.					
	Paramento izquierdo					
		1	15,78		7,91	124,82
	Zona bajada	1	3,24		6,70	21,71
	Paramento derecho					
		1	15,78		7,91	124,82
	Zona bajada1	1	3,24		6,70	21,71
	Zona de bajada 2	1	1,84		1,55	2,85
			0,38		3,10	1,18

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Lateral compuertas	1	1,60		10,41	16,66
		1	0,50		10,41	5,21
	Frontal	1	7,00		7,21	50,47
						369,43
01.01.01.03	OBRA DE FÁBRICA					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Bajo almenara	1	19,02	22,50		427,95
						427,95
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3					
	Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.					
	Losa	1	15,78	22,50	0,60	213,03
	Salto 1	1		22,50	6,85	154,13
	Salto 2	1	0,83	6,50	6,00	32,37
		1		6,50	3,75	24,38
	Cajero derecho	1	15,78	0,50	7,31	57,68
	Salto 1	1	3,24	0,50	6,10	9,88
	Cajero izquierdo	2	15,78	0,50	7,31	115,35
	Salto 1	1	3,24	0,50	6,10	9,88
	Salto 2	2	1,84	0,50	1,25	2,30
	Salto 2	2	0,83	0,50	2,50	2,08
	muro frontal compuertas	1	7,00	1,60	10,41	116,59
	A deducir compuertas y conductos					
		-2	2,00	1,10	10,47	-46,07
		-2	2,00	0,50	2,00	-4,00
	Alojamiento de filtros					
		1	21,50	0,50	7,31	78,58
	A deducir alojamiento de filtros	-6	1,14	0,50	3,90	-13,34
		-6	0,51	0,50		-1,53
	A deducir desagües	-2	0,30	0,50	0,30	-0,09
	Tajamares	5	3,80	0,50	7,31	69,45
		5		0,06	7,31	2,19

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						822,86
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.						
Paramento izquierdo						
		1	15,78		7,91	124,82
	Zona bajada	1	3,24		6,70	21,71
Paramento derecho						
		1	15,78		7,91	124,82
	Zona bajada1	1	3,24		6,70	21,71
	Zona de bajada 2	1	1,84		1,55	2,85
			0,38		3,10	1,18
	Lateral compuertas	1	1,60		10,41	16,66
		1	0,50		10,41	5,21
	Frontal	1	7,00		7,21	50,47
	Chimeneas de aireación	8	0,60		7,21	34,61
Juntas						
	Solera	2	22,50		0,60	27,00
	Cajero	4		0,50	7,31	14,62
	En alivadero	1	15,00		0,60	9,00
	Cajeros	2		0,50	7,31	7,31
	En Salto 2	1	2,67		0,60	1,60
		1	5,00		0,60	3,00
						466,57

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Paramento izquierdo

1 15,78 7,31 115,35

Zona bajada 1 3,24 6,10 19,76

Paramento derecho

1 15,78 7,31 115,35

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Zona bajada1	1	3,24		6,10	19,76
	Zona de bajada 2	2	1,84		0,95	3,50
		2	0,38		2,50	1,90
	Frontal compuertas	1	1,00		9,81	9,81
		2	2,00		7,81	31,24
	Laterales 2 Fases	4	0,80		9,81	31,39
		4	0,40		9,81	15,70
		4	0,40		0,81	1,30
	Filtros					
	Aguas arriba	2	3,35		7,31	48,98
		4	3,20		7,31	93,57
	A deducir alojamiento de filtros	-6	1,14		3,90	-26,68
	Semicirculo	-6	1,02			-6,12
	Laterales alojamiento filtros	12		0,50	3,90	23,40
	Tajamares	10	3,80		7,31	277,78
	Aguas abajo					
		1	21,50		7,31	157,17
	A deducir alojamiento de filtros	-6	1,14		3,90	-26,68
	Semicirculo	-6	1,02			-6,12
	Desagüe de emergencia	8	0,30	0,30		0,72
						901,08

P4ETT-004C-E2 m² Encof/desenc. muros y paramentos CURVOS y VISTOS

Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

En salto 1

1	0,79	21,50	16,99
1	0,79	21,50	16,99

En salto 2

1	0,31	5,00	1,55
1	0,31	5,00	1,55

Nicho de compuerta

2	1,96	2,40	9,41
---	------	------	------

En alojamiento filtros

6	1,79	0,50	5,37
---	------	------	------

En tajamares

5	0,06	7,30	2,19
---	------	------	------

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						54,05
P4ETT-002	kg Acero B-500-S	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.				
	Según medición auxiliar	1	98.613,62			98.613,62
						98.613,62
P4JTAPVC400B	m Junta elastomérica de estanqueidad PVC 400	Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.				
	Juntas					
	Solera	1	22,00			22,00
	Cajero	2			7,61	15,22
	En aliviadero	1	15,50			15,50
	Cajeros	2			7,61	15,22
	En Salto 2	2	2,67			5,34
		1	5,50			5,50
						78,78
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo	Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.				
	Solera	1	22,00			22,00
	Cajeros	2		5,20		10,40
						32,40
P41MRE002	m² Aplicación de resina epoxy	Aplicación de resina epoxy en obras de fábrica. Unidad completa incluidas operaciones de tratamiento y limpieza.				
	Solera	1	22,50		0,60	13,50
	Cajeros	2		4,90	0,50	4,90
						18,40
P1MTTU003	m² Geodrén PEAD 200 gr/m2	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.				
	Paramento izquierdo					
		1	15,78		7,91	124,82
	Zona bajada	1	3,24		6,70	21,71
	Paramento derecho					
		1	15,78		7,91	124,82

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Zona bajada1	1	3,24		6,70	21,71
	Zona de bajada 2	1	1,84		1,55	2,85
			0,38		3,10	1,18
	Lateral compuertas	1	1,60		10,41	16,66
		1	0,50		10,41	5,21
	Frontal	1	7,00		7,21	50,47
						369,43

01.01.01.04 ESTRUCTURA METÁLICA

P41ETT-001 kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga

Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífuga y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.

Módulos extremos

UPN 140	4	3,60	16,00	230,40
IPN-140	4	2,60	14,40	149,76
IPN-140	4	0,72	14,40	41,47
IPN-140	4	1,00	14,40	57,60
IPN-200	4	3,35	26,30	352,42

Módulos centrales

UPN 140	8	3,60	16,00	460,80
IPN-140	8	2,60	14,40	299,52
IPN-140	8	0,72	14,40	82,94
IPN-140	8	1,00	14,40	115,20
IPN-200	8	3,24	26,30	681,70

2.471,81

P41TRAM_001A m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2)

Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.

En filtros extremos

	2	3,60	3,35	24,12
A deducir hueco para filtro	-2	2,60	1,80	-9,36

En filtros centrales

	4	3,60	3,35	48,24
--	---	------	------	-------

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A deducir hueco para filtro	-4	2,60	1,80		-18,72
						44,28
01.01.01.05 ELEMENTOS HIDROMECAÑICOS y ACCESORIOS						
PFILTMO001	ud Filtro de cadenas					
	Filtro de cadenas, adecuado para el tamizado de agua, para un caudal aproximado de 3.350 l/s, con luz de malla 1,5 mm de accionamiento eléctrico, totalmente instalado y probado.					
		6				6,00
						6,00
PFILTMO002	ud Conjunto automatismo para el filtro de cadena					
	Conjunto automatismo para el filtro de cadena, incluyendo armariode maniobre, detector de pérdida de carga y moto-bomba para agua de lavado, totalmente instalado.					
		6				6,00
						6,00
PCOMO001	ud Compuerta mural 2250x2600					
	Compuerta mural 2250x2600, para 10 mca y dise±o unidireccional de accionamiento eléctrico, incluyendo actuador, deslizaderas, sellado en cuatro lados, caperuza de plástico, totalmente montada en obra.					
		2				2,00
						2,00
PCOMO002	ud Compuerta mural 350x400					
	Compuerta mural 350x400, para 10 mca y dise±o unidireccional de accionamiento manual, incluyendo deslizaderas, sellado en cuatro lados, husillo ascendente, caperuza de plástico, totalmente montada en obra, instalado y probado.					
		2				2,00
						2,00
PCOMO010A	m Embebidos metálicos en 1ª y 2ª fase					
	Embebidos metálicos en primera y segunda fase de hormigonado de obra de Picarana, en ranuras de elementos hidro-mecánicos, totalmente colocados.					
	En compuertas murales					
	Verticales	4	9,81			39,24
	Horizontales	2	2,60			5,20
						44,44
01.01.01.06 ELEMENTOS ACCESORIOS						
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
		2	25,00			50,00
						50,00
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6					
	Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada pot tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.					
	Margen izquierda					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	22,27			22,27
	Margen derecha					
		1	22,27			22,27
	Frontal	1	7,00			7,00
						51,54
P41BARAND05	m Barandilla de acero en plataforma de tramex					
	Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por perfilera metálica y tubos metálicos 42,2x6 mm, montada en plataforma de tramex o elementos metálicos por soldadura, incluso parte proporcional de soldaduras, totalmente colocada y terminada.					
		2	3,35			6,70
		4	3,24			12,96
						19,66
01.01.02	ALIVIADERO					
01.01.02.01	MOVIMIENTO DE TIERRAS					
P1MT06L	m² Demolición obra de mampostería o escollera hormigonada					
	Demolición o Desmontado de muros y soleras de escollera hormigonada o mampostería con recuperación de parte de las piezas desmontadas para su posterior colocación, con retirada de escombros sobrantes, carga y transporte a vertedero o planta de reciclaje.					
	Según planimetría	1	373,19			373,19
						373,19
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Aliviadero hasta escalonado					
	Cuerpo principal hasta aliviadero	1	208,71		2,12	442,47
	Taludes despues de demolición					
	Cajero derecho	1	8,54	13,56		115,80
	Cajero izquierdo	1	17,75	13,56		240,69
	Canal de descarga					
	Sobreexcavación	1	27,42	20,26		555,53
						1.354,49
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN					
	Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares.					
	Unidad totalmente terminada.					
	Taludes de cajeros					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Cajero derecho	1	8,54	13,56		115,80
	Cajero izquierdo	1	17,75	13,56		240,69
						356,49
P1MTTU003	m² Geodrán PEAD 200 gr/m2					
	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.					
		2	3,25			6,50
		1	14,50		5,15	74,68
		1	5,34		5,15	27,50
						108,68
01.01.02.02	OBRA DE FÁBRICA					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Según planimetría	1	208,71			208,71
						208,71
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3					
	Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.					
	Solera	1	208,71		0,60	125,23
	Cajero izquierdo					
		1	3,25	0,50	7,31	11,88
		1	5,34	0,50	5,15	13,75
	Cajero derecho					
		1	3,25	0,50	7,31	11,88
			14,50	0,50	5,15	37,34
	Perfil vertedero	1	15,00	0,50	5,73	42,98
		1	15,00	0,50		7,50
						250,56
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
		2	3,25		7,91	51,42
		1	14,50		5,75	83,38
		1	5,34		5,75	30,71
	Junta 1					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Solera	1	16,00		0,60	9,60
	Cajeros	2		0,50	7,31	7,31
	Junta 2					
	Solera	1	16,00		0,60	9,60
	Cajeros	1		0,50	3,00	1,50
	Encuentro con Escollera					
	Solera	1	15,00		0,60	9,00
	Cajeros	1		0,50	3,00	1,50
						204,02

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Cajeros

Hasta junta 1	1	3,25		7,31	23,76
Hasta Escollera MI	1	5,34		5,15	27,50
Hasta escollera MD	1	14,50		5,15	74,68
Perfil vertedero					
Aguas arriba	1	15,00		6,03	90,45
Aguas abajo	1	15,00		5,73	85,95

302,34

P4ETT-004C-E2 m² Encof/desenc. muros y paramentos CURVOS y VISTOS

Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

En perfil vertedero	1	15,00	2,51		37,65
---------------------	---	-------	------	--	-------

37,65

P4CIMBRA m³ Aparente cimbra

Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m² y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.

Labio de vertido	1	15,00	0,30	5,73	25,79
------------------	---	-------	------	------	-------

25,79

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Según medición auxiliar	1	31.597,33			31.597,33
						31.597,33
P4JTAPVC400B	m Junta elastomérica de estanqueidad PVC 400					
	Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Junta 1					
	Solera	1	15,50			15,50
	Cajeros	2			7,61	15,22
	Junta 2					
	Solera	1	15,50			15,50
	Cajeros	1			3,60	3,60
						49,82
01.01.02.03	SECCIÓN CANAL DE DESCARGA					
P1MT08ESC500H	m³ Escollera 500 Kg hormigonada con HM20					
	Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Plataforma 468	1	3,74	14,73		55,09
	Cajero MI	1	3,74	1,05	3,00	11,78
	Cajero MD	1	4,00	1,05	3,00	12,60
	Plataforma 467	1	3,74	11,86		44,36
	Cajero MI	1	3,74	1,05	3,00	11,78
	Cajero MD	1	4,00	1,05	3,00	12,60
	Plataforma 466	1	3,74	10,44		39,05
	Cajero MI	1	3,74	1,05	3,00	11,78
	Cajero MD	1	4,00	1,05	3,00	12,60
	Plataforma 465	1	3,74	9,02		33,73
	Cajero MI	1	3,74	1,05	3,00	11,78
	Cajero MD	1	4,00	1,05	3,00	12,60
	Plataforma 464	1	3,74	7,59		28,39
	Cajero MI	1	3,74	1,05	3,00	11,78
	Cajero MD	1	4,00	1,05	3,00	12,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Plataforma 462.505	1	3,74	6,51		24,35
	Cajero MI	1	3,74	1,05	3,00	11,78
	Cajero MD	1	3,86	1,05	3,00	12,16
						370,81
01.01.03	CONEXIÓN CON 2ºFASE					
01.01.03.01	OBRA DE FÁBRICA					
P4HG-002B	m³	Hormigón HM-20/B/20/X0 Elementos horizontales y verticales				
	Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Transición tubería	1	3,00	6,07	3,20	58,27
	A deducir tansiciones metálicas	-2	3,00		3,57	-21,42
	Chimeneas	2	0,60	0,60	7,21	5,19
	A deducir aireación	-2		0,01	7,21	-0,14
						41,90
01.01.03.02	ELEMENTOS ACCESORIOS					
P4JTUMO001	m	Tubería acero diámetro 300 mm				
	Suministro y colocaci%n de tuber%a de acero al carbono API 5L/ASTM/A106 de de 300 mm de di%metro interior, totalmente colocada.					
		2	7,81			15,62
		2	2,94			5,88
						21,50
PACCAR-01_E	kg	Acero al carbono S-275/S-355 JR				
	Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.					
	Transición	7.850	2,00	0,02	7,20	2.260,80
						2.260,80
01.01.04	ACCESOS					
01.01.04.01	ACCESO POR MARGEN DERECHA					
P1MT08BASEZA2	m²	Escarificado camino +30%Zahorra artificial 95%PM				
	Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.					
	planimetrando en el plano	1	996,52			996,52
						996,52

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	1	198,50			198,50
						198,50
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.	1				1,00
						1,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Según planimetría	1	996,52		0,30	298,96
						298,96
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada. Vial en coronación	1	996,52			996,52
						996,52
01.01.04.02	ACCESO POR MARGEN IZQUIERDA					
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos. Según planimetría	1	627,55			627,55
						627,55
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones. Según planimetría	1	627,55			627,55
						627,55
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada. Según planimetría	1	627,55		0,50	313,78
						313,78

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	1	180,35			180,35
						180,35
PASEÑACC	ud Señalización de accesos y advertencias de seguridad Señalización de accesos y advertencias de seguridad, etc.	1				1,00
						1,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Según planimetría	1	627,55		0,30	188,27
						188,27
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada. Vial en coronación	1	627,55			627,55
						627,55
01.01.05	INSTALACIONES ELECTRICAS ALMENARA PIKARANA					
01.01.05.01	LINEA ELECTRICA DE MT					
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Crucecita de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	ACOMETIDA	50				50,00
						50,00
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	ACOMETIDA	1				1,00
						1,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas, elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollision y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.					
	ACOMETIDA	3	6.600,00	1,10		21.780,00
Asume 10% sobre long. por catenaria						
						21.780,00
P5ELEM4X25TT	m Manguera eléctrica 4 x 25 + TT mm2 Cu Manguera eléctrica de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	DF	1,1	400,00			440,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						440,00
P5ARQPREF2.A2	ud Arqueta BT prefabricada inst. elect. A2 (145X90)con tapa FD					
	Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, tronco-piramidal, tipo A-2, de 145x90 cm de medidas interiores y 117x62 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapas de fundición dúctil, de 72x62x6,5 cm, para arqueta de conexión eléctrica tipo A-2, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.					
	ACOMETIDA	1				1,00
						1,00
01.01.05.02	LINEAS DE BT					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado					
	Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	1	80,00			80,00
						80,00
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2					
	Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	1	80,00			80,00
						80,00
P5ELEM3X4TT2	m Manguera eléctrica 3 x 4 + TT 4mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	1	160,00			160,00
						160,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	PIKARANA	6	50,00			300,00
	ALM-DF	1	400,00			400,00
						700,00
P5ELEM01	ud Conjunto pequeño material líneas BT					
	Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.01.05.03	TRANSFORMACIÓN Y GENERACIÓN					
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA					
	<p>Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por:</p> <ul style="list-style-type: none"> -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. <p>Unidad totalmente instalada.</p>	1				1,00
						1,00
P5ELEARQ1X1TF	ud Arqueta estanca 1.0x1.0x1.5+ tapa función recogida de ace					
	<p>Arqueta prefabricada estanca para recogida de aceites de dimensiones 1,0x1,0m y altura de hasta 1.5m, tapa de fundición 600x600 mm, cerco y precerco, conectada a conductor de recogida, incluidos pasamuros y tuberías de conexión. Unidad totalmente colocada.</p>	1				1,00
						1,00
P5ELECEN125	ud Generador eléctrico 125kVA supersilencioso+cuadro elec+conmutado					
	<p>Generador eléctrico silencioso móvil de 125kVA/96kW según especificaciones técnicas definidas en el PPTP, incluido cuadro eléctrico, control y automatización.</p> <p>Motor: Motor diesel 4 tiempos Refrigerado por agua; Arranque eléctrico 24V; Radiador con ventilador soplante; Filtro decantador (nivel no visible); Regulación electrónica; o Bulbos de ATA; Bulbos de BPA; Filtro de aire en seco; Protecciones de partes calientes; Protecciones de partes móviles;; Sensor de nivel agua radiador</p> <p>Alternador: Autoexcitado y autorregulado; Protección IP23; Aislamiento clase H; Sistema Eléctrico; Cuadro eléctrico de control y potencia, con aparatos de medida y central de control ; Protección magnetotérmica tetrapola; Protección diferencial regulable (tiempo y sensibilidad) y con protección magnetotérmica; Cargador de batería (incluido en grupos con cuadro de versión automática); Resistencia de caldeo (de serie en grupos con cuadro de versión automática); Alternador de carga de baterías con toma de tierra; Batería/s de arranque instaladas (incluye/n cables y soporte); Instalación eléctrica de toma de tierra, con conexión prevista para pica de tierra ; Desconector de batería/s;</p> <p>Conmutador: Armario IP55; Central; Parada de emergencia; Módulo de medida; Llave para conmutación manual; Conmutador motorizado; Conexión a tierra; Zócalo para armarios >800A</p> <p>Cuadro Automático AS5 CEM 7 o similar y cuadro de conmutación con central CC2 o similar con contactores</p> <p>Cuadros - Reloj programador: Informa a la central de la fecha y hora actual. Permite la programación semanal de: - Arranques programados - Bloqueos programados - Test de motor y mantenimientos programados - Ampliación del histórico de errores en + 100 - Contadores de energía (día, mes, año)</p> <p>Cuadros - Teleseñal: Placa que dispone de comunicación CAN y 12 relés. - Relés: 4 de contacto conmutado y 8 de contacto simple - Permite activar elementos de señalización remotos - Permite la programación de los relés en función de las diferentes variables.</p> <p>Otros elementos: Chasis Acero ; Kit de extracción de aceite del cárter; Versatilidad para el montaje de chasis de gran capacidad con depósito metálico; Amortiguadores antivibratorios; Tanque de combustible integrado en el chasis; Aforador de nivel de combustible; Pulsador parada de emergencia; Carrocería fabricada con chapa de alta calidad; Alta resistencia mecánica; o Bajo nivel de emisiones sonoras; Insonorización a base de lana de roca volcánica de alta densidad;; Acabado superficial a base de polvo de poliéster epoxídico (ensayo de niebla salina superior a 1000h); Total acceso a mantenimientos (agua, aceite y filtros sin desmontar capot); Gancho de izado reforzado para elevación con grúa; Chasis estanco (hace función de doble pared retención líquidos); Tapón drenaje depósito; Tapón drenaje chasis; Chasis predispuesto para instalación de kit móvil; Silencioso residencial de acero de -35db(A); Válvula de 3 vías para trasiego de combustible (disponible con conexiones de 1/2" y de 3/8"); Bomba de trasiego de combustible</p> <p>Unidad totalmente instalada y probada</p>					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T.A.	1				1,00
						1,00
P5ELEC BATC36	ud Bateria de condensadores (36 KVAR)					
	Módulo metálico para corrección automática del factor de potencia 36 KVAR Compuesta de: condensadores sobredimensionados en tensión a 440 V, base fusibles y fusibles, regulador electrónico, contactores e interruptor general, Condensador CLZ , Contactores con bloque de preinserción y resistencia de descarga rápida, Protección en cabecera por fusibles con alto, poder de corte (APR). Serie NH-00, regulador de energía reactiva serie computer m con indicación digital y salidas de relé; Interruptor manual en cabecera de batería; Interruptor automático en cabecera de batería; Interruptor automático + Protección diferencial en cabecera de batería; Unidad de ventilación forzada + termostato; Placa de policarbonato contra contactos directos; Autotransformador 400/230 V. Totalmente instalada en armario metálico.					
	T.A.	1				1,00
						1,00
P5ELETRAF13	ud Cuadro de alarmas y señalización de defectos del centro de trans					
	Cuadro de alarmas y señalización de defectos del centros de transformación formado por armario metálico en chapa de acero. Conteniendo: 8 relés auxiliares. 1 fuente de alimentación normal-socorro 230/48 Vcc. con acumuladores Ni-Cd de 21 Ah, intensidad nominal 5 A. Automáticos de protección, bornas canaletas y pequeño material de montaje.					
		1				1,00
						1,00
P5ELETRAF5A	ud Conjunto material de protección y señalización transformador					
	Conjunto de material de protección y señalización transformador. Normalizado.					
		1				1,00
						1,00
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota					
	Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					
		1				1,00
						1,00
P5ELETRAF11	ud Puesta en servicio del telecontrol de LMT					
	Puesta en servicio del telecontrol, incluyendo: - Integración de la instalación en cada uno de los sistemas de concesionario eléctrico implicados en el procesode todas las funcionalidades del Telecontrol, Control local y Automatismos del Centro de Seccionamiento - Configuración, parametrización y puesta en servicio de Terminal Remoto de Telecontrol, equipos de c/c., Relés de detección de Paso de Falta y demás elementos de la instalación - Generación de configuraciones, telecarga y comprobaciones de cada una de las bases de datos: históricas, cronológicas, de alarmas, de eventos y de medidas analógicas en el Terminal Remoto de Telecontrol, en el C.S. así como en las unidades centrales					
		1				1,00
						1,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo					
	Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETRAF12	ud Verificación de trabajos instalación de transformadores Verificación de trabajos, incluyendo: - Comprobación de la instalación, en lo que al telemando se refiere, de acuerdo al proyecto y documentación técnica aprobados - Supervisión del correcto conexionado de T/is y/o detectores de Paso de FALTA, Presencia de Tensión, etc en celdas de MT - Comprobación del esquema unifilar y rótulos para el telemando - Recepción de la Documentación de Adaptación al Telemando	1				1,00
						1,00
P5ELETRAF4D	ud Puesta a tierra del Centro de Transformación Redes de puesta a tierra de protección general y servicio para el neutro, en centro de transformación, de acuerdo con lo indicado en la MIE-RAT-13, y normas de Cía Suministradora, formada la primera de ellas por cable de cobre desnudo de 50 mm2. de sección y la segunda por cable de cobre aislado, tipo RVde 0,6/1 kV, y 50 mm2 de sección y picas de tierra de acero cobrizado de 2 m.de longitud y 14 mm. de diámetro. Incluso material de conexión y fijación.	1				1,00
						1,00
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1				1,00
						1,00
P5ELECASTRAFO	ud Caseta normalizada trafo 25-160 KVa Caseta prefabricada normalizada para transformador hasta 160 KVA , con compartimento para celdas, puertas de paso y acceso, lamas de ventilación , ventilaciónn forzada, cubiertas y resto de elementos conformados. Unidad totalmente instalada.	1				1,00
						1,00
P5ELETRAF25	ud Transformador 50KVA trifásico en aceite, llenado integral Transformador trifásico reductor de tensión (MT/BT) construido de acuerdo con UNE-EN 60076, dieléctrico éster natural biodegradable, de 50 kVA de potencia, tensión asignada 24 kV, tensión primario 20 kV, tensión de salida de 420 V entre fases en vacío o de 230/420 V entre fases en vacío, frecuencia 50 Hz, grupo de conexión Dyn 11, regulación en el primario + 2,5%, + 5%, + 7,5%, + 10%, protección propia del transformador con termómetro, para instalación interior o exterior, cuba de aletas, refrigeración natural (ONAN), conmutador de regulación maniobrable sin tensión, pasatasas MT de porcelana, pasabarras BT de porcelana, 2 terminales de tierra, dispositivo de vaciado y toma de muestras, dispositivo de llenado, placa de características y placa de seguridad e instrucciones de servicio, colocado.	1				1,00
						1,00
P5ELETRAF5C	ud Equipamiento auxiliar centro de transformación hasta 630 KVA Equipamiento auxiliar para centro de transformación prefabricado comprendiendo los siguientes elementos: - 1 Red interior de tierras. - 4 Puntos de luz LED 53 W cada uno IP-55. - 2 Toma de corriente 16 Amp. - 1 Aparato autónomo de emergencia portátil equipado con interruptor. - 1 Conjunto de circuitos para alimentación a los anteriores equipos, ejecución superficie bajo tubo PVC. - 1 Par de guantes aislantes alojados en cofret. - 1 Banqueta aislante. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
P5ELETRAF5E	ud Conjunto de accesorios de seguridad y maniobra para CT Conjunto de accesorios de seguridad y maniobra constituido por una banqueta aislante, un extintor de eficacia 89B, guantes aislantes, pértiga aislante y armario de primeros auxilios, según Instrucciones Técnicas Complementarias del Reglamento sobre Condiciones Técnicas y Garantías de Seguridad en Centrales Eléctricas, Subestaciones y Centros de Transformación. B.O.E. 25-10-84, colocada.	1				1,00
						1,00
P5ELETRAF6	ud Celda de e/s tipo 24-20KV 400A/16K manual Celda de entrada/salida formada por módulo metálico tipo CGM-24 o similar de dimensiones aproximadas 1800mm de alto x 370mm de ancho x 850mm de tipo modular, envolvente de chapa de acero galvanizado, corte y aislamiento íntegro en SF6, intensidad nominal de 400 A/16 kA, con interruptor-seccionador rotativo tripolar de 3 posiciones (conectado, seccionado y puesta a tierra) con mando manual, captadores capacitivos para la detección de tensión y sistema de alarma sonora de puesta a tierra, colocada.	2				2,00
						2,00
P5ELETRAF7B	ud Cel.met.de protec general int.aut.,24-20 kV,400.Amp 16 KA manual Celda metálica de protección general con interruptor automático, 24 kV o 20 KV, 400 A, lcc 16 kA, aislamiento en SF6, con interruptor automático en SF6 de 24 kV, 400 A, poder de corte 16 kA, con captadores de intensidad, relé de protección contra sobrecorrientes de fase y homopolares, mando manual.	1				1,00
						1,00
P5ELETRAF7	ud Celda metálica de protección 24-20kv 400A tipo CGM24 -CMP-F Celda metálica de protección de transformador tipo CGM24 -CMP-F o similar ensayado contra una eventual inmersión, de dimensiones 1800 x 480 x 850mm de corte y aislamiento íntegro en SF6, de acuerdo a UNE CEI RU6407, instalada, conteniendo : 1 interruptor rotativo trifásico de tensión nominal 24 KV e In 400A y capacidad de cierre sobre cortocircuito 40KA, 3 portafusibles para cartuchos de 24 KV 3 cartuchos de fusibles de 24KV 1 seccionador de puesta a tierra, 1 relé de protección de transformador autoalimentado 51/50n 3 captadores toroidales de intensidad para protección de fase 3 captadores capacitivos de presencia de tensión 1 Ud embarrado para 400A 1 Ud Pletina de cobre 30 x 3mm 1 Ud Accesorios y pequeño material Unidad totalmente instalada	1				1,00
						1,00
P5ELETRAF8	ud Celda de medid 24-20KV CGM-24 con 3 transformadores X/110V Celda de medida formada por módulo metálico CGM-24 de dimensiones 1800 x 800 x 1025 de fondo, conteniendo en su interior debidamente montado y conexionado : 3 transformadores de intensidad relación X/5A, tensión nominal 24KV, potencia de precisión 15VA, clase 0.5, 3 transformadores X/110V, Vn 24KV, potencia de precisión 50VA en clase 0.5. Acometida y salida con cable en seco, malla de protección quitamiedos abisagrada, carros extraíbles para el equipo de medida.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.01.05.04	CUADROS					
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1	50,00			50,00
						50,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	100,00			100,00
						100,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	100,00			100,00
						100,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	1	200,00			200,00
						200,00
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	4,00			4,00
						4,00
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	160,00			160,00
						160,00
P5BORD1	m Bordo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	1	20,00			20,00
						20,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	1	20,00			20,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.	1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PSELECGBT41	ud CGBT AUX					
	<p>Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>	1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	<p>Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.</p>	6				6,00
						6,00
01.01.05.05	ALUMBRADO					
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+Ip68					
	<p>Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de polipcarbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.</p>					16,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm					
	<p>Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescen-te. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cabelado necesario para la instalación. Unidad total-mente operativa.</p>					4,00
P5ELEI400LED	ud Luminaria LEDs de 1x400 W IP67 estanca					
	<p>Proyector industrial les de 85 W cpn un flujo lumínico de 10500 Lm, con lámpara, totalmente instalado,incluso lámpara p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Antideflagrante. Unidad totalmen-te instalada.</p>					3,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo					
	<p>Proyector para instalación adosado a pared de edificio de las siguientes características:</p> <p>Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6</p> <p>Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006.</p> <p>Aletas de refrigeración que permiten alcanzar una tº de 40°C</p> <p>Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65.</p> <p>Soporte de acero galvanizado sujeto con tornillos M10</p> <p>Reflectores de aluminio pulido y anodizado (99,8%)</p> <p>Lámpara 200W led. incluida</p> <p>Totalmente instalado.</p>					3,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEI400WX2	ud Columna de 12 m + dos proyectores 400 W LED Columna tronco-cónica de las siguientes características: Longitud: 12 metros Brazo en T para soportación de 2 proyectores. Material: Acero galvanizado Proyectores: 2 Uds Luminaria: Philips Tempo 3 MWF 330. Lámpara: 400W LED. incluida Completamente instalada, incluida obra civil (excavación, rellenos y cimentación)					1,00
01.01.05.06	ACOMETIDA Y LEGALIZACIÓN					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					1,00
P5ELEC10001	I Gasol grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					600,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					20,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.					1,00
P5ELEC1MATUD	ud Conex LMTS+refuerzos+adapt.línea Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Balsa de Mostrakas					2,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.					1,00
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.					1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.					1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.01.05.07 CANALIZACIONES						
P5ELE110X4H	m Can. horm. PVC 110 mm x4 (calzadas) 0.4x1.0m (Zanja tipo-8B)					
	Canalización hormigonada de 4x110mm PVC normalizado instalación, en cualquier tipo de terreno, Acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada					300,00
P35RALUM02	m Canaliz alumbrado conducto Ø90 mm+tendido línea elec.4x6mm2+TT					
	Canalización PVC corrugado de 90 mm. de diámetro en cualquier tipo de terreno, Acerados y/o pavimentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexionados multiples. Unidad totalmente terminada.					20,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm					
	Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					40,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20					
	Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					80,00
P5ELECROZA	m Roza en ladrillo macizo, bloque hormigón					
	Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.					60,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD					
	Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					2,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD					
	Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					4,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95					
	Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					12,00
01.01.05.08 TOMA DE TIERRA						
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas					
	Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita					
	Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					4,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					4,00
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.					4,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.					2,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.					200,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					40,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					4,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					1,00
01.01.05.09	MECANISMOS					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	ALM 10 SR2	2				2,00
	PIKARANA	4				4,00
	TOMA DE RIEGO 9	2				2,00
	DF	2				2,00
						10,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	PIKARANA	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P5ELEC08	ud Base de enchufe 16A monofásica Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.					
	ALM 10 SR2	2				2,00
	PIKARANA	6				6,00
	TOMA DE RIEGO 9	2				2,00
	DF	2				2,00
						12,00
P5ELEC09	ud Base de enchufe trifásica 16A Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.					
	ALM 10 SR2	1				1,00
	PIKARANA	1				1,00
	TOMA DE RIEGO 9	1				1,00
	DF	1				1,00
						4,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	ALM 10 SR2	1	2,00			2,00
	PIKARANA	1	6,00			6,00
	TOMA DE RIEGO 9	1	2,00			2,00
	DF	1	2,00			2,00
						12,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	ALM 10 SR2	1				1,00
	PIKARANA	1				1,00
	TOMA DE RIEGO 9	1				1,00
	DF	1				1,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.01.06	INSTALACIONES ELÉCTRICAS ALMENARA 10 Y TOMA DE RIEGO 9					
01.01.06.01	LINEA ELECTRICA DE MT					
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA					
	Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
		2				2,00
						2,00
P5ELE200X2H2	m Can. horm. PE 200 mm x2 (calzadas) 0.65x1.3m (Zanja tipo 2B)					
	Canalización de línea de media tensión hormigonada bajo Acerados y pavimentos conformado por tubos 2x200mm PE normalizado para instalación eléctrica, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	TRAYECTO 1	1.086				1.086,00
	TRAYECTO 2	372				372,00
						1.458,00
P5ELEM4X25TT	m Manguera eléctrica 4 x 25 + TT mm2 Cu					
	Manguera eléctrica de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	DF	1,1	400,00			440,00
						440,00
P5ELEM1X150	m Manguera eléctrica 1 x 150 mm2 Cu					
	Cable 18/30 KV aislado en polietileno reticulado, tipo HEPRZ1 1x150 mm2 CU+H16 instalado bajo tubos, según memoria y pliegos. Totalmente montado.					
	TRAYECTO 2	3	1.086,00	1,10		3.583,80
	TRAYECTO 1	3	372,00	1,10		1.227,60
	TUNEL 1	3	635,00	1,10		2.095,50
	TUNEL 2	3	400,00	1,10		1.320,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						8.226,90
P5ARQPREF2.0E	ud Arqueta MT prefabricada inst. elect. 110x110x160 con tapa FD					
Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.						
	TRAYECTO 1		24			24,00
	TRAYECTO 2		10			10,00
						34,00
P5ARQPREF2.A2	ud Arqueta BT prefabricada inst. elect. A2 (145X90)con tapa FD					
Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, tronco-piramidal, tipo A-2, de 145x90 cm de medidas interiores y 117x62 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapas de fundición dúctil, de 72x62x6,5 cm, para arqueta de conexión eléctrica tipo A-2, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.						
	ACOMETIDA		1			1,00
						1,00
01.01.06.02	LINEAS DE BT					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado					
Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
						120,00
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2					
Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
						120,00
P5ELEM3X4TT2	m Manguera eléctrica 3 x 4 + TT 4mm2 Cu Apantallado					
Manguera eléctrica apantallada de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
						200,00
P5ELEM01	ud Conjunto pequeño material líneas BT					
Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.						
						2,00
01.01.06.03	TRANSFORMACION Y GENERACION					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas UNE 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexión el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm ² . de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, placas señalizadoras y protección antiescalo, señalización de peligro y medida anticautena - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					2,00
P5ELEARQ1X1TF	ud Arqueta estanca 1.0x1.0x1.5+ tapa función recogida de ace Arqueta prefabricada estanca para recogida de aceites de dimensiones 1,0x1,0m y altura de hasta 1.5m, tapa de fundición 600x600 mm, cerco y precerco, conectada a conductor de recogida, incluidos pasamuros y tuberías de conexión. Unidad totalmente colocada.					3,00
P5ELETRAF13	ud Cuadro de alarmas y señalización de defectos del centro de trans Cuadro de alarmas y señalización de defectos del centros de transformación formado por armario metálico en chapa de acero. Conteniendo: 8 relés auxiliares. 1 fuente de alimentación normal-socorro 230/48 Vcc. con acumuladores Ni-Cd de 21 Ah, intensidad nominal 5 A. Automáticos de protección, bornas canaletas y pequeño material de montaje.					2,00
P5ELETRAF5A	ud Conjunto material de protección y señalización transformador Conjunto de material de protección y señalización transformador. Normalizado.					2,00
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					2,00
P5ELETRAF11	ud Puesta en servicio del telecontrol de LMT Puesta en servicio del telecontrol, incluyendo: - Integración de la instalación en cada uno de los sistemas de concesionario eléctrico implicados en el proceso de todas las funcionalidades del Telecontrol, Control local y Automatismos del Centro de Seccionamiento - Configuración, parametrización y puesta en servicio de Terminal Remoto de Telecontrol, equipos de c/c., Relés de detección de Paso de Falta y demás elementos de la instalación - Generación de configuraciones, telecarga y comprobaciones de cada una de las bases de datos: históricas, cronológicas, de alarmas, de eventos y de medidas analógicas en el Terminal Remoto de Telecontrol, en el C.S. así como en las unidades centrales					2,00
P5ELEC10003	ud Operación de conexionado y desconexión a trafo Operación de conexionado y desconexión de LMT.					2,00
P5ELETRAF12	ud Verificación de trabajos instalación de transformadores Verificación de trabajos, incluyendo: - Comprobación de la instalación, en lo que al telemando se refiere, de acuerdo al proyecto y documentación técnica aprobados - Supervisión del correcto conexionado de T/is y/o detectores de Paso de FALTA, Presencia de Tensión, etc en celdas de MT - Comprobación del esquema unifilar y rótulos para el telemando - Recepción de la Documentación de Adaptación al Telemando					2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETRAF4D	ud Puesta a tierra del Centro de Transformación Redes de puesta a tierra de protección general y servicio para el neutro, en centro de transformación, de acuerdo con lo indicado en la MIE-RAT-13, y normas de Cía Suministradora, formada la primera de ellas por cable de cobre desnudo de 50 mm2. de sección y la segunda por cable de cobre aislado, tipo RVde 0,6/1 kV, y 50 mm2 de sección y picas de tierra de acero cobrizado de 2 m.de longitud y 14 mm. de diámetro. Incluso material de conexión y fijación.					2,00
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					2,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					2,00
P5ELECASTRAFO	ud Caseta normalizada trafo 25-160 KVa Caseta prefabricada normalizada para transformador hasta 160 KVA , con compartimento para celdas, puertas de paso y acceso, lamas de ventilación , ventilaciónn forzada, cubiertas y resto de elementos conformados. Unidad totalmente instalada.					2,00
P5ELETRAF25	ud Transformador 50KVA trifásico en aceite, llenado integral Transformador trifásico reductor de tensión (MT/BT) construido de acuerdo con UNE-EN 60076, dieléctrico éster natural biodegradable, de 50 kVA de potencia, tensión asignada 24 kV, tensión primario 20 kV, tensión de salida de 420 V entre fases en vacío o de 230/420 V entre fases en vacío, frecuencia 50 Hz, grupo de conexión Dyn 11, regulación en el primario + 2,5%, + 5%, + 7,5%, + 10%, protección propia del transformador con termómetro, para instalación interior o exterior, cuba de aletas, refrigeración natural (ONAN), conmutador de regulación maniobrable sin tensión, pasatas pas MT de porcelana, pasabarras BT de porcelana, 2 terminales de tierra, dispositivo de vaciado y toma de muestras, dispositivo de llenado, placa de características y placa de seguridad e instrucciones de servicio, colocado.					2,00
P5ELETRAF5C	ud Equipamiento auxiliar centro de transformación hasta 630 KVA Equipamiento auxiliar para centro de transformación prefabricado comprendiendo los siguientes elementos: - 1 Red interior de tierras. - 4 Puntos de luz LED 53 W cada uno IP-55. - 2 Toma de corriente 16 Amp. - 1 Aparato autónomo de emergencia portátil equipado con interruptor. - 1 Conjunto de circuitos para alimentación a los anteriores equipos, ejecución superficie bajo tubo PVC. - 1 Par de guantes aislantes alojados en cofret. - 1 Banqueta aislante. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					2,00
P5ELETRAF5E	ud Conjunto de accesorios de seguridad y maniobra para CT Conjunto de accesorios de seguridad y maniobra constituido por una banquetta aislante, un extintor de eficacia 89B, guantes aislantes, pértiga aislante y armario de primeros auxilios, según Instrucciones Técnicas Complementarias del Reglamento sobre Condiciones Técnicas y Garantías de Seguridad en Centrales Eléctricas, Subestaciones y Centros de Transformación. B.O.E. 25-10-84, colocado.					2,00
P5ELETRAF6	ud Celda de e/s tipo 24-20KV 400A/16K manual Celda de entrada/salida formada por módulo metálico tipo CGM-24 o similar de dimensiones aproximadas 1800mm de alto x 370mm de ancho x 850mm de tipo modular, envolvente de chapa de acero galvanizado, corte y aislamiento íntegro en SF6, intensidad nominal de 400 A/16 kA, con interruptor-seccionador rotativo tripolar de 3 posiciones (conectado, seccionado y puesta a tierra) con mando manual, captadores capacitivos para la detección de tensión y sistema de alarma sonora de puesta a tierra, colocada.					3,00
P5ELETRAF7B	ud Cel.met.de protec general int.aut.,24-20 kV,400.Amp 16 KA manual Celda metálica de protección general con interruptor automático, 24 kV o 20 KV, 400 A, lcc 16 kA, aislamiento en SF6, con interruptor automático en SF6 de 24 kV, 400 A, poder de corte 16 kA, con captadores de intensidad, relé de protección contra sobreintensidades de fase y homopolares, mando manual.					2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETRAF7	ud Celda metálica de protección 24-20kv 400A tipo CGM24 -CMP-F Celda metálica de protección de transformador tipo CGM24 -CMP-F o similar ensayado contra una eventual inmersión, de dimensiones 1800 x 480 x 850mm de corte y aislamiento íntegro en SF6, de acuerdo a UNE CEI RU6407, instalada, conteniendo : 1 interruptor rotativo trifásico de tensión nominal 24 KV e In 400A y capacidad de cierre sobre cortocircuito 40KA, 3 portafusibles para cartuchos de 24 KV 3 cartuchos de fusibles de 24KV 1 seccionador de puesta a tierra, 1 relé de protección de transformador autoalimentado 51/50n 3 captadores toroidales de intensidad para protección de fase 3 captadores capacitivos de presencia de tensión 1 Ud embarrado para 400A 1 Ud Pletina de cobre 30 x 3mm 1 Ud Accesorios y pequeño material Unidad totalmente instalada					2,00
P5ELETRAF8	ud Celda de medid 24-20KV CGM-24 con 3 transformadores X/110V Celda de medida formada por módulo metálico CGM-24 de dimensiones 1800 x 800 x 1025 de fondo, conteniendo en su interior debidamente montado y conexionado : 3 transformadores de intensidad relación X/5A, tensión nominal 24KV, potencia de precisión 15VA, clase 0.5, 3 transformadores X/110V, Vn 24KV, potencia de precisión 50VA en clase 0.5. Acometida y salida con cable en seco, malla de protección quitamiedos abisagrada, carros extraíbles para el equipo de medida.					2,00
01.01.06.04	CUADROS					
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					2,00
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					2,00
P5ELECGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					2,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					2,00
P5ELECGBT41	ud CGBT AUX Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					4,00
01.01.06.05	ALUMBRADO					
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+Ip68 Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbamiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de poliparbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					2,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescen-te. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cabelado necesario para la instalación. Unidad total-mente operativa.					2,00
P5ELEI400LED	ud Luminaria LEDs de 1x400 W IP67 estanca Proyector industrial les de 85 W cpn un flujo lumínico de 10500 Lm, con lámpara, totalmente instalado,incluso lámpara p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Antideflagrante. Unidad totalmen-te instalada.					2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					2,00
P5ELEI400WX2	ud Columna de 12 m + dos proyectores 400 W LED Columna tronco-cónica de las siguientes características: Longitud: 12 metros Brazo en T para soportación de 2 proyectores. Material: Acero galvanizado Proyectores: 2 Uds Luminaria: Philips Tempo 3 MWF 330. Lámpara: 400W LED. incluida Completamente instalada, incluida obra civil (excavación, rellenos y cimentación)					2,00
01.01.06.06	ACOMETIDA Y LEGALIZACION					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bor-nas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para manteniemiiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					410,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexiones, arranques y mantenimiento, posterior operación de desconexiones, y operaciones necesarias de retirada. Unidad completa					20,00
P5ELEC10003	ud Operación de conexionado y desconexiones a trafo Operación de conexionado y desconexión de LMT.					2,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.					2,00
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.					2,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.					2,00
01.01.06.07 CANALIZACIONES						
P5ELE110X4H	m Can. horm. PVC 110 mm x4 (calzadas) 0.4x1.0m (Zanja tipo-8B) Canalización hormigonada de 4x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada					200,00
P35RALUM02	m Canaliz alumbrado conducto Ø90 mm+tendido línea elec.4x6mm2+TT Canalización PVC corrugado de 90 mm. de diámetro en cualquier tipo de terreno, acerados y/o pavimentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexiones múltiples. Unidad totalmente terminada.					40,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					40,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					1.600,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					60,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECROZA	m Roza en ladrillo macizo, bloque hormigón Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.					50,00
P5ARQPREF2.0E	ud Arqueta MT prefabricada inst. elect. 110x110x160 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.					12,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					2,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					8,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					8,00
01.01.06.08	TOMA DE TIERRA					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					2,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					8,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					8,00
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.					2,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.					2,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.					120,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					10,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					2,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					2,00
01.01.06.09	MECANISMOS					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					4,00
P5ELEC08	ud Base de enchufe 16A monofásica Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.					4,00
P5ELEC09	ud Base de enchufe trifásica 16A Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.					2,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					4,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					2,00
01.01.07	URBANIZACIÓN Y CERRAMIENTOS					
01.01.07.01	URBANIZACIÓN GENERAL					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Plataforma sobre obra nueva					
	Margen izquierda	1	229,98		0,30	68,99
	Margen derecha	1	218,31		0,30	65,49
	Plataforma sobre obra existente					
	Margen izquierda	1	419,85		0,30	125,96
	Margen derecha	1	445,09		0,30	133,53
	A deducir arqueta	-1	69,67		0,30	-20,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						373,07
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2					
Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormi- gón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.						
Plataforma sobre obra nueva						
	Margen izquierda	1	229,98			229,98
	Margen derecha	1	218,31			218,31
Plataforma sobre obra existente						
	Margen izquierda	1	419,85			419,85
	Margen derecha	1	445,09			445,09
	A deducir arqueta	-1	69,67			-69,67
						1.243,56
01.01.07.02 CERRAMIENTOS						
P5CERRAMPU	m Cerramiento tipo-2 Valla de D/T metálica, con pp puerta acceso					
Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapun- tas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino,incluyendo parte proporcional de puerta de acceso.						
		1	485,00			485,00
						485,00
01.02 MOVIMIENTO DE TIERRAS (OT-T12)						
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico					
Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate ma- nual de bordes y zonas especiales.						
SEGÚN SUPERFICIES OBTENIDAS EN GIS						
	Superf. excav. vegetal (50%)	0,5	1.633.863,42			816.931,71
	a deducir acopios temporales	-0,5	28.647,36			-14.323,68
	a deducir zonas depósito excedentes	-0,5	185.812,60			-92.906,30
Según superficies obtenidas en GIS						
						709.701,73
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea)					
Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (her- báceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozado- ra provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxilia- res. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.						
SEGÚN SUPERFICIES OBTENIDAS EN GIS						
	CN-T11	1	830.997,72			830.997,72
	T11-T12	1	766.410,09			766.410,09
	a deducir acopios temporales	-1	28.647,36			-28.647,36

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	a deducir zonas depósito excedentes	-1	185.812,60			-185.812,60
						1.382.947,85
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos. SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	CN-T11	1	34.658,80			34.658,80
	T11-T12	1	1.796,81			1.796,81
						36.455,61
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones. SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	CN-T11	1	830.997,72			830.997,72
	CN-T11	1	34.658,80			34.658,80
	T11-T12	1	766.410,09			766.410,09
	T11-T12	1	1.796,81			1.796,81
	a deducir acopios temporales	-1	28.647,36			-28.647,36
	a deducir zonas depósito excedentes	-1	185.812,60			-185.812,60
						1.419.403,46
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones. SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	CN-T11	1	830.997,72			830.997,72
	CN-T11	1	34.658,80			34.658,80
	T11-T12	1	766.410,09			766.410,09
	T11-T12	1	1.796,81			1.796,81
	a deducir acopios temporales	-1	28.647,36			-28.647,36
	a deducir zonas depósito excedentes	-1	185.812,60			-185.812,60
						1.419.403,46
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ..) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	sm	1	415.915,18			415.915,18
	saneos base terciarios	0,15	26.266,82	6,20	0,15	3.664,22
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	0,75	26.266,82	1,55	0,08	2.442,81
						422.022,21
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	sm	1	485.033,32			485.033,32
	saneos base aluviales	0,05	26.266,82	6,20	0,15	1.221,41
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	0,25	26.266,82	1,55	0,08	814,27
						487.069,00
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno					
	Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	saneos base terciarios	0,15	26.266,82	6,20	0,15	3.664,22
	saneos base aluviales	0,05	26.266,82	6,20	0,15	1.221,41
						4.885,63
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15					
	Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Cama de apoyo granular sm	1	77.950,97			77.950,97
	Relleno Riñoneras sm	1	7.241,11			7.241,11
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	1	26.266,82	1,55	0,08	3.257,09
						88.449,17
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN					
	Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/ med relleno riñoneras	1	207.780,98			207.780,98
	s/ med relleno de cobertura	1	987,32			987,32
						208.768,30
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Rellenos de cobertura	1	432.515,46			432.515,46
	No hay esponjamientos					
						432.515,46
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Excedentes de sobre excavación					
	saneo base terciarios	0,15	26.266,82	6,20	0,15	3.664,22
	saneo base aluviales	0,05	26.266,82	6,20	0,15	1.221,41
	Excedentes excavación a vertedero					
	sm	1	153.322,91			153.322,91
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	0,75	26.266,82	1,55	0,08	2.442,81
						160.651,35
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert					
	Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cama hormigonada	1	3.186,09			3.186,09
	Rellenos riñonera	1	6.997,20			6.997,20
	Rellenos de cobertura en cruces carreteras	1	316,32			316,32
						10.499,61
01.03	TUBERÍAS (OT-T12)					
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC					
	M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	s/med (deduciendo hincas)	1	52.153,65			52.153,65
						52.153,65
P1T1800.11.5A	m Tubería acero helic. L275, Ø1829 esp. 11,5					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicoidada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	s/m	1	23.580,00			23.580,00
						23.580,00
P1T1800.14.0A	m Tubería acero helic. L275, Ø1829 esp. 14.0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicoidada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	s/med	1	100,00			100,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						100,00
P1T2000.14.0A	m Tubería acero helic. L275, Ø2032 nom esp. 14,0					
	Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	s/med	1	20.562,00			20.562,00
						20.562,00
P1T2000.15.0A	m Tubería acero helic. L275, Ø2032 nom esp. 15,0					
	Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	s/ med	1	3.411,65			3.411,65
						3.411,65
P1T2000.14.0B	m Tubería acero helic. L355, Ø2032 nom esp. 14,0					
	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	s/med	1	4.660,00			4.660,00
	Hinca Aragón curvatura	0,05	308,00			15,40
						4.675,40
P1T2000.15.0B	m Tubería acero helic. L355, Ø2032 nom esp. 15,0					
	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	S/ med	1	220,00			220,00
						220,00
01.04	DESAGÜES (OT-T12)					
01.04.01	ARQUETA DESAGÜE, VALVULERÍA Y CALDERERÍA (OT-T12)					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.04.01.01 MOV. TIERRAS Y DREN (DESAGÜES OT-T12)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.						
		1	76,00			76,00
						76,00
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil					
Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.						
		1	190,00			190,00
						190,00
01.04.01.02 ESTRUCTURA DE HORMIGÓN Y METÁLICA (DESAGÜES OT-T12)						
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.						
		1	25,50			25,50
						25,50
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales					
Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.						
		20,7				20,70
						20,70
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.						
		1	60,60			60,60
						60,60
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.						
		1	131,90			131,90
						131,90
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.						
		1	43,20			43,20
						43,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	1	492,20			492,20
						492,20
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	1	21.856,10			21.856,10
						21.856,10
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	1	322,00			322,00
						322,00
P4JTAHIDROF2	m Junta cordón unión prefabricado a hormigón in situ					
	Junta de estanqueidad en unión arquetas prefabricadas a hormigón de base ejecutado in situ, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	1	36,60			36,60
						36,60
P4JTAPVC150	m Junta elastomérica de estanqueidad PVC 150					
	Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.	1	110,50			110,50
						110,50
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	1	36,60			36,60
						36,60
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2					
	Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	1	246,10			246,10
						246,10
P5ARQP-1.5A	ud Arq. pref DN=1.5 m H=1.5m +pates para desagües tipo D					
	UD de Arqueta prefabricada de diámetro 1.5 m y altura 1.5m para desagües tipo D formada por anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, con pates de polipropileno montados , incluida excavación localizada y rellenos necesarios. Unidad totalmente terminada.	1	34,00			34,00
						34,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y candado. Totalmente terminada y colocada.	1	198,10			198,10
						198,10
P4LOSA2	m² Losas prefabricadas de hormigón tapas arq.traffic.cuant.190kg/m3 Losas prefabricadas de hormigón en tapas de arquetas para tránsito de tráfico pesado, cuantía mínima 190 kg/m3 homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.	1	70,50			70,50
						70,50
P4TAPA60D400A	ud Tapa registro fundición, circular Ø 60 cm clase D-400 acerrojada Tapa de registro de fundición estanca y acerrojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN). Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, cerco,... unidad de obra totalmente instalada y ejecutada.	2				2,00
						2,00
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	1	30,40			30,40
						30,40
P41ESC2	m Escalera vertical fija acero inox-tipo barco AISI 316L Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaída y elementos extensibles. Unidad totalmente terminada.	1	13,20			13,20
						13,20
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm, barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante, incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	1	6,00			6,00
						6,00
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	1	19,60			19,60
						19,60
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.	1	2,00			2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.04.01.03	VÁLVULAS Y CALDERERÍA (DESAGÜES OT-12)					
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	14,10			14,10
						14,10
P1T0800.12.5B	m Tubería acero helic. L355, Ø813 esp 12.5					
	Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	13,00			13,00
						13,00
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0					
	Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	7,30			7,30
						7,30
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	Calderería	4.432,3				4.432,300
	Tuberías y bridas	3.601,8				3.601,800
						8.034,10
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga					
	Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.					
	Soportes y conexión tubería principal	1	3.265,30			3.265,30
						3.265,30

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	48				48,00
						48,00
P1BRIDA500.25	ud Brida ciega PN 25 Ø500 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 500 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	2				2,00
						2,00
P1BRIDA150.25	ud Brida ciega PN 25 Ø150 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN150 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	10				10,00
						10,00
P1BRIDA250.25	ud Brida ciega PN 25 Ø250 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 250 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	2				2,00
						2,00
P6PM500INX	ud Carrete pasamuros 500mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 500mm de diámetro.	2				2,00
						2,00
P6VC.100.16	ud Válvula compuerta ø 100 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreadada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 100 mm, instalada.	48				48,00
						48,00
P6VC.150.16	ud Válvula compuerta ø 150 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreadada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada.	10				10,00
						10,00
P6VM.250.16	ud Válvula mariposa ø 250 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 250 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2				2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2,00
P6VM.500.25	ud Válvula mariposa ø 500 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 500 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2				2,00
						2,00
P6VO.250.25	ud Válvula globo PN25 Ø250 multiorificio Válvula de regulación de globo, de paso recto de 250 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2				2,00
						2,00
P6VO.500.25	ud Válvula globo PN25 Ø500 multiorificio Válvula de regulación de globo, de paso recto de 500 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2				2,00
						2,00
P6CD.150.16	ud Carrete desmontaje DN150PN16 Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	15				15,00
						15,00
P6CD.250.16	ud Carrete desmontaje DN250 PN16 Carrete de desmontaje de diametro 250 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	5				5,00
						5,00
P6CD.500.25	ud Carrete desmontaje DN 500 PN25 Carrete de desmontaje de acero de 500 mm de diámetro PN25, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	5				5,00
						5,00
P6VENT.025.16	ud Ventosa trifuncional DN25 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 25 mm PN16 con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	46				46,00
						46,00
P6VD.150.25	ud Válvula dilatadora y compensadora de goma DN 150 PN25 Válvula dilatadora y compensadora de goma de DN 150 PN25. Unidad totalmente instalada.	5				5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6VD.250.25	ud Válvula dilatadora y compensadora de goma DN 250 PN25 Válvula dilatadora y compensadora de goma de DN 250 PN25. Unidad totalmente instalada.	1				1,00
						1,00
P6CR.100.25	ud Conexión rápida en desagües DN100 Conexión rápida de desagües DN 100.	34				34,00
						34,00
01.04.02	CONDUCCIÓN A VERTIDO (OT-T12)					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	1	26.605,050			26.605,050
	s/med aux.					26.605,05
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	138,38			138,38
	s/med aux.					138,38
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	1	138,38			138,38
	s/med aux.					138,38
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	350,25			350,25
	s/med aux.					350,25
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1	62,89			62,89
	s/med aux.					62,89

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/med aux.	1	139,02			139,02
						139,02
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/med aux.	1	158,19			158,19
						158,19
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	s/med aux.	1	35,71			35,71
						35,71
01.04.03	ARQUETA ROTURA Y VERTIDO A CAUCE (OT-T12)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
		1	1.269,80			1.269,80
						1.269,80
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
		1	862,20			862,20
						862,20
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
		1	236,40			236,40
						236,40
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
		1	520,10			520,10
						520,10

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	s/nec vertido	1	1,50	3,00	0,20	0,90
						0,90
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	6,10			6,10
						6,10
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
		1	4,00			4,00
						4,00
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
		1	18,20			18,20
						18,20
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
		1	45,30			45,30
						45,30
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
		23,3				23,30
						23,30
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
		1	151,10			151,10
						151,10
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	6.325,80			6.325,80
						6.325,80
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
		52				52,00
						52,00
01.05	VENTOSAS (OT-T12)					
01.05.01	MOVIMIENTO DE TIERRAS VENTOSAS (OT-T12)					
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ...) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/med	1	185,10			185,10
						185,10
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/med	1	185,10			185,10
						185,10
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.					
		1	950,00			950,00
						950,00
01.05.02	OBRAS DE FÁBRICA VENTOSAS (OT-T12)					
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	s/med	1	92,60			92,60
						92,60
P5ELECAS01	ud Caseta prefabricada 1.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 1.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.					
	s/ nec . varios	1				1,00
						1,00
P5ELECAS02	ud Caseta prefabricada 4.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 4.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.					
		1	38,00			38,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						38,00
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado,soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.					
	s/ med	1	41,00			41,00
						41,00
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.					
	s/med	1	38,00			38,00
						38,00
01.05.03	VÁLVULAS Y CALDERERÍA VENTOSAS (OT-T12)					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	10.776,700			10.776,700
						10.776,70
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	86,60			86,60
						86,60
P1T0800.12.5B	m Tubería acero helic. L355, Ø813 esp 12.5 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	85,20			85,20
						85,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marca-do CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto fun-cionamiento. Unidad totalmente instaladas.					
		76				76,00
						76,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al me-nos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
		72				72,00
						72,00
P6VENT.200.25	ud Ventosa trifuncional DN200 mm PN25+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al me-nos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
		6				6,00
						6,00
P6VENT.250.16	ud Ventosa trifuncional DN250 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 250 mm PN16, con un orificio de purga capaz de expulsar al me-nos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
		12				12,00
						12,00
01.06	TOMAS (OT-T12)					
01.06.01	TOMA-11					
01.06.01.01	MOVIMIENTO DE TIERRAS (TOMA-11)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, ter-ciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la exca-vación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cual-quier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre per-fil teórico.					
	Saneos plataforma s/ cad	1	3.141,00		0,30	942,30
	Excav. general s/m	1	177,57			177,57
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	2	40,00	5,00		400,00
	Excav macizos					
	Macizos T	3	6,00	6,00	2,00	216,00
	Cajeos cámara de descarga en capítulo correspondiente					
						2.135,87

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma	1	3.141,00		0,30	942,30
						942,30
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	286,00			286,00
	A vertedero sobrante	1	2.135,87			2.135,87
		-1	286,00			-286,00
		-1	458,00			-458,00
						1.677,87
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	2	40,00	5,00		400,00
		-2	28,50	3,00		-171,00
		-2	28,50	3,00		-171,00
						458,00
01.06.01.02	CALDERERÍA Y VALVULERÍA (TOMA-11)					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	112.178,870			112.178,870
						112.178,87
P1BRID1300.25	ud Brida ciega PN 25 Ø1300 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas					
	Toma	1				1,00
						1,00
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Tub. principal	2	2,00			4,00
	Tomas derivación T conex. ventosa	1				1,00
						5,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	Desague-1	3				3,00
	Desague-2	3				3,00
						6,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16					
	Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass	4				4,00
						4,00
P6CD.300.16	ud Carrete desmontaje DN 300 PN16					
	Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Desagüe-1	1				1,00
	Desagüe-2	1				1,00
						2,00
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300					
	Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Caudalímetro	1				1,00
						1,00
P6CD.1500.16	ud Carrete desmontaje virola acero inox. PN16 DN1500					
	Carrete telescópico autoportante, PN 16 atm, DN 1.500 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Derivación toma	2				2,00
						2,00
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800					
	Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Conducción principal-1	1				1,00
	Conducción principal-2	1				1,00
						2,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio					
	Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	4	1,00			4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						4,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada. Cámara de descarga	2				2,00
						2,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas. Bypass	4	2,00			8,00
						8,00
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas. Desagüe-1 Desagüe-2	1 1				1,00 1,00
						2,00
P6VM.1500.16M	ud Válvula mariposa motorizada PN 16 Ø1500 I Válvula de mariposa, DN 1500 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Toma	2				2,00
						2,00
P6VM.1800.16M	ud Válvula mariposa motorizada PN 16 Ø1800 I Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Conducción-1 Conducción-2	1 1				1,00 1,00
						2,00
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado. Cámara descarga	2				2,00
						2,00
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas. Cámara descarga	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete					
	Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Incluye válvula de corte de mismo diámetro y timbraje.					
	Conducción-1	2				2,00
	Conducción-2	2				2,00
	T toma	1				1,00
						5,00
01.06.01.03	LOSA Y ANCLAJES (TOMA-11)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	31,25	27,50	0,10	85,94
						85,94
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	31,25	27,50	0,30	257,81
	A descontar cámara descarga	-1	40,00		0,30	-12,00
	A descontar macizos	-3	6,00	6,00	0,30	-32,40
	A descontar macizos convex	-2	5,00	3,00	0,30	-9,00
	Macizos T	3	6,00	6,00	2,00	216,00
	Macizo T toma alzados s/ losa	2	5,60	1,70		19,04
	Macizo T toma alzado s/ losa	2	5,60	1,40		15,68
	Apoyos tuberías	1	2,60	2,70		7,02
	Macizos concavos/ convexos	4	33,10	3,00		397,20
	A descontar tuberías	-2	10,50	3,14	1,00	-65,94
		-2	10,50	3,14	0,81	-53,41
	Apoyos tuberías					
	tramo conduc. principal	2	3,00	2,60	0,80	12,48
	Tramo derivación tomas	2	2,00	1,50	0,80	4,80
	Tramo caudalímetro	1	2,00	1,50	0,80	2,40
	Apoyos Válvulas	4	3,00	1,50	0,80	14,40
	Apoyo caudalímetro	1	2,00	1,20	0,80	1,92
	Bypass	4	3,00	1,50	0,50	9,00
	Otros pequeños apoyos	10	0,50	0,50	0,50	1,25

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						786,25
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.						
Solera		1	124,00		0,30	37,20
						37,20
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.						
Macizos T		3	24,00		2,00	144,00
		2	5,60			11,20
		2	1,70		3,30	11,22
		1	9,50		1,70	16,15
Macizos concavos/ convexos		8	33,10			264,80
		2	3,00	4,10		24,60
		2	3,00	3,00		18,00
		2	3,00	3,00		18,00
		2	3,00	3,00		18,00
Apoyos Válvulas		4	9,00		0,80	28,80
Apoyo de caudalímetro		1	7,00		0,80	5,60
Apoyos tubería-anclajes		4	8,00		0,80	25,60
Deriv. tomas		2	7,00		0,80	11,20
Toma-caudalimero		2	6,00		0,80	9,60
Apoyos bypass		4	3,00	1,70	0,50	10,20
Otros apoyos		9	1,50		0,50	6,75
						623,72
P4ETT-002	kg Acero B-500-S					
Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.						
Solera #1620		2	31,25	27,50	16,30	28.015,63
A descontar cámara descarga		-2	48,50		16,30	-1.581,10
A descontar macizos T		-6	6,00	6,00	16,30	-3.520,80
A descontar p.p. concav		-4	5,00	3,00	16,30	-978,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Macizos T #16/15 (21.7Kg/m2)	3	24,00	2,00	21,70	3.124,80
	Alzados	4	5,60	21,70	21,70	10.547,94
	Alzados	2	12,20	2,00	21,70	1.058,96
	Alzados	1	9,50	1,00	21,70	206,15
		2	5,50		21,70	238,70
	Solera macizos T	3	6,00	6,00	21,70	2.343,60
	Solera macizos T	3	6,00	6,00	21,70	2.343,60
	Refuerzos fi 16/15	76	1,00		1,73	131,48
		46	1,00		1,73	79,58
	Macizos concavos/ convexos	8	33,10		21,70	5.746,16
	perimetro	8	28,00	3,00	21,70	14.582,40
	Refuerzos #20/15 macizo conv.	8	8,60		34,00	2.339,20
		4	15,00	3,00	34,00	6.120,00
	Solera #16/15. Adicional hierro en losa	2	5,00	22,00	7,70	1.694,00
		2	5,00	22,00	7,70	1.694,00
		2	3,00	23,00	7,70	1.062,60
	Apoyos Válvulas #16/15					
	Apoyos Válvulas	4	9,00	21,70	0,80	624,96
	Basex2	4	4,50	21,70	2,00	781,20
	Apoyo de caudalímetro	1	7,00	21,70	0,80	121,52
	Basex2	2	4,50	21,70	1,00	195,30
	Apoyos tubería-anclajes	4	8,00	21,70	0,80	555,52
		4	4,50	21,70	2,00	781,20
	Deriv. tomas	4	7,00	21,70	0,80	486,08
		4	4,00	21,70	2,00	694,40
	Toma-caudalimero	2	6,00	21,70	0,80	208,32
		2	4,00	21,70	1,00	173,60
	Apoyos bypass	4	3,00	21,70	0,85	221,34
		4	3,00	21,70	0,15	39,06
	Otros apoyos	9	1,50	21,70	0,50	146,48
		9	2,00	21,70	0,15	58,59
	Pérdidas	0,15	80.336,47			12.050,47

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						92.386,94
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes T	4	11,00			44,00
		1	8,00			8,00
	Anclajes conv	4	13,00			52,00
						104,00
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	27,50			27,50
						27,50
01.06.01.04	PROTECCIÓN Y ENCINTADOS (TOMA-11)					
P4CINT2000	m Encintado anticorrosivo DN2000 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN2000mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Tubería entrada	2	10,50			21,00
						21,00
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Tubería salida	2	10,50			21,00
						21,00
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Desagües	4	0,30			1,20
						1,20
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	2	2,00	0,80	6,28	20,10
	Apoyos tubería T	2	2,00	0,80	4,72	15,10
	Apoyos tubería toma	2		0,80	4,30	6,88
	Apoyos válvulas	2	2,00	1,00	1,00	4,00
		2	2,00	0,80	1,00	3,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	MACIZOS de anclaje					
	T	2	4,50	1,70		15,30
	T tomas	1	2,50	2,50		6,25
	Varios desagüe	4	1,00	0,50		2,00
	Varios apoyos menores	0,15	65,00			9,75
						82,58
01.06.01.05	OBRA DE DESAGÜE (TOMA-11)					
01.06.01.05.1	ARQUETA ROTURA (TOMA-11)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Excav	1	87,50		1,00	87,50
						87,50
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excav	1	87,50		1,00	87,50
		-1	48,50		1,00	-48,50
						39,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	48,50		0,10	4,85
						4,85
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales					
	Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cuñas	1	12,00	2,00	0,20	4,80
						4,80
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	48,50		0,30	14,55
						14,55
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Alzados	2	9,20	0,20	1,40	5,15
		1	2,00	0,20	1,40	0,56
		2	3,20	0,20	2,50	3,20
		1	2,00	0,20	2,50	1,00
		1	2,00	0,20	1,10	0,44
		1	7,00	0,20	1,50	2,10
		1	7,00	0,20	0,60	0,84
		2	2,50	0,20	1,50	1,50
						14,79

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

perímetro losa	2	12,40	0,30	7,44
	2	2,40	0,30	1,44
	1	7,00	0,30	2,10
	2	2,50	0,30	1,50
				12,48

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Alzados	4	9,20	0,20	1,40	10,30
	2	2,00	0,20	1,40	1,12
	4	3,20	0,20	2,50	6,40
	2	2,00	0,20	2,50	2,00
	2	2,00	0,20	1,10	0,88
	2	7,00	0,20	1,50	4,20
	2	7,00	0,20	0,60	1,68
	4	2,50	0,20	1,50	3,00
					29,58

P4ETT-002 kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

12/15

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Alzados	4	9,20	12,30	1,40	633,70
		2	2,00	12,30	1,40	68,88
		4	3,20	12,30	2,50	393,60
		2	2,00	12,30	2,50	123,00
		2	2,00	12,30	1,10	54,12
		2	7,00	12,30	1,50	258,30
		2	7,00	12,30	0,60	103,32
		4	2,50	12,30	1,50	184,50
	Solera	2	48,50	12,30		1.193,10
	Ref. solera-alzado					
		14	0,92	35,00		450,80
		14	0,92	9,00		115,92
	Esquinas	8	20,00	0,92	1,50	220,80
	Solpaes y varios	0,15	3.800,00			570,00
						4.370,04
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	35,00			35,00
		1	9,00			9,00
						44,00
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2					
	Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	35,00	1,00		35,00
						35,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte					
	Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AI-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
	Arqueta	1	2,70	7,00		18,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						18,90
01.06.01.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-11)						
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800					
	Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
Desagüe		1	17,00			17,00
						17,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
Desagüe		1	17,00	2,00	1,60	54,40
						54,40
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert					
	Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
Desagüe		1	17,00	2,00	1,60	54,40
A descontar tubo		-1	17,00	0,50		-8,50
Embocadura						
Solera		1	1,30	1,50	0,30	0,59
Tacón entronque		1	1,30	0,40	0,50	0,26
						46,75
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo					
	Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
Vertido		1	1,00	2,50	0,30	0,75
						0,75
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
Embocadura zapatas						
Aletas		2	1,50	1,25	0,50	1,88
						1,88
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
Embocadura						
Aletas		2	1,50	0,30	1,50	1,35
Frontal		1	1,50	0,30	1,50	0,68

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2,03
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	4	1,50		0,50	3,00
						3,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	2	1,50		1,50	4,50
	Frontal	1	1,50		1,50	2,25
						6,75
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Embocadura					
	Aletas #12/20	2	1,50	9,20	1,50	41,40
	Frontal #12/20	2	1,50	9,20	1,50	41,40
	Zapatas #12/20	4	1,50	1,25	9,20	69,00
	Solera	2	1,30	1,50	9,20	35,88
	Solapes	0,15	187,00			28,05
						215,73
01.06.01.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-11)						
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desagüe	1	870,00	2,50		2.175,00
						2.175,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion					
	Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	870,00	2,50		2.175,00
						2.175,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	859,78	0,75	1,00	644,84
	Reperfilado de azarbe					
						644,84
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Desagüe	1	5,00	2,50	0,30	3,75
						3,75
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	Desagüe	1	5,00	2,50		12,50
						12,50
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
		1	8,00			8,00
						8,00
01.06.01.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-11)					
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		4	12,20			48,80
						48,80
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.					
	Ángulo 45°	4	3,20			12,80
						12,80
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		4	1,50	2,00		12,00
						12,00
P41CADENA III	m Cadena acero inox 8 mm					
	Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.					
	Acceso escaleras	4	1,00			4,00
						4,00
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C.					
	Montaje e instalación completa en obra.					
	Unidad totalmente instalada.					
	Escaleras					
	Soportes UPN-200	4	13,000	25,300		1.315,600
	Pilares UPN-200	4	4,000	25,300	2,000	809,600
	Placas	4	4,000	15,000		240,000
						2.365,20
P41LV001	ud Línea de vida					
	Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje, incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud.					
	Unidad totalmente instalada.					
	Línea de vida	2				2,00
						2,00
01.06.01.07	URBANIZACIÓN (TOMA-11)					
01.06.01.07.1	PAVIMENTOS (T11)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	2.712,00		0,30	813,60
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque caminos	2	55,00		0,30	33,00
						832,93
01.06.01.07.2	CERRAMIENTOS (T11)					
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint					
	Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
	Acceso	2				2,00
						2,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint					
	Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Acceso	2				2,00
						2,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment.					
	Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
	Cerramiento perimetral	1	204,00			204,00
						204,00
01.06.01.07.3 DRENAJES (T11)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Cuneta guardas perimetral	1	123,00			123,00
		1	72,00			72,00
						195,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
	Entronque con embocadura desagüe	2	3,00			6,00
						6,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
		2	10,00			20,00
						20,00
01.06.02 TOMA-12						
01.06.02.01 MOVIMIENTO DE TIERRAS (TOMA-12)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Saneos plataforma s/ cad	1	3.480,00		0,30	1.044,00
	Excav. general s/m	1	1.246,63			1.246,63
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	2	40,00	5,00		400,00
	Excav macizos					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Macizos T	2	4,00	4,00	1,50	48,00
		1	3,50	3,50	1,20	14,70
	Cajeos cámara de descarga en capítulo correspondiente					
						3.153,33
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno					
	Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma	1	3.480,00		0,30	1.044,00
						1.044,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	115,05			115,05
	A vertedero, extendidos	1	3.153,33			3.153,33
		-1	115,05			-115,05
		-1	458,00			-458,00
						2.695,33
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	2	40,00	5,00		400,00
		-2	28,50	3,00		-171,00
		-2	28,50	3,00		-171,00
						458,00
01.06.02.02	CALDERERÍA Y VALVULERÍA (TOMA-12)					
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C.					
	Montaje e instalación completa en obra.					
	Unidad totalmente instalada.					
	s/ med	1	74.342,590			74.342,590
						74.342,59
P1BRIDA800.25	ud Brida ciega PN 25 Ø800					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marca CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Tub. principal	2	2,00			4,00
	Tomas derivación T conex. ventosa	1				1,00
						5,00
P1BRIDA500.25	ud Brida ciega PN 25 Ø500					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 500 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Toma	1				1,00
						1,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanquidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	Desagüe-1	3				3,00
	Desagüe-2	3				3,00
						6,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16					
	Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass	4				4,00
						4,00
P6CD.300.16	ud Carrete desmontaje DN 300 PN16					
	Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Desagüe-1	1				1,00
	Desagüe-2	1				1,00
						2,00
P6CD.500.16	ud Carrete desmontaje DN 500 PN16					
	Carrete de desmontaje de acero de 500 mm de diámetro PN16, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Caudalímetro	1				1,00
						1,00
P6CD.700.16	ud Carrete desmontaje DN 700 PN16					
	Carrete de desmontaje de diametro 700 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Deriv. toma	2				2,00
						2,00
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800					
	Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Conducción principal-1	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Conducción principal-2	1				1,00
						2,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio					
	Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	4	1,00			4,00
						4,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio					
	Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Cámara de descarga	2				2,00
						2,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual					
	Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Bypass	4	2,00			8,00
						8,00
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual					
	Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Desagüe-1	1				1,00
	Desagüe-2	1				1,00
						2,00
P6VM.700.16M	ud Válvula mariposa motorizada PN 16 Ø700 I					
	Válvula de mariposa, DN 700 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Toma	2				2,00
						2,00
P6VM.1800.16M	ud Válvula mariposa motorizada PN 16 Ø1800 I					
	Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Conducción-1	1				1,00
	Conducción-2	1				1,00
						2,00
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400					
	Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.					
	Descarga	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6FG.400.16	ud Filtro globo PN 16 Ø400					
	Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.					
	Descarga	2				2,00
						2,00
P6VENT.250.16	ud Ventosa trifuncional DN250 mm PN16+Valv corte+carrete					
	Suministro e instalación de ventosa trifuncional, DN 250 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Incluye válvula de corte de mismo diámetro y timbraje.					
	Conducción principal	2	2,00			4,00
	Conducción principal	2	2,00			4,00
	T toma	1	1,00			1,00
						9,00
01.06.02.03	LOSA Y ANCLAJES (TOMA-12)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	32,70	29,60	0,10	96,79
						96,79
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	32,70	29,60	0,30	290,38
	A descontar cámara descarga	-1	16,40	3,40	0,30	-16,73
		-1	2,70	7,00	0,30	-5,67
	A descontar macizos	-1	4,00	4,00	0,30	-4,80
		-1	3,50	3,50	0,30	-3,68
		-1	4,00	4,00	0,30	-4,80
		-2	5,00	3,00	0,30	-9,00
	Macizos T	1	4,00	4,00	1,50	24,00
		1	4,00	4,00	1,50	24,00
		1	3,50	3,50	1,20	14,70
		2	5,60	1,70		19,04
	Apoyos tuberías	1	2,60	2,70		7,02
	Macizos concavos/ convexos	4	40,00	3,00		480,00
	A descontar tuberías	-4	10,50	0,81		-34,02
	Apoyos Válvulas	4	3,00	1,50	0,80	14,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Apoyos tubería-anclajes	4	3,00	1,00	0,80	9,60
	Deriv. tomas	4	2,40	0,86	0,80	6,60
	Toma-caudalímetro	2	2,00	0,60	0,80	1,92
	Pequeños apoyos	14	0,50	0,50	0,50	1,75
						814,71

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

Solera	1	124,50		0,30	37,35
					37,35

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Macizos T	2	16,00		1,50	48,00
	1	14,00		1,20	16,80
	2	5,60			11,20
	2	1,70		3,30	11,22
	1	9,50		1,70	16,15
Macizos concavos/ convexos	8	40,00			320,00
	2	3,00	4,20		25,20
	2	3,00	2,85		17,10
Apoyos Válvulas	4	9,00		0,80	28,80
Apoyos tubería-anclajes	4	8,00		0,80	25,60
Deriv. tomas	4	7,00		0,80	22,40
Toma-caudalímetro	2	6,00		0,80	9,60
Varios pequeños apoyos	14	1,00			14,00
					566,07

P4ETT-002 kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

Solera #1620 16.3 kg/m2)	2	32,70	29,60	16,30	31.554,19
A descontar cámara descarga	-2	74,50		16,30	-2.428,70
A descontar macizos T	-2	4,00	4,00	16,30	-521,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		-2	4,00	4,00	16,30	-521,60
		-2	3,50	3,50	16,30	-399,35
	A descontar p.p. concav	-2	5,00	3,00	16,30	-489,00
	Macizos T #16/15 (21.7kg/m2)	2	4,00	4,00	21,70	694,40
	base	2	4,00	4,00	21,70	694,40
	base	2	3,50	3,50	24,70	605,15
	Alzados	2	5,60	21,70		243,04
	Alzados	2	1,70	21,70	3,30	243,47
	Alzados	1	9,50	21,70	1,70	350,46
	Solera macizos T	3	6,00	6,00	21,70	2.343,60
	Solera macizos T	3	6,00	6,00	21,70	2.343,60
	Refuerzos fi 16/15	76	1,00	1,73		131,48
	Macizos concavos/ convexos	8	40,00		21,70	6.944,00
		8	28,00	3,00	21,70	14.582,40
	Refuerzos 20/15	8	8,60		34,00	2.339,20
		4	15,00	3,00	34,00	6.120,00
	Apoyos Válvulas #16/15	4	9,00	21,70	0,80	624,96
	Apoyos tubería-anclajes	4	8,00	21,70	0,80	555,52
	Deriv. tomas	4	7,00	21,70	0,80	486,08
	Toma-caudalimero	2	6,00	21,70	0,80	208,32
	Solera #16/15. Adicional hierro	2	5,00	16,20	7,70	1.247,40
		2	3,00	12,40	7,70	572,88
		2	3,00	16,20	7,70	748,44
	Solapes y varios	0,15	69.272,74			10.390,91
						79.663,65
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes T	4	11,00			44,00
		1	8,00			8,00
	Anclajes conv	4	13,00			52,00
						104,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	29,60			29,60
						29,60
01.06.02.04	PROTECCIÓN Y ENCINTADOS (TOMA-12)					
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Tubería salida	4	10,50			42,00
						42,00
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Desagües	4	0,30			1,20
						1,20
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	2	2,00	0,80	6,28	20,10
	Apoyos tubería T	2	2,00	0,80	1,60	5,12
	Apoyos tubería toma	2		0,80	2,50	4,00
	Apoyos válvulas	2	2,00	1,00	1,00	4,00
		2	2,00	0,80	1,00	3,20
	MAcizos de anclaje					
	T	2	4,50	1,70		15,30
	T tomas	1	2,50	2,50		6,25
	Varios desagüe	4	1,00	0,50		2,00
	Varios apoyos menores	0,15	65,00			9,75
						69,72

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.06.02.05	OBRA DE DESAGÜE (TOMA-12)					
01.06.02.05.1	ARQUETA ROTURA (TOMA-12)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Excav	1	127,00		1,00	127,00
						127,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excav	1	127,00		1,00	127,00
		-1	74,50		1,00	-74,50
						52,50
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	74,50		0,10	7,45
						7,45
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cuñas	1	16,00	2,00	0,20	6,40
						6,40
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	74,50		0,30	22,35
						22,35
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Alzados	2	13,20	0,20	1,40	7,39
		1	3,00	0,20	1,40	0,84
		2	3,20	0,20	2,50	3,20
		1	3,00	0,20	2,50	1,50
		1	3,00	0,20	1,10	0,66
		1	7,00	0,20	1,50	2,10

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	7,00	0,20	0,60	0,84
		2	2,50	0,20	1,50	1,50
						18,03

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

perímetro losa	2	16,40	0,30	9,84
	2	3,40	0,30	2,04
	1	7,00	0,30	2,10
	2	2,50	0,30	1,50
				15,48

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlite que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Alzados	4	9,20	0,20	1,40	10,30
	2	2,00	0,20	1,40	1,12
	4	3,20	0,20	2,50	6,40
	2	2,00	0,20	2,50	2,00
	2	2,00	0,20	1,10	0,88
	2	7,00	0,20	1,50	4,20
	2	7,00	0,20	0,60	1,68
	4	2,50	0,20	1,50	3,00
					29,58

P4ETT-002 kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

#12/15

Alzados	4	13,20	12,30	1,40	909,22
	2	3,00	12,30	1,40	103,32
	4	3,20	12,30	2,50	393,60
	2	3,00	12,30	2,50	184,50
	2	3,00	12,30	1,10	81,18
	2	7,00	12,30	1,50	258,30

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	7,00	12,30	0,60	103,32
		4	2,50	12,30	1,50	184,50
	Solera	2	74,60	12,30		1.835,16
	Ref. solera-alzado					
		14	0,92	35,00		450,80
		14	0,92	9,00		115,92
	Esquinas	8	20,00	0,92	1,50	220,80
	Solpaes y varios	0,15	4.840,00			726,00
						5.566,62
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	45,00			45,00
		1	9,00			9,00
						54,00
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2					
	Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	35,00	1,00		35,00
						35,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte					
	Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero Al-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
	Arqueta	1	2,70	7,00		18,90
						18,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.06.02.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-12)						
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000					
	Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
		1	12,50			12,50
						12,50
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	12,50	2,00	1,80	45,00
						45,00
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert					
	Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Desagüe	1	12,50	2,00	1,60	40,00
	A descontar tubo	-1	12,50	0,78		-9,75
	Embocadura					
	Solera	1	1,30	1,50	0,30	0,59
	Tacón entronque	1	1,30	0,40	0,50	0,26
						31,10
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo					
	Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Vertido	1	1,00	2,50	0,30	0,75
						0,75
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Embocadura zapatas					
	Aletas	2	1,50	1,25	0,50	1,88
						1,88
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Embocadura					
	Aletas	2	1,50	0,30	1,50	1,35
	Frontal	1	1,50	0,30	1,50	0,68
						2,03

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada. Embocadura					
	Aletas	4	1,50		0,50	3,00
						3,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. Embocadura					
	Aletas	2	1,50		1,50	4,50
	Frontal	1	1,50		1,50	2,25
						6,75
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. Embocadura					
	Aletas #12/20	2	1,50	9,20	1,50	41,40
	Frontal #12/20	2	1,50	9,20	1,50	41,40
	Zapatillas #12/20	4	1,50	1,25	9,20	69,00
	Solera	2	1,30	1,50	9,20	35,88
	Solapes	0,15	187,00			28,05
						215,73
01.06.02.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-12)					
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desagüe	1	175,00	3,00		525,00
						525,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	175,00	3,00		525,00
						525,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	175,00	1,50	1,00	262,50
	Reperfilado de azarbe					
						262,50
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Desagüe	1	5,00	2,50	0,30	3,75
	Punto de vertido	1	5,00	2,50	0,30	3,75
						7,50
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujección provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	Desagüe	2	5,00	2,50		25,00
						25,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
	Paso finca	1	9,00			9,00
						9,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Paso	1	5,00	5,00	0,30	7,50
						7,50
01.06.02.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-12)					
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		4	12,20			48,80
						48,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada. Ángulo 45°	4	3,20			12,80
						12,80
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilaría acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	4	1,50	2,00		12,00
						12,00
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada. Acceso escaleras	4	1,00			4,00
						4,00
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada. Escaleras					
	Soportes UPN-200	4	13,000	25,300		1.315,600
	Pilares UPN-200	4	4,000	25,300	2,000	809,600
	Placas	4	4,000	15,000		240,000
						2.365,20
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.					
	Línea de vida	2				2,00
						2,00
01.06.02.07	URBANIZACIÓN (TOMA-12)					
01.06.02.07.1	PAVIMENTOS (T12)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	2.882,00		0,30	864,60
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque camino existente	1	55,00		0,30	16,50
						867,43

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.06.02.07.2 CERRAMIENTOS (T12)						
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint					
	Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
Acceso		2				2,00
						2,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint					
	Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
Acceso		2				2,00
						2,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment.					
	Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
Cerramiento perimetral		1	218,00			218,00
						218,00
01.06.02.07.3 DRENAJES (T12)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
Cuneta guardas perimetral		1	104,00			104,00
		1	33,00			33,00
		1	70,00			70,00
						207,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
Entronque con embocadura desagüe		2	3,00			6,00
						6,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y repelido de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
		1	12,00			12,00
		1	9,00			9,00
						21,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.07	HINCAS (OT-T12)					
01.07.01	HINCA RÍO ARAGÓN					
01.07.01.01	TRABAJOS PREPARATORIOS+MT (HINCA ARAGÓN)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med acceso y preparación de plataforma	1	2.509,27			2.509,27
	Excav. zavorras y acceso provisional	1	178,80			178,80
						2.688,07
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med recinto interior	1	4.668,55			4.668,55
						4.668,55
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Pozo ataque:Mejora de cimiento losa (Prov. NF alto)	1	13,00	15,00	0,30	58,50
	Pozo de salida: mejora cimientos (Porv. NF alto)	1	13,00	16,00	0,20	41,60
						100,10
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Pozo salida					
	Acceso	1	26,00	5,00	0,15	19,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
	Pozo ataque					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
						178,80
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Cuneta perimetral provisional					
	Pozo salida	2	69,00			138,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Pozo ataque	2	30,00			60,00
						198,00
01.07.01.02	PANTALLA Y ESTRUCTURA (HINCA ARAGÓN)					
P5PANT01	ud Transporte y montaje equipos ejec. pantallas					
	Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.					
	Implantación inicial pozo entrada	1				1,00
						1,00
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra					
	Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.					
	Traslado a pozo de salida	1				1,00
						1,00
PAPANT04	m Murete guía para muro pantalla					
	Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.					
	Muro guía pozo entrada	2	17,00			34,00
		2	13,00			26,00
	Muro pozo salida	2	17,00			34,00
		1	13,00			13,00
						107,00
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal					
	Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o reperforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Homigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.					
	s/ med	1	2.208,00			2.208,00
						2.208,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Fondo solera pozo de ataque	1	13,00	15,00	0,10	19,50
						19,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera provisional hinca	1	78,00			78,00
						78,00
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Vigas de arriostre	1	172,11			172,11
	Muro empuje	1	0,60	13,00	3,00	23,40
						195,51
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/ med aux pantallas	1	389.138,07			389.138,07
	Muro empuje #16/20	2	13,00	16,30	3,00	1.271,40
	Losa #16/20+15%	2	1,15	195,00	16,30	7.310,55
						397.720,02
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios conectores	1	10,00			10,00
						10,00
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios s/nec viga	1	10,00			10,00
						10,00
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Pozo ataque					
	Conectores losas fi 16/20	560				560,00
						560,00
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios conectores s/ nec viga	1	10,00			10,00
						10,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	s/ med pantallas vigas	1	464,80			464,80
	Muro de empuje	1	13,00		3,00	39,00
						503,80
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo					
	Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.					
	s/ med	1	56,00			56,00
						56,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco					
	Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulfurresistente sin retracción.					
	Apertura de hueco frontal de pantallas en hinca	1	18,84			18,84
						18,84
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon					
	Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	Demolición de frontal de pantalla pozo de ataque	1	104,00			104,00
	Demolición muro empuje	1	13,00	0,60	3,00	23,40
	Resto se queda para ser rellenado					127,40
01.07.01.03	HINCA(HINCA ARAGÓN)					
P6HINCA2000A1	ud Implantación equipo escudo cerrado hinca DN 2000-2500 desde fáb.					
	Implantación y transporte de equipo perforador de escudo cerrado, para hinca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.					
	Implantación inicial	1				1,00
						1,00
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra					
	Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.					
	Traslado a hinca-nº 2 en Hinca Aragón	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
	Hinca	2	153,00			306,00
						306,00
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.					
	Instalación de tubería en interior	2	153,00			306,00
						306,00
01.07.01.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA ARAGÓN)					
01.07.01.04.1	TRATAMIENTO (HINCA ARAGÓN)					
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel). Frente en bolos sin matriz penetración (80% de la long)					
	Hinca-1 (Sup=15 m2, penetración 20%)	0,8	153,00	15,00	0,20	367,20
	Hinca-2 (Sup=15 m2, penetración 20%)	0,8	153,00	15,00	0,20	367,20
	Relleno del gap	2	153,00	9,42	0,20	576,50
	Relleno de hueco entre tubería hinca y tubería acero	1	509,50			509,50
						1.820,40
P6HINC.T02	m³ Resina de silicatos inyectada en el terreno Resina de silicatos inyectada en el terreno para consolidación en túneles e impermeabilización i/ rechazo. Frente en bolos sin matriz penetración (20% de la long)					
	Hinca-1 (Sup=15 m2, penetración 20%)	0,2	153,00	15,00	0,20	91,80
	Hinca-2 (Sup=15 m2, penetración 20%)	0,2	153,00	15,00	0,20	91,80
	Relleno del gap incluido					
						183,60
P1MT15-250M	m Micropilote DN 250 mortero M250 Pilote de 250 mm de diámetro, barrenado mecánico con empleo de entubación recuperable y lodos tixotrópicos, fabricado "in situ" de mortero M-250 SR, conforme a norma UNE 36068 y/o según normativa vigente, puesto en obra según EHE vigente, incluso parte proporcional de excavación, transporte, instalación, montaje y desmontaje de equipos, recuperación de la entubación, protección de la cabeza del pilote, descabezado de pilote hasta cara inferior de viga de atado y retirada de sobrantes, ejecución, control de calidad, suministro y colocacinó de tubos sónicos, informes, ensayos asociados y documentación. Totalmente terminado. Pozo de ataque, en los primeros 10m para evitar arrastres					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Pilotes de 15m y colocación tresbolillo c/ 1.5m					
	Hinca-1	7	4,00			28,00
	Hinca-2	7	4,00			28,00
						56,00
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20					
	Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.					
	Frente extracción taludes pozo de extracción	2	20,00		5,00	200,00
						200,00
01.07.01.04.2	AUSCULTACIÓN (HINCA ARAGÓN)					
P6HINCA03B	ud Equipo auscultación túnel / hinca río de long >100m					
	Equipo de auscultación de seguimiento de túnel bajo río de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes. Todo conforme Plan de Auscultación y requerimientos de Organismo.					
		1				1,00
						1,00
01.07.02	HINCA NA-128					
01.07.02.01	TRABAJOS PREPARATORIOS+MT (HINCA NA-128)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med acceso y preparación de plataforma	1	1.973,37			1.973,37
	Excav. zahorras y acceso provisional	1	166,80			166,80
						2.140,17
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan					
	Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med recinto interior	1	2.996,55			2.996,55
						2.996,55
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno					
	Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Pozo ataque:Mejora de cimiento losa (Prov. NF alto)	1	13,00	15,00	0,30	58,50
	Pozo de salida: mejora cimientos (Porv. NF alto)	1	13,00	16,00	0,20	41,60
						100,10

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Pozo salida					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
	Pozo ataque					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
						166,80
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada. Cuneta perimetral provisional					
	Pozo salida	1	30,00			30,00
		1	60,00			60,00
	Pozo ataque	2	65,00			130,00
						220,00
01.07.02.02	PANTALLA Y ESTRUCTURA (HINCA NA-128)					
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa. Traslado desde Hinca Aragón a NA-128	1				1,00
	Traslado desde pozo de ataque a pozo de salida	1				1,00
						2,00
P5PANT03	ud Desmontaje/ desplazamiento equipos pantallas a fábricas Desmontaje final de pantallas y transporte a punto de origen. Unidad completa. Última hinca en el subtramo agrupado a fábrica	1				1,00
						1,00
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado. Muro guía pozo entrada	2	17,00			34,00
		2	13,00			26,00
	Muro pozo salida	2	17,00			34,00
		1	13,00			13,00
						107,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o perforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Homigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreescavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.					
s/ med		1	1.712,00			1.712,00
						1.712,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
Fondo solera pozo de ataque		1	13,00	15,00	0,10	19,50
						19,50
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
Solera provisional hincia		1	78,00			78,00
						78,00
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
Vigas de arriostre		1	151,47			151,47
Muro empuje		1	0,60	13,00	3,00	23,40
						174,87
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
s/ med aux pantallas		1	141.392,87			141.392,87
Muro empuje #16/20		2	13,00	16,30	3,00	1.271,40
Losa #16/20+15%		2	1,15	195,00	16,30	7.310,55
						149.974,82

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios conectores	1	10,00			10,00
						10,00
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios s/nec viga	1	10,00			10,00
						10,00
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Pozo ataque					
	Conectores losas fi 16/20	560				560,00
						560,00
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios conectores s/ nec viga	1	10,00			10,00
						10,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	s/ med pantallas vigas	1	386,40			386,40
	Muro de empuje	1	13,00		3,00	39,00
						425,40
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.					
	s/ med	1	56,00			56,00
						56,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulfurresistente sin retracción.					
	Apertura de hueco hinca	1	18,84			18,84
						18,84
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	Demolición de frontal de pantalla pozo de ataque	1	71,50			71,50
	Demolición muro empuje	1	13,00	0,60	3,00	23,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Resto se queda					94,90
01.07.02.03	HINCA (HINCA NA-128)					
P6HINCA2000A2	ud Retirada equipo escudo cerrado hinca DN 2.000-2500 a fábrica					
	Retirada completa de obra y transporte a punto de origen de proveedor de equipo perforador de escudo cerrado, para hinca de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.					
	Retirada a fábrica	1				1,00
						1,00
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra					
	Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.					
	Traslado desde hinca Aragón	1				1,00
	Traslado a hinca -2	1				1,00
						2,00
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado					
	Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
	Hinca	2	35,00			70,00
						70,00
P6HINCATUB01	m Sobre coste tubería int. hinca					
	Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.					
	Instalación de tubería en interior	2	35,00			70,00
						70,00
01.07.02.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA NA-128)					
01.07.02.04.1	TRATAMIENTO (HINCA NA-128)					
P6HINC.T01	m³ Lechada cemento tratamientos					
	Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).					
	Relleno del gap hinca e=0.2m 100%	2	35,00	9,42	0,20	131,88
	Relleno de hueco entre tubería hinca y tubería acero	1	116,50			116,50
						248,38
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20					
	Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.					
	Frente extracción taludes pozo de extracción	2	20,00		5,00	200,00
						200,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.07.02.04.2 AUSCULTACIÓN (HINCA NA-128)						
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada					
	Auscultación carretera	8				8,00
						8,00
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.					
	Auscultación carretera	8				8,00
						8,00
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes. Todo conforme Plan de Auscultación y requerimientos de Organismo.					
		1				1,00
						1,00
01.08 MACIZOS DE ANCLAJE (OT-T12)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. s/med aux CN-T11					
	Sobreexcav. macizo convexo	1	79,98			79,98
	Sobreexcav. macizo cóncavo	1	80,01			80,01
	Sobreexcav. macizo vertical	6	44,45			266,70
	Sobreexcav. macizo con muro (macizo)	3	53,09			159,27
	Sobreexcav. macizo con muro (muro)	3	15,97			47,91
						633,87
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada. s/med aux CN-T11					
	macizo convexo	1	34,07			34,07
	macizo cóncavo	1	33,44			33,44
	macizo vertical	6	32,97			197,82
	macizo con muro (macizo)	3	39,38			118,14
						383,47

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	s/med aux					
	CN-T11					
	macizo convexo	1	134,14			134,14
	macizo cóncavo	1	78,24			78,24
	macizo vertical	6	115,73			694,38
	macizo con muro (macizo)	3	136,03			408,09
	macizo con muro (muro)	3	21,61			64,83
						1.379,68
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	CN-T11					
	ANCLAJE CONVEXO					
	Caras laterales	2	25,15			50,30
	Cara front. y trasera	2	26,64			53,28
	ANCLAJE VERTICAL					
	Caras laterales	12	19,47			233,64
	Cara ag.arriba	6	41,13			246,78
	Cara ag.abajo	6	17,26			103,56
	ANCLAJE CÓNCAVO					
	Caras laterales	2	13,66			27,32
	Cara ag.arriba	1	16,83			16,83
	Cara ag.abajo	1	16,03			16,03
	ANCLAJE VERTICAL CON MURO					
	Caras laterales	6	25,51			153,06
	Cara ag.arriba	3	48,60			145,80
	Cara ag.abajo	3	17,34			52,02
						1.098,62

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. CN-T11 ANCLAJE CONVEXO # ø12 c/15 Caras laterales Cara sup. e inf. Cara front. y trasera ø12 c/15 Refuerzo superior ANCLAJE VERTICAL # ø12 c/15 Caras laterales Cara ag.arriba Cara inferior Cara ag.abajo Cara superior a deducir conducciones ø12 c/15 Base conducciones ANCLAJE CÓNCAVO # ø12 c/15 Caras laterales Cara ag.arriba Cara inferior Cara ag.abajo Cara superior a deducir conducciones ANCLAJE VERTICAL CON MURO Macizo # ø16 c/15 Caras laterales	2 2 2 1 12 6 6 6 6 -6 6 2 1 1 1 2 -2 6	25,15 6,45 26,64 6,54 19,47 5,67 4,00 2,38 6,36 6,36 24,33 6,42 2,32 6,42 2,21 6,36 6,36 25,51	 7,02 46,80 7,25 7,25 6,20 7,25 7,25 4,00 6,36 5,86 7,25 6,20 7,25 7,25 4,00 21,73	12,27 12,27 12,27 0,92 12,27 12,27 12,27 12,27 12,27 12,27 6,13 12,27 12,27 12,27 12,27 12,27 12,27 12,27 21,73	617,18 1.111,15 653,75 281,59 20.784,03 3.026,33 1.825,78 1.270,31 3.394,62 -1.872,89 5.691,29 923,22 206,38 488,40 196,60 1.131,54 -624,30 3.325,99

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Cara ag.arriba	3	6,70	7,25	21,73	3.166,60
	Cara inferior	3	5,00	6,20	21,73	2.020,89
	Cara ag.abajo	3	2,39	7,25	21,73	1.129,58
	Cara superior	6	6,36	7,25	21,73	6.011,82
	a deducir conducciones	-6	6,36	4,00	21,73	-3.316,87
	Ø12 c/15					
	Base conducciones	3	24,33	50,40	0,92	3.384,40
	Muro vertical					
	# Ø16 c/15					
	Cara inferior	3	36,55		21,73	2.382,69
	Refuerzo	3	27,00	10,50	1,63	1.386,32
		3	5,18	52,50	1,63	1.329,84
	# Ø25 c/20					
	Cara superior	3	36,55		39,80	4.364,07
	Refuerzo	3	27,00	10,50	3,98	3.384,99
		3	5,64	52,50	3,98	3.535,43
	2 Ø25					
	Refuerzo hueco	6	24,01	3,98		573,36
						71.784,09

P4CINT2000 m Encintado anticorrosivo DN2000 mm

Encintado para recubrimiento de protección anticorrosiva de tubería de DN200mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.

CN-T11

Anclaje convexo	1	2,00	6,54	13,08
Anclaje vertical	6	2,00	6,33	75,96
Cóncavo	1	2,00	6,42	12,84
Anclaje vertical con muro	3	2,00	7,56	45,36
				147,24

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.09	CAMINOS DE SERVICIO (OT-T12)					
01.09.01	MOVIMIENTO DE TIERRAS Y PAVIMENTOS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. s/med aux					
	CN-T11	1	922,06			922,06
	T11-T12	1	4.347,02			4.347,02
						5.269,08
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil. s/med aux					
	CN-T11	1	223,14			223,14
	T11-T12	1	2.467,88			2.467,88
						2.691,02
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. s/med aux					
	CN-T11	1	453,06			453,06
	T11-T12	1	3.306,51			3.306,51
						3.759,57
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. s/med aux					
	CN-T11	1	30,21			30,21
	T11-T12	1	327,54			327,54
						357,75
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. s/med aux					
	CN-T11	1	644,48			644,48
	T11-T12	1	6.987,52			6.987,52

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						7.632,00
01.09.02	DRENAJE TRANSVERSAL					
01.09.02.01	MOVIMIENTO DE TIERRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.						
s/med aux						
CN-T11		1	40,28			40,28
T11-T12		1	822,11			822,11
						862,39
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN					
Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares.						
Unidad totalmente terminada.						
s/med aux						
CN-T11		1	20,30			20,30
T11-T12		1	23,36			23,36
						43,66
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales					
Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.						
s/med aux						
T11-T12		1	61,69			61,69
						61,69
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert					
Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.						
s/med aux						
CN-T11		1	3,18			3,18
T11-T12		1	3,66			3,66
						6,84
P1MT08ESC150	m³ Escollera 50-150 Kg careada					
Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.						
s/med aux						
CN-T11		1	29,00			29,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T11-T12	1	259,00			259,00
						288,00
01.09.02.02	OBRAS DE FÁBRICA					
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5 , incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.					
	s/med aux					
	CN-T11	1	8,80			8,80
	T11-T12	1	11,30			11,30
						20,10
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
	s/med aux					
	CN-T11	1	20,40			20,40
	T11-T12	1	38,60			38,60
						59,00
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000					
	Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	s/med aux					
	CN-T11	1	5,30			5,30
	T11-T12	1	6,10			6,10
						11,40
P4M2.0X1.0	m Marco prefabricado 2,0x1,0 m					
	Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.0x1.0 m, conforme a norma UNE-EN 14844+A2:2012incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.					
	s/med aux					
	T11-T12	1	3,00			3,00
						3,00
P4M3.0X1.5	m Marco prefabricado 3.0x1.5 m					
	Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 3.0x1.5 m, conforme a norma UNE-EN 14844+A2:2012incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.					
	s/med aux					
	T11-T12	1	20,90			20,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						20,90
P4M2.5X2.0	m Marco prefabricado 2.5x2.0 m Suministro y colocación de marco prefabricado visitable de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.5x2.0 m, conforme a norma UNE-EN 14844+A2:2012 incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena. s/med aux					
	T11-T12	1	7,50			7,50
						7,50
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales Hormigón para armar HA-30/B/20/XC4, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. s/med aux					
	CN-T11	1	14,50			14,50
	T11-T12	1	118,96			118,96
						133,46
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada. s/med aux					
	CN-T11	1	28,80			28,80
	T11-T12	1	199,30			199,30
						228,10
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. s/med aux					
	CN-T11	1	21,57			21,57
	T11-T12	1	202,47			202,47
						224,04
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. s/med aux					
	CN-T11	1	1.232,71			1.232,71
	T11-T12	1	10.111,39			10.111,39
						11.344,10

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada. s/med aux					
	CN-T11	1	14,63			14,63
	T11-T12	1	162,13			162,13
						176,76
P3LAM1	m² Imperm. muros+Lámina dren PE+Geotex 200 g Drenaje de muros con lámina nodular con marcado CE de polietileno virgen con geotextil incorporado y doble nódulo de 12 mm. de altura nod, capacidad de drenaje 1,2 l / s y resistencia a compresión de 90 kn/m2. Delta Drain o similar, p.p. de fijación al soporte con taco espiga de polipropileno, a razón de 3 uds / m2 y sellado de solapes de anchura de 10 cm. con banda autoadhesiva a dos caras de caucho butilo Delta Fix, incluso impermeabilización del paramento de hormigón con dos manos de emulsión bituminosa modificada 0.7kg/m2 , según CTE/DB-HS 1. Unidad totalmente terminada, incluso remate de conexión a dren. s/med aux					
	CN-T11	1	16,09			16,09
	T11-T12	1	178,34			178,34
						194,43
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada. s/med aux					
	CN-T11	1	27,60			27,60
	T11-T12	1	193,20			193,20
						220,80
01.09.03	DRENAJE LONGITUDINAL					
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada. s/med aux					
	CN-T11	1	57,54			57,54
	T11-T12	1	623,89			623,89
						681,43
01.10	PROTECCIÓN CATÓDICA (OT-T12)					
P2CAT001	ud Rectificador 70V-35A en armario intemperie. Rectificador 70V-35A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexiónado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	2				2,00
	T11-T12	1				1,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT004	ud Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2 Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	26				26,00
	T11-T12	10				10,00
						36,00
P2CAT005	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vía Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	24				24,00
	T11-T12	9				9,00
						33,00
P2CAT006	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	4				4,00
	T11-T12	2				2,00
						6,00
P2CAT007	m Cable anódico tipo RV-K de sección 1x25mm2 Cable anódico tipo RV-K de sección 1x25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	1	275,00			275,00
	T11-T12	1	110,00			110,00
						385,00
P2CAT008	Kg Coque petróleo calcinado Coque petróleo calcinado s/med aux					
	CN-T11	1	10.400,00			10.400,00
	T11-T12	1	3.600,00			3.600,00
						14.000,00
P2CAT009	m Manguera perforada Manguera perforada s/med aux					
	CN-T11	1	138,00			138,00
	T11-T12	1	144,00			144,00
						282,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT010	ud Arqueta riego protección catódica Arqueta riego ide protección catódica incluidos p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	4				4,00
	T11-T12	2				2,00
						6,00
P2CAT011	ud Caja de conexionado 12 ánodos IP.55 y prensaestopas. Caja de conexionado 12 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	1				1,00
						1,00
P2CAT012	ud Caja de conexionado 10 ánodos IP.55 y prensaestopas. Caja de conexionado 10 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	1				1,00
	T11-T12	1				1,00
						2,00
P2CAT013	ud Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0. Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0.6/1 KV 1 x 6 mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	2				2,00
	T11-T12	1				1,00
						3,00
P2CAT014	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 (cantidad estimada) y Handy cap, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	4				4,00
	T11-T12	2				2,00
						6,00
P2CAT015	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	4				4,00
	T11-T12	2				2,00
						6,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT016A	ud Obra civil, mont.conex EPC+TP+TPEs+ P.Func (OT-T12) Obra civil, montaje y conexionado EPC, y material en línea de TPs y TPEs en todo el conjunto del subtramo OT-T12. Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	1				1,00
	T11-T12	1				1,00
						2,00
P2CAT017	ud Caja toma de potencial de policarbonato con prensaestopas Caja toma de potencial de policarbonato con prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	5				5,00
	T11-T12	5				5,00
						10,00
P2CAT018	ud Caja toma de potencial TPE (200 X 200) con poste acero galvaniza Caja toma de potencial TPE (200 X 200) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	2				2,00
						2,00
P2CAT019	ud Caja toma de potencial TPE (320 x 320) con poste acero galvaniza Caja toma de potencial TPE (320 x 320) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	2				2,00
	T11-T12	1				1,00
						3,00
P2CAT022	ud Electrodo probeta estándar Electrodo probeta estándar, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	9				9,00
	T11-T12	5				5,00
						14,00
P2CAT025	ud Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados con mezcla activadora y 5 m de cable (Protección catódica provisional), incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	108				108,00
	T11-T12	72				72,00
						180,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT026	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable R Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable RV 0.6/1 KV 1 x 6 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	20				20,00
	T11-T12	10				10,00
						30,00
P2CAT027	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable RV 0.6/1 KV 1 x 25 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	13				13,00
	T11-T12	7				7,00
						20,00
P2CAT028	ud Cable acero galvanizado 12 mm Cable acero galvanizado 12 mm, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	1	30,00			30,00
	T11-T12	1	15,00			15,00
						45,00
P5ELEM1X25TT	m Manguera eléctrica 1 x 25 mm2 Cu Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado. s/med aux					
	CN-T11	1	20,00			20,00
	T11-T12	1	10,00			10,00
						30,00
P2CAT029	ud Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	8				8,00
	T11-T12	4				4,00
						12,00
P2CAT030	ud Picas de zinc 1000 mm ensacada Picas de zinc 1000 mm ensacada, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	8				8,00
	T11-T12	4				4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						12,00
P2CAT031	ud Vías de chispas con cable y pletina para conexión Vías de chispas con cable y pletina para conexión, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	9				9,00
	T11-T12	5				5,00
						14,00
P2CAT032	ud Junta aislante embridada DN 2200 mm PN16 Junta aislante embridada DN 2200 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	2				2,00
						2,00
P2CAT033	ud Junta aislante embridada DN 2000 mm PN16 Junta aislante embridada DN 2000 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	4				4,00
						4,00
P2CAT035A	ud Junta aislante embridada DN 1800 mm PN16 Junta aislante embridada DN 1800 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	2				2,00
	T11-T12	4				4,00
						6,00
P2CAT038	ud Junta aislante embridada DN 1300 mm PN16 Junta aislante embridada DN 1300 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	1				1,00
						1,00
P2CAT044	ud Junta aislante embridada DN 500mm PN16 Junta aislante embridada DN 500mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T11-T12	1				1,00
						1,00
P2CAT045	ud Junta aislante embridada DN 300mm PN16 Junta aislante embridada DN 300mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	CN-T11	2				2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T11-T12	2				2,00
						4,00
01.11	INSTALACIONES ELÉCTRICAS (OT-T12)					
01.11.01	TOMA-11 (FOTOV)					
01.11.01.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-11)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.					
		1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.					
		1				1,00
						1,00
01.11.01.02	FOTOVOLTAICA (TOMA-11)					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEF001	ud Panel Cel. fotovoltaicas 400w Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 % Datos eléctricos de CA - Modelo de inversor: IQ 7A A 230 V CA - Potencia máxima de salida 366 VA - Máx. potencia de salida continua 349 VA - Rango/Tensión nom. (LN) 219 264 V - Máx. corriente de salida continua 1,52 A - Máx. unidades por circuito derivado de 20 A (LN) 10 - Eficiencia ponderada 10 96,5 % - Frecuencia nominal 50 Hz - Rango de frecuencia ampliado 45-55 Hz - Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo Datos de alimentación de CC - Potencia nominal 11 (Pnom) 400 W - Tol. de potencia +5/0 % - Eficiencia del módulo 21,5 % - Coef. temp. (Potencia) -0,29 %/°C Datos mecánicos - Células solares 66 células monocristalinas Maxeon Generación 5 - Cristal frontal - Cristal templado antirreflejos de gran transmisividad - Clasificación ambiental Microinversor con clasificación para exteriores - IP67 - (UL: NEMA tipo 6) - Marco Anodizado negro de clase 1 Caja de conexiones: IP65. Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión . Unidad totalmente instalada y operativa					
	Panel	14				14,00
						14,00
P5ELEF002	ud Regulador 12/24/48V 208V 15 Amp Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp. Unidad totalmente instalada y operativa					
	Varios	1				1,00
						1,00
P5ELEF003	ud Baterías de gel 200PZV2500 o similar Baterías de gel 200PZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora. Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento. Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEF004	ud Inversor-cargador 8.000w Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo eléctrico). Cumplirá: - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretensión en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. Características técnicas - Entrada DC o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal; 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00
P5ELEF005	ud Convertidor CC/CC Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobrecalentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00
P5ELEF006	ud Estructura aluminio y hormigón soporte de placas fotovoltaicas Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Varios	14				14,00
						14,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Conex. reguladores	1	50,00			50,00
	Conex inversores	1	20,00			20,00
	Conex. paneles	14	2,50			35,00
						105,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
		1				1,00
						1,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
		6				6,00
						6,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
		1				1,00
						1,00
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.					
		1				1,00
						1,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					
		1	20,00			20,00
						20,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
		1				1,00
						1,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Paneles	14	2,50			35,00
	Varios conex	1	5,00			5,00
						40,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.11.01.03	CUADROS ELÉCTRICOS (TOMA-11)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m)					
	Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3.3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.					
		1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta					
	Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					
		1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías					
	Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Base	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2					
	Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
		1				1,00
						1,00
P5ELEGBT11	ud CGBT Toma-11 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-11 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	4				4,00
	Pulsador general de corte	1				1,00
						5,00
01.11.01.04	CANALIZACIONES (TOMA-11)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. paneles fotov	1	25,00			25,00
	Conex. CCTV	1	2,00			2,00
	Conex Tuberías	1	12,00			12,00
		1	27,00			27,00
		1	20,00			20,00
		1	7,00			7,00
	Conex.	0,1	93,00			9,30
						102,30
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interor caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	4	5,00			20,00
		1	5,00			5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						25,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	12,50			12,50
		1	12,50			12,50
		1	6,00			6,00
						31,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Conex. Fotov	2				2,00
	Conex CCTV	1				1,00
	Conex. valv.	5				5,00
						8,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	Interconex.	2				2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95					
	Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería	5				5,00
						9,00
01.11.01.05	LÍNEAS DE BT (TOMA-11)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado					
	Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	3				3,00
	Salida SAI	3				3,00
	L-6 Agrupacion	3				3,00
	L-6.3 Trafo 230/24V	5				5,00
	L-7 Agupacion	3				3,00
	L-7.4 Trafo 230/24V	5				5,00
	L-7.5 Señales Contr	3				3,00
	L-3.1 Alumb. Int.	30				30,00
	L-3.2 Alumb. Emerg.	30				30,00
	L-3.3 Alumb. Ext.	1				1,00
	L-4.1 Vent-1	5				5,00
	L-4.2 R. Caldeo	5				5,00
	L-4.3 Al. Cuadro	48				48,00
	L-6.1 CCTV	25				25,00
	L-6.2 Reserva	5				5,00
	L-6.3.1 Reserva	10				10,00
	L-7.1 PLC y Control	1				1,00
	L-7.2 Señales Varia	50				50,00
	L-7.3 Cuadro Comuni	1				1,00
	L-7.4.1 Varios	5				5,00
	L-7.5.1 Señal Val 1	50				50,00
	L-7.5.2 Señal Val 2	50				50,00
	L-7.5.3 Señal Val 3	50				50,00
	L-7.5.4 Señal Val 4	50				50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-7.5.5 Señal Cauda	50				50,00
	L-7.5.6 Varios	50				50,00
	L-7.5.7 Varios	50				50,00
	L-7.5.8 Varios	50				50,00
	L-7.5.9 Varios	50				50,00
	L-7.5.10 Varios	50				50,00
	L-7.5.11 (Reserva)	50				50,00
	L-7.5.12 (Reserva)	50				50,00
	L-7.5.13 (Reserva)	50				50,00
	L-7.5.14 (Reserva)	50				50,00
	L-4 Agrupacion	2				2,00
						943,00
P5ELEM2X2.5TT m Manguera eléctrica 2 x 2.5 + TT 2.5mm2						
Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	Varios conex	1	5,00			5,00
						5,00
P5ELEM2X2.5T2 m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado						
Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	L-3.4 Reserva	25				25,00
	Reserva Monofasica	5				5,00
	L-4.4 T.C.	5				5,00
	L-5.1 Tomas Monof	15				15,00
						50,00
P5ELEM2X6T2 m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado						
Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT m Manguera eléctrica 3 x 6 + TT mm2						
Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	L-5	3				3,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	50				50,00
	Actuador Valv. N°02	75				75,00
	Actuador Valv. N°03	50				50,00
	Actuador Valv. N°04	50				50,00
	Reserva Trifasica	5				5,00
	L-5.1 Tomas Trif	15				15,00
						245,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Entrada SAI	5				5,00
	ACOMETIDA PRINCIPAL	30				30,00
	ACOMETIDA GRUPO	5				5,00
						40,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00
01.11.01.06	TOMA TIERRA (TOMA-11)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
						6,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
						8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
						6,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.					
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.					138,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					5,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					2,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					1,00
01.11.01.07 MECANISMOS (TOMA-11)						
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado		1			1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado		1			1,00
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado		1			1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.		1			1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta		1			1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta		1			1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.11.01.08	ALUMBRADO (TOMA-11)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	Caseta	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cabelado necesario para la instalación. Unidad totalmente operativa.					
	Emergencia en interior de caseta	1				1,00
	Exterior de caseta	1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	Caseta	1				1,00
						1,00
01.11.02	TOMA-12					
01.11.02.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-12)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEC10003	ud Operación de conexonado y desconexonados a trafo Operación de conexonado y desconexonado de LMT.	1				1,00
						1,00
P5ELEC1M1T12	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-12 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexonado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora Toma-12.	1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
01.11.02.02	LÍNEA DE MEDIA TENSIÓN (TOMA-12)					
P5ELEC1M2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos -Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexonar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	Total apoyos	46				46,00
	A deducir inicio y fin de lñinea con trafo	-2				-2,00
	Añadir postes flojos de apoyo	2				2,00
						46,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.					
	LA-56	3	3.128,00	1,10		10.322,40
	Asume 10% sobre long. por catenaria					
						10.322,40
01.11.02.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-12)					
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1				1,00
						1,00
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1				1,00
						1,00
01.11.02.04	CUADROS ELÉCTRICOS (TOMA-12)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	3,50	5,50	0,20	3,85
						3,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm ² (20 N/mm ²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm ² ., 1 bloque de bornas de 2,5 mm ² . y 1 bloque de bornas de 25 mm ² . para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm ² . para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm ² . para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECGBT12	ud CGBT Toma-12 incl. cabina y aparamenta					
	Suministro y montaje de módulo de alimentación, control y protección de Toma-12 en cabina/s de 2,0x0.8x0.6m normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
		1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	4				4,00
	Pulsador general de corte	1				1,00
						5,00
01.11.02.05	CANALIZACIONES(TOMA-12)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a)					
	Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. CCTV	1	3,00			3,00
	Conex Tuberías	1	10,50			10,50
		1	12,00			12,00
		1	28,50			28,50
						54,00
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b)					
	Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	Conex trafo a caseta	1	18,00			18,00
						18,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Lecho anódico	1	60,00			60,00
						60,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interor caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	4	5,00			20,00
		1	5,00			5,00
						25,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	12,50			12,50
		1	8,00			8,00
		1	2,50			2,50
		1	6,00			6,00
						29,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Conex. LMT a caseta	2				2,00
	Conex CCTV	1				1,00
	Conex. valv.	7				7,00
						10,00
P5ARQPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.					
	Arquetas lecho anódico	3				3,00
						3,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	Varios CCTV	1				1,00
						1,00
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.					
	s/nec	1				1,00
						1,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	s/ nec	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95					
	Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería	5				5,00
						9,00
01.11.02.06	LÍNEAS DE BT (TOMA-12)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado					
	Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	3				3,00
	Salida SAI	3				3,00
	L-6 Agrupacion	3				3,00
	L-6.3 Trafo 230/24V	5				5,00
	L-7 Agupacion	3				3,00
	L-7.4 Trafo 230/24V	5				5,00
	L-7.5 Señales Contr	3				3,00
	L-3.1 Alumb. Int.	30				30,00
	L-3.2 Alumb. Emerg.	30				30,00
	L-3.3 Alumb. Ext.	1				1,00
	L-4.1 Vent-1	5				5,00
	L-4.2 R. Caldeo	5				5,00
	L-4.3 Al. Cuadro	48				48,00
	L-6.1 CCTV	25				25,00
	L-6.2 Reserva	5				5,00
	L-6.3.1 Reserva	10				10,00
	L-7.1 PLC y Control	1				1,00
	L-7.2 Señales Varia	50				50,00
	L-7.3 Cuadro Comuni	1				1,00
	L-7.4.1 Varios	5				5,00
	L-7.5.1 Señal Val 1	50				50,00
	L-7.5.2 Señal Val 2	50				50,00
	L-7.5.3 Señal Val 3	50				50,00
	L-7.5.4 Señal Val 4	50				50,00
	L-7.5.5 Señal Cauda	50				50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-7.5.6 Varios	50				50,00
	L-7.5.7 Varios	50				50,00
	L-7.5.8 Varios	50				50,00
	L-7.5.9 Varios	50				50,00
	L-7.5.10 Varios	50				50,00
	L-7.5.11 (Reserva)	50				50,00
	L-7.5.12 (Reserva)	50				50,00
	L-7.5.13 (Reserva)	50				50,00
	L-7.5.14 (Reserva)	50				50,00
	L-4 Agrupacion	2				2,00
						943,00
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2					
	Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-3.4 Reserva	25				25,00
	Reserva Monofasica	5				5,00
	L.4.4 T.C.	5				5,00
	L-5.1 Tomas Monof	15				15,00
						50,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2					
	Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu					
	Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	50				50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Actuador Valv. N°02	75				75,00
	Actuador Valv. N°03	50				50,00
	Actuador Valv. N°04	50				50,00
	Reserva Trifasica	5				5,00
	L-5.1 Tomas Trif	15				15,00
						245,00
P5ELEM4X16TT	m Manguera eléctrica 4 x 16 + TT16 mm2 Cu					
	Manguera eléctrica de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Acometida desde CT	1	30,00			30,00
						30,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Entrada SAI	5				5,00
	ACOMETIDA PRINCIPAL	30				30,00
	ACOMETIDA GRUPO	5				5,00
						40,00
P5ELEM4X16T2	m Manguera eléctrica 4 x 16 + TT 16mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Acometida desde CT	1	30,00			30,00
						30,00
P5ELEM01	ud Conjunto pequeño material líneas BT					
	Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00
01.11.02.07	TOMA TIERRA (TOMA-12)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas					
	Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
		1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita					
	Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
	Losa	2				2,00
	Pararrayos	3				3,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELET7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2. Varios	5				5,00
						5,00
P5ELET10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro. TT	5				5,00
						5,00
P5ELET9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica. Losa	1				1,00
						1,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1				1,00
						1,00
P5ELET4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas. Losa	1	130,00			130,00
						130,00
P5ELET5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada Pararrayos y otros	1	8,00			8,00
						8,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características. Varios	2				2,00
						2,00
01.11.02.08	MECANISMOS (TOMA-12)					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta	1				1,00
						1,00
01.11.02.09 ALUMBRADO (TOMA-12)						
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa. Caseta	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescen-te. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cabelado necesario para la instalación. Unidad total-mente operativa. Emergencia en interior de caseta Exterior de caseta	1 1				1,00 1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado. Caseta	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.11.03	EPC02					
01.11.03.01	ACOMETIDA Y LEGALIZACIÓN (EPC02)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	2	100,00			200,00
						200,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	2				2,00
						2,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00
P5ELEC1M1EP02	ud Conex. LMTS+ refuerzos+adaptación línea EPC02 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en EPC01.					
		1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.					
		1				1,00
						1,00
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
01.11.03.02	LÍNEA DE MEDIA TENSIÓN (EPC02)					
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1				1,00
						1,00
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	46				46,00
	Total apoyos	46				46,00
	A deducir inicio y fin de línea con trafo	-2				-2,00
	Añadir postes flojos de apoyo	2				2,00
						46,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA					
	Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas UNE 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
		1				1,00
						1,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56					
	Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas, elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.					
	LA-56	3	40,00	1,10		132,00
	Asume 10% sobre long. por catenaria					
						132,00
01.11.03.03 TRANSFORMACIÓN Y GENERACIÓN(EPC02)						
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA					
	Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas UNE 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multi-función, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1				1,00
						1,00
01.11.03.04	CUADROS ELÉCTRICOS (EPC02)					
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	3,50	5,50	0,20	3,85
						3,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm ² (20 N/mm ²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm ² ., 1 bloque de bornas de 2,5 mm ² . y 1 bloque de bornas de 25 mm ² . para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm ² . para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm ² . para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEGGBTEPC2	ud CGBT EPC-02 incl. cabina y aparamenta					
	Suministro y montaje de módulo de alimentación, control y protección de EPC-02 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexas. Incluyendo: Interrupción general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusión.					
	Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal.					
	El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.					
	Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
		1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	4				4,00
	Pulsador general de corte	1				1,00
						5,00
01.11.03.05	CANALIZACIONES(EPC02)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, aceros y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b)					
	Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	Conex trafo a caseta	1	18,00			18,00
						18,00
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B)					
	Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, aceros y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Lecho anódico	1	40,00			40,00
						40,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm					
	Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interior caseta	1	10,00			10,00
	Alumbrado ext. caseta	1	10,00			10,00
						20,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Conex. LMT a caseta	2				2,00
						2,00
P5ARQPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, tronco-piramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.					
	Arquetas lecho anódico	3				3,00
						3,00
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.					
	s/nec	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	s/ nec	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
						4,00
01.11.03.06	LÍNEAS DE BT (EPC02)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion	1	3,00			3,00
	L-3.1 Alumb. Int.	1	30,00			30,00
	L-3.2 Alumb. Emerg.	1	30,00			30,00
	L-3.3 Alumb. Ext.	1	1,00			1,00
	L-4.1 Vent-1	1	5,00			5,00
	L-4.2 R. Caldeo	1	5,00			5,00
	L-4.3 Al. Cuadro	1	48,00			48,00
	Entrada SAI	1	5,00			5,00
	Salida SAI	1	3,00			3,00
	L-6 Agrup Intrusism	1	3,00			3,00
	L-6.1 CCTV	1	25,00			25,00
	L-6.2 Reserva	1	5,00			5,00
	L-6.3 Trafo 230/24V	1	5,00			5,00
	L-6.3.1 Reserva	1	10,00			10,00
	L-7 Agrupacion	1	3,00			3,00
	L-7.2 Señales Varia	1	50,00			50,00
	L-7.3 Cuadro Comuni	1	1,00			1,00
	L-7.4 Trafo 230/24V	1	5,00			5,00
	L-7.4.1 Varios	1	5,00			5,00
	L-7.5 Agrupacion	1	3,00			3,00
	L-7.5.1 Señal N°01	1	10,00			10,00
	L-7.5.2 Señal N°02	1	10,00			10,00
	L-7.5.3 Señal N°03	1	10,00			10,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-7.5.4 Señal N°04	1	10,00			10,00
	L-7.5.5 (Reserva)	1	10,00			10,00
	L-7.5.6 (Reserva)	1	10,00			10,00
	L-7.5.7 (Reserva)	1	10,00			10,00
	L-7.5.8 (Reserva)	1	10,00			10,00
	L-7.5.9 (Reserva)	1	10,00			10,00
	L-7.5.10 (Reserva)	1	10,00			10,00
						345,00
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-3.4 Prot Catodica	1	5,00			5,00
	L-3.5 Reserva Monof	1	5,00			5,00
	L-4 Agrupacion	1	2,00			2,00
	L.4.4 T.C.	1	5,00			5,00
	L-5.2 Tomas Monof	1	15,00			15,00
						32,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5T2	m Manguera eléctrica 4 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-3.6 Reserva Trif	1	5,00			5,00
	L-5.1 Tomas Trif	1	15,00			15,00
						20,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	50				50,00
	Actuador Valv. N°02	75				75,00
	Actuador Valv. N°03	50				50,00
	Actuador Valv. N°04	50				50,00
	Reserva Trifasica	5				5,00
	L-5.1 Tomas Trif	15				15,00
						245,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Entrada SAI	5				5,00
	ACOMETIDA PRINCIPAL	30				30,00
	ACOMETIDA GRUPO	5				5,00
						40,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00
01.11.03.07	TOMA TIERRA (EPC02)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
		1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
	Losa	2				2,00
	Pararrayos	3				3,00
						5,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
	Varios	5				5,00
						5,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
	TT	5				5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						5,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.					
	Losa	1				1,00
						1,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					
		1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.					
	Losa	1	130,00			130,00
						130,00
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada					
	Pararrayos y otros	1	8,00			8,00
						8,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
	Varios	2				2,00
						2,00
01.11.03.08	MECANISMOS (EPC02)					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
		1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta					
		1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta					
		1				1,00
						1,00
01.11.03.09 ALUMBRADO (EPC02)						
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa. Caseta					
		4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa. Emergencia en interior de caseta Exterior de caseta					
		1				1,00
		1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado. Caseta					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.12	CONTROL Y AUTOMATISMO (OT-T12)					
01.12.01	INGENIERÍA Y FORMACIÓN (OT-12)					
P7ING001	ud Ingeniería PLC's y comunicaciones (CN-T12) Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	1				1,00
						1,00
P73COMSCADA1	ud Ingeniería adecuación SCADA, control y supervisión (CN-T12) Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	1				1,00
						1,00
P73COMPUESTA1	ud Pruebas y puesta en marcha de instalaciones (CN-T12) Control de Calidad de señales y Pruebas Funcionales de la instalación del tramo CN-T12 incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	1				1,00
						1,00
P73COMFORMA	ud Formación y documentación Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la ·1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.	1				1,00
						1,00
01.12.02	SISTEMA DE CONTROL Y COMUNICACIONES (OT-12)					
P7COMARM01	ud Armario de control 2000 x 800 x 600mm Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de autómatas y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de caldeo y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc..., incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexiados y probados.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						3,00
P7COMNODO1	ud Nodo comunicaciones GSM/GPRS G3-5. incl.cuadro protec. Ud Suministro e instalación equipo de comunicaciones bidireccional compuesto de alimentación autónomo de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y modem de comunicaciones , armario IP65, armario mural de 19", 12 U y 600 mm de profundidad. , RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C), 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°c A 80°c contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica), electrificación cuadro (magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMNODO2	ud Nodo comunicaciones radiofrecuencia. incl.cuadro protec. Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio modem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP005	ud Bastidor Automata Suministro de bastidor para autómata de 10 slots, tipo 1756-A10 de Allen Bradley o similar.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMPLC01	ud PLC proglamable integrable (ED:64 SD:32; EA:8 SA:8) PLC centralizador de todos los sistemas (Ed:64 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje					
		1				1,00
						1,00
P7COMPLC02	ud PLC proglamable integrable (ED:128 SD:32 EA:16 SA:8) PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje					
	Toma-11	1				1,00
	Toma-12	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2,00
P7COMP011	ud Módulos conexión cableado E/D (IB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 in-terfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según refe-rencias (V8 INPUT PLC V8/FLK14/IN - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso acceso-rios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	EPC02	1	2,00			2,00
	Toma-11	1	4,00			4,00
	Toma-12	1	4,00			4,00
						10,00
P7COMP012	ud Módulos conexión cableado S/D (OB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, se-gún referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KON-FEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elemen-tos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP013	ud Módulos conexión cableado E/A (IF16) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC - FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP014	ud Módulos conexión cableado S/A (OF8) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC - FLK14/EZ-DR/300/CONFEC (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de ele-mentos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servi-cio.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMPLC1C	ud Pantallas gráficas HMI 15" táctil+cableado conex. Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado numé-rico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instala-ción y conexionado de unidad; Configuración Remota, Pruebas y Puesta en Servicio.					
	EPC02	1				1,00
	Toma-11	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Toma-12	1				1,00
						3,00
P7COMPLC1B	ud Cuadro, protecciones electricas y pantalla PLC					
	Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP001	ud Protección contra sobretensiones equipos 230 Vca					
	Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.					
		1				1,00
						1,00
P7COMP002	ud Protección contra sobretensiones analógicas					
	Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); dobles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP003	ud Protección contra sobretensiones 24Vcc					
	Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&-TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP006	ud Fuente de alimentación automática 24 Vcc 10 A					
	Suministro e instalación de fuente de alimentación para automático programable para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P71COMSAH11	ud Sistema alimentación ininterrumpido-com 24 VDC					
	Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.					
	EPC02	1	1,00			1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P71COMSAH12	ud Sistema alimentación ininterrumpido 2500w					
	Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y bypass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación:					
	1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min					
	1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para bypass manual del SAI					
	1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos					
	1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI					
	1.00 Protección Magnetotérmica II 10A 6kA. Protección foma de enchufe e instrumentación					
	4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos					
	Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación.					
	Totalmente instalado, conexionado y funcionando.					
	Unidad totalmente instalada					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP004	ud CPU automática L72 memoria 4 Mb con memoria SD					
	Suministro e instalación de CPU para autómatas programables con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 61131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP015	ud Tarjeta comunicaciones Ethernet/IP					
	Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP016	ud Tarjeta Ethernet/IP 2-PORT CLX HI-CAP ENET/P BRIDG o similar					
	Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP017	ud Tarjeta comunicaciones Modbus					
	Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.					
	EPC02	1	1,00			1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP018	ud Pasarela comunicaciones POWELOGIC EGX 100 o similar Suministro y montaje de pasarela de comunicaciones POWERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexionada.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
P7COMP022	ud Puente de diodos Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.					
	EPC02	1	1,00			1,00
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						3,00
01.12.03	INSTRUMENTACIÓN (OT-12)					
P6VALV1	ud Valv bola y conexionados Válvulas de tipo bola de 1", piezas T y conexiones, totalmente instalado y probado. Bypass					
	Toma-11	4	1,00			4,00
	Toma-12	4	1,00			4,00
						8,00
P6SENS01	ud Sensor humedad e inundación caseta Suministro, instalación y puesta en servicio de sensor de humedad e inundación, alimentación eléctrica a 24Vcc, incluso 15 m de tubo PVC y cable de conexión, totalmente instalado y probado.					
	Toma-11	1	1,00			1,00
	Toma-12	1	1,00			1,00
						2,00
P6MAN01	ud Manómetro en baño de glicerina Suministro, instalación y puesta en servicio de manómetro en baño de glicerina, escala 0-6 y 0-10 kg/cm2, sistema de medida Bourdon, diámetro 100 mm 1/2" montado y probado .					
	Toma-11	4	1,00			4,00
	Toma-12	4	1,00			4,00
						8,00
P6PRES01	ud Transductor presión 0,1 % Analógico Suministro, instalación y puesta en servicio de Transductor de presión con salida analógica, alimentación eléctrica a 24Vcc, con técnica de 2 ó 4 hilos, con precisión mejor del 0,1%, IP 67, indicación digital de medida en frontal del equipo, señal de salida 4-20 mA, totalmente instalado y probado. Bypass					
	Toma-11	4	2,00			8,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Toma-12	4	2,00			8,00
						16,00
P6Q500.16	ud Caudalímetro ultrasónico PN 16 Ø500 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 500 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.					
	Toma-12	1				1,00
						1,00
P6Q1300.16	ud Caudalímetro ultrasónico PN 16 Ø1300 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.					
	Toma-11	1				1,00
						1,00
01.12.04	CANALIZACIÓN Y CABLEADOS (OT-12)					
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antioedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.					
	Connex. com's	1	2,00			2,00
						2,00
P7COMCABL2	m Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (Rj45), tendido y conectorizado. Unidad totalmente instalada.					
	Varios s/n	4	5,00			20,00
						20,00
P5COMCBL001A	m Cable multihilo coms. VHOV-K y VOV-K apantall.8x0,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada. Conex. valvulería					
	Valv-1	2	45,00			90,00
	Valv-2	2	50,00			100,00
	Valv-3	2	60,00			120,00
	Valv-4	2	75,00			150,00
	Caudalímetro	2	75,00			150,00
						610,00
P5COMCBL001B	m Cable multihilo com. VHOV-K y VOV-K apantall. 8x1,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.					
	Intrusionismo	1	20,00			20,00
						20,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5COMCBL001C	m Cable multihilo comunicaciones señales digitales interior 19p Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.					
	Transformador	1	30,00			30,00
	Cel. Fototv-bat	1	5,00			5,00
	CGBT	2	3,00			6,00
	SAI	2	3,00			6,00
	EPC	1	5,00			5,00
	Cuadro de control	2	5,00			10,00
	Instrumentación					
	Válvula-1	2	40,00			80,00
	Válvula-2	2	55,00			110,00
	Válvula-3	2	65,00			130,00
	Válvula-4	2	75,00			150,00
	Disparo de protecciones comunicaciones	2	5,00			10,00
	Intrusionismo	2	5,00			10,00
						552,00
P5COMCBL001D	m Cable multihilo comunicaciones señales analógica interior 19p Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.					
	Fotov. batería	1	5,00			5,00
	SAI	2	5,00			10,00
	Instrumentación					
	Válvula-1	2	45,00			90,00
	Válvula-2	2	50,00			100,00
	Válvula-3	2	60,00			120,00
	Válvula-4	2	75,00			150,00
	Presostatos bypass	2	4,00		60,00	480,00
	Intrusionismo	2	5,00			10,00
						965,00
P5COMCBL004	m Cable comunicaciones RS232 Cable comunicaciones RS232. Unidad totalmente instalada.					
	conexionados	2	20,00			40,00
						40,00
P5COMCBL005	m Cable comunicaciones RS485 multipar Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.					
	conexionados	2	20,00			40,00
						40,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5COMCBL007	m Cable comunicaciones RJ45					
	Cable comunicaciones RS45 .Unidad totalmente instalada.					
	conexionados	2	20,00			40,00
						40,00
P5COMCBL006	m Cable profibus					
	Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.					
	conexionados	2	20,00			40,00
						40,00
P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, con gestión comunic					
	Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100Base-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.					
	Tomas	2				2,00
						2,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm					
	Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Presostatos	2	4,00	2,00	1,50	24,00
						24,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm					
	Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Válvulas	2	2,00	4,00		16,00
	Cadalímetros	2	2,00			4,00
						20,00
P5ELEBAND2	m Bandeja PVC 200x60mm					
	Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
		1	10,00			10,00
	Varios conex. grupos y señales	1	8,00			8,00
		1	15,00			15,00
						33,00
P5ELEBAND3	m Bandeja PVC 100x60mm					
	Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Interior caseta	2	20,00			40,00
	Independiente de cables eléctricos					
						40,00
P5ELE25PVC	m Tubo. electricidad Polímero term libre de halógenos ríg M25					
	Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	caudalim.	2	3,00			6,00
						6,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	Varios conex. señales	2	4,00	2,00		16,00
						16,00
P5ELE50PVC	m tubo. electricidad Polímero term libre de halógenos ríg M50 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada					
	Varios s/ n	2	3,00			6,00
						6,00
P5ELE75PVC	m Tubo PVC 75 mm liso adosado o embebido Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Caseta	2				2,00
						2,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	Válvulas	2	4,00			8,00
	Caudalímetros	2				2,00
	Presostatos	2	4,00	2,00		16,00
	Varios inter. cuadros	4				4,00
						30,00
01.12.05	INTRUSISMO (OT-12)					
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antioedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.					
	CCTV	2	30,00			60,00
						60,00
P7COMSEG1	ud Sistema de Alarma-Intrusionismo Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS , incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expansor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.					
		2				2,00
						2,00
P7COMCCTV6	m Inst. +Cable RG59 + tubo PVC32+cajasc/50m CCTV Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2 , repetidor de seña cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexionado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Interior	2	5,00			10,00
						10,00
P7COMCCTV1	Ud Hardware de control CCTV					
	Hardware para gestión y control de CCTV en centro de control compuesto por : Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 píxeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.					
	Centro de control	1				1,00
						1,00
P7COMCCTV2	ud Software gestión CCTV intrusivo					
	Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player,"Site builder",e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCADA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.					
	Centro de control	1				1,00
						1,00
P7COMCCTV3	ud Sistema de instalación configuración in situ videocam segurid					
	Servicios de instalación , configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores).					
	Para toda la obra	1				1,00
						1,00
P7COMCCTV4	ud Servidor CCTV					
	Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8TeraBytes. Unidad totalmente instalada y probada.					
	Centro de control	1				1,00
						1,00
P7COMCCTV5	ud Cámara visión nocturna IP-66+carcasa+columna y cimentación CCTV					
	Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcasas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenesde máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Video, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad:Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.					
		2				2,00
						2,00
P7COMCCTV8	ud Formación y manuales sistema CCTV					
	Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias.					
	toda la obra	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMCCTV9	ud Switch 3 puertos RJ45 para video IP y cámaras Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30. Switch gestionable para la red de video y seguridad de diversos elementos.					
	Tomas	2				2,00
						2,00
P7COMCABL1B	m Cable de fibra óptica 8F+fusiones+cajas Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua, elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antirroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro. Según EN 60794. Incluidas cajas de empalmen para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.					
	CCTV	2	30,00			60,00
						60,00
P7COMCCTV12	ud Columna 8m+ soporte CCTV Ud. báculo de 8 m. de altura troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; anclaje a dado de hormigón, puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión, tubo de unión, incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3, operaciones de excavación y rellenos.					
	Tomas	2				2,00
						2,00
01.13	SERVICIOS AFECTADOS (OT-T12)					
01.13.01	R.S.PAVIMENTOS (OT-T12)					
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa					
	RS-33-CN-T11 PK 5150 - 5170	1	34,20			34,20
						34,20
P1MT06C	m² Demolición pavimento hormigón o acerado 40 cm espesor+tte+canon Demolición de pavimento hidráulico de hormigón, base de hormigón o acerado hasta 40 cm de espesor, con corte de junta con hilo diamante o radial, retirada de bordillos y elementos lineales, i retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	RS-33-CN-T11 PK 5150 - 5170	1	300,00			300,00
						300,00
P5PAVFRES	m²cm Fresado pavimentos+trabajos preparatorios Metro cuadrado por centímetro de espesor, de fresado de pavimento asfáltico con máquina fresadora o levantapavimentos, incluso precorte previo y carga de productos y limpieza, así como trabajos preparatorios para extendido de MB, incluido transporte a vertedero autorizado y canon de vertido.					
	RS-33-CN-T11 PK 5150 - 5170	1	490,00			490,00
						490,00
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y popstereos, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	RS-33-CN-T11 PK 5150 - 5170	1	285,00			285,00
						285,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	RS-33-CN-T11 PK 5150 - 5170	1	300,00			300,00
						300,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	RS-33-CN-T11 PK 5150 - 5170	1	20,00	7,00	0,30	42,00
						42,00
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	RS-33-CN-T11 PK 5150 - 5170	1	84,00			84,00
						84,00
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.					
	s/ n	2				2,00
						2,00
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm MI. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	RS-33-CN-T11 PK 5150 - 5170	1	150,00			150,00
						150,00
01.13.02	R.S. CAMINOS (OT-T12)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	s/nec	2				2,00
						2,00
P1MT06B	m³ Demolición muro en masa o mamposteria+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	s/ nec elementos riego	2	1,50			3,00
						3,00
P1MT08BASEZA2	m² Escarificado camino +30%Zahorra artificial 95%PM Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.					
	RS-25-CN-T11 PK 3700 - 5500	1	6.930,00			6.930,00
	RS-66-CN-T11 PK 7400 - 7900	1	2.000,00			2.000,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-86-CN-T11 PK 9470 - 14290	1	18.557,00			18.557,00
						27.487,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.				
	RS-2-CN-T11 PK 30 - 50	1	63,00			63,00
	RS-6-CN-T11 PK 655 - 665	1	68,25			68,25
	RS-8-CN-T11 PK 700 - 730	1	90,30			90,30
	RS-10-CN-T11 PK 1100 - 1120	1	42,00			42,00
	RS-11-CN-T11 PK 1400 - 1410	1	42,00			42,00
	RS-16-CN-T11 PK 1930 - 1935	1	63,00			63,00
	RS-17-CN-T11 PK 2000 - 2040	1	130,50			130,50
	RS-18-CN-T11 PK 2365 - 2370	1	36,00			36,00
	RS-22-CN-T11 PK 2600 - 2610	1	108,00			108,00
	RS-26-CN-T11 PK 3950 - 3960	1	126,00			126,00
	RS-34-CN-T11 PK 5150 - 5170	1	27,00			27,00
	RS-37-CN-T11 PK 5490 - 5500	1	84,00			84,00
	RS-41-CN-T11 PK 5900 - 6200	1	270,00			270,00
	RS-44-CN-T11 PK 6290 - 6300	1	73,50			73,50
	RS-46-CN-T11 PK 6500 - 6510	1	72,00			72,00
	RS-48-CN-T11 PK 6660 - 6670	1	72,00			72,00
	RS-50-CN-T11 PK 6740 - 6750	1	90,00			90,00
	RS-54-CN-T11 PK 7030 - 7040	1	84,00			84,00
	RS-67a-CN-T11 PK 7895 - 7895	1	36,00			36,00
	RS-68-CN-T11 PK 7974 - 8100	1	151,20			151,20
	RS-74-CN-T11 PK 8310 - 8330	1	120,00			120,00
	RS-75-CN-T11 PK EPC01 - EPC01	1	120,00			120,00
	RS-77-CN-T11 PK 8680 - 8690	1	120,00			120,00
	RS-78-CN-T11 PK 8850 - 8860	1	108,00			108,00
	RS-81-CN-T11 PK 9250 - 9260	1	36,00			36,00
	RS-83-CN-T11 PK 9290 - 9300	1	99,90			99,90
	RS-85-CN-T11 PK 9470 - 9480	1	108,00			108,00
	RS-87-CN-T11 PK 10020 - 10040	1	168,00			168,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-88-CN-T11 PK 11040 - 11060	1	198,00			198,00
	RS-89-CN-T11 PK 12000 - 12020	1	54,00			54,00
	RS-91-CN-T11 PK 12260 - 12280	1	84,00			84,00
	RS-92-CN-T11 PK 13450 - 13470	1	60,00			60,00
	RS-93-CN-T11 PK 14250 - 14270	1	60,00			60,00
	RS-94-T11-T12 PK 741 - 761	1	72,00			72,00
	RS-96-T11-T12 PK 1743 - 1763	1	187,20			187,20
	RS-97-T11-T12 PK 2000 - 2020	1	187,20			187,20
	RS-98-T11-T12 PK 2240 - 2260	1	187,20			187,20
	RS-101-T11-T12 PK 2675 - 2695	1	84,00			84,00
	RS-102-T11-T12 PK 3570 - 3590	1	72,00			72,00
	RS-103-T11-T12 PK 5369 - 5389	1	259,20			259,20
	RS-104-T11-T12 PK 6100 - 6110	1	60,00			60,00
	RS-105-T11-T12 PK 6600 - 6600,2	1	63,60			63,60
	RS-108-T11-T12 PK 7850 - 7860	1	63,60			63,60
	RS-112-T11-T12 PK 8600 - 8600	1	114,00			114,00
	RS-113-T11-T12 PK 8650 - 8670	1	72,00			72,00
	RS-115-T11-T12 PK 9560 - 9560	1	78,00			78,00
	RS-116-T11-T12 PK 9820 - 9820	1	79,20			79,20
	RS-118-T11-T12 PK 10545 - 10555	1	36,00			36,00
	RS-122-T11-T12 PK -	1	48,00			48,00
						4.727,85
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	RS-34-CN-T11 PK 5150 - 5170	1	40,00			40,00
						40,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
	RS-22-CN-T11 PK 2600 - 2610	1	4,00			4,00
	RS-81-CN-T11 PK 9250 - 9260	1	8,00			8,00
						12,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	RS-68-CN-T11 PK 7974 - 8100	1	600,00			600,00
	RS-83-CN-T11 PK 9290 - 9300	1	562,50			562,50
						1.162,50
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	RS-68-CN-T11 PK 7974 - 8100	1	600,00			600,00
	RS-83-CN-T11 PK 9290 - 9300	1	562,50			562,50
						1.162,50
P1MT08ESC500	m³ Escollera 500 kg careada Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	RS-68-CN-T11 PK 7974 - 8100	0,9	157,50			141,75
						141,75
P1MT08ESC500H	m³ Escollera 500 Kg hormigonada con HM20 Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	RS-68-CN-T11 PK 7974 - 8100	0,1	157,50			15,75
						15,75
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	RS-68-CN-T11 PK 7974 - 8100	1,2	157,50	2,00		378,00
						378,00
01.13.03	R.S. ABASTECIMIENTO (OT-T12)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	s/med	2				2,00
						2,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A determinar sostenimiento s/ n	2				2,00
						2,00
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.	2				2,00
						2,00
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexonado. Unidad totalmente terminada.	s/m	1	160,00		160,00
						160,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	s/m	1	432,00		432,00
						432,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	s/m	1	43,20		43,20
						43,20
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	s/m	1	153,60		153,60
						153,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	s/m	1	235,20		235,20
						235,20
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	s/m	1	160,00		160,00
						160,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6TUBPE110.16	m Tubería de PE100 DN110 PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 110 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada. s/nec mantenimiento de servicio temporal	1	80,00			80,00
						80,00
P6TUBPE160.16	m Tubería de PE100 DN160PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada. s/nec mantenimiento de servicio temporal	1	80,00			80,00
						80,00
P5ARQP-1A	ud Arq. pref DN=1.0 m H=2.5m+tapa fundición DN600 +pates UD de Arqueta prefabricada, altura variable hasta 2.5m de tipo pozo de 1000mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltes para su acoplamiento, entre otras piezas ediante juntas de goma, incluyendo módulo cónico superior, tubo de resalto de PVC DN 315mm, macizado hormigonado HM-20, recibido con mortero de cemento, cerco y tapa de fundición DN600 para tráfico pesado 40Tn, pates y resto de elementos asociados, incluida excavación y rellenos necesarios. Unidad totalmente terminada. s/nec alojamiento elementos	1				1,00
						1,00
P6VENT.080.16	ud Ventosa trifuncional DN80 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje. s/nec	1				1,00
						1,00
TUB.FD.300A	m Tubería de FD DN300 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 300 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada. s/m	1	80,00			80,00
						80,00
TUB.FD.100A	m Tubería de FD DN100 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 100 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada. s/m	1	80,00			80,00
						80,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.13.04	R.S. RED RIEGO (OT-T12)					
P4RSV0A	ud Localización de servicio					
	Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	s/m	8				8,00
	Protección de paralelismo. Posibles necesidades de localización					
	de red de riego	2				2,00
						10,00
P4RSACEQ01	m Reposición acequia+excav+rellenos					
	Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembreada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluidas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.					
	s/m	1	1.012,00			1.012,00
						1.012,00
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5					
	Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.					
	s/m	1	40,00			40,00
						40,00
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5					
	Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
	s/m	1	80,00			80,00
						80,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
	s/m	1	25,00			25,00
						25,00
P4RSV2	ud Corte programado servicio aguas					
	Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.					
	s/m	8				8,00
						8,00
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000					
	Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexión. Unidad totalmente terminada.					
	s/m	1	415,00			415,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						415,00
P4RSS1C	m Dem, desmont y retirada tubería DN >1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento/riego y/o saneamiento/ pluviales de DN >1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.					
	s/ nec T10B	1	5,00			5,00
						5,00
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	s/m	1	295,95			295,95
						295,95
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/m	1	1.161,50			1.161,50
						1.161,50
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	s/m	92,5				92,50
						92,50
P1MT03H	m³ Excavación de escollera existente+acopio+post. colocacion Excavación localizada de escollera de cualquier tonelaje con carga, transporte a acopio o acopios intermedios para posterior uso, sucesivas fases de carga, transporte y colocación de escollera careada. Unidad totalmente terminada excavada y posteriormente colocada con reutilización de material.					
	s/nec dem. vertidos exist T10B	1	81,00			81,00
						81,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/m	1	104,60			104,60
						104,60
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
		1	503,40			503,40
						503,40
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	s/m	1	438,00			438,00
						438,00
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	s/m	1	400,00			400,00
						400,00
P6TUBPE160.16	m Tubería de PE100 DN160PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.					
	s/ nec bypass temporal red riego	1	290,00			290,00
						290,00
P5ARQpref1.0	ud Arqueta prefabricada 1.0x1.0x1.5+ tapa acero galvanizada+pates Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de hasta 1.5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , apoyada sobre fondo de caja excavado y compactado con 0.2m de hormigón en masa HM-20, incluida tapa superior armada, tapa de acero galvanizado en caliente de 3 mm estriada, cerco y precerco, rejillas de ventilación, unión entre módulos de cordón impermeabilizante de polisulfuro, agujeros para entrada de tuberías de dimensiones especificadas, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.					
	Rep. redes de riego.	2				2,00
						2,00
P5ARQPREF1	ud Arqueta prefabricada 1.0x1.0x2,5+ tapa FD+pates+rellenos Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de de 1,5-2,5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , pieza tapa con apertura DN600 mm, huecos preformados para conexión de tuberías de diámetro múltiple apoyada sobre fondo de caja excavado y compactado, ejecución de 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado. Unidad totalmente colocada.					
	varias arquetas riego	2				2,00
						2,00
P6VC.150.16	ud Válvula compuerta ø 150 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada.					
	s/m	5				5,00
						5,00
P6CD.150.16	ud Carrete desmontaje DN150PN16 Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente,con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	s/m	5				5,00
						5,00
P6PM150INX	ud Carrete pasamuros 150mm AIS I316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 150mm de diámetro.					
	s/m	5				5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
TUB.FD.100A	m Tubería de FD DN100 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 100 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
s/m		1	10,00			10,00
						10,00
TUB.FD.150A	m Tubería de FD DN150 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 150 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
s/m		1	15,00			15,00
						15,00
TUB.FD.300A	m Tubería de FD DN300 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 300 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
s/m		290				290,00
						290,00
TUB.FD.500A	m Tubería de FD DN500 C30+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 500 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
s/m		1	50,00			50,00
						50,00
TUB.FD.1000A	m Tubería de FD DN1000 C30+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 1000 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN 545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
s/m		1	50,00			50,00
						50,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
s/med		1	5,00			5,00
						5,00
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
s/m		81				81,00
						81,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujección provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	s/m	1,2	81,00	2,00		194,40
						194,40
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	s/m	1	2,50			2,50
						2,50
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	s/n vertidos	3	1,00	3,00	0,50	4,50
						4,50
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	s/m arquetas	1	62,05			62,05
						62,05
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/m	1	5.894,75			5.894,75
						5.894,75
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	s/m	0,9	297,00			267,30
						267,30
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	s/m	0,1	297,00			29,70
						29,70
P4LOSA1	m² Losas prefabricadas de hormigón tapas arq. peat.cuant. 95kg/m3 Losas prefabricadas de hormigón en tapas de arquetas dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	s/m	1	18,75			18,75
						18,75
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	s/m	1	30,00			30,00
						30,00
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	s/nec	4	2,50			10,00
						10,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	s/med	1	40,00			40,00
						40,00
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	s/m	148,5				148,50
						148,50
P4TAPA60D400	ud Tapa registro fundición, circular Ø 60 cm clase D-400 Tapa de registro de fundición estanca acerrojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN) de la marca EJ modelo TP800 o similar. Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, perfiels, ladrillos,... unidad de obra totalmente instalada y ejecutada.					
	s/m	3				3,00
						3,00
01.13.05	R.S. DRENAJE Y ARROYOS (OT-T12)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	s/m	1	130,00			130,00
						130,00
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.					
	s/m	1	2.070,00			2.070,00
						2.070,00
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
	s/m	520				520,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						520,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	as/m bypass	1	2.850,00			2.850,00
						2.850,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	as/m bypass	1	2.850,00			2.850,00
						2.850,00
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	s/nec protecciones	1	15,00			15,00
						15,00
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	s/m	1	150,00			150,00
						150,00
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	s/m	1,2	150,00	2,00		360,00
						360,00
01.13.06	R.S. ELECTRICIDAD(OT-T12)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	s/ nec servicios no identificados	3				3,00
						3,00
P4RSV1D	m Demolición y retirada de conductos y cableados inst. subterránea Demolición y retirada de conductos y cableados de instalaciones eléctricas incluidas, iluminación, telefonía y/o comunicaciones subterráneas, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.					
	s/ nec servicios no identificados	3	30,00			90,00
						90,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE110X2	m Can. cama arena PVC 110 mm x 2 (calzadas) 0.4x1.0m(Zanja 7a) Canalización de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pa-sa-guía y corchetes. Unidad totalmente instalada y terminada.					
	s/ nec servicios no identificados	3	30,00			90,00
						90,00
P5ARQLD2	ud Arqueta de registro 80x80x100 1/2 tapa FD Arqueta de registro de dimensiones interiores 80x80x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 80x80 normalizada D-400. Unidad totalmente terminada.					
	s/ nec servicios no identificados	3	2,00			6,00
						6,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	s/ nec servicios no identificados	3	20,00			60,00
						60,00
P4RSV1C	ud Sostenimiento poste telefonía y/o electricidad BT Sostenimiento y protección de poste de línea telefónica y/o eléctrica aérea de BT, mediante puntales, arriostres y resto de elementos, durante la ejecución de la obra. Unidad totalmente terminada					
	Proteccion de poste s/n	1				1,00
						1,00
P1MT08ESC500	m³ Escollera 500 kg careada Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	s/m	0,9	37,50			33,75
	Para sostener el talud					
						33,75
P1MT08ESC500H	m³ Escollera 500 Kg hormigonada con HM20 Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	s/m	0,1	37,50			3,75
	Para sostener el talud					
						3,75
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujección provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	s/m	1,2	37,50	2,00		90,00
	Para sostener el talud					
						90,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.13.07 R.S. COMUNICACIONES(OT-T12)						
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	s/nec	1				1,00
						1,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	s/nec	1				1,00
						1,00
01.13.08 R.S. GAS(OT-T12)						
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	s/n	1				1,00
						1,00
P4RSGPE200	m Reposición tub. DN200mm PE-SDR11+arq+valv.+excav+rellenos GAS Localización, desmontaje programado, y reposición de tubería de gas DN200 mm PE,SDR11 arquetas y valvulería asociada, incluyendo operaciones de localización mediante calas y/o sistemas de microgravimetría con técnico cualificado, programación de corte y rotura con empresa de servicios, gestión y pago de canon y tasas requeridas, demolición, carga y retirada de conducciones, arquetas y elementos asociados, transporte a vertedero autorizado, pago de canon de vertido, reposición de servicio mediante retranqueo, con excavación en zanja de ancho especificado en planos mínimo 0.8m, con base de apoyo de cama de arena de 15 cm, relleno con arena hasta 30 cm sobre clave de tubería, posterior relleno localizado con suelo seleccionado procedente de préstamo tamaño máximo 100 mm, relleno con zahorra artificial hasta sección de pavimento, lámina PVC señalizadora de servicio normalizada, losa de HM20 de protección en pavimentos de 0.15m de espesor con al menos 1.20m de ancho, vainas de tubería en cruzamientos, conexiones de elementos, juntas especiales, p.p. de arquetas normalizadas con tapa de fundición C-400, según detalle definido en planos con base y anclaje de hormigón en caso de valvulerías, arquetas en cambios de dirección, conexiones y puntos de ubicación de valvulería. Unidad totalmente ejecutada.					
	RS-60-CN-T11 PK 7450 - 7460	1	30,00			30,00
						30,00
01.13.09 R.S. CANAL(OT-T12)						
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	s/m	1	47,25			47,25
						47,25
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/m	1	56,00			56,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						56,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
s/m		1	300,00			300,00
						300,00
P1MT04D	m³ Rellenos localizado con material filtrante 40/80 95%PN Relleno localizado de material filtrante (grava 40-80) procedente de préstamo, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
s/m		1	56,00			56,00
						56,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
Bancada con camino de coronación		2	30,00	5,00	0,30	90,00
						90,00
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
s/m		1	45,15			45,15
						45,15
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
s/m		1	1.806,00			1.806,00
						1.806,00
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
s/m		1	10,50			10,50
						10,50
P3DREN110PVC	m Tubo dren PVC 110 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 110 mm, e=3,2 mm incluso p.p. excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 0,40 cm. de ancho por 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.					
s/m		1	85,00			85,00
						85,00
P4JTACOMB200B	m Junta canal Juntas horizontales o inclinadas, en canal conformadas por cordón de polisulfuro y posterior lámina de PVC 200 combiflex o similar con aplicación de epoxy de adherencia. Unidad totalmente terminada incluidos cortes en hormigón, solapes y soldaduras de unión.					
s/m		1	70,00			70,00
						70,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT06E	m Corte junta diamante en losa o pavimento e=0.2m Corte de hormigón con disco e hilo de diamante, corte de armaduras con disco espesor 20 cm, retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Unidad completa. Corte de junta canal	1	70,00			70,00
						70,00
01.13.10	R.S. CERRAMIENTOS(OT-T12)					
P1MT06K	m² Demolición muro bloque o ladrillo Demolición de muro bloque o ladrillo hormigón con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido. Varios en zonas de riego s/n	3	15,00	2,00		90,00
						90,00
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido. Varios en zonas de riego s/n	1	15,00	2,00	0,30	9,00
						9,00
P5CERRAM0D	m Reposición de cerramiento muro mampuesto Reposición de muro bancal de espesor medio 0,5 m , altura variable hasta 1,5 m y longitud 4 m. incluyendo retirada de muro existente, acopio y posterior reconstrucción mediante aporte de mampuestos, ripios, perfectamente alineado, aplomado, con excavación y preparación de la superficie de asiento (20 cm de HM-20), completamente terminado. incluyendo las operaciones de acopio,recolocación de la piedra original y/o reposición de otra de características similares a la original. s/ nec zonas de riego	1	15,00			15,00
						15,00
P5CERRAM0A	m Desmontaje de cerramiento metálico, vallado y barandillas. Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar , existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos. Chamizos de zonas de riego	4	15,00			60,00
						60,00
P5CERRAM2	m Cerramiento tipo-2 Valla de D/T metálica Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, sin incluir puerta de acceso. s/nec varios zonas de riego	3	20,00			60,00
						60,00
P5CERRAM4	m Cerramiento tipo-4 ganadero Cerramiento ganadero a base de postes de hormigón de 17x12x170 cm y 1,40 m o metálicos sobre el terreno a 7 m separación media, empotrados y anclados en el terreno 30 cm y guarnecido con un malla 100x8x15 mm y dos hiladas superiores de alambre, doble hilo 13x15, tensado en tramos de 50 m, y con dos riostras cada 100 m. Unidad completamente terminada. Varios sin identificar	4	30,00			120,00
						120,00
P3EDIF012B	m² Fab. Bloq. split 40x20x20 dos caras color Fábrica de bloques de hormigón Mod. Split de medidas 40x20x20 cm., color, ejecutado a dos caras vistas, i/relleno de hormigón H-200/20 y armadura en zona según normativa y recibido con mortero de cemento y arena de río M 5 según UNE-EN 998-2, i/p.p. de piezas especiales, roturas, nivelados, aplomados, llagueados y limpieza todo ello según CTE/ DB-SE-F.Unidad totalmente terminada Chamizos de zonas de riego	2	15,00	3,00		90,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						90,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
	varios s/n zonas de riego	2				2,00
						2,00
01.13.11	R.S. VARIOS (OT-T12)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	s/med	1				1,00
						1,00
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	s/nec	5				5,00
						5,00
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.					
	s/m	1	35,00			35,00
						35,00
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
	s/m	5				5,00
						5,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	sm	1	37,50			37,50
						37,50
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	sm	1	50,00			50,00
						50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
s/m		1	10,00			10,00
						10,00
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
s/m		1	950,00			950,00
						950,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
s/m		0,9	33,33			30,00
						30,00
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
s/m		0,1	33,33			3,33
						3,33
01.13.12	R.S. DESV. TRAFICO (OT-T12)					
01.13.12.01	DESVÍO NA-1240					
01.13.12.01.1	MOV. TIERRAS (DESVÍO NA-1240)					
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
Desv. fase-1		1	254,00	15,00		3.810,00
						3.810,00
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
Desv. fase-1		1	254,00	15,00		3.810,00
						3.810,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccione Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
Desv. fase-1		1	254,00	15,00		3.810,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						3.810,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. Fase-1 Cajeado Fase-2. Excav tras desvío a vertedero Terraplenado Zahorra	1 <				

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	desv. provisional fase-1	1	254,00	9,00		2.286,00
						2.286,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Base provisional	1	254,00	11,00	0,30	838,20
						838,20
01.13.12.01.4 SEÑALIZACIÓN (DESVÍO NA-1240)						
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA MI. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Desvío fase-1	3	700,00			2.100,00
						2.100,00
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final					
	Desvío fase-1	3	700,00			2.100,00
		-3	250,00			-750,00
						1.350,00
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebr, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.					
	Flechas	2	3,00			6,00
						6,00
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm MI. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Repintado completo	1	700,00			700,00
						700,00
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm MI. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Repintado completo	2	700,00			1.400,00
						1.400,00
P6SÑL-020	m Banda sonora 90cmx50cmx5cm Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada. Bandas sonoras reducción velocidad					
	Sentido-1	2	3,50			7,00
	Sentido-2	2	3,50			7,00
						14,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrape-so, incluida instalación, colocación y desmontaje.					
	Fase-1	1	237,00			237,00
	Fase-2	1	10,00			10,00
						247,00
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, inclu-so p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.					
	Señales TB1 Fase-1	4	3,00			12,00
	Señales TB1 Fase-2	1				1,00
						13,00
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metá-lica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del núme-ro óptimo de utilizaciones en desvíos de tráfico.					
	Fase-1	11				11,00
	Fase-2	2				2,00
						13,00
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte me-tálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de trá-fico.					
	Fase-1	2				2,00
	Fase-2	2				2,00
						4,00
P6SÑL-060	ud Señal advertencia e indicatoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desví-os de tráfico.					
	Fase-1	4				4,00
						4,00
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.					
	Tbs	2	12,00			24,00
	Ts	2	4,00			8,00
	VArios criculares	6				6,00
						38,00
P6SÑL-092	ud Lámpara luminosa intermitente en trípode Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.					
	Varios señales	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.					
	Acceso a camino	2				2,00
						2,00
P6SÑL-002A	ud Señal triangular normal L=90 cm. Nivel1 Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.					
	Varios reposición señalítica	1				1,00
						1,00
P6SÑL-003B	ud Señal cuadrada normal L=60 cm. Nivel1 Señal cuadrada de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.					
	Varios reposición señalítica	1				1,00
						1,00
P6SÑL-002	ud Señal circular normal L=60 cm Nivel1 Señal circular de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.					
	Reposición de señales	2				2,00
						2,00
P6SÑL-004	ud Señal octogonal normal L=60 cm Nivel1 Señal octogonal de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.					
	Fase-1	1				1,00
	fASE-2	2				2,00
						3,00
P6SÑL-100	m Barrera New Jersey plástico. desv. tráfico Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco lastrable, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico					
	Desvío fase.1	1	185,00			185,00
		-1	42,00			-42,00
	Fase-2	1	123,00			123,00
		-1	72,00			-72,00
						194,00
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.					
	Excavación fase-1	1	42,00			42,00
	Fase-2	1	72,00			72,00
						114,00
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señalítica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.14	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (OT-T12)					
01.14.01	MEDIDAS PROTECTORAS, CORRECTORAS (OT-T12)					
01.14.01.01	ATMÓSFERA (OT-T12)					
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora					
	Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.					
	Total obra meses secos 6/12	0,5	36,00			18,00
						18,00
01.14.01.02	SUELO (OT-T12)					
P-101AMB-MP03	m Jalonamiento de protección malla					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
	trazado de las conducciones 10%	0,1	26.200,00	2,00		5.240,00
						5.240,00
P-101AMB-MP09	m Jalonamiento de protección cinta					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
	trazado de las conducciones 25%	1	26.200,00	2,00		52.400,00
						52.400,00
P1MT08GTX-003	m² Geomalla refuerzo taludes					
	Suministro y colocación de geomalla de refuerzo DLT Grid en taludes incluso enrejado con alambre galvanizado de Ø 2,00 mm y malla hexagonal 8x10-16 anclado al terreno con barras corrugadas de acero B 500 S, para protección de taludes, medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 1.5m) entre paños y mermas. Unidad totalmente terminada.					
	Zonas de gran pendiente					
	CN-t11 pk3+0140 a PK3+145)	1	130,00	20,00		2.600,00
	Refuerzo de tramo 10B. Medida compensatoria	1	130,00	15,00		1.950,00
						4.550,00
P1MTMR001	m Fajina retención rollizo 0.5m altura					
	ml de fajinada formada por estacas de pino de 1 m de longitud y 8 cm de diámetro,hincados en el suelo 50 cm, entre los que se entrelazan una fajina construida con ramas, hasta formar una pantalla de 50 cm de altura, construida para reducir la escorrentía superficial. Incluso herramientas y medios auxiliares.					
	Zonas de gran pendiente					
	CN-t11 pk3+0140 a PK3+145)	25	20,00			500,00
	Medida compensatori tramo 10 B	25	7,00			175,00
						675,00
P-102AMBPL001	m² Hidrosiembra incluso rastrillado y tapado					
	Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.					
	Zonas de gran pendiente					
	CN-t11 pk3+0140 a PK3+145)	1	130,00	40,00		5.200,00
	Medida compensatoria tramo 10B	1	130,00	20,00		2.600,00
						7.800,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.14.01.03	HIDROLOGIA (OT-T12)					
P-101AMB-MP05	m Barrera de retención sedimentos					
	Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.					
	Cruces de arroyos/ cauces	20	10,00	2,00		400,00
	Barreras de sedimentos c/1000m s/ n	22	20,00			440,00
						840,00
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones					
	Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.					
	Una por cada zona de instalaciones	15				15,00
						15,00
01.14.01.04	FAUNA Y FLORA (OT-T12)					
P-101AMB-MP03	m Jalonamiento de protección malla					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
	trazado de las conducciones 5%	0,05	26.200,00	2,00		2.620,00
						2.620,00
P-101AMB-MP09	m Jalonamiento de protección cinta					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
	trazado de las conducciones 15%	0,15	26.200,00	2,00		7.860,00
						7.860,00
P-101AMB-MP10	ud Protector de fauna					
	Protector de fauna: Instalación de vallas plásticas y elementos necesarios.					
	Zonas de riesgo	5	10,00			50,00
						50,00
01.14.02	SEGUIMIENTO ARQUEOLÓGICO (OT-T12)					
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones					
	Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.					
	Informe inicial	1				1,00
						1,00
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz.					
	Informe arqueológico previo incluidas tramitaciones y tasas.					
	un informe previo	1				1,00
						1,00
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe					
	Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual					
	Plazo obra	36				36,00
						36,00
P-103AMBAR-03	km² Prospección arqueológica detallada, análisis y trabajo de campo					
	Prospección arqueológica intensiva de cobertura total en una superficie afectada de 1Km2, incluyendo excavaciones, sondeos arqueológicos, medios humanos, maquinaria, material auxiliar necesario, análisis documental, proyecto de actuación arqueológica y trabajo de campo. Unidad completa					
	Varios	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
01.14.03	PROGRAMA VIGILANCIA AMBIENTAL (OT-T12)					
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica					
	Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación PVA y PGR	1				1,00
						1,00
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras					
	Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento.					
	Meses de duracion obra	36				36,00
	Duración obra+ demoliciones y remates					
						36,00
P-104AMBVA02A	mes Seguimiento acústico (ruido ambiental)					
	Medida de niveles de ruido en zona de obra. Desarrollada la medición a lo largo de una jornada laboral, con toma de datos en diversos puntos de la obra, y elaboración de informes periódicos posteriores por especialista cualificado, incluidos materiales y elementos auxiliares. Unidad totalmente terminada.					
	Seguimiento ruido en las zonas habitadas	36				36,00
						36,00
P-104AMBVA03A	ud Informe especializado de flora					
	Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe.					
	Incluidos gastos de desplazamiento y material de oficina.					
	1 al principio de obra	1				1,00
						1,00
P-104AMBVA04A	ud Informe especializado de fauna					
	Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe.					
	1 antes de inicio de obra	1				1,00
						1,00
P-104AMBVA05	ud Informe y analítica de muestra de aguas					
	Informe y analítica de muestras de agua en puntos de cruce singulares. unidad totalmente ejecutada.					
	Cruce del Río Aragón	2	3,00			6,00
	Antes y despues de la obra					
	Durante la obra en cruce del Río Aragón	2	3,00			6,00
						12,00
P-104AMBVA06	ud Informe de prevención acústica					
	Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio.					
	Unidad completa.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.14.04	INTEGRACIÓN PAISAJÍSTICA (OT-T12)					
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos. s/med aux					
	acopios temporales	1	28.647,36			28.647,36
	zonas depósito excedentes	1	185.812,60			185.812,60
						214.459,96
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones. s/med aux					
	acopios temporales	1	28.647,36			28.647,36
	zonas depósito excedentes	1	185.812,60			185.812,60
						214.459,96
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones. s/med aux					
	acopios temporales	1	28.647,36			28.647,36
	zonas depósito excedentes	1	185.812,60			185.812,60
						214.459,96
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales. Superf. excav. vegetal (50%)					
	acopios temporales	0,5	28.647,36			14.323,68
	zonas depósito excedentes	0,5	185.812,60			92.906,30
						107.229,98
P-102AMB-PL06	Pie Apeo árboles ø >20-<=30 cm densidad <=750 pies/ha c/mat (R.E.A.) Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y densidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la intensidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, incluido canon de vertido, herramientas y medios auxiliares. s/med aux					
	CN-T11	1	2.600,00	0,15		390,00
	T11-T12	1	135,00	0,15		20,25
						410,25

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P-102AMBPL08	mes Mantenimiento de plantaciones, riego y reposición extraordinaria Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de marras, realización de podas de realce necesarias y otras operaciones de mantenimiento. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande realizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, incluyendo la escarda y mezcla con el sustrato de malas hierbas, herramientas y medios auxiliares. Duración Subtramo	36				36,00
						36,00
P-102AMBPL38B	ud Plantación de Crataegus monogyna de 0,6-0,8 m en contenedor Plantación de Crataegus monogyna 0,6-0,8 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación. Tratamiento 4	30				30,00
						30,00
P-102AMBPL03B	ud Plantación de Pinus halepensis de 1,0-1,5 m en contenedor Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso apertura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación. Tratamiento 3a	299				299,00
						299,00
P-102AMBPL39B	ud Plantación de Populus alba de 1,0-1,5 m en cepellón Populus alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x6,0 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto. Tratamiento 7b	783				783,00
						783,00
P-102AMBPL31A	ud Plantación de Quercus coccifera 1,8-2,0m alt. CEP. Quercus ilex de 1,8-2,0m alt. de perímetro de tronco, suministrado en cepellón y plantación en hoyo de 1x1x1x m., incluso apertura del mismo con los medios indicados, abonado, formación de alcorque, tutor y primer riego. Tratamiento 6	27				27,00
						27,00
P-102AMBPL34E	ud Plantación de Rosa canina 20-30 cm. CONT. Rosa canina de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,6x0,6x0,6 m., incluso apertura del mismo a mano, abonado, formación de alcorque y primer riego. Tratamiento 4	423				423,00
						423,00
P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m en contenedor Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación. Tratamiento 3a Tratamiento 6	75 809				75,00 809,00
		1.493				1.493,00
						2.377,00
P-102AMBPL17I	ud Plantación de Rubus ulmifolius 0,3-0,5m en contenedor Plantación de Rubus ulmifolius extensa de 0,3-0,50m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación. Tratamiento 4	677				677,00
						677,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P-102AMBPL39	ud Plantación de Salix alba de 1,0-1,5 m en cepellón					
	Plantación de Salix alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x0,6 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto					
	Tratamiento 4	58				58,00
						58,00
P-102AMBPL18	ud Plantación de Salix atrocinerea de 0,50-0,75 m en contenedor					
	Ud. Suministro y plantación de Salix atrocinerea (Sarga negra) de 0,50 a 0,75 m. de altura, suministrado en contenedor, y plantación en hoyo de 0,4 x 0,4 x 0,4 m., incluso apertura manual del mismo, abonado, formación de alcorque y primer riego.					
	Tratamiento 4	76				76,00
						76,00
P-102AMBPL36	ud Plantación de Salvia officinalis 20-30cm. CONT.					
	Salvia officinalis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, formación de alcorque y primer riego.					
	Tratamiento 3a	75				75,00
						75,00
P-102AMBPL37	ud Plantación de Thymus vulgaris de 0,2-0,4 m en envase forestal					
	Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso apertura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 3a	75				75,00
	Tratamiento 6	809				809,00
		1.493				1.493,00
		658				658,00
						3.035,00
P-102AMBPL12B	m² Formación de pasto gramíneas y leguminosas					
	Formación de pasto por siembra de una mezcla de especies gramíneas y leguminosas, a determinar por la Dirección de Obra, incluso la limpieza del terreno, laboreo con dos pases de motocultor cruzados y abonado de fondo, rastrillado y retirada de todo material de tamaño superior a 2 cm., distribución de la semilla.					
	ZONAS DEPOSITO EXCEDENTES	1	185.812,60			185.812,60
	ACOPIOS INTERMEDIOS	1	27.595,14			27.595,14
	Tratamiento 6	1	8.226,00			8.226,00
						221.633,74
P-102AMBPL40	ud Tutor árbol					
	Entutorado de árbol con 1 tutor vertical de rollizo de pino torneado, de 3 m de longitud y 8 cm de diámetro con punta en un extremo y baquetón en el otro, tanalizado en autoclave, hincado en el fondo del hoyo de plantación, retacado con la tierra de plantación, y sujeción del tronco con cincha textil no degradable, de 3-4 cm de anchura y tornillos galvanizados.					
	Pinus halepensis					
	Tratamiento 3a	299				299,00
	Populus alba					
	Tratamiento 7b	783				783,00
						1.082,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P-102AMBPL01	ud Plantación de Genista scorpius 0.3-0.5m en contenedor Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 3a	75				75,00
	Tratamiento 6	809				809,00
		658				658,00
		1.493				1.493,00
						3.035,00
P-102AMBPL02	ud Plantación de Suaeda vera 0,2-0,4m en contenedor Plantación de Suaeda vera 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 5	835				835,00
						835,00
P-102AMBPL04	ud Plantación de Salsola vermiculata 0,2-0,4m en contenedor Plantación de Salsola vermiculata 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 5	337				337,00
						337,00
P-102AMBPL05	ud Plantación de Santolina chamaecyparissus 0,2-0,4m en contenedor Plantación de Santolina chamaecyparissus 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 5	337				337,00
						337,00
P-102AMBPL06	ud Plantación de Ononis fruticosa 0,2-0,4m en contenedor Plantación de Ononis fruticosa 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 6	1.012				1.012,00
						1.012,00
P-102AMBPL07	ud Plantación de Linum suffruticosum 0,2-0,4m en contenedor Plantación de Linum suffruticosum 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 6	1.866				1.866,00
						1.866,00
P-102AMBPL09	ud Plantación de Stipa parviflora 0,1-0,25m en contenedor Plantación de Stipa parviflora 0,1-0,25m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 6	1.866				1.866,00
						1.866,00
P-102AMBPL10	ud Plantación de Rhamnus alaternus 0,2-0,5m en contenedor Plantación de Rhamnus alaternus 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 6	27				27,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						27,00
P-102AMBPL002	ud Plantación de Juniperus phoenicea 0,1-0,2m en contenedor					
	Plantación de Juniperus phoenicea 0,1-0,2m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 6	27				27,00
						27,00
P-102AMBPL003	ud Plantación de Artemisia herba-alba 0,2-0,5m en contenedor					
	Plantación de Artemisia herba-alba 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 6	658				658,00
						658,00
01.15	GESTIÓN DE RESIDUOS (OT-T12)					
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos					
	Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un encachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.					
	Puntos de vertido intermedio	15				15,00
						15,00
PGESRES180A	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (OT-12).					
	Carga , transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.					
		1				1,00
						1,00
PGESRES150A	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (OT-T12)					
	Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.					
		1				1,00
						1,00
PGESRES200A	ud Carga, transporte y depos.de Res. peligrosos (OT-T12)					
	Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido o en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
01.16	VARIOS (OT-T12)					
P90VAR4	ud Difusión y comunicación actuación del tramo					
	Difusión y comunicación de las obras del tramo consistente en : a)-Emisión de 2 anuncios en periódico de gran tirada, b)-2 anuncios publicitarios en medio de radiodifusión , c)-edición de 200 folletos explicativos tipo tríptico de alta calidad, d)-desarrollo de WEB informativa y de seguimiento de las obras con el volcado informativo del avance de obra, estado f)-Reportaje fotográfico de evolución de obra g)-CD video divulgativo h)-Presentación y actos varios i)-Monolito actuación					
		1				1,00
						1,00
01.17	SEGURIDAD Y SALUD (OT-T12)					
PSEGSAL.01	ud Seguridad y Salud. Subtramo O.T. Pikarana-T12					
	Seguridad y salud en el Subtramo O.T. Pikarana-T12, (según valoración realizada en el Anejo nº20 del proyecto).					
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02	SUBTRAMO T12-D.C. (Derivación Corella)					
02.01	MOVIMIENTO DE TIERRAS (T12-D.C.)					
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico					
	Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.					
	SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	T12-T13	0,5	753.381,94			376.690,97
	T12-T13	0,5	52.217,76			26.108,88
	T13-T13BIS	0,5	204.659,16			102.329,58
	T13-T13BIS	0,5	40.687,15			20.343,58
	T13BIS-BT	0,5	411.746,30			205.873,15
	T13BIS-BT	0,5	24.489,22			12.244,61
	BT-DC	0,5	111.635,75			55.817,88
	a deducir zonas depósito excedentes	-0,5	173.787,94			-86.893,97
	a deducir acopios temporales	-0,5	105.812,67			-52.906,34
						659.608,34
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea)					
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
	SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	T12-T13	1	753.381,94			753.381,94
	T13-T13BIS	1	204.659,16			204.659,16
	T13BIS-BT	1	411.746,30			411.746,30
	BT-DC	1	111.635,75			111.635,75
	a deducir zonas depósito excedentes	-1	173.787,94			-173.787,94
	a deducir acopios temporales	-1	105.812,67			-105.812,67
						1.201.822,54
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea)					
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
	SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	T12-T13	1	52.217,76			52.217,76
	T13-T13BIS	1	40.687,15			40.687,15

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T13BIS-BT	1	24.489,22			24.489,22
						117.394,13
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones. SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	T12-T13	1	753.381,94			753.381,94
	T12-T13	1	52.217,76			52.217,76
	T13-T13BIS	1	204.659,16			204.659,16
	T13-T13BIS	1	40.687,15			40.687,15
	T13BIS-BT	1	411.746,30			411.746,30
	T13BIS-BT	1	24.489,22			24.489,22
	BT-DC	1	111.635,75			111.635,75
	a deducir zonas depósito excedentes	-1	173.787,94			-173.787,94
	a deducir acopios temporales	-1	105.812,67			-105.812,67
						1.319.216,67
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones. SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	T12-T13	1	753.381,94			753.381,94
	T12-T13	1	52.217,76			52.217,76
	T13-T13BIS	1	204.659,16			204.659,16
	T13-T13BIS	1	40.687,15			40.687,15
	T13BIS-BT	1	411.746,30			411.746,30
	T13BIS-BT	1	24.489,22			24.489,22
	BT-DC	1	111.635,75			111.635,75
	a deducir zonas depósito excedentes	-1	173.787,94			-173.787,94
	a deducir acopios temporales	-1	105.812,67			-105.812,67
						1.319.216,67
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ..) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. s/ med	1	567.079,08			567.079,08

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	saneos	0,05	24.712,21	5,80	0,15	1.074,98
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	0,75	24.712,21	1,55	0,08	2.298,24
						570.452,30
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.						
	s/med	1	406.149,28			406.149,28
	saneos aluvial	0,15	24.712,21	5,80	0,15	3.224,94
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	0,25	24.712,21	1,55	0,08	766,08
						410.140,30
P1MT15-200B	m Micropilote DN 200HA-30 Vaina 155/8 p.p. puntales+viga riostra					
Micropilote DN200 mm con vaina metálica de acero S275 JR 155.8mm de diámetro y 8mm de espesor lechada de cemento CEM I 42,5N y HA30, con una relación agua/cemento de 0,4 dosificada en peso, vertida por el interior de la armadura mediante sistema de inyección única global (IU)., reperforando sobre pantalla de mortero, ejecutado con entubación perdida o recuperable, para cualquier profundidad, Incluido:						
-Replanteo de trabajos.						
-Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria.						
-Muros guía de hormigón armado de 0,70x0,50 mts. y posterior demolición del mismo con transporte a vertedero de los restos, evacuación a vertedero de la excavación.						
-Pérdidas de Ichada y, mortero y hormigón.						
-Demolición de protuberancias, descabezado de pilotes y p.p. preparación de conexion viga de atado.						
-Partida de transporte y montaje inicial y medios auxiliares.						
-Partida para transporte y montaje inicial de grúa auxiliar.						
-Partida de espesamiento de lodos finales con transporte a vertedero.						
-Perforación o reperforación de pilotes incluyendo el consumo de lodos.						
-Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía.						
-Transporte de sobrantes a vertedero autorizado, incluso canon de vertido, limpieza y operaciones de demobiliación.						
-Puntales y perfil risotra						
Unidad totalmente terminada medida linealmente sobre eje por la profundidad realmente ejecutada.						
Cruce bajo A68						
Se dispone de pantalla a ambos lados de zanja						
en el interior de la estructura						
	Separación entre pilotes <3x0.2=0.6m en L=38.7m	2	97,00		10,00	1.940,00
Adoptamos s=0.4m s/ cálculo						1.940,00
P1MT09	m² Tablestacado recuperable o perdido cualquier profundidad					
Tablestacado recuperable o perdido de cualquier profundidad mediante paneles ESTANCOS con cámara de chapa de acero en cajón, tablestacas de chapa y codales extensibles metálicos, celosía y perfiles de arrioestre, incluido desplazamiento de equipo a obra, trabajos preparatorios de plataforma, operaciones de hincado y vibrado, reperforaciones necesarias, estructura soporte, puntales-cercha y perfiles de arrioestre, anclajes de sostenimiento de 50 tn y 20 m de longitud en diferentes fases según anejo de cálculo, inyecciones, barras y tendones, perfilería metálica de sostenimiento (hasta 3 escalones de anclajes) y acodalamiento para cualquier profundidad, operaciones de retirada y medios auxiliares. Unidad totalmente ejecutada.						
	Conexión a obra de paso A68	2	5,00		10,00	100,00
						100,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	saneos aluvial	0,15	24.712,21	5,80	0,15	3.224,94
	saneos terciarios	0,05	24.712,21	5,80	0,15	1.074,98
						4.299,92
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.					
	cama granular	1	61.970,09			61.970,09
	Rellenos riñoneras	1	9.465,06			9.465,06
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	1	24.712,21	1,55	0,08	3.064,31
						74.499,46
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Rellenos riñoneras	1	170.957,51			170.957,51
	Rellenos de cobertura con suelo seleccionado	1	3.333,97			3.333,97
						174.291,48
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Rellenos de cobertura	1	564.017,54			564.017,54
						564.017,54
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil. A vertederos ubicados a lo largo de la traza					
	saneos aluvial	0,15	24.712,21	5,80	0,15	3.224,94
	saneos terciarios	0,05	24.712,21	5,80	0,15	1.074,98
	Excedentes + esponjamientos	1	118.958,85			118.958,85
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	1	24.712,21	1,55	0,08	3.064,31
						126.323,08

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cama HM tuberías	1	5.319,16			5.319,16
	Camas +Riñoneras HM	1	19.122,28			19.122,28
	Rellenos HM de cobertura	1	5.790,49			5.790,49
						30.231,93
02.02	TUBERÍAS (T12-D.C.)					
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	sm	1	47.585,70			47.585,70
						47.585,70
P1T1600.10.0A	m Tubería acero helic. L275, Ø1626 esp. 10.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	sm	1	8.873,46			8.873,46
						8.873,46
P1T1600.12.5A	m Tubería acero helic. L275, Ø1626 esp. 12,5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	sm	1	4.888,00			4.888,00
						4.888,00
P1T1600.16.0A	m Tubería acero helic. L275, Ø1626 esp. 16.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	sm	1	94,00			94,00
						94,00
P1T1800.11.5A	m Tubería acero helic. L275, Ø1829 esp. 11,5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	sm	1	11.348,00			11.348,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						11.348,00
P1T1800.12.5A	m Tubería acero helic. L275, Ø1829 esp. 12,5					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	sm	1	1.094,00			1.094,00
						1.094,00
P1T1800.14.0A	m Tubería acero helic. L275, Ø1829 esp. 14.0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	30,00			30,00
						30,00
P1T1800.15.0A	m Tubería acero helic. L275, Ø1829 esp. 15.0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	704,00			704,00
						704,00
P1T1800.11.5B	m Tubería acero helic. L355, Ø1829 esp. 11,5					
	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	6.946,00			6.946,00
						6.946,00
P1T1800.12.5B	m Tubería acero helic. L355, Ø1829 esp. 12,5					
	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	1.694,00			1.694,00
						1.694,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1T1800.13.0B	m Tubería acero helic. L355, Ø1829 esp. 13,0 Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 13,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	8.376,00			8.376,00
						8.376,00
P1T1800.14.0B	m Tubería acero helic. L355, Ø1829 esp. 14,0 Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	2.088,00			2.088,00
	s/m					
	Cruce río Ebro curvatura	0,05	1.002,00			50,10
						2.138,10
P1T1900.13.0A	m Tubería acero helic. L275, Ø1930 esp. 13,0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.930 mm y espesor mínimo de 13,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	3.288,95			3.288,95
						3.288,95
02.03	DESAGÜES (T12-D.C.)					
02.03.01	ARQUETA DESAGÜE, VALVULERÍA Y CALDERERÍA (T12-DC)					
02.03.01.01	MOV. TIERRAS Y DREN (DESAGÜES T12-DC)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	33,20			33,20
						33,20
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	1	80,00			80,00
						80,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.03.01.02	ESTRUCTURA DE HORMIGÓN Y METÁLICA (DESAGÜES T12-DC)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	11,10			11,10
						11,10
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales Hormigón para armar HA-30/B/20/XC4, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
		1	11,70			11,70
						11,70
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
		1	37,40			37,40
						37,40
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
		1	64,50			64,50
						64,50
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
		1	20,20			20,20
						20,20
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
		1	194,00			194,00
						194,00
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
		1	10.618,80			10.618,80
						10.618,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
		398				398,00
						398,00
P4JTAHIDROF2	m Junta cordón unión prefabricado a hormigón in situ Junta de estanqueidad en unión arquetas prefabricadas a hormigón de base ejecutado in situ, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.					
		1	36,60			36,60
						36,60
P4JTAPVC150	m Junta elastomérica de estanqueidad PVC 150 Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.					
		1	18,40			18,40
						18,40
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	36,60			36,60
						36,60
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
		1	97,00			97,00
						97,00
P5ARQP-1.5A	ud Arq. pref DN=1.5 m H=1.5m +pates para desagües tipo D UD de Arqueta prefabricada de diámetro 1.5 m y altura 1.5m para desagües tipo D formada por anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, con pates de polipropileno montados , incluida excavación localizada y rellenos necesarios. Unidad totalmente terminada.					
		60				60,00
						60,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero Al-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
		1	171,20			171,20
						171,20
P4LOSA2	m² Losas prefabricadas de hormigón tapas arq.traffic.cuant.190kg/m3 Losas prefabricadas de hormigón en tapas de arquetas para tránsito de tráfico pesado, cuantía mínima 190 kg/m3 homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.					
		1	70,50			70,50
						70,50
P4TAPA60D400A	ud Tapa registro fundición, circular Ø 60 cm clase D-400 acerojada Tapa de registro de fundición estanca y acerojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN) . Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, cerco,... unidad de obra totalmente instalada y ejecutada.					
		2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41ESC0	m Escalera vertical pozos acero inox. AISI 316 L Escalera de acero inoxidable AIS-316 de dimensiones especificadas en planos. totalmente instalada, incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Unidad totalmente terminada.	1	2,20			2,20
						2,20
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	1	6,00			6,00
						6,00
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	1	13,60			13,60
						13,60
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.	2				2,00
						2,00
02.03.01.03	VÁLVULAS Y CALDERERÍA (DESAGÜES T12-DC)					
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	16,00			16,00
						16,00
P1T0800.12.5B	m Tubería acero helic. L355, Ø813 esp 12.5 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	17,40			17,40
						17,40
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	1,90			1,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,90
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	Calderería anclajes y varios	1	4.433,700			4.433,700
	Calderería tubos	1	2.721,400			2.721,400
						7.155,10
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífuga y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.					
		1	3.921,70			3.921,70
						3.921,70
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
		2				2,00
						2,00
P1BRIDA200.25	ud Brida ciega PN 25 Ø200 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 200 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
		2				2,00
						2,00
P6VC.100.16	ud Válvula compuerta ø 100 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 100 mm, instalada.					
		64				64,00
						64,00
P6VM.200.25	ud Válvula mariposa ø 200 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
		2				2,00
						2,00
P6VM.500.25	ud Válvula mariposa ø 500 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 500 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2				2,00
						2,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2				2,00
						2,00
P6VO.500.25	ud Válvula globo PN25 Ø500 multiorificio Válvula de regulación de globo, de paso recto de 500 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2				2,00
						2,00
P6CD.200.25	ud Carrete desmontaje DN200 PN25 Carrete de desmontaje de diametro 200 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	5				5,00
						5,00
P6CD.500.25	ud Carrete desmontaje DN 500 PN25 Carrete de desmontaje de acero de 500 mm de diámetro PN25, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4				4,00
						4,00
P6VENT.025.16	ud Ventosa trifuncional DN25 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 25 mm PN16 con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	62				62,00
						62,00
P6VD.200.25	ud Válvula dilatadora y compensadora de goma DN 200 PN25 Válvula dilatadora y compensadora de goma de DN 200 PN25. Unidad totalmente instalada.	1				1,00
						1,00
P6CR.100.25	ud Conexión rápida en desagües DN100 Conexión rápida de desagües DN 100.	60				60,00
						60,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.03.02	CONDUCCIÓN A VERTIDO (T12-DC)					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
s/med aux.		1	715,020			715,020
						715,02
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
s/med aux.		1	3,72			3,72
						3,72
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
s/med aux.		1	3,72			3,72
						3,72
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
s/med aux.		1	10,36			10,36
						10,36
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
s/med aux.		1	1,69			1,69
						1,69
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
s/med aux.		1	3,74			3,74
						3,74
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	s/med aux.	1	3,88			3,88
						3,88
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	s/med aux.	1	1,05			1,05
						1,05
02.03.03 ARQUETA ROTURA Y VERTIDO A CAUCE (T12-DC)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
		1	582,20			582,20
						582,20
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
		1	380,60			380,60
						380,60
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
		1	95,90			95,90
						95,90
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
		1	211,00			211,00
						211,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	3,40			3,40
						3,40
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
		1	2,50			2,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2,50
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	10,10			10,10
						10,10
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	1	23,30			23,30
						23,30
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	1	9,20			9,20
						9,20
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	1	77,70			77,70
						77,70
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	1	3.278,30			3.278,30
						3.278,30
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	17				17,00
						17,00
02.04	VENTOSAS (T12-D.C.)					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.04.01	MOVIMIENTO DE TIERRAS VENTOSAS (T12-DC)					
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ...) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	204,60			204,60
						204,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	204,60			204,60
						204,60
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	1	1.050,00			1.050,00
						1.050,00
02.04.02	OBRAS DE FÁBRICA VENTOSAS (T12-DC)					
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	102,30			102,30
						102,30
P5ELECAS01	ud Caseta prefabricada 1.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 1.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada. s/ nec. varios	1				1,00
						1,00
P5ELECAS02	ud Caseta prefabricada 4.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 4.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	42				42,00
						42,00
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.	1	44,20			44,20
						44,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.	1	42,00			42,00
						42,00
02.04.03	VÁLVULAS Y CALDERERÍA VENTOSAS (T12-DC)					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	1	172,200			172,200
						172,20
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	85,20			85,20
						85,20
P1T0800.12.5B	m Tubería acero helic. L355, Ø813 esp 12.5 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	35,60			35,60
						35,60
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	84				84,00
						84,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		62				62,00
						62,00
P6VENT.200.25	ud Ventosa trifuncional DN200 mm PN25+Valv corte+carrete					
	Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Incluye válvula de corte de mismo diámetro y timbraje.					
		30				30,00
						30,00
P6VENT.250.16	ud Ventosa trifuncional DN250 mm PN16+Valv corte+carrete					
	Suministro e instalación de ventosa trifuncional, DN 250 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Incluye válvula de corte de mismo diámetro y timbraje.					
		4				4,00
						4,00
02.05	TOMAS (T12-D.C.)					
02.05.01	TOMA-13					
02.05.01.01	MOVIMIENTO DE TIERRAS (TOMA-13)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Saneos plataforma s/ cad	1	3.750,00		0,30	1.125,00
	Excav. general s/m	1	1.117,81			1.117,81
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	2	40,00	5,00		400,00
	Excav macizos					
	Macizos T	1	90,30		1,50	135,45
						3.178,26
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno					
	Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma	1	3.480,00		0,30	1.044,00
						1.044,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	1.246,63			1.246,63
	A vertederos	1	3.178,26			3.178,26

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		-1	1.246,63			-1.246,63
		-1	458,00			-458,00
						2.720,26
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	2	40,00	5,00		400,00
		-2	28,50	3,00		-171,00
		-2	28,50	3,00		-171,00
						458,00
02.05.01.02	CALDERERÍA Y VALVULERÍA (TOMA-13)					
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	81.423,880			81.423,880
						81.423,88
P1BRIDA800.25	ud Brida ciega PN 25 Ø800					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Tub. principal	2	2,00			4,00
	Tomas derivación T conex. ventosa	1				1,00
	Toma	1				1,00
						6,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	Desagüe-1	2				2,00
	Desagüe-2	2				2,00
						4,00
P6PM400INX	ud Carrete pasamuros 400mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 400mm de diámetro.					
	Desagües	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6CD.200.25	ud Carrete desmontaje DN200 PN25 Carrete de desmontaje de diametro 200 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass	4	1,00			4,00
						4,00
P6CD.300.25	ud Carrete desmontaje DN300 PN25 Carrete de desmontaje de diametro 300 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Desagüe	1				1,00
						1,00
P6CD.800.25	ud Carrete desmontaje virola acero inox. PN25 DN 800 Carrete telescópico autoportante, PN 25 atm, DN 800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Caudalímetro	1				1,00
						1,00
P6CD.1000.25	ud Carrete desmontaje virola acero inox. PN25 DN 1000 Carrete telescópico autoportante, PN 25 atm, DN 1.000 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Derivación tomas	2				2,00
						2,00
P6CD.1800.25	ud Carrete desmontaje virola acero inox. PN25 DN1800 Carrete telescópico autoportante, PN 25 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Conducción principal	2				2,00
						2,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	4	1,00			4,00
						4,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Cámara de descarga	2				2,00
						2,00
P6VM.200.25	ud Válvula mariposa ø 200 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Bypass	4	2,00			8,00
						8,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6VM.300.25	ud Válvula mariposa ø 300 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Desagüe-1	1				1,00
	Desagüe-2	1				1,00
						2,00
P6VM.1000.25M	ud Válvula mariposa motorizada PN 25 Ø1000 I Válvula de mariposa, DN 1000 mm, PN 25, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Toma	2				2,00
						2,00
P6VM.1800.25M	ud Válvula mariposa motorizada PN 25 Ø1800 I Válvula de mariposa, DN 1800 mm, PN 25, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Conducción-1	1				1,00
	Conducción-2	1				1,00
						2,00
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400 Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.					
	Descarga	2				2,00
						2,00
P6FG.400.16	ud Filtro globo PN 16 Ø400 Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.					
	Descarga	2				2,00
						2,00
P6VENT.200.25	ud Ventosa trifuncional DN200 mm PN25+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Conducción principal	2	2,00	2,00		8,00
	T	1				1,00
						9,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.01.03	LOSA Y ANCLAJES (TOMA-13)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	32,70	36,10	0,10	118,05
						118,05
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	32,70	36,10	0,30	354,14
	A descontar cámara descarga	-1	16,40	3,40	0,30	-16,73
	A descontar macizos	-1	90,60		0,30	-27,18
	A descontar anclaje convexo	-4	5,00	3,00	0,30	-18,00
	Macizos T	1	90,60		1,50	135,90
	Alzado	2	5,60	1,70		19,04
	Apoyos tuberías T	1	2,60	2,70		7,02
	Macizos concavos/ convexos	4	40,00	3,00		480,00
	A descontar tuberías	-4	10,50	3,14	0,80	-105,50
	Apoyos tuberías					
	tramo conduc. principal	4	3,00	2,60	0,80	24,96
	Tramo derivación tomas	4	2,00	1,50	0,80	9,60
	Tramo caudalímetro	1	2,00	1,50	0,80	2,40
	Apoyos Válvulas	4	3,00	1,50	0,80	14,40
	Apoyo caudalímetro	1	2,00	1,20	0,80	1,92
	Bypass	4	3,00	1,50	0,50	9,00
	Otros pequeños apoyos	10	0,50	0,50	0,50	1,25
						892,22
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Solera	1	137,00		0,30	41,10
						41,10
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Macizos T	1	60,00		1,50	90,00
	Alzado T	2	5,20			10,40
	Alzado T	2	1,70		3,10	10,54
	Apoyo deriv. caudalímetro	1	9,50		1,70	16,15
	Macizos concavos/ convexos	8	40,00			320,00
		2	3,00	4,20		25,20
		2	3,00	4,20		25,20
		2	3,00	2,80		16,80
		2	3,00	2,80		16,80
	Apoyos					
	Apoyos Válvulas	4	9,00		0,80	28,80
	Apoyo de caudalímetro	1	7,00		0,80	5,60
	Apoyos tubería-ancajes	4	8,00		0,80	25,60
	Deriv. tomas	4	7,00		0,80	22,40
	Toma-caudalimero	2	6,00		0,80	9,60
	Apoyos bypass	2	4,00	1,70	0,50	6,80
	Otros apoyos	3	1,50		0,50	2,25
						632,14

P4ETT-002

kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

Solera #1620 16.3 kg/m2)	2	36,10	32,70	16,30	38.483,32
A descontar cámara descarga	-2	74,50		16,30	-2.428,70
A descontar macizos T	-2	90,50		16,30	-2.950,30
A descontar p.p. concav	-4	5,00	3,00	16,30	-978,00
Macizos T #16/15 (21.7kg/m2)	2	90,50		21,70	3.927,70
AlzadosT	1	60,00	21,70	1,50	1.953,00
Tacón T derivación macizo	2	5,10		21,70	221,34
	2	12,20	2,00	21,70	1.058,96
Tacón T apoyo macizo	1	7,00	1,00	21,70	151,90
	2	5,50			11,00
Refuerzos fi 16/15	76	1,00	1,73	3,00	394,44
Refuerzos fi 16/15 T apoyo	46	1,00	2,00	1,73	159,16

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Macizos concavos/ convexos	8	40,00		21,70	6.944,00
		4	28,00	3,00	21,70	7.291,20
	Refuerzos 20/15 macizos cóncav.	8	8,60		34,00	2.339,20
	Entrada	4	11,40		34,00	1.550,40
	Salida	4	11,40		34,00	1.550,40
	Entrada	4	15,10	3,00	34,00	6.160,80
	Salida	4	15,10	3,00	34,00	6.160,80
	Solera #16/15. Adicional hierro	2	5,00	22,00	7,70	1.694,00
		2	5,00	22,00	7,70	1.694,00
		2	3,00	23,00	7,70	1.062,60
	Apoyos Válvulas #16/15					
	Apoyos Válvulas	4	9,00	21,70	0,80	624,96
	Basex2	4	4,50	21,70	2,00	781,20
	Apoyo de caudalímetro	1	7,00	21,70	0,80	121,52
	Basex2	2	4,50	21,70	1,00	195,30
	Apoyos tubería-anclajes	4	8,00	21,70	0,80	555,52
		4	4,50	21,70	2,00	781,20
	Deriv. tomas	4	7,00	21,70	0,80	486,08
		4	4,00	21,70	2,00	694,40
	Toma-caudalimero	2	6,00	21,70	0,80	208,32
		2	4,00	21,70	1,00	173,60
	Apoyos bypass	4	3,00	21,70	0,85	221,34
		4	3,00	21,70	0,15	39,06
	Otros apoyos	6	1,50	21,70	0,50	97,65
		6	2,00	21,70	0,15	39,06
	Pérdidas	0,15	81.470,43			12.220,56
						93.690,99
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes T	4	11,00			44,00
		1	8,00			8,00
	Anclajes conv	4	13,00			52,00
						104,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	36,10			36,10
		1	26,60			26,60
						62,70
02.05.01.04	PROTECCIÓN Y ENCINTADOS (TOMA-13)					
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Tubería salida	4	10,50			42,00
						42,00
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Desagües	4	0,30			1,20
						1,20
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm2 Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	2	2,00	0,80	6,28	20,10
	Apoyos tramo tubería toma	2	2,00	0,80	3,14	10,05
	Apoyos tramo caudalimetro	2		0,80	2,50	4,00
	Apoyos válvulas	2	2,00	1,00	1,00	4,00
		2	2,00	0,80	1,00	3,20
	MAcizos de anclaje					
	T	2	4,50	1,70		15,30
	T tomas	1	2,50	2,50		6,25
	Varios desagüe	4	1,00	0,50		2,00
	Varios apoyos menores	0,15	65,00			9,75
						74,65

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.01.05	OBRA DE DESAGÜE (TOMA-13)					
02.05.01.05.1	ARQUETA ROTURA (TOMA-13)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Excav	1	127,00		1,00	127,00
						127,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excav	1	127,00		1,00	127,00
		-1	74,50		1,00	-74,50
						52,50
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	74,50		0,10	7,45
						7,45
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cuñas	1	16,00	2,00	0,20	6,40
						6,40
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	74,50		0,30	22,35
						22,35
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Alzados	2	13,20	0,20	1,40	7,39
		1	3,00	0,20	1,40	0,84
		2	3,20	0,20	2,50	3,20
		1	3,00	0,20	2,50	1,50
		1	3,00	0,20	1,10	0,66
		1	7,00	0,20	1,50	2,10

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	7,00	0,20	0,60	0,84
		2	2,50	0,20	1,50	1,50
						18,03

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

perímetro losa	2	16,40	0,30	9,84
	2	3,40	0,30	2,04
	1	7,00	0,30	2,10
	2	2,50	0,30	1,50
				15,48

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlite que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Alzados	4	9,20	0,20	1,40	10,30
	2	2,00	0,20	1,40	1,12
	4	3,20	0,20	2,50	6,40
	2	2,00	0,20	2,50	2,00
	2	2,00	0,20	1,10	0,88
	2	7,00	0,20	1,50	4,20
	2	7,00	0,20	0,60	1,68
	4	2,50	0,20	1,50	3,00
					29,58

P4ETT-002 kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

#12/15

Alzados	4	13,20	12,30	1,40	909,22
	2	3,00	12,30	1,40	103,32
	4	3,20	12,30	2,50	393,60
	2	3,00	12,30	2,50	184,50
	2	3,00	12,30	1,10	81,18
	2	7,00	12,30	1,50	258,30

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	7,00	12,30	0,60	103,32
		4	2,50	12,30	1,50	184,50
	Solera	2	74,60	12,30		1.835,16
	Ref. solera-alzado					
		14	0,92	35,00		450,80
		14	0,92	9,00		115,92
	Esquinas	8	20,00	0,92	1,50	220,80
	Solpaes y varios	0,15	4.840,00			726,00
						5.566,62
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	45,00			45,00
		1	9,00			9,00
						54,00
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2					
	Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	35,00	1,00		35,00
						35,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte					
	Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero Al-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
	Arqueta	1	2,70	7,00		18,90
						18,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.01.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-13)						
P4TUB120HA135	m Tubería hormigón armado junta elastomérica 135 Ø1200					
	Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.200 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
		1	22,50			22,50
						22,50
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	22,50	2,50	1,80	101,25
						101,25
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert					
	Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Desagüe	1	22,50	2,50	1,80	101,25
	A descontar tubo	-1	22,50	1,13		-25,43
	Embocadura					
	Solera	1	1,30	1,50	0,30	0,59
	Tacón entronque	1	1,30	0,40	0,50	0,26
						76,67
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo					
	Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Vertido	1	1,00	2,50	0,30	0,75
						0,75
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Embocadura zapatas					
	Aletas	2	1,50	1,25	0,50	1,88
						1,88
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Embocadura					
	Aletas	2	1,50	0,30	1,50	1,35
	Frontal	1	1,50	0,30	1,50	0,68
						2,03

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada. Embocadura					
	Aletas	4	1,50		0,50	3,00
						3,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. Embocadura					
	Aletas	2	1,50		1,50	4,50
	Frontal	1	1,50		1,50	2,25
						6,75
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. Embocadura					
	Aletas #12/20	2	1,50	9,20	1,50	41,40
	Frontal #12/20	2	1,50	9,20	1,50	41,40
	Zapatas #12/20	4	1,50	1,25	9,20	69,00
	Solera	2	1,30	1,50	9,20	35,88
	Solapes	0,15	187,00			28,05
						215,73
02.05.01.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-13)					
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desagüe	1	120,00	3,00		360,00
						360,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	120,00	3,00		360,00
						360,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	120,00	1,50	1,00	180,00
	Reperfilado de azarbe					
						180,00
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Desagüe	1	5,00	2,50	0,30	3,75
	Punto de vertido	1	5,00	2,50	0,30	3,75
						7,50
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	Desagüe	2	5,00	2,50		25,00
						25,00
02.05.01.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-13)					
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		4	12,20			48,80
						48,80
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm, barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante, incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.					
	Ángulo 45°	4	3,20			12,80
						12,80
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					
		4	1,50	2,00		12,00
						12,00
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.					
	Acceso escaleras	4	1,00			4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada. Escaleras					
	Soportes UPN-200	4	13,000	25,300		1.315,600
	Pilares UPN-200	4	4,000	25,300	2,000	809,600
	Placas	4	4,000	15,000		240,000
						2.365,20
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje, incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.					
	Línea de vida	2				2,00
						2,00
02.05.01.07	URBANIZACIÓN (TOMA-13)					
02.05.01.07.1	PAVIMENTOS (T13)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	2.728,00		0,30	818,40
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque camino existente	1	55,00		0,30	16,50
						821,23
02.05.01.07.2	CERRAMIENTOS (T13)					
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
	Acceso	2				2,00
						2,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
	Acceso	2				2,00
						2,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeo de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Cerramiento perimetral	1	213,00			213,00
						213,00
02.05.01.07.3 DRENAJES (T13)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Cuneta guardas perimetral	1	124,00			124,00
		1	97,00			97,00
		2	5,00			10,00
						231,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
	Entronque con embocadura desagüe	2	3,00			6,00
						6,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
		1	12,00			12,00
		1	9,00			9,00
						21,00
02.05.02 TOMA-13B						
02.05.02.01 MOVIMIENTO DE TIERRAS (TOMA-13B)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Saneos plataforma s/ cad	1	1.165,00		0,30	349,50
						349,50
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno					
	Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma	1	1.165,00		0,30	349,50
						349,50
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Terraplenado s/ med	1	829,51			829,51
	A vertederos	1	349,50			349,50
		-1	829,51			-829,51
						349,50
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Relleno arqueta principal	2,5	2,00	6,00		30,00
		2,5	2,00	8,25		41,25
	Relleno arqueta toma	2,35	2,00	2,20		10,34
		2,35	2,00	2,20		10,34
						91,93
02.05.02.02	ARQUETAS, VALVULERÍA Y CALDERERÍA (TOMA 13B)					
02.05.02.02.1	MOVIMIENTO DE TIERRAS (T13B)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Arqueta principal	1	10,55	8,30	2,75	240,80
	Arqueta toma	1	7,00	4,50	2,75	86,63
						327,43
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Arqueta principal	1	10,55	8,30	2,75	240,80
	a descontar arqueta	-1	8,25	6,00	2,75	-136,13
	Arqueta toma	1	7,00	4,50	2,75	86,63
	a descontar arqueta	-1	4,20	2,20	2,75	-25,41
						165,89
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Excavacion	1	327,43			327,43
	A deducir rellenos	-1	165,89			-165,89
						161,54

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.02.02.2 ESTRUCTURA DE HORMIGÓN Y METÁLICA (T13B)						
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	9,20	6,90	0,10	6,35
		1	2,20	2,20	0,10	0,48
						6,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base arqueta ppal	1	8,25	6,00	0,25	12,38
	Base arqueta toma	1	2,20	2,20	0,40	1,94
						14,32
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Arqueta ppal.	2	8,25	3,50	0,25	14,44
		2	5,50	3,50	0,25	9,63
	Arqueta toma	2	2,20	3,75	0,30	4,95
		2	1,60	3,75	0,30	3,60
	Apoyo válvula toma	1	1,50	2,25	1,80	6,08
	Apoyo válvula desagüe	1	1,20	1,00	2,00	2,40
						41,10
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Solera arqueta ppal.	1	28,50	0,25		7,13
	Solera arqueta toma	1	8,80	0,40		3,52
						10,65
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Arqueta ppal.	2	8,25	3,50	0,25	14,44
		2	5,50	3,50	0,25	9,63
	Arqueta toma	2	2,20	3,75	0,30	4,95
		2	1,60	3,75	0,30	3,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Apoyo válvula toma	2	1,80	2,25		8,10
		1	1,80	1,50		2,70
	Apoyo válvula desagüe	2	1,50	2,00		6,00
		1	1,00	2,00		2,00
						51,42
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Arqueta ppal					
	Solera	2	8,25	6,00	12,27	1.214,73
		1	28,50	0,25	12,27	87,42
	Alzados	4	3,50	8,25	12,27	1.417,19
		2	23,50	0,25	12,27	144,17
		4	3,50	5,50	12,27	944,79
		2	18,00	0,25	12,27	110,43
	Arqueta toma					
	Solera	2	2,20	2,20	12,27	118,77
		1	8,80	0,40	12,27	43,19
	Alzados	4	2,20	3,75	12,27	404,91
		2	11,90	0,40	12,27	116,81
		4	2,20	3,75	12,27	404,91
		2	11,90	0,40	12,27	116,81
	Apoyo valvula toma	2	1,80	2,25	12,27	99,39
		1	8,10	1,50	12,27	149,08
	Apoyo valvula desagüe	2	2,00	1,50	12,27	73,62
		1	7,00	1,00	12,27	85,89
						5.532,11
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Arqueta principal	2	16,00			32,00
	Arqueta desagüe	1	6,00			6,00
						38,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4JTAPVC150	m Junta elastomérica de estanqueidad PVC 150 Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.					
	Arqueta principal	2	8,00			16,00
		2	5,75			11,50
	Arqueta desagüe	4	1,90			7,60
						35,10
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
		1	8,25	6,00		49,50
						49,50
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
	Válvula toma	1	6,00			6,00
	Válvula desagüe	1	4,40			4,40
						10,40
P41ESC5	m Escalera vertical tipo barco PRFV de 500 mm de ancho Suministro e instalación de escalera de PRFV con aros de protección anticaída, de 500 mm de ancho y peldaños antideslizantes cada 250 mm, fabricada mediante pultrusión, con resina ISOFTÁLICA en espacios sin agresión química y con VINILESTER en espacios confinados con agresión química, con las siguientes características: - Resistencia UV 5 en la escala de grises conforme a norma UNE-EN ISO 4892-parte 2 y/o según normativa vigente - Resistencia al fuego M-1 (ASTM-E84) - Resistencia al humo F-1 (ASTM-E84) - Pigmentación mediante resina tintada Incluso p.p. de elementos de sujeción en acero inoxidable austenítico AISI 316.					
	Válvula toma	1	3,00			3,00
	Válvula desagüe	1	2,60			2,60
						5,60
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					
	Válvula toma	1	2,25			2,25
	Válvula desagüe	1	1,20			1,20
						3,45

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.02.02.3 VÁLVULAS Y CALDERERÍA (T13B)						
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
		1	4.572,940			4.572,940
						4.572,94
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	Desagüe	1				1,00
	Arqueta desagüe	2				2,00
						3,00
P6PM500INX	ud Carrete pasamuros 500mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 500mm de diámetro.					
	Toma	1				1,00
						1,00
P6VC.080.16	ud Válvula compuerta ø 80 mm, 16 atm, instalada					
	Válvula de compuerta enterrada con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo bridas y tornillería; presión de trabajo hasta 16 atm, para diámetro de 80 mm, instalada.Especificaciones s/ PPTP.					
	Desagüe	1				1,00
						1,00
P6VM.300.25	ud Válvula mariposa ø 300 mm, 25 atm, instalada. Manual					
	Válvula de mariposa, DN 300 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Desagüe	2				2,00
						2,00
P6VM.500.25	ud Válvula mariposa ø 500 mm, 25 atm, instalada. Manual					
	Válvula de mariposa, DN 500 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Toma	2				2,00
						2,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio					
	Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Desagüe	1				1,00
						1,00
P6VO.500.25	ud Válvula globo PN25 Ø500 multiorificio					
	Válvula de regulación de globo, de paso recto de 500 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Toma	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Desagüe	3				3,00
	Arqueta desagüe	1				1,00
						4,00
P6CD.500.16	ud Carrete desmontaje DN 500 PN16 Carrete de desmontaje de acero de 500 mm de diámetro PN16, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Toma	3				3,00
						3,00
P6CD.500.25	ud Carrete desmontaje DN 500 PN25 Carrete de desmontaje de acero de 500 mm de diámetro PN25, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Toma	3				3,00
						3,00
P6VENT.025.16	ud Ventosa trifuncional DN25 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 25 mm PN16 con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Desagüe	2				2,00
	Toma	2				2,00
						4,00
P6VENT.080.16	ud Ventosa trifuncional DN80 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Arqueta desagüe	1				1,00
						1,00
P6VD.300.25	ud Válvula dilatadora y compensadora de goma DN 300 PN25 Válvula dilatadora y compensadora de goma de DN 300 PN25. Unidad totalmente instalada.					
	Desagüe	1				1,00
						1,00
P6VD.500.25	ud Válvula dilatadora y compensadora de goma DN 500 PN25 Compensador de dilatación de goma de DN 300 PN25 embreado en extremos. Unidad totalmente instalada.					
	Toma	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.02.03	OBRA DE DESAGÜE (TOMA 13B)					
02.05.02.03.1	ARQUETA ROTURA (TOMA 13B)					
P1MT03B1	m ³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Excav	1	161,60			161,60
						161,60
P1MT04B	m ³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excav	1	119,70			119,70
						119,70
P4HG-002A	m ³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	0,94			0,94
						0,94
P4HG-002B	m ³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cuñas	1	0,60			0,60
						0,60
P4HG-004A2H	m ³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	2,81			2,81
						2,81
P4HG-004A2V	m ³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Alzados	1	5,91			5,91
						5,91
P1MT08ESC200	m ³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
		1	18,50			18,50
						18,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	perímetro losa	1	3,72			3,72
						3,72
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlite que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Alzados	1	19,70			19,70
						19,70
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
		1	874,73			874,73
						874,73
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Arqueta rotura	7				7,00
						7,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	45,00			45,00
		1	9,00			9,00
						54,00
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2					
	Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	2	3,00	2,00		12,00
						12,00
02.05.02.03.2 CONDUCCIÓN Y EMBOCADURA (TOMA 13B)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med aux.	1	20,43			20,43
						20,43

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil. s/med aux.	1	1,41			1,41
						1,41
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada. s/ med aux.	1	3,13			3,13
						3,13
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada. s/ med aux.	1	6,92			6,92
						6,92
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada. s/ med aux.	1	16,82			16,82
						16,82
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada. s/med aux.	1	6,89			6,89
						6,89
02.05.02.04	URBANIZACIÓN (TOMA 13B)					
02.05.02.04.1	PAVIMENTOS (T13B)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Sup. parcela	1	400,00		0,30	120,00
	Arqueta principal	-1	49,50		0,30	-14,85
	Arqueta toma	-1	9,25		0,30	-2,78
						102,37

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.02.04.2 CERRAMIENTOS (T13B)						
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint					
	Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
Acceso		1				1,00
						1,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint					
	Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
Acceso		1				1,00
						1,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment.					
	Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
Cerramiento perimetral		1	73,80			73,80
						73,80
02.05.02.04.3 DRENAJES (T13B)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
Cuneta guardas perimetral		1	48,50			48,50
		1	33,70			33,70
						82,20
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
Entronque con escolera		2	3,00			6,00
						6,00
02.05.03 DERIVACION CORELLA						
02.05.03.01 MOVIMIENTO DE TIERRAS (DC)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
Saneos plataforma s/ cad		1	2.351,00		0,30	705,30
Excav. general s/m		1	249,36			249,36
Excavación de tub. entrantes (sup.x ancho)		2	40,00	5,00		400,00
Excavación de tub. salientes (sup.x ancho)		3	40,00	5,00		600,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Excav macizos					
	Macizos T	1	74,50		1,60	119,20
		1	55,50		1,60	88,80
	Cajeos cámara de descarga en capítulo correspondiente					
	Excav. cajeo escollera pie talud	1	45,00	1,20	1,00	54,00
						2.216,66
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno					
	Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma	1	3.480,00		0,30	1.044,00
						1.044,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	1.279,30			1.279,30
	A vertedero sobrantes	1	2.216,66			2.216,66
		-1	1.279,30			-1.279,30
		-1	458,00			-458,00
						1.758,66
P1MT08ESC500	m³ Escollera 500 kg careada					
	Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Escollera en talud	1	90,00	0,50		45,00
						45,00
P1MT08ESC500H	m³ Escollera 500 Kg hormigonada con HM20					
	Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Escollera pie talud cimienta	1	45,00	1,00	1,00	45,00
						45,00
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2					
	Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	Escollera apoyo	1	90,00			90,00
		1	45,00	3,00		135,00
						225,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	2	40,00	5,00		400,00
		-2	28,50	3,00		-171,00
		-2	28,50	3,00		-171,00
						458,00
02.05.03.02	CALDERERÍA Y VALVULERÍA (DC)					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	103.007,070			103.007,070
						103.007,07
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Tub. principal	5				5,00
						5,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass	4	1,00			4,00
						4,00
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Desagües	3				3,00
						3,00
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800 Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Conducción principal	4				4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	4	1,00			4,00
						4,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Bypass	4	2,00			8,00
						8,00
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Desagües	3				3,00
						3,00
P6VM.1800.16M	ud Válvula mariposa motorizada PN 16 Ø1800 I Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Cond. principal	4				4,00
						4,00
P6VENT.200.25	ud Ventosa trifuncional DN200 mm PN25+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Conducción principal	5				5,00
						5,00
02.05.03.03	LOSA Y ANCLAJES (DC)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	98,50		0,10	9,85
						9,85
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	98,50		0,30	29,55
	A descontar macizos	-1	55,30		0,30	-16,59
		-1	74,50		0,30	-22,35
	A descontar anclaje convexo	-2	5,20	3,82	0,30	-11,92
		-3	5,10	3,14	0,30	-14,41

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Macizos T	1	55,30		1,60	88,48
		1	74,50		1,60	119,20
	Alzado	3	5,60	2,20		36,96
	Macizos concavos/ convexos	2	40,00	3,82		305,60
		3	40,00	3,82		458,40
	A descontar DN 1900	-2	10,50	3,14	0,90	-59,35
	A descontar DN 1800	-3	10,50	3,14	0,81	-80,12
	Apoyos tuberías					
	tramo conduc. principal	2	3,00	2,60	0,80	12,48
	Tramo derivación tomas	2	2,00	1,50	0,80	4,80
	Apoyos Válvulas	3	3,00	1,50	0,80	10,80
	Bypass	3	3,00	1,50	0,50	6,75
	Otros pequeños apoyos	5	0,50	0,50	0,50	0,63
						868,91

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

Solera	1	126,00		0,30	37,80
					37,80

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Macizos T	1	37,00		1,60	59,20
	1	47,00		1,60	75,20
Alzado	6	5,60			33,60
	6	3,20			19,20
Macizos concavos/ convexos	10	40,00			400,00
	5	4,00	3,30		66,00
	5	4,00	3,00		60,00
Apoyos Válvulas	4	3,00	1,50	0,80	14,40
Apoto tuberías					
Tramo conduc. principal	4	8,00		0,80	25,60
Pequeños apoyos de bypass	4	0,50		0,50	1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Pequeños apoyos de desagües	3	0,50		0,50	0,75
						754,95
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Solera #16/20 (16.3 kg/m2)	2	98,00		16,30	3.194,80
	A descontar macizos T	-1	55,00		16,30	-896,50
		-1	74,50		16,30	-1.214,35
	A descontar p.p. concav	-2	5,00	4,00	16,30	-652,00
	Macizos T #16/15 (21.7kg/m2)	2	55,50		21,70	2.408,70
		2	74,50		21,70	3.233,30
	AlzadosT	3	34,00	21,70	1,60	3.541,44
		3	47,00	21,70	1,60	4.895,52
	Anclaje alzado	3	5,20	2,00	21,70	677,04
		3	3,00	2,20	21,70	429,66
	Refuerzos fi 16/15	76	1,00	1,73	3,00	394,44
	Macizos concavos/ convexos	10	40,00		21,70	8.680,00
		5	27,50	3,82	21,70	11.397,93
	Refuerzos 20/15	10	11,40		34,00	3.876,00
		5	15,00	3,82	34,00	9.741,00
	Solera #16/15. Adicional hierro	2	6,00	6,00	7,70	554,40
	Apoyos Válvulas #16/15					
	Apoyos Válvulas	4	9,00	21,70	0,80	624,96
	Basex2	4	4,50	21,70	2,00	781,20
	Apoyo de caudalímetro	1	7,00	21,70	0,80	121,52
	Basex2	2	4,50	21,70	1,00	195,30
	Apoyos tubería-anclajes	4	8,00	21,70	0,80	555,52
		4	4,50	21,70	2,00	781,20
	Apoyos bypass	3	3,00	21,70	0,85	166,01
		3	3,00	21,70	0,15	29,30
	Otros apoyos	6	1,50	21,70	0,50	97,65
		6	2,00	21,70	0,15	39,06
	Pérdidas	0,15	53.653,09			8.047,96

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						61.701,06
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes T	4	11,00			44,00
		1	8,00			8,00
	Anclajes conv	4	13,00			52,00
						104,00
02.05.03.04	PROTECCIÓN Y ENCINTADOS (DC)					
P4CINT1900	m Encintado anticorrosivo DN1900 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1900mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
		2	10,50			21,00
						21,00
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Tubería salida	3	10,50			31,50
						31,50
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Desagües	3	0,50			1,50
						1,50
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	3	2,00	0,80	6,28	30,14
	Apoyos válvulas	4	2,00	1,00	1,00	8,00
	MACIZOS de anclaje					
	T	3	4,50	1,70		22,95
	Varios desagües	4	1,00	0,50		2,00
	Varios apoyos menores	0,15	63,00			9,45
						72,54

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.03.05	OBRA DE DESAGÜE (DC)					
02.05.03.05.1	ARQUETA ROTURA (DC)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Pozo	1	2,50	2,50	2,50	15,63
						15,63
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excav	1	2,50	2,50	2,50	15,63
		-1	4,40			-4,40
						11,23
P5ARQP-1.2A	ud Arq. pref DN=1.2 m H=3.0m+ tapa fundición DN600 +pates UD de Arqueta prefabricada, altura variable hasta 3.0m de tipo pozo de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltes para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltes en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base. Unidad totalmente terminada.					
		1				1,00
						1,00
02.05.03.05.2	CONDUCCIÓN Y EMBOCADURA (DC)					
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
		1	18,00			18,00
						18,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	18,00	2,00	1,80	64,80
						64,80
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Desagüe	1	18,00	2,00	1,60	57,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A descontar tubo	-1	18,00	0,78		-14,04
	Embocadura					
	Solera	1	5,20		0,30	1,56
	Tacón entronque	1	4,00	0,40	0,50	0,80
						45,92
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo					
	Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Vertido	1	5,00	4,00	0,20	4,00
						4,00
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Embocadura zapatas					
	Aletas	2	2,50	1,25	0,50	3,13
						3,13
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Embocadura					
	Aletas	2	2,50	0,30	1,50	2,25
	Frontal	1	1,50	0,30	1,50	0,68
						2,93
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	4	2,50		0,50	5,00
						5,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	2	2,50		1,50	7,50
	Frontal	1	1,50		1,50	2,25
						9,75

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Embocadura					
	Aletas #12/20	2	2,50	9,20	1,50	69,00
	Frontal #12/20	2	2,50	9,20	1,50	69,00
	Zapatillas #12/20	4	2,50	1,25	9,20	115,00
	Solera	2	5,20		9,20	95,68
	Solapes	0,15	350,00			52,50
						401,18
02.05.03.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (DC)					
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclados con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desagüe	1	25,00	5,00		125,00
						125,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion					
	Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
	Desagüe	1	25,00	5,00		125,00
						125,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	25,00	0,50		12,50
	Entronque con desagüe	1	25,00	3,50	1,50	131,25
						143,75
P1MT08ESC200	m³ Escollera 200 kg careada					
	Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Desagüe	1	25,00		0,30	7,50
						7,50
P1MT08GTX-002	m² Geotextil Geotessant-295gr/m2					
	Suministro y colocación de geotextil no tejido Geotessán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	Desagüe	1,1	25,00			27,50
						27,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.03.06	ESTRUCTURA METÁLICA Y VARIOS (DC)					
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	4	12,20			48,80
						48,80
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada. Ángulo 45º	4	3,20			12,80
						12,80
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	4	1,50	2,00		12,00
						12,00
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada. Acceso escaleras	4	1,00			4,00
						4,00
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada. Escaleras					
	Soportes UPN-200	4	13,000	25,300		1.315,600
	Pilares UPN-200	4	4,000	25,300	2,000	809,600
	Placas	4	4,000	15,000		240,000
						2.365,20
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	3				3,00
	Línea de vida					3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.05.03.07	URBANIZACIÓN (DC)					
02.05.03.07.1	PAVIMENTOS (DC)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	1.680,00		0,30	504,00
	Entronque camino existente	1	55,00		0,30	16,50
						520,50
02.05.03.07.2	CERRAMIENTOS (DC)					
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint					
	Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
	Acceso	1				1,00
						1,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint					
	Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
	Acceso	1				1,00
						1,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment.					
	Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
	Cerramiento perimetral	1	155,00			155,00
						155,00
02.05.03.07.3	DRENAJES(DC)					
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Camino lateral	1	45,00			45,00
						45,00
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5					
	Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
	Cuneta guarda	1	112,00			112,00
		1	60,00			60,00
						172,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	1	10,00			10,00
						10,00
02.06	HINCAS (T12-D.C.)					
02.06.01	HINCA CERRO					
02.06.01.01	TRABAJOS PREPARATORIOS+MT (HINCA CERRO)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med acceso y preparación de plataforma	1	16.056,00			16.056,00
	Excav. zavorras y acceso provisional	1	220,00			220,00
						16.276,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	S/M	1	227,72			227,72
	Resto de mat. excavado será utilizado para rellenos de tuberías					
						227,72
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Pozo salida					
	Acceso	1	45,00	5,00	0,15	33,75
	Plataforma de trabajo s/ med CAD	1	13,00	15,00	0,15	29,25
	Pozo ataque					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	13,00	15,00	0,15	29,25
						99,75
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Cuneta perimetral provisional					
	Pozo salida	1	105,00			105,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	95,00			95,00
	Pozo ataque	2	65,00			130,00
						330,00
02.06.01.02	ESTRUCTURA (HINCA CERRO)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Fondo solera pozo de ataque	1	13,60	15,00	0,10	20,40
						20,40
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert					
	Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	rellenos muro de reacción	1	14,00	0,75		10,50
	Rellenos frontales s/nec	1	14,00	0,50		7,00
						17,50
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera provisional hinca	1	13,60	15,00	0,40	81,60
						81,60
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Muro empuje	1	0,60	13,00	4,50	35,10
	Muros perimetrales					
		2	15,00	0,30	1,00	9,00
		1	13,60	0,30	5,00	20,40
		1	13,60	0,30	5,00	20,40
						84,90
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Muros perimetrales #16/20					
		4	15,00	16,30	1,00	978,00
		2	13,60	16,30	5,00	2.216,80
		2	13,60	16,30	5,00	2.216,80
						5.411,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlite que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. Muros perimetrales					
		4	15,00		1,00	60,00
		2	13,60		5,00	136,00
		2	13,60		5,00	136,00
						332,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción. Apertura de hueco hincas					
		2	9,42			18,84
						18,84
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Demolición muro empuje+muro Resto se queda, incluida la losa y muros laterales					
		1	13,60	0,90	3,00	36,72
						36,72
02.06.01.03	HINCA (HINCA CERRO)					
P6HINCA2000B1	ud Implantación equipo escudo abierto hinca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo abierto, para hinca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.					
		1				1,00
						1,00
P6HINCA2000B3	ud Retirada de equipos esc. abierto+ traslado+imp. interior de obra Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto. Traslado desde pozo de extracción hincas-1 a pozo ataque hincas-2					
		1				1,00
						1,00
P6HINCA2500B	m Tubería hincada hormigón armado DN 2500 escudo abierto Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
		1	200,00			200,00
		1	200,00			200,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						400,00
P6HINCATUB01	m Sobre coste tubería int. hinca					
	Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas , operaciones de empuje y tiro-arrastré, p.p. de anillo de estanqueidad. Unidad totalmente instalada.					
	Instalación de tubería en interior	2	200,00			400,00
						400,00
02.06.01.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA CERRO)					
02.06.01.04.1	TRATAMIENTO (HINCA Cerro)					
P6HINC.T01	m³ Lechada cemento tratamientos					
	Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).					
	Relleno del gap incluido	2	200,00	9,42	0,20	753,60
	Relleno de hueco entre tubería hinca y tubería acero	1	912,10			912,10
						1.665,70
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20					
	Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.					
	Se consideran frentes estables si bien se dota ante riesgo					
	en transiciones geológicas					
	Frente extracción taludes pozo de extracción	1	20,00		5,00	100,00
	Frente de ataque	1	20,00		5,00	100,00
						200,00
02.06.01.04.2	AUSCULTACIÓN (HINCA Cerro)					
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p					
	Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada					
	Auscultación GENERAL	10	2,00			20,00
						20,00
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen					
	Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.					
	Auscultación	10	2,00			20,00
						20,00
P6HINCA03C	ud Equipo auscultación túnel / hinca de long >100m					
	Equipo de auscultación de seguimiento de túnel del cerro de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.06.02	HINCA NA-134					
02.06.02.01	TRABAJOS PREPARATORIOS+MT (HINCA NA-134)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med acceso y preparación de plataforma	1	1.639,76			1.639,76
	Excav. zahorras y acceso provisional	1	166,80			166,80
						1.806,56
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med recinto interior	1	2.903,20			2.903,20
						2.903,20
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Pozo ataque:Mejora de cimiento losa (Prov. NF alto)	1	13,00	15,00	0,30	58,50
	Pozo de salida: mejora cimientos (Porv. NF alto)	1	13,00	16,00	0,20	41,60
						100,10
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	s/ m	1	886,12			886,12
						886,12
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Pozo salida					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
	Pozo ataque					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
						166,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada. Cuneta perimetral provisional					
	Pozo salida	1	30,00			30,00
		1	60,00			60,00
	Pozo ataque	2	65,00			130,00
						220,00
02.06.02.02	PANTALLA Y ESTRUCTURA (HINCA NA-134)					
P5PANT01	ud Transporte y montaje equipos ejec. pantallas Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.					
		1				1,00
						1,00
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.					
	Traslado desde pozo de ataque a pozo de salida	1				1,00
						1,00
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.					
	Muro guía pozo entrada	2	17,00			34,00
		2	13,00			26,00
	Muro pozo salida	2	17,00			34,00
		1	13,00			13,00
						107,00
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o reperforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Hormigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	s/ med	1	1.712,00			1.712,00
						1.712,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Fondo solera pozo de ataque	1	13,00	15,00	0,10	19,50
						19,50
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera provisional hinca	1	78,00			78,00
						78,00
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Vigas de arriostre	1	151,47			151,47
	Muro empuje	1	0,60	13,00	3,00	23,40
						174,87
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/ med aux pantallas	1	155.119,27			155.119,27
	Losa #16/20+15%	2	1,15	195,00	16,30	7.310,55
	Muro empuje #16/20	2	13,00	16,30	3,00	1.271,40
						163.701,22
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios conectores	1	10,00			10,00
						10,00
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios s/nec viga	1	10,00			10,00
						10,00
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Pozo ataque					
	Conectores losas fi 16/20	560				560,00
						560,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante. Varios conectores s/ nec viga	1	10,00			10,00
						10,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. s/ med pantallas vigas Muro de empuje	1 1	386,40 13,00		3,00	386,40 39,00
						425,40
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada. s/ med	1	56,00			56,00
						56,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción. Apertura de hueco hinca	1	18,84			18,84
						18,84
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Demolición de frontal de pantalla pozo de ataque Demolición muro empuje Resto se queda, incluida la losa y pantallas..	1 1	71,50 13,00		0,60 3,00	71,50 23,40
						94,90
02.06.02.03	HINCA (HINCA NA-134)					
P6HINCA2000A1	ud Implantación equipo escudo cerrado hinca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo cerrado, para hinca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto. Desde fábrica en el subtramo agrupado	1				1,00
						1,00
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto. Traslado desde hinca-1 a hinca -2	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
	Hinca	2	50,00			100,00
						100,00
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.					
	Instalación de tubería en interior	2	50,00			100,00
						100,00
02.06.02.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA NA-134)					
02.06.02.04.1	TRATAMIENTO (HINCA NA-134)					
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).					
	Relleno del gap incluido	2	50,00	9,42	0,20	188,40
	Relleno de hueco entre tubería hinca y tubería acero	1	228,00			228,00
						416,40
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.					
	Frente extracción taludes pozo de extracción	2	20,00		5,00	200,00
						200,00
02.06.02.04.2	AUSCULTACIÓN (HINCA NA-134)					
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada					
	Auscultación carretera	8				8,00
						8,00
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada, excavaciones, rellenos y gravilla incluidos.					
	Auscultación carretera	8				8,00
						8,00
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes. Todo conforme Plan de Auscultación y requerimientos de Organismo.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.06.03	HINCA EBRO					
02.06.03.01	TRABAJOS PREPARATORIOS+MT (HINCA Ebro)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med acceso y preparación de plataforma	1	1.812,73			1.812,73
	Excav. zahorras y acceso provisional	1	166,80			166,80
						1.979,53
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med recinto interior	1	3.528,70			3.528,70
						3.528,70
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Pozo ataque:Mejora de cimiento losa (Prov. NF alto)	1	13,00	15,00	0,30	58,50
	Pozo de salida: mejora cimientos (Porv. NF alto)	1	13,00	16,00	0,20	41,60
						100,10
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Pozo salida					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
	Pozo ataque					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
						166,80
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Cuneta perimetral provisional					
	Pozo salida	1	80,00			80,00
		1	80,00			80,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Pozo ataque	1	30,00			30,00
		1	45,00			45,00
						235,00
02.06.03.02	PANTALLA Y ESTRUCTURA (HINCA Ebro)					
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra					
	Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.					
	Traslado desde Hinca NA-134	1				1,00
	Traslado desde pozo de ataque a pozo de salida	1				1,00
						2,00
PAPANT04	m Murete guía para muro pantalla					
	Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.					
	Muro guía pozo entrada	2	17,00			34,00
		2	13,00			26,00
	Muro pozo salida	2	17,00			34,00
		1	13,00			13,00
						107,00
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal					
	Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o reperforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amoterada con suministro y colocación del hormigón y exceso por pérdidas. -Homigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su ejey longitud según plano, adecuando la longitud de módulos finales y de unión.					
	s/ med	1	1.926,00			1.926,00
						1.926,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Fondo solera pozo de ataque	1	13,00	15,00	0,10	19,50
						19,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera provisional hinca	1	78,00			78,00
						78,00
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Vigas de arriostre	1	151,47			151,47
	Muro empuje	1	0,60	13,00	3,00	23,40
						174,87
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/ med aux pantallas	1	218.580,37			218.580,37
	Muro empuje #16/20	2	13,00	16,30	3,00	1.271,40
	Losa #16/20+15%	2	1,15	195,00	16,30	7.310,55
						227.162,32
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios conectores	1	10,00			10,00
						10,00
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios s/nec viga	1	10,00			10,00
						10,00
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Pozo ataque					
	Conectores losas fi 16/20	560				560,00
						560,00
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios conectores s/ nec viga	1	10,00			10,00
						10,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	s/ med pantallas vigas	1	386,40			386,40
	Muro de empuje	1	13,00		3,00	39,00
						425,40
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo					
	Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.					
	s/ med	1	56,00			56,00
						56,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco					
	Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulfurresistente sin retracción.					
	Apertura de hueco hinca	1	18,84			18,84
						18,84
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon					
	Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	Demolición de frontal de pantalla pozo de ataque	1	91,00			91,00
	Demolición muro empuje	1	13,00	0,60	3,00	23,40
	Resto se queda, incluida la losa y pantallas..					
						114,40
02.06.03.03	HINCA (HINCA Ebro)					
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra					
	Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.					
	Traslado desde NA-134	1				1,00
	Traslado desde hincas-1 a hincas -2	1				1,00
						2,00
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado					
	Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
	Hinca	2	500,00			1.000,00
						1.000,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas , operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada. Instalación de tubería en interior	2	500,00			1.000,00
						1.000,00
02.06.03.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA Ebro)					
02.06.03.04.1	TRATAMIENTO (HINCA Ebro)					
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel). Frente en bolos sin matriz penetración (50% de la long)					
	Hinca-1 (Sup=15 m2, penetración 20%)	0,5	500,00	15,00	0,20	750,00
	Hinca-2 (Sup=15 m2, penetración 20%)	0,5	500,00	15,00	0,20	750,00
	Relleno del gap	2	500,00	9,42	0,20	1.884,00
	Relleno de hueco entre tubería hinca y tubería acero	1	1.884,00			1.884,00
						5.268,00
P6HINC.T02	m³ Resina de silicatos inyectada en el terreno Resina de silicatos inyectada en el terreno para consolidación en túneles e impermeabilización i/ rechazo. Frente en bolos sin matriz penetración (10% de la long)					
	Hinca-1 (Sup=15 m2, penetración 20%)	0,1	500,00	15,00	0,20	150,00
	Hinca-2 (Sup=15 m2, penetración 20%)	0,1	500,00	15,00	0,20	150,00
	Relleno del gap incluido					
						300,00
P1MT15-250M	m Micropilote DN 250 mortero M250 Pilote de 250 mm de diámetro, barrenado mecánico con empleo de entubación recuperable y lodos tixotrópicos, fabricado "in situ" de mortero M-250 SR, conforme a norma UNE 36068 y/o según normativa vigente, puesto en obra según EHE vigente, incluso parte proporcional de excavación, transporte, instalación, montaje y desmontaje de equipos, recuperación de la entubación, protección de la cabeza del pilote, descabezado de pilote hasta cara inferior de viga de atado y retirada de sobrantes, ejecución, control de calidad, suministro y colocacinó de tubos sónicos , informes, ensayos asociados y documentación. Totalmente terminado. Pozo de ataque, en los primeros 10m para evitar arrastres Pilotes de 15m y colocación tresbolillo c/ 1.5m					
	Hinca-1	7	4,00			28,00
	Hinca-2	7	4,00			28,00
						56,00
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes. Frente extracción taludes pozo de extracción	2	20,00		5,00	200,00
						200,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.06.03.04.2 AUSCULTACIÓN (HINCA Ebro)						
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	4				4,00
						4,00
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.	4				4,00
						4,00
P6HINCA03B	ud Equipo auscultación túnel / hinca río de long >100m Equipo de auscultación de seguimiento de túnel bajo río de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes. Todo conforme Plan de Auscultación y requerimientos de Organismo.	1				1,00
						1,00
02.06.04 HINCA FFCC ALSASUA						
02.06.04.01 TRABAJOS PREPARATORIOS+MT (HINCA FFCC)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med acceso y preparación de plataforma	1	1.995,97			1.995,97
	Excav. zahorras y acceso provisional	1	174,30			174,30
						2.170,27
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med recinto interior	1	3.248,70			3.248,70
						3.248,70
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Pozo ataque:Mejora de cimiento losa (Prov. NF alto)	1	13,00	15,00	0,30	58,50
	Pozo de salida: mejora cimientos (Porv. NF alto)	1	13,00	16,00	0,20	41,60
						100,10
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Pozo salida					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
	Pozo ataque					
	Acceso	1	20,00	5,00	0,15	15,00
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
						174,30
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada. Cuneta perimetral provisional					
	Pozo salida	1	65,00			65,00
		1	65,00			65,00
	Pozo ataque	2	70,00			140,00
						270,00
02.06.04.02	PANTALLA Y ESTRUCTURA (HINCA FFCC)					
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.					
	Traslado desde hinca Ebro	1				1,00
	Traslado desde pozo de ataque a pozo de salida	1				1,00
						2,00
P5PANT03	ud Desmontaje/ desplazamiento equipos pantallas a fábricas Desmontaje final de pantallas y transporte a punto de origen. Unidad completa.					
	Traslados a fábrica	1				1,00
						1,00
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.					
	Muro guía pozo entrada	2	17,00			34,00
		2	13,00			26,00
	Muro pozo salida	2	17,00			34,00
		1	13,00			13,00
						107,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o perforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Homigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreescavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.					
	s/ med	1	1.712,00			1.712,00
						1.712,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Fondo solera pozo de ataque	1	13,00	15,00	0,10	19,50
						19,50
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera provisional hincia	1	78,00			78,00
						78,00
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Vigas de arriostre	1	151,47			151,47
	Muro empuje	1	0,60	13,00	3,00	23,40
						174,87
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/ med aux pantallas	1	164.819,32			164.819,32
	Muro empuje #16/20	2	13,00	16,30	3,00	1.271,40
	Losa #16/20+15%	2	1,15	195,00	16,30	7.310,55
						173.401,27

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante. Varios conectores	1	10,00			10,00
						10,00
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante. Varios s/nec viga	1	10,00			10,00
						10,00
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante. Pozo ataque Conectores losas fi 16/20	560				560,00
						560,00
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante. Varios conectores s/ nec viga	1	10,00			10,00
						10,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. s/ med pantallas vigas Muro de empuje	1 1	386,40 13,00		3,00	386,40 39,00
						425,40
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada. s/ med	1	56,00			56,00
						56,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción. Apertura de hueco hinca	1	18,84			18,84
						18,84
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Demolición de frontal de pantalla pozo de ataque Demolición muro empuje	1 1	78,00 13,00	0,60	3,00	78,00 23,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Resto se queda, incluida la losa y pantallas..					101,40
02.06.04.03	HINCA (HINCA FFCC)					
P6HINCA2000A2	ud Retirada equipo escudo cerrado hinca DN 2.000-2500 a fábrica					
	Retirada completa de obra y transporte a punto de origen de proveedor de equipo perforador de escudo cerrado, para hinca de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.					
	Retirada a fábrica	1				1,00
						1,00
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra					
	Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.					
	Traslado desde hinca Ebro	1				1,00
	Traslado desde hinca-1 a hinca -2	1				1,00
						2,00
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado					
	Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
	Hinca	2	50,00			100,00
						100,00
P6HINCATUB01	m Sobre coste tubería int. hinca					
	Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.					
	Instalación de tubería en interior	2	50,00			100,00
						100,00
02.06.04.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA FFCC)					
02.06.04.04.1	TRATAMIENTO (HINCA FFCC)					
P6HINC.T01	m³ Lechada cemento tratamientos					
	Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).					
	Relleno del gap incluido	2	50,00	9,42	0,20	188,40
	Paraguas en el frente (20% long S=15m2, 20% penetrac)	0,2	50,00	15,00	0,20	30,00
	Relleno de hueco entre tubería hinca y tubería acero	1	228,00			228,00
						446,40
P6HINC.T02	m³ Resina de silicatos inyectada en el terreno					
	Resina de silicatos inyectada en el terreno para consolidación en túneles e impermeabilización i/ rechazo.					
	Paraguas en el frente s/n	0,05	50,00	15,00	0,20	7,50
						7,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.					
	Frente extracción taludes pozo de extracción	2	20,00		5,00	200,00
						200,00
02.06.04.04.2 AUSCULTACIÓN (HINCA FFCC)						
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada					
	Auscultación FFCC plataforma y Vía	12				12,00
						12,00
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.					
	Auscultación FFCC	12				12,00
						12,00
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes. Todo conforme Plan de Auscultación y requerimientos de Organismo.					
		1				1,00
						1,00
P6HINCA05	ud Equipo vigilancia FFCC+tasas Equipo de vigilancia FFCC de ADIF, incluido pago de tasas.					
		1				1,00
						1,00
02.06.05 HINCA AP-68						
02.06.05.01 TRABAJOS PREPARATORIOS+MT (HINCA AP-68)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med acceso y preparación de plataforma	1	10.461,49			10.461,49
	Excav. zavorras y acceso provisional	1	88,50			88,50
						10.549,99
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Pozo salida					
	Acceso	1	30,00	5,00	0,15	22,50
	Plataforma de trabajo s/ med CAD	1	13,00	15,00	0,15	29,25
	Pozo ataque					
	Acceso	1	10,00	5,00	0,15	7,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Plataforma de trabajo s/ med CAD	1	13,00	15,00	0,15	29,25
						88,50
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada. Cuneta perimetral provisional					
	Pozo salida	1	90,00			90,00
		1	90,00			90,00
	Pozo ataque	2	65,00			130,00
						310,00
02.06.05.02	ESTRUCTURA (HINCA AP68)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada. Fondo solera pozo de ataque	1	15,00	12,40	0,10	18,60
						18,60
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. rellenos muro de reacción	1	12,40	0,75		9,30
	Rellenos frontales s/nec	1	12,40	0,50		6,20
						15,50
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. Solera provisional hinca	1	15,00	12,40	0,40	74,40
						74,40
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada. Muro empuje	1	0,60	12,40	4,50	33,48
	Muros perimetrales	2	15,00	0,30	1,00	9,00
		1	12,40	0,30	5,00	18,60
		1	12,40	0,30	5,00	18,60
						79,68

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Muros perimetrales #16/20					
		4	15,00	16,30	1,00	978,00
		2	12,40	16,30	5,00	2.021,20
		2	12,40	16,30	5,00	2.021,20
						5.020,40
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Muros perimetrales					
		4	15,00		1,00	60,00
		2	12,40		5,00	124,00
		2	12,40		5,00	124,00
						308,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco					
	Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.					
	Apertura de hueco hincas					
		2	9,42			18,84
						18,84
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon					
	Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	Demolición muro empuje+muro					
		1	12,40	0,90	3,00	33,48
	Resto se queda, incluida la losa y muros laterales					
						33,48
02.06.05.03	HINCA (HINCA AP68)					
P6HINCA2000B2	ud Retirada equipo escudo cerrado hinca DN 2.000-2500 a fáb.					
	Retirada completa de obra y transporte de equipo perforador de escudo abierto, para hinca de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.					
	Retirada a fábrica					
		1				1,00
						1,00
P6HINCA2000B3	ud Retirada de equipos esc. abierto+ traslado+imp. interior de obra					
	Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.					
	Traslado desde Hinca del cerro					
		1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Traslado desde pozo de extracción hinca-1 a pozo ataque hinca-2	1				1,00
						2,00
P6HINCA2000B	m Tubería hincada hormigón armado DN 2000 escudo abierto					
	Tubería hincada de DN 2.000 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje.					
	Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
	Hinca-1	1	115,00			115,00
	Hinca-2	1	115,00			115,00
						230,00
P6HINCATUB01	m Sobre coste tubería int. hinca					
	Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.					
	Instalación de tubería en interior	2	115,00			230,00
						230,00
02.06.05.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA AP68)					
02.06.05.04.1	TRATAMIENTO (HINCA AP68)					
P6HINC.T01	m³ Lechada cemento tratamientos					
	Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).					
	Relleno del gap incluido	2	115,00	7,54	0,20	346,84
	Relleno de hueco entre tubería hinca y tubería acero	1	244,80			244,80
						591,64
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20					
	Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.					
	Se consideran frentes estables si bien se dota ante riesgo					
	en transiciones geológicas					
	Frente extracción taludes pozo de extracción	1	20,00		5,00	100,00
	Frente de ataque	1	20,00		5,00	100,00
						200,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.06.05.04.2 AUSCULTACIÓN (HINCA AP68)						
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada					
	Auscultación carretera	10	2,00			20,00
						20,00
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.					
	Auscultación carretera	10	2,00			20,00
						20,00
P6HINCA03A	ud Equipo auscultación túnel / hinca carretera de long >100m Equipo de auscultación de seguimiento de túnel carretero de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes. Todo conforme Plan de Auscultación y requerimientos de Organismo.					
		1				1,00
						1,00
02.07 MACIZOS DE ANCLAJE (T12-D.C.)						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. s/med aux T13-T13BIS					
	Sobreexcav. macizo vertical	2	43,75			87,50
	Sobreexcav. macizo con muro (macizo)	2	72,10			144,20
	Sobreexcav. macizo con muro (muro)	2	1,89			3,78
	T17-T18					
	Sobreexcav. macizo vertical	2	32,29			64,58
	Sobreexcav. macizo con muro (macizo)	1	62,27			62,27
	Sobreexcav. macizo con muro (muro)	1	1,89			1,89
	T17-T18					
	Sobreexcav. macizo vertical	2	28,19			56,38
						420,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada. s/med aux T13-T13BIS					
	macizo vertical	2	16,33			32,66

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	macizo con muro (macizo)	2	26,91			53,82
	T17-T18					
	macizo vertical	2	12,49			24,98
	macizo con muro (macizo)	1	23,24			23,24
	T17-T18					
	macizo vertical	2	13,65			27,30
						162,00
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	s/med aux					
	T13-T13BIS					
	macizo vertical	2	61,26			122,52
	macizo con muro (macizo)	2	117,20			234,40
	macizo con muro (muro)	2	61,51			123,02
	T17-T18					
	macizo vertical	2	39,85			79,70
	macizo con muro (macizo)	1	107,35			107,35
	macizo con muro (muro)	1	37,73			37,73
	T17-T18					
	macizo vertical	2	27,01			54,02
						758,74
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	CN-T11					
	ANCLAJE VERTICAL					
	Caras laterales	4	19,47			77,88
	Cara ag.arriba	2	41,13			82,26
	Cara ag.abajo	2	17,26			34,52
	ANCLAJE VERTICAL CON MURO					
	Caras laterales	4	25,51			102,04
	Cara ag.arriba	2	48,60			97,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Cara ag.abajo	2	17,34			34,68
						428,58
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	T13-T13BIS					
	ANCLAJE VERTICAL					
	# ø12 c/15					
	Caras laterales	4	9,77	7,25	12,27	3.476,46
	Cara ag.arriba	2	3,63	7,25	12,27	645,83
	Cara inferior	2	3,00	6,20	12,27	456,44
	Cara ag.abajo	2	2,18	7,25	12,27	387,85
	Cara superior	2	3,78	7,25	12,27	672,52
	a deducir conducciones	-2	3,78	4,00	12,27	-371,04
	ø12 c/15					
	Base conducciones	2	3,78	7,25	6,13	335,99
	ANCLAJE VERTICAL CON MURO					
	Macizo					
	# ø16 c/15					
	Caras laterales	4	18,34		21,73	1.594,11
	Cara ag.arriba	2	4,49	7,25	21,73	1.414,73
	Cara inferior	2	5,00	6,20	21,73	1.347,26
	Cara ag.abajo	2	2,17	7,25	21,73	683,73
	Cara superior	4	6,23	7,25	21,73	3.925,96
	a deducir conducciones	-4	6,23	4,00	21,73	-2.166,05
	ø12 c/15					
	Base conducciones	2	26,89	41,53	0,92	2.054,80
	Muro vertical					
	# ø16 c/15					
	Cara inferior	2	93,62		21,73	4.068,73
	Refuerzo	2	27,00	10,50	1,63	924,21
		2	5,18	52,50	1,63	886,56
	# ø25 c/20					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Cara superior	2	93,62		53,07	9.936,83
	Refuerzo	2	27,00	10,50	3,98	2.256,66
		2	5,64	52,50	3,98	2.356,96
	2 ø25					
	Refuerzo hueco	4	24,01	3,98		382,24
	T17-T18					
	ANCLAJE VERTICAL					
	# ø12 c/15					
	Caras laterales	4	6,89	7,25	12,27	2.451,67
	Cara ag.arriba	2	2,99	7,25	12,27	531,97
	Cara inferior	2	2,50	6,20	12,27	380,37
	Cara ag.abajo	2	2,03	7,25	12,27	361,17
	Cara superior	2	2,89	7,25	12,27	514,17
	a deducir conducciones	-2	2,89	4,00	12,27	-283,68
	ø12 c/15					
	Base conducciones	2	2,89	7,25	6,13	256,88
	ANCLAJE VERTICAL CON MURO					
	Macizo					
	# ø16 c/15					
	Caras laterales	2	16,69		21,73	725,35
	Cara ag.arriba	1	3,08	6,85	21,73	458,46
	Cara inferior	1	5,00	5,80	21,73	630,17
	Cara ag.abajo	1	2,02	6,85	21,73	300,68
	Cara superior	2	5,38	6,85	21,73	1.601,63
	a deducir conducciones	-2	5,38	4,00	21,73	-935,26
	ø12 c/15					
	Base conducciones	1	19,85	38,67	0,92	706,19
	Muro vertical					
	# ø16 c/15					
	Cara inferior	1	63,65		21,73	1.383,11
	Refuerzo	1	27,00	10,50	1,63	462,11
		1	5,18	52,50	1,63	443,28
	# ø25 c/20					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Cara superior	1	63,65		21,73	1.383,11
	Refuerzo	1	27,00	10,50	3,98	1.128,33
		1	5,64	52,50	3,98	1.178,48
	2 ø25					
	Refuerzo hueco	2	14,99	3,98		119,32
	T18-T19					
	ANCLAJE VERTICAL					
	# ø12 c/15					
	Caras laterales	4	8,21	4,28	12,27	1.724,61
	Cara ag.arriba	2	3,41	4,28	12,27	358,16
	Cara inferior	2	2,33	3,23	12,27	184,69
	Cara ag.abajo	2	2,03	4,28	12,27	213,21
	Cara superior	2	3,21	4,28	12,27	337,15
	a deducir conducciones	-2	3,21	4,00	12,27	-315,09
	ø12 c/15					
	Base conducciones	2	3,16	4,28	6,13	165,81
						51.736,83

P4CINT1800 m Encintado anticorrosivo DN1800 mm

Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.

s/med aux

T13-T13BIS

macizo vertical	2	61,26	122,52
-----------------	---	-------	--------

macizo con muro (macizo)	2	117,20	234,40
--------------------------	---	--------	--------

T17-T18

macizo vertical	2	39,85	79,70
-----------------	---	-------	-------

macizo con muro (macizo)	1	107,35	107,35
--------------------------	---	--------	--------

macizo con muro (muro)	1	37,73	37,73
------------------------	---	-------	-------

T17-T18

macizo vertical	2	27,01	54,02
-----------------	---	-------	-------

635,72

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.08	CAMINOS DE SERVICIO (T12-D.C.)					
02.08.01	MOVIMIENTO DE TIERRAS Y PAVIMENTOS (T12-DC)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. s/med aux					
	T12-T13	1	1.039,50			1.039,50
	T13-T13B	1	2.570,66			2.570,66
	T13B-BT	1	7.115,63			7.115,63
	BT-DC	1	1.560,86			1.560,86
						12.286,65
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil. s/med aux					
	T12-T13	1	277,77			277,77
	T13-T13B	1	203,68			203,68
	T13B-BT	1	1.399,73			1.399,73
	BT-DC	1	1.290,98			1.290,98
						3.172,16
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. s/med aux					
	T12-T13	1	530,34			530,34
	T13-T13B	1	1.393,46			1.393,46
	T13B-BT	1	4.659,87			4.659,87
	BT-DC	1	2.294,99			2.294,99
						8.878,66
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. s/med aux					
	T12-T13	1	97,21			97,21
	T13-T13B	1	77,40			77,40
	T13B-BT	1	135,15			135,15

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	BT-DC	1	14,44			14,44
						324,20
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/med aux					
	T12-T13	1	2.073,90			2.073,90
	T13-T13B	1	1.651,20			1.651,20
	T13B-BT	1	2.883,20			2.883,20
	BT-DC	1	308,03			308,03
						6.916,33
02.08.02	DRENAJE TRANSVERSAL (T12-DC)					
02.08.02.01	MOVIMIENTO DE TIERRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/med aux					
	T12-T13	1	80,84			80,84
	T13-T13BIS	1	49,36			49,36
	T13BIS-BT	1	23,60			23,60
	BT-DC	1	75,45			75,45
						229,25
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN					
	Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/med aux					
	T13-T13BIS	1	59,75			59,75
	T13BIS-BT	1	22,98			22,98
	BT-DC	1	98,62			98,62
						181,35
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales					
	Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	s/med aux					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T12-T13	1	9,07			9,07
						9,07
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. s/med aux					
	T13-T13BIS	1	9,36			9,36
	T13BIS-BT	1	3,60			3,60
	BT-DC	1	15,45			15,45
						28,41
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria. s/med aux					
	T12-T13	1	38,00			38,00
	T13-T13BIS	1	40,00			40,00
	T13BIS-BT	1	20,00			20,00
	BT-DC	1	60,00			60,00
						158,00
02.08.02.02	OBRAS DE FÁBRICA					
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizadora de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5 , incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada. s/med aux					
	T12-T13	1	17,40			17,40
	T13-T13BIS	1	16,30			16,30
	T13BIS-BT	1	19,00			19,00
						52,70
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos. s/med aux					
	T12-T13	1	51,55			51,55

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T13-T13BIS	1	55,90			55,90
	T13BIS-BT	1	100,50			100,50
						207,95
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000					
	Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	s/med aux					
	T13-T13BIS	1	15,60			15,60
	T13BIS-BT	1	6,00			6,00
	BT-DC	1	25,75			25,75
						47,35
P4M2.0X1.0	m Marco prefabricado 2,0x1,0 m					
	Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.0x1.0 m, conforme a norma UNE-EN 14844+A2:2012incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.					
	s/med aux					
	T12-T13	1	2,00			2,00
						2,00
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales					
	Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	s/med aux					
	T12-T13	1	13,64			13,64
	T13-T13BIS	1	22,34			22,34
	T13BIS-BT	1	11,17			11,17
	BT-DC	1	33,50			33,50
						80,65
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	s/med aux					
	T12-T13	1	27,30			27,30
	T13-T13BIS	1	34,20			34,20
	T13BIS-BT	1	17,10			17,10
	BT-DC	1	51,30			51,30
						129,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlite que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. s/med aux					
	T12-T13	1	23,60			23,60
	T13-T13BIS	1	31,54			31,54
	T13BIS-BT	1	15,77			15,77
	BT-DC	1	47,31			47,31
						118,22
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. s/med aux					
	T12-T13	1	1.159,40			1.159,40
	T13-T13BIS	1	1.898,48			1.898,48
	T13BIS-BT	1	949,24			949,24
	BT-DC	1	2.847,71			2.847,71
						6.854,83
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada. s/med aux					
	T12-T13	1	16,40			16,40
	T13-T13BIS	1	18,45			18,45
	T13BIS-BT	1	9,23			9,23
	BT-DC	1	27,68			27,68
						71,76
P3LAM1	m² Imperm. muros+Lámina dren PE+Geotex 200 g Drenaje de muros con lámina nodular con marcado CE de polietileno virgen con geotextil incorporado y doble nódulo de 12 mm. de altura nod, capacidad de drenaje 1,2 l / s y resistencia a compresión de 90 kn/m2. Delta Drain o similar, p.p. de fijación al soporte con taco espiga de polipropileno, a razón de 3 uds / m2 y sellado de solapes de anchura de 10 cm. con banda autoadhesiva a dos caras de caucho butilo Delta Fix, incluso impermeabilización del paramento de hormigón con dos manos de emulsión bituminosa modificada 0.7kg/m2 , según CTE/DB-HS 1. Unidad totalmente terminada, incluso remate de conexión a dren. s/med aux					
	T12-T13	1	18,04			18,04
	T13-T13BIS	1	20,30			20,30
	T13BIS-BT	1	10,15			10,15

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	BT-DC	1	30,44			30,44
						78,93
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada. s/med aux					
	T12-T13	1	24,72			24,72
	T13-T13BIS	1	21,60			21,60
	T13BIS-BT	1	10,80			10,80
	BT-DC	1	32,40			32,40
						89,52
02.08.03	DRENAJE LONGITUDINAL (T12-DC)					
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada. s/med aux					
	T12-T13	1	185,17			185,17
	T13-T13B	1	147,43			147,43
	T13B-BT	1	257,43			257,43
	BT-DC	1	27,50			27,50
						617,53
02.09	PROTECCIÓN CATÓDICA (T12-D.C.)					
P2CAT001	ud Rectificador 70V-35A en armario intemperie. Rectificador 70V-35A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	1				1,00
						1,00
P2CAT004	ud Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2 Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	10				10,00
						10,00
P2CAT005	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vía Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T12-T13	9				9,00
						9,00
P2CAT006	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	2				2,00
						2,00
P2CAT007	m Cable anódico tipo RV-K de sección 1x25mm2 Cable anódico tipo RV-K de sección 1x25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	1	120,00			120,00
						120,00
P2CAT008	Kg Coque petróleo calcinado Coque petróleo calcinado s/med aux					
	T12-T13	1	4.000,00			4.000,00
						4.000,00
P2CAT009	m Manguera perforada Manguera perforada s/med aux					
	T12-T13	1	54,00			54,00
						54,00
P2CAT010	ud Arqueta riego protección catódica Arqueta riego ide protección catódica incluidos p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	2				2,00
						2,00
P2CAT012	ud Caja de conexionado 10 ánodos IP.55 y prensaestopas. Caja de conexionado 10 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	1				1,00
						1,00
P2CAT013	ud Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0. Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0.6/1 KV 1 x 6 mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT014	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 (cantidad estimada) y Handy cap, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	2				2,00
						2,00
P2CAT015	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	2				2,00
						2,00
P2CAT016B	ud Obra civil, mont.conex EPC+TP+TPEs+ P.Func (T12-DC) Obra civil, montaje y conexionado EPC, y material en línea de TPs y TPEs en todo el conjunto del subtramo 12-DC. Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	1				1,00
	T13-T13B	1				1,00
	T13B-BT	1				1,00
	BT-DC	1				1,00
						4,00
P2CAT017	ud Caja toma de potencial de policarbonato con prensaestopas Caja toma de potencial de policarbonato con prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	3				3,00
						3,00
P2CAT018	ud Caja toma de potencial TPE (200 X 200) con poste acero galvaniza Caja toma de potencial TPE (200 X 200) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	5				5,00
	T13B-BT	3				3,00
						8,00
P2CAT019	ud Caja toma de potencial TPE (320 x 320) con poste acero galvaniza Caja toma de potencial TPE (320 x 320) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	3				3,00
	T13-T13B	1				1,00
	T13B-BT	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	BT-DC	1				1,00
						6,00
P2CAT020	ud UDCA en caja TPE con poste de acero galvanizado diámetro 2" y 2 UDCA en caja TPE con poste de acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T13B-BT	11				11,00
						11,00
P2CAT021	ud Vía de chispas en caja TPE con poste de acero galvanizado Vía de chispas en caja TPE con poste de acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	5				5,00
	T13-T13B	11				11,00
	T13B-BT	2				2,00
						18,00
P2CAT022	ud Electrodo probeta estándar Electrodo probeta estándar, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	10				10,00
	T13-T13B	1				1,00
	T13B-BT	3				3,00
	BT-DC	1				1,00
						15,00
P2CAT023	ud Electrodo probeta alterna Electrodo probeta alterna, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	5				5,00
	T13-T13B	11				11,00
	T13B-BT	13				13,00
						29,00
P2CAT024	ud Electrodo probeta alterna ENAGÁS. Electrodo probeta alterna ENAGÁS, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T13B-BT	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT025	ud Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados con mezcla activadora y 5 m de cable (Protección catódica provisional), incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	192				192,00
	T13-T13B	144				144,00
	T13B-BT	204				204,00
	BT-DC	12				12,00
						552,00
P2CAT026	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable R Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable RV 0.6/1 KV 1 x 6 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	30				30,00
	T13B-BT	10				10,00
						40,00
P2CAT027	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable RV 0.6/1 KV 1 x 25 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	25				25,00
	T13-T13B	32				32,00
	T13B-BT	35				35,00
	BT-DC	6				6,00
						98,00
P2CAT028	ud Cable acero galvanizado 12 mm Cable acero galvanizado 12 mm, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	1	2.575,00			2.575,00
	T13-T13B	1	7.115,00			7.115,00
	T13B-BT	1	6.475,00			6.475,00
	BT-DC	1	15,00			15,00
						16.180,00
P5ELEM1X25TT	m Manguera eléctrica 1 x 25 mm2 Cu Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado. s/med aux					
	T12-T13	1	760,00			760,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T13-T13B	1	340,00			340,00
	T13B-BT	1	1.000,00			1.000,00
	BT-DC	1	10,00			10,00
						2.110,00
P5ELEM1X50TT	m Manguera eléctrica 1 x 50 mm2 Cu					
	Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	s/med aux					
	T13B-BT	1	150,00			150,00
						150,00
P2CAT029	ud Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente					
	Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.					
	s/med aux					
	T12-T13	19				19,00
	T13-T13B	37				37,00
	T13B-BT	43				43,00
	BT-DC	4				4,00
						103,00
P2CAT030	ud Picas de zinc 1000 mm ensacada					
	Picas de zinc 1000 mm ensacada, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.					
	s/med aux					
	T12-T13	4				4,00
	T13-T13B	4				4,00
	T13B-BT	4				4,00
	BT-DC	4				4,00
						16,00
P2CAT031	ud Vías de chispas con cable y pletina para conexión					
	Vías de chispas con cable y pletina para conexión, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.					
	s/med aux					
	T12-T13	9				9,00
	T13-T13B	8				8,00
	T13B-BT	4				4,00
	BT-DC	5				5,00
						26,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT034	ud Junta aislante embridada DN 1900 mm PN16 Junta aislante embridada DN 1900 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T13B-BT	2				2,00
	BT-DC	2				2,00
						4,00
P2CAT035A	ud Junta aislante embridada DN 1800 mm PN16 Junta aislante embridada DN 1800 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T13-T13B	2				2,00
	BT-DC	3				3,00
						5,00
P2CAT035B	ud Junta aislante embridada DN 1800 mm PN25 Junta aislante embridada DN 1800 mm PN25, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	4				4,00
						4,00
P2CAT036	ud Junta aislante embridada DN 1600 mm PN16 Junta aislante embridada DN 1600 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T13-T13B	2				2,00
	T13B-BT	2				2,00
						4,00
P2CAT041	ud Junta aislante embridada DN 800mm PN16 Junta aislante embridada DN 800mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T13-T13B	4				4,00
						4,00
P2CAT042	ud Junta aislante embridada DN 800mm PN25 Junta aislante embridada DN 800mm PN25, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	1				1,00
						1,00
P2CAT045	ud Junta aislante embridada DN 300mm PN16 Junta aislante embridada DN 300mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	2				2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T13-T13B	2				2,00
						4,00
P2CAT046	ud Junta aislante monoblock DN 1800 PN16 Junta aislante monoblock DN 1800 PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T12-T13	4				4,00
						4,00
P2CAT047	ud Junta aislante monoblock DN 1600 PN16 Junta aislante monoblock DN 1600 PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T13B-BT	4				4,00
						4,00
02.10	INSTALACIONES ELÉCTRICAS (T12-D.C.)					
02.10.01	TOMA-13+EPC					
02.10.01.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-13)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00
P5ELEC1M1T13	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-13 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-13					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P5ELECTM	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
02.10.01.02 LÍNEA DE MEDIA TENSIÓN (TOMA-13)						
P5ELECTMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	Total apoyos	51				51,00
	A deducir inicio y fin de lñinea con trafo	-2				-2,00
	Añadir postes flojos de apoyo	2				2,00
						51,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.					
	LA-56	3	3.436,75	1,10		11.341,28
	Asume 10% sobre long. por catenaria					
						11.341,28
02.10.01.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-13)					
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1				1,00
						1,00
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra					
	Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1				1,00
						1,00
02.10.01.04	CUADROS ELÉCTRICOS (TOMA-13)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m)					
	Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta					
	Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías					
	Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2					
	Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	3,50	5,50	0,20	3,85
						3,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm ² (20 N/mm ²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm ² ., 1 bloque de bornas de 2,5 mm ² . y 1 bloque de bornas de 25 mm ² . para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm ² . para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm ² . para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECGBT13	ud CGBT Toma-13 incl. cabina y aparamenta					
	Suministro y montaje de módulo de alimentación, control y protección de Toma-13 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexas. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
		1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	4				4,00
	Pulsador general de corte	1				1,00
						5,00
02.10.01.05	CANALIZACIONES (TOMA-13)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a)					
	Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. CCTV	1	3,00			3,00
	Conex Tuberías	1	43,50			43,50
		1	12,00			12,00
						58,50
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b)					
	Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	Conex trafo a caseta	1	18,00			18,00
						18,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm					
	Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interior caseta	1	30,00			30,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm					
	Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm					
	Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	4	5,00			20,00
		1	5,00			5,00
						25,00
P5ELEBAND2	m Bandeja PVC 200x60mm					
	Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	12,50			12,50
		1	8,00			8,00
		1	2,50			2,50
		1	6,00			6,00
						29,00
P5ELEBAND3	m Bandeja PVC 100x60mm					
	Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20					
	Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32					
	Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido					
	Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Interior caseta	4	1,00			4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Conex. LMT a caseta	2				2,00
	Conex CCTV	1				1,00
	Conex. valv.	7				7,00
						10,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	Varios CCTV	1				1,00
						1,00
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.					
	s/nec	1				1,00
						1,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	s/ nec	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería	5				5,00
						9,00
02.10.01.06	LÍNEAS DE BT (TOMA-13)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	3				3,00
	Salida SAI	3				3,00
	L-6 Agrupacion	3				3,00
	L-6.3 Trafo 230/24V	5				5,00
	L-7 Agupacion	3				3,00
	L-7.4 Trafo 230/24V	5				5,00
	L-7.5 Señales Contr	3				3,00
	L-3.1 Alumb. Int.	30				30,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-3.2 Alumb. Emerg.	30				30,00
	L-3.3 Alumb. Ext.	1				1,00
	L-4.1 Vent-1	5				5,00
	L-4.2 R. Caldeo	5				5,00
	L-4.3 Al. Cuadro	48				48,00
	L-6.1 CCTV	25				25,00
	L-6.2 Reserva	5				5,00
	L-6.3.1 Reserva	10				10,00
	L-7.1 PLC y Control	1				1,00
	L-7.2 Señales Varia	50				50,00
	L-7.3 Cuadro Comuni	1				1,00
	L-7.4.1 Varios	5				5,00
	L-7.5.1 Señal Val 1	50				50,00
	L-7.5.2 Señal Val 2	50				50,00
	L-7.5.3 Señal Val 3	50				50,00
	L-7.5.4 Señal Val 4	50				50,00
	L-7.5.5 Señal Cauda	50				50,00
	L-7.5.6 Varios	50				50,00
	L-7.5.7 Varios	50				50,00
	L-7.5.8 Varios	50				50,00
	L-7.5.9 Varios	50				50,00
	L-7.5.10 Varios	50				50,00
	L-7.5.11 (Reserva)	50				50,00
	L-7.5.12 (Reserva)	50				50,00
	L-7.5.13 (Reserva)	50				50,00
	L-7.5.14 (Reserva)	50				50,00
	L-4 Agrupacion	2				2,00
						943,00
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2					
Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	Varios conex	1	5,00			5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-3.4 Reserva	25				25,00
	Reserva Monofasica	5				5,00
	L-4.4 T.C.	5				5,00
	L-5.1 Tomas Monof	15				15,00
						50,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	50				50,00
	Actuador Valv. N°02	75				75,00
	Actuador Valv. N°03	50				50,00
	Actuador Valv. N°04	50				50,00
	Reserva Trifasica	5				5,00
	L-5.1 Tomas Trif	15				15,00
						245,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Entrada SAI	5				5,00
	ACOMETIDA PRINCIPAL	30				30,00
	ACOMETIDA GRUPO	5				5,00
						40,00
P5ELEM4X16T2	m Manguera eléctrica 4 x 16 + TT 16mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Acometida desde CT	1	30,00			30,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						30,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00
02.10.01.07	TOMA TIERRA (TOMA-13)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
		1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba. Losa . TT independiente					
		2				2,00
	Pararrayos	3				3,00
						5,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2. Varios					
		8				8,00
						8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro. TT					
		2				2,00
						2,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica. Losa					
		1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas. Losa					
		1	140,00			140,00
		2	2,00			4,00
						144,00
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada Pararrayos y otros					
		1	5,00			5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					
	Pararrayos y otros	1	5,00			5,00
						5,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
	Varios	2				2,00
						2,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					
		1				1,00
						1,00
02.10.01.08	MECANISMOS (TOMA-13)					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
		1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.10.01.09	ALUMBRADO (TOMA-13)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65					
	Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	Caseta	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm					
	Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cabelado necesario para la instalación. Unidad totalmente operativa.					
	Emergencia en interior de caseta	1				1,00
	Exterior de caseta	1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo					
	Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	Caseta	1				1,00
						1,00
02.10.02	TOMA-13b					
02.10.02.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-13b)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares					
	Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA					
	Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil					
	Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEC10003	ud Operación de conexonado y desconexonados a trafo Operación de conexonado y desconexonado de LMT.	1				1,00
						1,00
P5ELEC1M1T13B	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-13B Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexonado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma 13b.	1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
02.10.02.02	LÍNEA DE MEDIA TENSIÓN (TOMA-13b)					
P5ELEC1M1T2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexonar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada. Inicio de LMT	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada. Añadir postes flojos de apoyo	1				1,00
						1,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada. LA-56	3	16,00	1,10		52,80
	Asume 10% sobre long. por catenaria					52,80
P5ELE200X2HT2	m Can. horm. PE 200x2+3x65mm (rustico) 0.65x1.3m (Zanja tipo 1A) Canalización de línea de media tensiónhormigonada en terrenos rústicos conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada. Rústico	1	545,00			545,00
						545,00
P5ELE200X2H2	m Can. horm. PE 200 mm x2 (calzadas) 0.65x1.3m (Zanja tipo 2B) Canalización de línea de media tensión hormigonada bajo Acerados y pavimentos conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada. Conexionados	1	3,00			3,00
						3,00
P5ELE200X2H1	m Can. horm. PE 200 mm x2 (aceras-rust) 0.65x1.3m Zanja tipo 2A) Canalización de línea de media tensión hormigonada en terrenos rústicos y/o ajardinados conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 100-130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada. Conexionados	1	3,00			3,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEM1X95A	m Manguera eléctrica 1 x 95 Al mm2 Manguera eléctrica HEPRZ1 1x95mm2 A1+H16 flexible completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Tendido	3	545,00			1.635,00
	Conexión con trafo	3	10,00			30,00
	Conesión paso LMT aérea-subterránea	3	10,00			30,00
						1.695,00
P5ARQPREF2.0E	ud Arqueta MT prefabricada inst. elect. 110x110x160 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.					
		14				14,00
						14,00
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	Cruce con LMT	2				2,00
	Cruce con línea de hidrocarburos	1				1,00
						3,00
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ..), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	Cruce con LMT	2				2,00
	Cruce con línea de hidrocarburos	1				1,00
						3,00
02.10.02.03 TRANSFORMACIÓN Y GENERACIÓN (TOMA-13b)						
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de canon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conectar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD	
						1,00	
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multi-función, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1				1,00	
						1,00	
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1				1,00	
						1,00	
02.10.02.04	CUADROS ELÉCTRICOS (TOMA-13b)						
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1				1,00	
						1,00	
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1				1,00	
						1,00	
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	Base	1	3,50	5,50	0,10	1,93
							1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	Base	1	4,00	6,00	0,40	9,60
							9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	Base	1	4,00	6,00	0,40	9,60
			-1	3,30	5,20	0,40	-6,86
							2,74

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm² (20 N/mm²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm²., 1 bloque de bornas de 2,5 mm². y 1 bloque de bornas de 25 mm². para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm². para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm². para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECGBT13B	ud CGBT Toma-13b incl. cabina y aparamenta					
	Suministro y montaje de módulo de alimentación, control y protección de Toma-13b en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
		1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	4				4,00
	Pulsador general de corte	1				1,00
						5,00
02.10.02.05	CANALIZACIONES(TOMA-13b)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a)					
	Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. CCTV	1	4,00			4,00
	Conex Tuberías	1	16,00			16,00
						20,00
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b)					
	Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	Conex trafo a caseta	1	10,00			10,00
						10,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm					
	Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interor caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	6	2,00			12,00
						12,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	20,00			20,00
						20,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	20,00			20,00
						20,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Conex. LMT a caseta	2				2,00
	Conex CCTV	1				1,00
	Conex. valv.	7				7,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						10,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	Varios CCTV	1				1,00
						1,00
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.					
	s/nec	1				1,00
						1,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	s/ nec	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería+caudalímetro	7				7,00
						11,00
02.10.02.06	LÍNEAS DE BT (TOMA-13b)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-3.1 Alumb. Int.	30				30,00
	L-3.2 Alumb. Emerg.	30				30,00
	L-3.3 Alumb. Ext.	1				1,00
	L-4.1 Vent-1	5				5,00
	L-4.2 R. Caldeo	5				5,00
	L-4.3 Al. Cuadro	48				48,00
	L-6.1 CCTV	25				25,00
	L-6.2 Reserva	5				5,00
	L-6.3.1 Reserva	10				10,00
	L-7.1 PLC y Control	1				1,00
	L-7.2 Señales Varia	50				50,00
	L-7.3 Cuadro Comuni	1				1,00
	L-7.4.1 Varios	5				5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-7.5.1 Señal Val 1	50				50,00
	L-7.5.2 Señal Cauda	50				50,00
	L-7.5.3 Otra Señal	50				50,00
	L-7.5.4 Otra Señal	50				50,00
	L-7.5.5 Otra Señal	50				50,00
	L-7.5.6 (Reserva)	50				50,00
	L-7.5.7 (Reserva)	50				50,00
	L-7.5.8(Reserva)	50				50,00
	L-7.5.9 (Reserva)	50				50,00
	L-7.5.10 (Reserva)	50				50,00
	L-7.5.11 (Reserva)	50				50,00
	L-7.5.12 (Reserva)	50				50,00
	L-7.5.13 (Reserva)	50				50,00
	L-7.5.14 (Reserva)	50				50,00
	Agrupacion 1	3				3,00
	Salida SAI	3				3,00
	L-6 Agrupacion	3				3,00
	L-6.3 Trafo 230/24V	5				5,00
	L-7 Agupacion	3				3,00
	L-7.4 Trafo 230/24V	5				5,00
	L-7.5 Señales Contr	3				3,00
						941,00

P5ELEM2X2.5TT m Manguera eléctrica 2 x 2.5 + TT 2.5mm2

Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	1	5,00	5,00
--------------	---	------	------

5,00

P5ELEM2X2.5T2 m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado

Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

L-3.4 Reserva	25		25,00
---------------	----	--	-------

Reserva Monofasica	5		5,00
--------------------	---	--	------

L-4 Agrupacion	2		2,00
----------------	---	--	------

L.4.4 T.C.	5		5,00
------------	---	--	------

L-5.1 Tomas Monof	15		15,00
-------------------	----	--	-------

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						52,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
	Entrada SAI	1	5,00			5,00
						10,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2					
	Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu					
	Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	1	50,00			50,00
	Reserva Trifasica	1	5,00			5,00
	L-5.1 Tomas Trif	1	15,00			15,00
						70,00
P5ELEM4X16TT	m Manguera eléctrica 4 x 16 + TT16 mm2 Cu					
	Manguera eléctrica de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Acometida desde CT	1	30,00			30,00
						30,00
P5ELEM4X6T2	m Manguera eléctrica 4 x 6 + TT 6mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 4 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	ACOMETIDA PRINCIPAL	1	30,00			30,00
	ACOMETIDA GRUPO	1	5,00			5,00
						35,00
P5ELEM01	ud Conjunto pequeño material líneas BT					
	Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.10.02.07	TOMA TIERRA (TOMA-13b)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
		1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba. Losa . TT independieente	2				2,00
	Pararrayos	3				3,00
						5,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2. Varios	8				8,00
						8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro. TT	2				2,00
						2,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica. Losa	1				1,00
						1,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas. Losa	1	30,00			30,00
						30,00
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada Pararrayos y otros	1	5,00			5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
	Varios	2				2,00
						2,00
02.10.02.08	MECANISMOS (TOMA-13b)					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
		1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
02.10.02.09	ALUMBRADO (TOMA-13b)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	Caseta	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Emergencia en interior de caseta	1				1,00
	Exterior de caseta	1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo					
	Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una t° de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	Caseta	1				1,00
						1,00
02.10.03	Derivación Corella					
02.10.03.01	ACOMETIDA Y LEGALIZACIÓN (DC)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares					
	Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA					
	Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil					
	Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo					
	Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00
P5ELEC1M1DC	ud Conex. LMTS+ refuerzos+adaptación línea Derivación Corella					
	Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexiónado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Derivación de Corella.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P5ELECTM	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
02.10.03.02 LÍNEA DE MEDIA TENSIÓN (DC)						
P5ELECMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1				1,00
	Inicio de LMT					1,00
						1,00
P5ELECMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	7				7,00
	Total apoyos					7,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A deducir inicio y fin de línea con trafo	-2				-2,00
	Añadir postes flojos de apoyo	2				2,00
						7,00
P5ELECMT3	m Conductor Aluminio Acero LA-56					
	Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas, elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.					
	LA-56	3	322,50	1,10		1.064,25
	Asume 10% sobre long. por catenaria					
						1.064,25
02.10.03.03	TRANSFORMACIÓN Y GENERACIÓN (DC)					
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA					
	Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de canon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1				1,00
						1,00
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota					
	Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					
		1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra					
	Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.10.03.04	CUADROS ELÉCTRICOS (DC)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m)					
	Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3.3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.					
		1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta					
	Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					
		1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías					
	Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Base	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2					
	Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELECGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
		1				1,00
						1,00
P5ELECGBTDC	ud CGBT Derivac. Corella incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Derivación Corella en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactador Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	4				4,00
	Pulsador general de corte	1				1,00
						5,00
02.10.03.05	CANALIZACIONES(DC)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. CCTV	1	3,00			3,00
	Conex Tuberías	1	38,50			38,50
		1	3,50			3,50
		1	3,50			3,50
						48,50
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	Conex trafo a caseta	1	7,00			7,00
						7,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interor caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	4	5,00			20,00
		1	5,00			5,00
						25,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	12,50			12,50
		1	8,00			8,00
		1	2,50			2,50
		1	6,00			6,00
						29,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Total	8				8,00
						8,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	Varios CCTV	1				1,00
						1,00
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.					
	s/nec	1				1,00
						1,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	s/ nec	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería	5				5,00
						9,00
02.10.03.06	LÍNEAS DE BT (DC)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	3				3,00
	Salida SAI	3				3,00
	L-6 Agrupacion	3				3,00
	L-6.3 Trafo 230/24V	5				5,00
	L-7 Agupacion	3				3,00
	L-7.4 Trafo 230/24V	5				5,00
	L-7.5 Señales Contr	3				3,00
	L-3.1 Alumb. Int.	30				30,00
	L-3.2 Alumb. Emerg.	30				30,00
	L-3.3 Alumb. Ext.	1				1,00
	L-4.1 Vent-1	5				5,00
	L-4.2 R. Caldeo	5				5,00
	L-4.3 Al. Cuadro	48				48,00
	L-6.1 CCTV	25				25,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-6.2 Reserva	5				5,00
	L-6.3.1 Reserva	10				10,00
	L-7.1 PLC y Control	1				1,00
	L-7.2 Señales Varia	50				50,00
	L-7.3 Cuadro Comuni	1				1,00
	L-7.4.1 Varios	5				5,00
	L-7.5.1 Señal Val 1	50				50,00
	L-7.5.2 Señal Val 2	50				50,00
	L-7.5.3 Señal Val 3	50				50,00
	L-7.5.4 Señal Val 4	50				50,00
	L-7.5.5 Señal Cauda	50				50,00
	L-7.5.6 Varios	50				50,00
	L-7.5.7 Varios	50				50,00
	L-7.5.8 Varios	50				50,00
	L-7.5.9 Varios	50				50,00
	L-7.5.10 Varios	50				50,00
	L-7.5.11 (Reserva)	50				50,00
	L-7.5.12 (Reserva)	50				50,00
	L-7.5.13 (Reserva)	50				50,00
	L-7.5.14 (Reserva)	50				50,00
	L-4 Agrupacion	2				2,00
						943,00

P5ELEM2X2.5TT m Manguera eléctrica 2 x 2.5 + TT 2.5mm2

Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	1	5,00	5,00
--------------	---	------	------

5,00

P5ELEM2X2.5T2 m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado

Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

L-3.4 Reserva	25		25,00
---------------	----	--	-------

Reserva Monofasica	5		5,00
--------------------	---	--	------

L-4.4 T.C.	5		5,00
------------	---	--	------

L-5.1 Tomas Monof	15		15,00
-------------------	----	--	-------

50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. Nº01	50				50,00
	Actuador Valv. Nº02	75				75,00
	Actuador Valv. Nº03	50				50,00
	Actuador Valv. Nº04	50				50,00
	Reserva Trifasica	5				5,00
	L-5.1 Tomas Trif	15				15,00
						245,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Entrada SAI	5				5,00
	ACOMETIDA PRINCIPAL	30				30,00
	ACOMETIDA GRUPO	5				5,00
						40,00
P5ELEM4X16T2	m Manguera eléctrica 4 x 16 + TT 16mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Acometida desde CT	1	30,00			30,00
						30,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.10.03.07	TOMA TIERRA (DC)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
		1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba. Losa . TT independieente	2				2,00
	Pararrayos	3				3,00
						5,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2. Varios	5				5,00
						5,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro. TT	2				2,00
						2,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica. Losa	1				1,00
						1,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas. Losa	1	130,00			130,00
						130,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada. Pararrayos y otros	1	8,00			8,00
						8,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
	Varios	2				2,00
						2,00
02.10.03.08	MECANISMOS (DC)					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
		1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
02.10.03.09	ALUMBRADO (Dc)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	Caseta	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Emergencia en interior de caseta	1				1,00
	Exterior de caseta	1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo					
	Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	Caseta	1				1,00
						1,00
02.11	CONTROL Y AUTOMATISMO (T12-D.C.)					
02.11.01	INGENIERÍA Y FORMACIÓN (T12-DC)					
P7ING002	ud Ingeniería PLC's y comunicaciones (T12-DC)					
	Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.					
		1				1,00
						1,00
P73COMSCADA2	ud Ingeniería adecuación SCADA, control y supervisión (T12-DC)					
	Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.					
		1				1,00
						1,00
P73COMPUESTA2	ud Pruebas y puesta en marcha de instalaciones (T12-DC)					
	Control de Calidad de señales y Pruebas Funcionales de la instalación del tramo T12-DC, incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.					
		1				1,00
						1,00
P73COMFORMA	ud Formación y documentación					
	Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la ·1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.11.02	SISTEMA DE CONTROL Y COMUNICACIONES (T12-DC)					
P7COMARM01	ud Armario de control 2000 x 800 x 600mm					
	Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de autómatas y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de caldeo y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc..., incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexiones y probados.					
	Toma-13	1	1,00			1,00
	Toma-13b	1	1,00			1,00
	D.C.	1	1,00			1,00
						3,00
P7COMNODO1	ud Nodo comunicaciones GSM/GPRS G3-5. incl.cuadro protec.					
	Ud Suministro e instalación equipo de comunicaciones bidireccional compuesto de alimentación autónoma de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y módem de comunicaciones, armario IP65, armario mural de 19", 12 U y 600 mm de profundidad, RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C, 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°C a 80°C contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica), electrificación cuadro (magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.					
	Toma-13	1	1,00			1,00
	Toma-13b	1	1,00			1,00
	D.C.	1	1,00			1,00
						3,00
P7COMNODO2	ud Nodo comunicaciones radiofrecuencia. incl.cuadro protec.					
	Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio módem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.					
	Toma-13	1	1,00			1,00
	Toma-13b	1	1,00			1,00
	D.C.	1	1,00			1,00
						3,00
P7COMP005	ud Bastidor Autómata					
	Suministro de bastidor para autómatas de 10 slots, tipo 1756-A10 de Allen Bradley o similar.					
	Toma-13	1	1,00			1,00
	Toma-13b	1	1,00			1,00
	D.C.	1	1,00			1,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMPLC02	ud PLC proglamable integrable (ED:128 SD:32 EA:16 SA:8)					
	PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje					
	Toma-13	1				1,00
						1,00
P7COMPLCT12	ud PLC proglamable integrable (ED:96 SD:32; EA:8 SA:8)					
	PLC centralizador de todos los sistemas (ED:96 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.					
	Toma-13b	1				1,00
	DC	1				1,00
						2,00
P7COMP011	ud Módulos conexión cableado E/D (IB32)					
	Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según referencias (V8 INPUT PLC V8/FLK14/IN - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	Toma-13	4				4,00
	T-13b	3				3,00
	DC	3				3,00
						10,00
P7COMP012	ud Módulos conexión cableado S/D (OB32)					
	Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, según referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMP013	ud Módulos conexión cableado E/A (IF16)					
	Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC - FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMP014	ud Módulos conexión cableado S/A (OF8) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC - FLK14/EZ-DR/300/CONFEC (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMPLC1C	ud Pantallas gráficas HMI 15" táctil+cableado conex. Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado numérico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instalación y conexionado de unidad; Configuración Remota, Pruebas y Puesta en Servicio.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMPLC1B	ud Cuadro, protecciones electricas y pantalla PLC Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMP001	ud Protección contra sobretensiones equipos 230 Vca Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMP002	ud Protección contra sobretensiones analógicas Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); dobles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMP003	ud Protección contra sobretensiones 24Vcc Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&-TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMP006	ud Fuente de alimentación automática 24 Vcc 10 A Suministro e instalación de fuente de alimentación para automático programable para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P71COMSAH11	ud Sistema alimentación ininterrumpido-com 24 VDC Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P71COMSAH12	ud Sistema alimentación ininterrumpido 2500w Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y bypass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación: 1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min 1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para bypass manual del SAI 1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos 1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI 1.00 Protección Magnetotérmica II 10A 6kA. Protección foma de enchufe e instrumentación 4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación. Totalmente instalado, conexionado y funcionando. Unidad totalmente instalada					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMP004	ud CPU automático L72 memoria 4 Mb con memoria SD Suministro e instalación de CPU para automático programable con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 61131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	DC	1	1,00			1,00
						3,00
P7COMP015	ud Tarjeta comunicaciones Ethernet/IP Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMP016	ud Tarjeta Ethernet/IP 2-PORT CLX HI-CAP ENET/P BRIDG o similar Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMP017	ud Tarjeta comunicaciones Modbus Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMP018	ud Pasarela comunicaciones POWELOGIC EGX 100 o similar Suministro y montaje de pasarela de comunicaciones POWERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexionada.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00
P7COMP022	ud Puente de diodos Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.					
	T-13	1	1,00			1,00
	T-13B	1	1,00			1,00
	DC	1	1,00			1,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.11.03	INSTRUMENTACIÓN (T12-DC)					
P6VALV1	ud Valv bola y conexiones Válvulas de tipo bola de 1", piezas T y conexiones, totalmente instalado y probado.					
	Toma-13	4	1,00			4,00
	Toma-13b	1	1,00			1,00
	DC	4	1,00			4,00
						9,00
P6SENS01	ud Sensor humedad e inundación caseta Suministro, instalación y puesta en servicio de sensor de humedad e inundación, alimentación eléctrica a 24Vcc, incluso 15 m de tubo PVC y cable de conexión, totalmente instalado y probado.					
	Toma-13	1				1,00
	T-13b	1				1,00
	DC	1				1,00
						3,00
P6MAN01	ud Manómetro en baño de glicerina Suministro, instalación y puesta en servicio de manómetro en baño de glicerina, escala 0-6 y 0-10 kg/cm2, sistema de medida Bourdon, diámetro 100 mm 1/2" montado y probado .					
	T-13	4				4,00
	T13B	1				1,00
	DC	4				4,00
						9,00
P6PRES01	ud Transductor presión 0,1 % Analógico Suministro, instalación y puesta en servicio de Transductor de presión con salida analógica, alimentación eléctrica a 24Vcc, con técnica de 2 ó 4 hilos, con precisión mejor del 0,1%, IP 67, indicación digital de medida en frontal del equipo, señal de salida 4-20 mA, totalmente instalado y probado.					
	T13	4	2,00			8,00
	T13B	4	2,00			8,00
	DC	4	2,00			8,00
						24,00
P6Q300.16	ud Caudalímetro ultrasónico PN 16 Ø300 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.					
	T13B	1				1,00
						1,00
P6Q800.25	ud Caudalímetro ultrasónico PN 25 Ø800 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 800 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 25, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.					
	T13	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
02.11.04	CANALIZACIÓN Y CABLEADOS (T12-DC)					
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de					
	Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antioedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.					
	Connex. com's	1	2,00			2,00
						2,00
P7COMCABL2	m Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10					
	Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (Rj45), tendido y conectorizado. Unidad totalmente instalada.					
	Varios s/n	4	5,00			20,00
						20,00
P5COMCBL001A	m Cable multihilo coms. VHOV-K y VOV-K apantall.8x0,5mm2					
	Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.					
	Conex. valvulería					
	Toma-13					
	Valv-1	1	45,00			45,00
	Valv-2	1	50,00			50,00
	Valv-3	1	60,00			60,00
	Valv-4	1	75,00			75,00
	Caudalímetro	1	75,00			75,00
	DC					
	Valv-1	1	45,00			45,00
	Valv-2	1	50,00			50,00
	Valv-3	1	60,00			60,00
	Valv-4	1	75,00			75,00
	T-13b					
	Caudalímetro	1	50,00			50,00
						585,00
P5COMCBL001B	m Cable multihilo com. VHOV-K y VOV-K apantall. 8x1,5mm2					
	Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.					
	Varios instr.	3	20,00			60,00
						60,00
P5COMCBL001C	m Cable multihilo comunicaciones señales digitales interior 19p					
	Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.					
	Transformador	3	30,00			90,00
	CGBT	3	3,00			9,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	SAI	3	3,00			9,00
	Cuadro de control	3	5,00			15,00
	Instrumentación T13 y DC					
	Válvula-1	2	40,00			80,00
	Válvula-2	2	55,00			110,00
	Válvula-3	2	65,00			130,00
	Válvula-4	2	75,00			150,00
	T-13b					
	Válvula	1	60,00			60,00
	Disparo de protecciones comunicaciones	3	5,00			15,00
	Intrusionismo	3	5,00			15,00
						683,00
P5COMCBL001D	m Cable multihilo comunicaciones señales analógica interior 19p					
	Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.					
	SAI	3	5,00			15,00
	Instrumentación T13 y DC					
	Válvula-1	2	45,00			90,00
	Válvula-2	2	50,00			100,00
	Válvula-3	2	60,00			120,00
	Válvula-4	2	75,00			150,00
	Instrumentación T13b					
	Válvula	1	60,00			60,00
	Presostatos bypass	2	4,00		45,00	360,00
	Intrusionismo	3	5,00			15,00
						910,00
P5COMCBL004	m Cable comunicaciones RS232					
	Cable comunicaciones RS232. Unidad totalmente instalada.					
	conexionados	3	20,00			60,00
						60,00
P5COMCBL005	m Cable comunicaciones RS485 multipar					
	Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.					
	conexionados	3	20,00			60,00
						60,00
P5COMCBL007	m Cable comunicaciones RJ45					
	Cable comunicaciones RS45 .Unidad totalmente instalada.					
	conexionados	3	20,00			60,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						60,00
P5COMCBL006	m Cable profibus					
	Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.					
	conexionados	3	20,00			60,00
						60,00
P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, con gestión comunic					
	Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100Base-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.					
	Tomas	3				3,00
						3,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm					
	Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Presostatos	2	4,00	2,00	1,50	24,00
	T-13b	1	1,50			1,50
						25,50
P5ELE32GALV	m Tubo galvanizado estanco 32 mm					
	Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Válvulas T13 y CD	2	2,00	4,00		16,00
	Válv T13b	1	2,00			2,00
	Cadalímetros	3	2,00			6,00
						24,00
P5ELEBAND2	m Bandeja PVC 200x60mm					
	Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válv	1	25,00			25,00
		1	20,00			20,00
						45,00
P5ELEBAND3	m Bandeja PVC 100x60mm					
	Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Interor caseta	2	20,00			40,00
	Independiente de cables eléctricos					
						40,00
P5ELE25PVC	m Tubo. electricidad Polímero term libre de halógenos ríg M25					
	Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	caudalim.	3	3,00			9,00
						9,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	Varios conex. señales	3	4,00	2,00		24,00
						24,00
P5ELE50PVC	m tubo. electricidad Polímero term libre de halógenos ríg M50 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada					
	Varios s/ n	3	3,00			9,00
						9,00
P5ELE75PVC	m Tubo PVC 75 mm liso adosado o embebido Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Caseta	3				3,00
						3,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	Válvulas T13b y DC	2	4,00			8,00
		1				1,00
	Caudalímetros T13,13b y DC	3				3,00
	Presostatos T13 y DC	2	4,00	2,00		16,00
	T13b	1				1,00
	Varios inter. cuadros	4				4,00
						33,00
02.11.05	INTRUSISMO (T12-DC)					
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antioedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.					
	CCTV	3	30,00			90,00
						90,00
P7COMSEG1	ud Sistema de Alarma-Intrusionismo Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS , incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expensor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.					
		3				3,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMCCTV6	m Inst. +Cable RG59 + tubo PVC32+cajasc/50m CCTV Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2 , repetidor de señal cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexionado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.					
	Interior	3	5,00			15,00
						15,00
P7COMCABL1B	m Cable de fibra óptica 8F+fusiones+cajas Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua , elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antirroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro . Según EN 60794. Incluidas cajas de empalme para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.					
	CCTV	3	30,00			90,00
						90,00
P7COMCCTV5	ud Cámara visión nocturna IP-66+carcasa+columna y cimentación CCTV Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcasas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenes de máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Vídeo, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad:Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.					
		3				3,00
						3,00
P7COMCCTV9	ud Switch 3 puertos RJ45 para video IP y cámaras Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30.Switch gestionable para la red de video y seguridad de diversos elementos.					
	Tomas	3				3,00
						3,00
P7COMCCTV12	ud Columna 8m+ soporte CCTV Ud. báculo de 8 m. de altura troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje;anclaje a dado de hormigón , puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión , tubo de unión,incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3 , operaciones de excavación y rellenos.					
	Tomas	3				3,00
						3,00
P7COMCCTV1	Ud Hardware de control CCTV Hardware para gestión y control de CCTV en centro de control compuesto por : Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 píxeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.					
	Centro de control	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMCCTV2	ud Software gestión CCTV intrusivo Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player,"Site builder",e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCADA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.					
	Centro de control	1				1,00
						1,00
P7COMCCTV3	ud Sistema de instalación configuración in situ videocam segurid Servicios de instalación , configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores).					
	Para toda la obra	1				1,00
						1,00
P7COMCCTV4	ud Servidor CCTV Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8TeraBytes. Unidad totalmente instalada y probada.					
	Centro de control	1				1,00
						1,00
P7COMCCTV8	ud Formación y manuales sistema CCTV Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias.					
	toda la obra	1				1,00
						1,00
02.12	SERVICIOS AFECTADOS (T12-D.C.)					
02.12.01	R.S.PAVIMENTOS (T12-DC)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	RS-146-T12-T13 PK 5030 - 5060	1	6,00			6,00
	RS-215-T12-T13b PK 2800 - 2810	1	5,40			5,40
	RS-252-T13b-BT PK 5750 - 5800	1	5,40			5,40
						16,80
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa					
	RS-144-T12-T13 PK 5010 - 5040	1	28,80			28,80
	RS-146-T12-T13 PK 5030 - 5060	1	50,40			50,40
	RS-215-T12-T13b PK 2800 - 2810	1	23,40			23,40
	RS-224-T13b-BT PK 220 - 260	1	74,10			74,10
	RS-252-T13b-BT PK 5750 - 5800	1	19,80			19,80
						196,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT06C	m² Demolición pavimento hormigón o acerado 40 cm espesor+tte+canon Demolición de pavimento hidráulico de hormigón, base de hormigón o acerado hasta 40 cm de espesor, con corte de junta con hilo diamante o radial, retirada de bordillos y elementos lineales, i retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	RS-144-T12-T13 PK 5010 - 5040	1	459,00			459,00
	RS-146-T12-T13 PK 5030 - 5060	1	420,00			420,00
	RS-215-T12-T13b PK 2800 - 2810	1	195,00			195,00
	RS-224-T13b-BT PK 220 - 260	1	617,50			617,50
	RS-252-T13b-BT PK 5750 - 5800	1	180,00			180,00
						1.871,50
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	RS-224-T13b-BT PK 220 - 260	1	195,00			195,00
						195,00
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
	RS-146-T12-T13 PK 5030 - 5060	1	40,00			40,00
	RS-215-T12-T13b PK 2800 - 2810	1	36,00			36,00
	RS-252-T13b-BT PK 5750 - 5800	1	36,00			36,00
						112,00
P5PAVFRES	m²cm Fresado pavimentos+trabajos preparatorios Metro cuadrado por centímetro de espesor, de fresado de pavimento asfáltico con máquina fresadora o levantapavimentos, incluso precorte previo y carga de productos y limpieza, así como trabajos preparatorios para extendido de MB, incluido transporte a vertedero autorizado y canon de vertido.					
	RS-144-T12-T13 PK 5010 - 5040	1	400,00			400,00
	RS-146-T12-T13 PK 5030 - 5060	1	700,00			700,00
	RS-215-T12-T13b PK 2800 - 2810	1	325,00			325,00
	RS-224-T13b-BT PK 220 - 260	1	475,00			475,00
	RS-252-T13b-BT PK 5750 - 5800	1	275,00			275,00
						2.175,00
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y popsteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	RS-144-T12-T13 PK 5010 - 5040	1	240,00			240,00
	RS-146-T12-T13 PK 5030 - 5060	1	420,00			420,00
	RS-215-T12-T13b PK 2800 - 2810	1	195,00			195,00
	RS-224-T13b-BT PK 220 - 260	1	617,50			617,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-252-T13b-BT PK 5750 - 5800	1	165,00			165,00
						1.637,50
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	RS-144-T12-T13 PK 5010 - 5040	1	240,00			240,00
	RS-146-T12-T13 PK 5030 - 5060	1	450,00			450,00
	RS-215-T12-T13b PK 2800 - 2810	1	210,00			210,00
	RS-224-T13b-BT PK 220 - 260	1	617,50			617,50
	RS-252-T13b-BT PK 5750 - 5800	1	180,00			180,00
						1.697,50
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	RS-146-T12-T13 PK 5030 - 5060	1	144,00			144,00
	RS-215-T12-T13b PK 2800 - 2810	1	63,00			63,00
	RS-224-T13b-BT PK 220 - 260	1	195,00			195,00
	RS-252-T13b-BT PK 5750 - 5800	1	54,00			54,00
						456,00
P5PAVHF36	m² Pav. hormigón HF-4, 20 cm Pavimento de hormigón hf-4,0/p/20/iic+e de 20 cm de espesor mínimo. incluso extendido, encofrado de borde, regleado, vibrado, fratasado o pulido a máquina, corte de junta sellada y curado con producto filmógeno. Pasantes en juntas de dilatación y armadura de piel 5/20-20.					
	RS-144-T12-T13 PK 5010 - 5040	1	144,00			144,00
						144,00
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	RS-144-T12-T13 PK 5010 - 5040	1	48,00			48,00
	RS-146-T12-T13 PK 5030 - 5060	1	84,00			84,00
	RS-215-T12-T13b PK 2800 - 2810	1	39,00			39,00
	RS-224-T13b-BT PK 220 - 260	1	84,50			84,50
	RS-252-T13b-BT PK 5750 - 5800	1	36,00			36,00
						291,50
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	s/nec	2	5,00			10,00
						10,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5BORD2	m Bordillo granito 15x25x120 cm Bordillo de granito gris (similar al existente en caso de reposición) de dimensiones 15x25x120 cms., asentado sobre base de hormigón HM-20 kg/cm ² (20 N/mm ²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	RS-144-T12-T13 PK 5010 - 5040	1	80,00			80,00
						80,00
P5PAV1C	m² Pav. solado acerado baldosa dim. multiple +10 HM20+15 ZA1 Solado de baldosas de hidráulicas de dimensión multiple gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso biselados, rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20 y 15 cm de zahorra artificial, unidad totalmente terminada.					
	S/n	1	1,50	1,50		2,25
						2,25
P5PAVHM20B	m² Pav.de hormigón HM-20 ruleteado, 15 cm en acerados+15 cm ZA1 Pavimento de hormigón HM-20 de 15 cm de espesor mínimo en acerados ruleteado con terminación estética, extendido, encofrado de borde, regleado, vibrado, fratasado a máquina, corte de junta sellada y curado con producto filmógeno. preparación de base de apoyo y aportación de 15 cm de zahorra artificial compactada al 95% del PN. Unidad totalmente terminada.					
	RS-144-T12-T13 PK 5010 - 5040	1	75,00			75,00
						75,00
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.					
	RS-146-T12-T13 PK 5030 - 5060	1	2,00			2,00
						2,00
P6SÑL-002A	ud Señal triangular normal L=90 cm. Nivel1 Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.					
	s/nec	2				2,00
						2,00
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	RS-144-T12-T13 PK 5010 - 5040	1	150,00			150,00
	RS-146-T12-T13 PK 5030 - 5060	1	150,00			150,00
	RS-215-T12-T13b PK 2800 - 2810	1	100,00			100,00
	RS-224-T13b-BT PK 220 - 260	1	170,00			170,00
	RS-252-T13b-BT PK 5750 - 5800	1	100,00			100,00
						670,00
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebr, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.					
	RS-146-T12-T13 PK 5030 - 5060	1	2,50			2,50
						2,50
P6RSBIONDA1	m Levantado y reposición de barrera de seguridad bionda Levantado y desmontaje de barrera de seguridad existente, incluida retirada de perfiles, anclajes y macizos, con acopio y posterior reposición completa.					
	RS-146-T12-T13 PK 5030 - 5060	1	180,00			180,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						180,00
02.12.02	R.S. CAMINOS (T12-DC)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	s/nec	2				2,00
						2,00
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	s/ nec elementos riego	2	1,50			3,00
						3,00
P1MT08BASEZA2	m² Escarificado camino +30%Zahorra artificial 95%PM Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.					
	RS-125-T12-T13 PK 930 - 1550	1	2.387,00			2.387,00
	RS-129-T12-T13 PK 2260 - 2270	1	252,00			252,00
	RS-134-T12-T13 PK 4320 - 4330	1	70,00			70,00
	RS-158-T12-T13 PK 5050 - 6800	1	7.875,00			7.875,00
	RS-168-T12-T13 PK 7250 - 8130	1	3.960,00			3.960,00
	RS-176-T12-T13 PK 9410 - 9570	1	920,00			920,00
	RS-181-T12-T13 PK 10200 - 10860	1	2.640,00			2.640,00
	RS-192-T12-T13 PK 11600 - 11630	1	240,00			240,00
	RS-199-T12-T13 PK 12300 - 12500	1	240,00			240,00
	RS-208-T12-T13b PK 370 - 760	1	80,00			80,00
	RS-250-T13b-BT PK 5400 - 5400	1	480,00			480,00
						19.144,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	RS-124-T12-T13 PK 1305 - 1315	1	85,20			85,20
	RS-126-T12-T13 PK 1850 - 1855	1	90,00			90,00
	RS-127-T12-T13 PK 1980 - 1990	1	84,00			84,00
	RS-130-T12-T13 PK 2560 - 2570	1	84,00			84,00
	RS-131-T12-T13 PK 2998 - 3008	1	93,60			93,60
	RS-132-T12-T13 PK 3018 - 3310	1	394,20			394,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-133-T12-T13 PK 3610 - 3620	1	90,00			90,00
	RS-152-T12-T13 PK 5460 - 5490	1	85,05			85,05
	RS-155-T12-T13 PK 5570 - 5580	1	27,00			27,00
	RS-163-T12-T13 PK 6760 - 6780	1	72,00			72,00
	RS-165-T12-T13 PK 6980 - 7000	1	72,00			72,00
	RS-166-T12-T13 PK 7250 - 7270	1	86,40			86,40
	RS-169-T12-T13 PK 8130 - 8150	1	86,40			86,40
	RS-172-T12-T13 PK 8440 - 8460	1	86,40			86,40
	RS-174-T12-T13 PK 8700 - 8720	1	93,60			93,60
	RS-177-T12-T13 PK 9710 - 9730	1	90,00			90,00
	RS-178-T12-T13 PK 9710 - 9730	1	58,50			58,50
	RS-179-T12-T13 PK 10020 - 10040	1	169,20			169,20
	RS-182-T12-T13 PK 10190 - 10200	1	169,20			169,20
	RS-184-T12-T13 PK 10850 - 10865	1	74,40			74,40
	RS-186-T12-T13 PK 11190 - 11200	1	67,50			67,50
	RS-187-T12-T13 PK 11340 - 11360	1	90,00			90,00
	RS-190-T12-T13 PK 11580 - 11610	1	67,50			67,50
	RS-193-T12-T13 PK 11850 - 11860	1	132,00			132,00
	RS-195-T12-T13 PK 12090 - 12105	1	90,00			90,00
	RS-196-T12-T13 PK 12180 - 12190	1	54,00			54,00
	RS-197-T12-T13 PK 12300 - 12320	1	67,50			67,50
	RS-200-T12-T13b PK 0 - 100	1	112,50			112,50
	RS-201-T12-T13b PK 0 - 100	1	112,50			112,50
	RS-203-T12-T13b PK 0 - 100	1	112,50			112,50
	RS-204-T12-T13b PK 376 - 386	1	72,00			72,00
	RS-206-T12-T13b PK 740 - 760	1	72,00			72,00
	RS-209-T12-T13b PK 820 - 860	1	72,00			72,00
	RS-212-T12-T13b PK 1120 - 1140	1	72,00			72,00
	RS-217-T12-T13b PK 2960 - 2970	1	54,00			54,00
	RS-220-T13b-BT PK 80 - 160	1	165,00			165,00
	RS-223-T13b-BT PK 80 - 240	1	112,50			112,50
	RS-228-T13b-BT PK 420 - 440	1	58,50			58,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-230-T13b-BT PK 990 - 1100	1	58,50			58,50
	RS-231-T13b-BT PK 1230 - 1240	1	58,50			58,50
	RS-232-T13b-BT PK 1360 - 1370	1	58,50			58,50
	RS-237-T13b-BT PK 2600 - 2630	1	54,00			54,00
	RS-241-T13b-BT PK 3430 - 3450	1	99,00			99,00
	RS-242-T13b-BT PK 3550 - 3560	1	54,00			54,00
	RS-243-T13b-BT PK 3830 - 3870	1	117,00			117,00
	RS-244-T13b-BT PK 3950 - 3970	1	88,20			88,20
	RS-246-T13b-BT PK 4600 - 4640	1	207,00			207,00
	RS-255-BT-DC PK 120 - 140	1	58,50			58,50
	RS-256-BT-DC PK 410 - 430	1	45,00			45,00
	RS-257-BT-DC PK 1100 - 1120	1	22,50			22,50
						4.595,85
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	RS-244-T13b-BT PK 3950 - 3970	1	98,00			98,00
	RS-246-T13b-BT PK 4600 - 4640	1	230,00			230,00
	RS-250-T13b-BT PK 5400 - 5400	1	144,00			144,00
	RS-255-BT-DC PK 120 - 140	1	65,00			65,00
						537,00
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
	RS-223-T13b-BT PK 80 - 240	1	30,00			30,00
						30,00
02.12.03	R.S. ABASTECIMIENTO (T12-DC)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización. s/med					
		3				3,00
						3,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A determinar sostenimiento s/ n	3				3,00
						3,00
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.					
	s/m	3				3,00
						3,00
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexonado. Unidad totalmente terminada.					
	s/m	1	270,00			270,00
						270,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/m	1	702,00			702,00
						702,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceo para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/m	1	127,80			127,80
						127,80
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/m	1	158,40			158,40
						158,40
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/m	1	415,80			415,80
						415,80
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	s/m	1	270,00			270,00
						270,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6TUBPE090.16	m Tubería de PE100 DN90 PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 90 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.					
	s/m	1	120,00			120,00
						120,00
P6TUBPE160.16	m Tubería de PE100 DN160PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.					
	s/nec mantenimiento de servicio temporal	1	150,00			150,00
						150,00
P5ARQP-1A	ud Arq. pref DN=1.0 m H=2.5m+ tapa fundición DN600 +pates UD de Arqueta prefabricada, altura variable hasta 2.5m de tipo pozo de 1000mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltes para su acoplamiento, entre otras piezas mediante juntas de goma, incluyendo módulo cónico superior, tubo de resalto de PVC DN 315mm, macizado hormigonado HM-20, recibido con mortero de cemento, cerco y tapa de fundición DN600 para tráfico pesado 40Tn, pates y resto de elementos asociados, incluida excavación y rellenos necesarios. Unidad totalmente terminada.					
	s/nec alojamiento elementos	1				1,00
						1,00
P6VENT.080.16	ud Ventosa trifuncional DN80 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	s/nec	1				1,00
						1,00
TUB.FD.200A	m Tubería de FD DN 200 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 200 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
	s/med	1	60,00			60,00
						60,00
TUB.FD.300A	m Tubería de FD DN300 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 300 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
	s/m	1	90,00			90,00
						90,00
TUB.FD.100A	m Tubería de FD DN100 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 100 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
	s/nec posible rep	1	80,00			80,00
						80,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.12.04	R.S. RED RIEGO (T12-DC)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	s/m	5				5,00
						5,00
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.					
	s/m	3				3,00
						3,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	sm	3				3,00
						3,00
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	s/m	1	59,00			59,00
						59,00
P4RSACEQ01	m Reposición acequia+excav+rellenos Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembrada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluidas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.					
	s/m	1	280,00			280,00
						280,00
P4RSS1A	m Dem, desmont y retirada tubería riego varios diám. DN<200 Localización, demolición, desmontaje programado y retirada de tubería de riego de varios diámetros menores a 200 mm, incluyendo arquetas y desmontaje de válvulas , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.					
	varios posibles enterrados en parcelas	1	350,00			350,00
						350,00
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.					
	Varios	1	185,00			185,00
						185,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/m	1	433,50			433,50
						433,50
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/m	1	43,20			43,20
						43,20
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
		1	162,00			162,00
						162,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/m	1	226,80			226,80
						226,80
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	s/m	1	185,00			185,00
						185,00
P6TUBPE160.16	m Tubería de PE100 DN160PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.					
	s/ nec bypass temporal red riego	1	290,00			290,00
						290,00
P5ARQpref1.0	ud Arqueta prefabricada 1.0x1.0x1.5+ tapa acero galvanizada+pates Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de hasta 1.5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales, apoyada sobre fondo de caja excavado y compactado con 0.2m de hormigón en masa HM-20, incluida tapa superior armada, tapa de acero galvanizado en caliente de 3 mm estriada, cerco y precerco, rejillas de ventilación, unión entre módulos de cordón impermeabilizante de polisulfuro, agujeros para entrada de tuberías de dimensiones especificadas, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.					
	Rep. redes de riego.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ARQPREF1	ud Arqueta prefabricada 1.0x1.0x2,5+ tapa FD+pates+rellenos Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de de 1,5-2,5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , pieza tapa con apertura DN600 mm, huecos preformados para conexión de tuberías de diámetro múltiple apoyada sobre fondo de caja excavado y compactado, ejecución de 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado. Unidad totalmente colocada.					
	varias arquetas riego s/ n	1				1,00
						1,00
P6VC.150.16	ud Válvula compuerta ø 150 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada.					
	s/m	1				1,00
						1,00
P6CD.150.16	ud Carrete desmontaje DN150PN16 Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	s/m	1				1,00
						1,00
P6PM150INX	ud Carrete pasamuros 150mm AIS I316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 150mm de diámetro.					
	s/m	1				1,00
						1,00
P6VENT.050.16	ud Ventosa trifuncional DN50 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 50 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Posible afección	1				1,00
						1,00
TUB.FD.100A	m Tubería de FD DN100 C40+pp piezas+J. Flex Tubería de fundicion ductil de diametro nominal 100 mm con junta flexible automatica, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribucion en obra, instalacion en zanja y pruebas segun pliego. unidad totalmente terminada.					
	s/m	1	5,00			5,00
						5,00
TUB.FD.250A	m Tubería de FD DN250 C40+pp piezas+J. Flex Tubería de fundicion ductil de diametro nominal 250 mm con junta flexible automatica, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribucion en obra, instalacion en zanja y pruebas segun pliego. unidad totalmente terminada.					
	s/m	1	180,00			180,00
						180,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	s/med	1	5,00			5,00
						5,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	s/m	1	2,50	2,50	0,10	0,63
						0,63
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	s/n vertidos	1	1,50			1,50
						1,50
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	s/m arquetas	1	1,50			1,50
						1,50
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/m	1	142,50			142,50
						142,50
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	s/m	0,9	6,00			5,40
						5,40
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	s/m	0,1	6,00			0,60
						0,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.12.05	R.S. PLUVIALES (T12-DC)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. RS-145-T12-T13 PK 5010 - 5040					
	pozos	2	2,50			5,00
						5,00
P4RSS5A	ud Cegado arqueta o tuberías mediante tape y hormigonado Cegado de arqueta o punto de entronque para anulación de tramo de colector existente mediante macizo de hormigón 1.5m3 HL-150 p.p. de tapes, excavaciones, demoliciones asociadas y reposición total de superficie, carga y transporte a vertedero de escombros, canon de vertido. Unidad completa. RS-145-T12-T13 PK 5010 - 5040					
	pozos	2				2,00
						2,00
P4RSS5B	ud Cegado de tuberías con brida ciega cualq. diam. Cegado de arqueta o punto de entronque para anulación de tramo de colector existente mediante brida ciega de dimensión igual a colector p.p. de tapes, excavaciones, rellenos y reposición total de superficie, carga y transporte a vertedero de escombros, canon de vertido. Unidad completa. RS-145-T12-T13 PK 5010 - 5040					
		1				1,00
						1,00
P4TUB315PVC	m Tubería PVC D=315 mm SN-8 Tubería de PVC diámetro Nominal 315 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada. RS-145-T12-T13 PK 5010 - 5040					
	Conexionados	2	3,00			6,00
						6,00
P4TUB500PVC	m Tubería PVC D=500 mm SN-8 Tubería de PVC diámetro Nominal 500 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada. RS-145-T12-T13 PK 5010 - 5040					
		1	30,00			30,00
						30,00
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada. RS-145-T12-T13 PK 5010 - 5040					
		1	30,00			30,00
						30,00
P3SUM2	ud Sumidero sifónico 40x60 Sumidero en losa o calzada para desagües de 40x60cm. y 70 cms. de profundidad, sobre solera de hormigón HM-20 N/mm2., realizada con ladrillo macizo de 1/2 pie de espesor, enfoscada interiormente y arqueta prefabricada a criterio de la Dirección Facultativa, con salida para tubo de diámetro 160 mm. situada su arista inferior a 20 cms. del fondo del sumidero, incluso rejilla de fundición de 400x600x30 mm. sobre cerco de angular . recibido a la fábrica de ladrillo o a la arqueta prefabricada, conexionado a red de colectores de pluviales. Unidad totalmente terminada incluyendo clapa RS-145-T12-T13 PK 5010 - 5040					
		1	2,00			2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	RS-145-T12-T13 PK 5010 - 5040	1	30,00	1,50	2,00	90,00
						90,00
P1MT03I	m² Entibación zanjas y pozos blindada o monocodal Entibación cuajada en zanjas, pozos o cimentaciones con paneles metálicos blindados o monocodal a cualquier profundidad, incluso desentibado y medios auxiliares. Unidad totalmente terminada incluyendo p.p. de sobresaliente del terreno natural de 0.25m como rodapié de seguridad.					
	RS-145-T12-T13 PK 5010 - 5040	2	30,00		2,00	120,00
						120,00
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.					
	RS-145-T12-T13 PK 5010 - 5040	1	30,00	1,50	1,00	45,00
		-1	30,00	0,19		-5,70
						39,30
P1MT04A	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	RS-145-T12-T13 PK 5010 - 5040	1	30,00	1,50	0,50	22,50
						22,50
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	RS-145-T12-T13 PK 5010 - 5040	1	30,00	1,50	0,20	9,00
						9,00
P5ARQLD1A	ud Arq. ladrillo 1pie DN1.2m+enfosc+ tapa FD H<=2.5m Arqueta de ladrillo 1 pie enfoscado interior mortero hidrófugo de diámetro interior 1.20 m, con cono reductor 1200/600 para alturas de hasta 2.5m, tapa de fundición DN 600 mm D-400, marco y contracerco, pates polipropileno alma de acero cada 20 cm, y base de apoyo HA25 y armado #8/10, con 0.4m de espesor mínimo y 10 cm de hormigón de limpieza, p.p. de excavación asociada, y rellenos con suelos seleccionados. Unidad totalmente terminada.					
	Pozos	2				2,00
						2,00
02.12.06	R.S. DRENAJE Y ARROYOS (T12-DC)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	sm	1	137,20			137,20
						137,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con tromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	s/ nec	1	1,50			1,50
						1,50
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.					
	sm	1	1.507,00			1.507,00
						1.507,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	sm	1	1.753,80			1.753,80
						1.753,80
P1MT04D	m³ Rellenos localizado con material filtrante 40/80 95%PN Relleno localizado de material filtrante (grava 40-80) procedente de préstamo, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	sm	1	117,60			117,60
						117,60
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	sm	1	1.048,00			1.048,00
						1.048,00
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	sm	1	137,20			137,20
						137,20
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	sm	5.488				5.488,00
						5.488,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT15-200B	m Micropilote DN 200HA-30 Vaina 155/8 p.p. puntales+viga riostra Micropilote DN200 mm con vaina metálica de acero S275 JR 155.8mm de diámetro y 8mm de espesor lechada de cemento CEM I 42,5N y HA30, con una relación agua/cemento de 0,4 dosificada en peso, vertida por el interior de la armadura mediante sistema de inyección única global (IU), reperforando sobre pantalla de mortero, ejecutado con entubación perdida o recuperable, para cualquier profundidad, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Muros guía de hormigón armado de 0,70x0,50 mts. y posterior demolición del mismo con transporte a vertedero de los restos, evacuación a vertedero de la excavación. -Pérdidas de lechada y, mortero y hormigón. -Demolición de protuberancias, descabezado de pilotes y p.p. preparación de conexión viga de atado. -Partida de transporte y montaje inicial y medios auxiliares. -Partida para transporte y montaje inicial de grúa auxiliar. -Partida de espesamiento de lodos finales con transporte a vertedero. -Perforación o reperforación de pilotes incluyendo el consumo de lodos. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. -Transporte de sobrantes a vertedero autorizado, incluso canon de vertido, limpieza y operaciones de demoliación. -Puntales y perfil risotra Unidad totalmente terminada medida linealmente sobre eje por la profundidad realmente ejecutada.					
	sm	1	2.000,00			2.000,00
						2.000,00
02.12.07	R.S. ALUMBRADO (T12-DC)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	RS-141-T12-T13 PK 5010 - 5020	1				1,00
						1,00
P5ELEBTALUMB	ud Legalización de alumbrado público+OCA's Unidad de legalización de alumbrado público en el conjunto de la actuación, incluyendo línea de baja tensión, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización.					
	RS-141-T12-T13 PK 5010 - 5020	1				1,00
						1,00
P4RSV1D	m Demolición y retirada de conductos y cableados inst. subterránea Demolición y retirada de conductos y cableados de instalaciones eléctricas incluidas, iluminación, telefonía y/o comunicaciones subterráneas, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.					
	RS-141-T12-T13 PK 5010 - 5020	1	40,00			40,00
						40,00
P5ELECFA02A	ud Desmontaje y post. montaje farolas H<8.0m + base+ arqu+TT Ud. Desmontaje y desconexión de línea, traslado a acopio y posterior montaje de nuevo en su lugar de ubicación una vez concluidas las obras de columnas de alumbrado público de altura de báculo H<=8.0m, con nueva construcción de pedestales de apoyo de dimensiones especificadas en planos, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición, instalación de toma tierra de cada báculo y conexionado a red de alumbrado. Incluye la sustitución y reposición de lámpara LED, así como partes perdidas, pernos y resto de elementos, operaciones de excavación y rellenos. Totalmente instalada, incluidas operaciones de desconexión y posterior conexionado					
	RS-141-T12-T13 PK 5010 - 5020	2				2,00
						2,00
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	RS-141-T12-T13 PK 5010 - 5020	1	40,00			40,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						40,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD					
	Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
		2				2,00
						2,00
P5ELE40PVC	m tubo. electricidad Polímero term libre de halógenos ríg M40					
	Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=40 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada					
	varios	2	5,00			10,00
						10,00
P5ELEM4X6TT	m Manguera eléctrica 4 x 6 + TT6 mm2 Cu					
	Manguera eléctrica de 4 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	RS-141-T12-T13 PK 5010 - 5020	1,5	40,00			60,00
						60,00
02.12.08	R.S. ELECTRICIDAD (T12-DC)					
P4RSV0A	ud Localización de servicio					
	Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	RS-140a-T12-T13 PK 5010 - 5020	1				1,00
	RS-140b-T12-T13 PK 5010 - 5020	1				1,00
	RS-194-T12-T13 PK 12090 - 12105	1				1,00
	RS-216-T13-T13b PK 2820 - 2830	1				1,00
	RS-218-T13b-BT PK 80 - 100	1				1,00
	RS-222-T13b-BT PK 80 - 160	1				1,00
	RS-236-T13b-BT PK 2080 - 2100	1				1,00
	RS-238-T13b-BT PK 2600 - 2650	1				1,00
	RS-240-T13b-BT PK 3100 - 3160	1				1,00
						9,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT					
	Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	RS-140b-T12-T13 PK 5010 - 5020	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub					
	Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ..), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	RS-140a-T12-T13 PK 5010 - 5020	1				1,00
	RS-194-T12-T13 PK 12090 - 12105	1				1,00
	RS-216-T13-T13b PK 2820 - 2830	1				1,00
	RS-218-T13b-BT PK 80 - 100	1				1,00
	RS-222-T13b-BT PK 80 - 160	1				1,00
	RS-236-T13b-BT PK 2080 - 2100	1				1,00
	RS-238-T13b-BT PK 2600 - 2650	1				1,00
	RS-240-T13b-BT PK 3100 - 3160	1				1,00
						8,00
P5ELE160X4H	m Can. horm. PVC 160 mm x4 (calzadas) 0.6x1.0m (Zanja tipo-5b)					
	Canalización hormigonada de 4x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, Acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x1.0m) relleno con suelo seleccionado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	RS-140b-T12-T13 PK 5010 - 5020	1	60,00			60,00
						60,00
P5ELE200X2H2	m Can. horm. PE 200 mm x2 (calzadas) 0.65x1.3m (Zanja tipo 2B)					
	Canalización de línea de media tensión hormigonada bajo Acerados y pavimentos conformado por tubos 2x200mm PE normalizado para instalación eléctrica, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	RS-140a-T12-T13 PK 5010 - 5020	1	60,00			60,00
	RS-194-T12-T13 PK 12090 - 12105	1	72,00			72,00
	RS-216-T13-T13b PK 2820 - 2830	1	72,00			72,00
	RS-218-T13b-BT PK 80 - 100	1	90,00			90,00
	RS-222-T13b-BT PK 80 - 160	1	90,00			90,00
	RS-236-T13b-BT PK 2080 - 2100	1	155,00			155,00
	RS-238-T13b-BT PK 2600 - 2650	1	165,00			165,00
	RS-240-T13b-BT PK 3100 - 3160	1	90,00			90,00
						794,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD					
	Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-140b-T12-T13 PK 5010 - 5020	2				2,00
						2,00
P5ARQPREF2.0E	ud Arqueta MT prefabricada inst. elect. 110x110x160 con tapa FD					
	Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.					
	RS-140a-T12-T13 PK 5010 - 5020	2				2,00
	RS-194-T12-T13 PK 12090 - 12105	2				2,00
	RS-216-T13-T13b PK 2820 - 2830	2				2,00
	RS-218-T13b-BT PK 80 - 100	2				2,00
	RS-222-T13b-BT PK 80 - 160	2				2,00
	RS-236-T13b-BT PK 2080 - 2100	2				2,00
	RS-238-T13b-BT PK 2600 - 2650	2				2,00
	RS-240-T13b-BT PK 3100 - 3160	2				2,00
						16,00
P5ELEM1X95A	m Manguera eléctrica 1 x 95 Al mm2					
	Manguera eléctrica HEPRZ1 1x95mm2 A1+H16 flexible completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	RS-140b-T12-T13 PK 5010 - 5020	3	60,00			180,00
						180,00
P5ELEM1X150A	m Manguera eléctrica 1 x 150 Al mm2					
	Manguera eléctrica HEPRZ1 1x150 mm2 A1+H16, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	RS-140a-T12-T13 PK 5010 - 5020	3	60,00			180,00
	RS-194-T12-T13 PK 12090 - 12105	3	72,00			216,00
	RS-216-T13-T13b PK 2820 - 2830	3	72,00			216,00
	RS-218-T13b-BT PK 80 - 100	3	90,00			270,00
	RS-222-T13b-BT PK 80 - 160	3	90,00			270,00
	RS-236-T13b-BT PK 2080 - 2100	3	155,00			465,00
	RS-238-T13b-BT PK 2600 - 2650	3	165,00			495,00
	RS-240-T13b-BT PK 3100 - 3160	3	90,00			270,00
						2.382,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.12.09	R.S. COMUNICACIONES (T12-DC)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	RS-139-T12-T13 PK 5010 - 5020	1				1,00
	RS-143-T12-T13 PK 5030 - 5040	1				1,00
	RS-219-T13b-BT PK 80 - 100	1				1,00
	RS-253b-T13b-BT PK 6300 - 6320	1				1,00
						4,00
P4RSV1D	m Demolición y retirada de conductos y cableados inst. subterránea Demolición y retirada de conductos y cableados de instalaciones eléctricas incluidas, iluminación, telefonía y/o comunicaciones subterráneas, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.					
	RS-139-T12-T13 PK 5010 - 5020	1	60,00			60,00
	RS-143-T12-T13 PK 5030 - 5040	1	60,00			60,00
	RS-219-T13b-BT PK 80 - 100	1	90,00			90,00
	RS-253b-T13b-BT PK 6300 - 6320	1	60,00			60,00
						270,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	RS-139-T12-T13 PK 5010 - 5020	1				1,00
	RS-143-T12-T13 PK 5030 - 5040	1				1,00
	RS-219-T13b-BT PK 80 - 100	1				1,00
	RS-253b-T13b-BT PK 6300 - 6320	1				1,00
						4,00
P5ELEZ110X6H	m Can. horm PVC 110 mm x6 Ud cualq. terreno + zanja+rell. Canalización hormigonada de 4x110mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada.					
	RS-139-T12-T13 PK 5010 - 5020	1	60,00			60,00
	RS-143-T12-T13 PK 5030 - 5040	1	60,00			60,00
	RS-219-T13b-BT PK 80 - 100	1	90,00			90,00
	RS-253b-T13b-BT PK 6300 - 6320	1	60,00			60,00
						270,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ARQPREF1.0R	ud Arqueta tipo 2P comunicaciones 100x100x150 cm con tapa FD Arqueta tipo 2P comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1x1x1.5 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.0x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.					
	RS-139-T12-T13 PK 5010 - 5020	2				2,00
	RS-143-T12-T13 PK 5030 - 5040	2				2,00
	RS-219-T13b-BT PK 80 - 100	2				2,00
						6,00
P5ARQPREF1.5R	ud Arqueta tipo 2b comunicaciones 150x100x130 cm con tapa FD Arqueta tipo 2B comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1.50x1.0x1.20 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.5x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.					
	RS-253b-T13b-BT PK 6300 - 6320	2				2,00
						2,00
P5COM62F	m Cable 62 fibras monomodo Suministro e instalación de cable de 64 fibras ópticas en Mono-modo 9/125, con aislamiento PEAP, bajo canalización de tritubo según especificaciones , incluso parte proporcional de empalmes, fusionado y conectorización, probado y certificado.					
	RS-139-T12-T13 PK 5010 - 5020	1	60,00			60,00
	RS-143-T12-T13 PK 5030 - 5040	1	60,00			60,00
	RS-219-T13b-BT PK 80 - 100	1	90,00			90,00
	RS-253b-T13b-BT PK 6300 - 6320	1	60,00			60,00
						270,00
P5COMCAJA64F	ud Caja empalme 64 FO Suministro e instalación de cajas de empalme estanca para 64 fibras ópticas de tipo monomodo, ejecutados por fusión, con p/p de verificación de tipo ODTR.					
	RS-139-T12-T13 PK 5010 - 5020	2				2,00
	RS-143-T12-T13 PK 5030 - 5040	2				2,00
	RS-219-T13b-BT PK 80 - 100	2				2,00
	RS-253b-T13b-BT PK 6300 - 6320	2				2,00
						8,00
P5COMLATFO	ud Latiguillo FO Multimodo Suministro e instalación de latiguillos de fibra óptica multimodo con conectores FC-FC, de una longitud de 1,50 m.					
	RS-139-T12-T13 PK 5010 - 5020	2				2,00
	RS-143-T12-T13 PK 5030 - 5040	2				2,00
	RS-219-T13b-BT PK 80 - 100	2				2,00
	RS-253b-T13b-BT PK 6300 - 6320	2				2,00
						8,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.12.10	R.S. GAS (T12-DC)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	RS-253a-T13b-BT PK 6300 - 6320	1				1,00
						1,00
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ..), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	RS-253a-T13b-BT PK 6300 - 6320	1				1,00
						1,00
P4RSV2B	ud Corte programado servicio GAS pequeño diam. Corte programa del servicio de GAS en conducciones de distribución.					
		1				1,00
						1,00
02.12.11	R.S. HIDROCARBUROS (T12-DC)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	RS-147-T12-T13 PK 5010 - 5040	1				1,00
	RS-160-T12-T13 PK 6335 - 6350	1				1,00
	RS-226-T13b-BT PK 260 - 265	1				1,00
						3,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	RS-160-T12-T13 PK 6335 - 6350	1				1,00
	RS-226-T13b-BT PK 260 - 265	1				1,00
						2,00
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ..), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	RS-147-T12-T13 PK 5010 - 5040	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.12.12	R.S. CANAL (T12-DC)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	s/m	1	65,53			65,53
						65,53
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/m	1	87,50			87,50
						87,50
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	s/m	1	875,00			875,00
						875,00
P1MT04D	m³ Rellenos localizado con material filtrante 40/80 95%PN Relleno localizado de material filtrante (grava 40-80) procedente de préstamo, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/m	1	87,50			87,50
						87,50
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Bancada con camino de coronación	2	30,00	5,00	0,30	90,00
						90,00
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	s/m	1	65,63			65,63
						65,63
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/m	1	2.625,00			2.625,00
						2.625,00
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	s/m	1	10,50			10,50
						10,50
P3DREN110PVC	m Tubo dren PVC 110 mm corrugado+zanja+geotextil					
	Tubo dren de PVC corrugado poroso, D= 110 mm, e=3,2 mm incluso p.p. excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 0,40 cm. de ancho por 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.					
	s/m	1	109,38			109,38
						109,38
P4JTACOMB200B	m Junta canal					
	Juntas horizontales o inclinadas, en canal conformadas por cordón de polisulfuro y posterior lámina de PVC 200 combiflex o similar con aplicación de epoxy de adherencia. Unidad totalmente terminada incluidos cortes en hormigón, solapes y soldaduras de unión.					
	s/m	1	109,38			109,38
						109,38
P1MT06E	m Corte junta diamante en losa o pavimento e=0.2m					
	Corte de hormigón con disco e hilo de diamante, corte de armaduras con disco espesor 20 cm, retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Unidad completa.					
	Corte de junta canal	1	109,38			109,38
						109,38
02.12.13 R.S. CERRAMIENTOS (T12-DC)						
P1MT06K	m² Demolición muro bloque o ladrillo					
	Demolición de muro bloque o ladrillo hormigón con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	Varios en zonas de riego s/n	3	15,00	2,00		90,00
						90,00
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon					
	Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	Varios en zonas de riego s/n	1	15,00	2,00	0,30	9,00
						9,00
P5CERRAM0D	m Reposición de cerramiento muro mampuesto					
	Reposición de muro bancal de espesor medio 0,5 m , altura variable hasta 1,5 m y longitud 4 m. incluyendo retirada de muro existente, acopio y posterior reconstrucción mediante aporte de mampuestos, ripios, perfectamente alineado, aplomado, con excavación y preparación de la superficie de asiento (20 cm de HM-20), completamente terminado. incluyendo las operaciones de acopio,recolocación de la piedra original y/o reposición de otra de características similares a la original.					
	s/ nec zonas de riego	1	15,00			15,00
						15,00
P5CERRAM0A	m Desmontaje de cerramiento metálico, vallado y barandillas.					
	Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar , existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos.					
	Chamizos de zonas de riego	4	15,00			60,00
						60,00
P5CERRAM2	m Cerramiento tipo-2 Valla de D/T metálica					
	Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, sin incluir puerta de acceso.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	s/nec varios zonas de riego	3	20,00			60,00
						60,00
P5CERRAM4	m Cerramiento tipo-4 ganadero Cerramiento ganadero a base de postes de hormigón de 17x12x170 cm y 1,40 m o metálicos sobre el terreno a 7 m separación media, empotrados y anclados en el terreno 30 cm y guarnecido con un malla 100x8x15 mm y dos hiladas superiores de alambre, doble hilo 13x15, tensado en tramos de 50 m, y con dos riostras cada 100 m. Unidad completamente terminada.					
	Varios sin identificar	4	30,00			120,00
						120,00
P3EDIF012B	m² Fab. Bloq. split 40x20x20 dos caras color Fábrica de bloques de hormigón Mod. Split de medidas 40x20x20 cm., color, ejecutado a dos caras vistas, i/relleno de hormigón H-200/20 y armadura en zona según normativa y recibido con mortero de cemento y arena de río M 5 según UNE-EN 998-2, i/p.p. de piezas especiales, roturas, nivelados, aplomados, llagueados y limpieza todo ello según CTE/ DB-SE-F.Unidad totalmente terminada					
	Chamizos de zonas de riego	2	15,00	3,00		90,00
						90,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
	varios s/n zonas de riego	1				1,00
						1,00
02.12.14	R.S. VARIOS (T12-DC)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	s/nec	28,5				28,50
						28,50
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.					
	s/m	1	60,00			60,00
						60,00
P4RSACEQ01	m Reposición acequia+excav+rellenos Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembreada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluídas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.					
	s/m	1	40,00			40,00
						40,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	SM	1	12,00			12,00
						12,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	sm	1	96,00			96,00
						96,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	sm	1	126,00			126,00
						126,00
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC					
	M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	s/m	1	400,00			400,00
						400,00
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	s/m	1	22,50			22,50
						22,50
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/m	1	2.137,50			2.137,50
						2.137,50
02.12.15	R.S. DESV. TRAFICO (T12-DC)					
02.12.15.01	DESVÍO NA-8712					
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA					
	MI. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Fase-1	3	960,00			2.880,00
		3	40,00			120,00
		3	260,00			780,00
		3	365,00			1.095,00
						4.875,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal					
	Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final					
Fase-1		3	960,00			2.880,00
		3	40,00			120,00
		3	260,00			780,00
		3	365,00			1.095,00
						4.875,00
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales					
	Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.					
Fase-1		2	10,00			20,00
						20,00
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm					
	MI. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
Fase-1		2	960,00			1.920,00
		2	40,00			80,00
		2	260,00			520,00
		2	365,00			730,00
						3.250,00
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm					
	MI. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
Fase-1		1	960,00			960,00
		1	40,00			40,00
		1	260,00			260,00
		1	365,00			365,00
						1.625,00
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos					
	Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.					
Fase-1		1	71,00			71,00
Fase-2		1	69,00			69,00
						140,00
P6SÑL-031	ud Panel direccional TB5. Desv. tráfico					
	Suministro y colocación de panel direccional provisional reflectante TB5 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.					
Fase-1		2				2,00
Fase-2		2				2,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6SÑL-010	m² Panel informativo urbano. Desv. tráfico Suministro y colocación de panel de lamas de aluminio extrusionado reflexivo, incluso postes de sustentación en perfil laminado y galvanizado, de dimensiones adecuadas a la superficie del cartel, placa de anclaje y cimentación de hormigón ligeramente armado, totalmente colocado. Fase-1					
	Señales direccionales	2	2,00	1,00		4,00
	Accesos a empresas	1	3,00	1,50		4,50
	Fase-2					
	Señales direccionales	1	2,00	1,00		2,00
						10,50
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Fase-1	21				21,00
	Fase-2	21				21,00
						42,00
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Fase-1	7				7,00
	Fase-2	6				6,00
						13,00
P6SÑL-060	ud Señal advertencia e indicatoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Fase-1	4				4,00
	Fase-2	3				3,00
						7,00
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada. Zona obras Fase-1	1				1,00
						1,00
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señalítica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.12.15.02	DESVÍO NA-6830					
02.12.15.02.1	MOV. TIERRAS (DESVÍO NA-6830)					
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea)					
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
	Desv. fase-1	1	195,00	15,00		2.925,00
						2.925,00
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclados con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desv. fase-1	1	195,00	15,00		2.925,00
						2.925,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion					
	Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
	Desv. fase-1	1	195,00	15,00		2.925,00
						2.925,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Fase-1					
	Cajeado	1	195,00	13,00	0,50	1.267,50
	Fase-2. Excav tras desvío a vertedero					
	Terraplenado	1	195,00	13,00	1,50	3.802,50
	Zahorra	1	195,00	9,00	0,30	526,50
						5.596,50
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Mat. prov. de excavaciones de tubos					
	Cajeado	1	195,00	13,00	0,50	1.267,50
	Terraplenado	1	195,00	13,00	1,00	2.535,00
						3.802,50
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Reposición de camino afectado por desvío	1	145,00		0,30	43,50
						43,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.12.15.02.2 DRENAJES (DESVÍO NA-6830)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Perimetral fase-1	1	195,00			195,00
						195,00
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5, incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.					
	Fase-1	1	17,00			17,00
		1	14,00			14,00
						31,00
P4RSV2D	m Demolición y retirada de tubería de hormigón < 500 mm					
	Demolición y retirada de tuberías de hormigón en masa, salvacunetas y conducciones, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.					
	Fase-1	1	17,00			17,00
		1	14,00			14,00
						31,00
02.12.15.02.3 PAVIMENTOS (DESVÍO NA-6830)						
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon					
	Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa					
	desv. provisional fase-1	1	195,00	9,00	0,12	210,60
						210,60
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2					
	Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	desv. provisional fase-1	1	195,00	9,00		1.755,00
						1.755,00
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2					
	Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	desv. provisional fase-1	1	195,00	9,00		1.755,00
						1.755,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Base provisional	1	195,00	11,00	0,30	643,50
						643,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.12.15.02.4 SEÑALIZACIÓN (DESVÍO NA-6830)						
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA					
	Ml. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Desvío fase-1	3	615,00			1.845,00
						1.845,00
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal					
	Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final					
	Desvío fase-1	3	615,00			1.845,00
		-3	195,00			-585,00
						1.260,00
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales					
	Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.					
	Flechas	2	3,00			6,00
						6,00
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm					
	Ml. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Repintado completo	1	615,00			615,00
						615,00
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm					
	Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Repintado completo	2	615,00			1.230,00
						1.230,00
P6SÑL-020	m Banda sonora 90cmx50cmx5cm					
	Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada.					
	Bandas sonoras reducción velocidad					
	Sentido-1	2	3,50			7,00
	Sentido-2	2	3,50			7,00
						14,00
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos					
	Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.					
	Fase-1					
	Lateral	1	83,00			83,00
		1	66,00			66,00
	Central	1	30,00			30,00
	Fase-2					
		1	9,00			9,00
						188,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.					
	Fase-1	4	3,00			12,00
						12,00
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.					
	Fase-1	10				10,00
						10,00
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.					
	Fase-1	2				2,00
	Fase-2	2				2,00
						4,00
P6SÑL-060	ud Señal advertencia e indicatoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.					
	fase-1	4				4,00
						4,00
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.					
	TB	2	12,00			24,00
	TS	1	10,00			10,00
	Varios criculares	6				6,00
						40,00
P6SÑL-092	ud Lámpara luminosa intermitente en trípode Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.					
	Varios señales	2				2,00
						2,00
P6SÑL-100	m Barrera New Jersey plástico. desv. tráfico Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco lastrable, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico					
	Fase-1					
	Desvío	1	135,00			135,00
		-1	41,00			-41,00
	Fase-2					
		1	90,00			90,00
		-1	41,00			-41,00
						143,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.					
	Fase-1	1	41,00			41,00
	Fase-2	1	41,00			41,00
						82,00
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señáltica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.					
		1				1,00
						1,00
02.13	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (T12-D.C.)					
02.13.01	MEDIDAS PROTECTORAS, CORRECTORAS (T12-DC)					
02.13.01.01	ATMÓSFERA (T12-DC)					
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.					
	Total obra meses secos 6/12	0,5	36,00			18,00
						18,00
02.13.01.02	SUELO (T12-DC)					
P-101AMB-MP03	m Jalonamiento de protección malla Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
	trazado de las conducciones 10%	0,1	24.750,00	2,00		4.950,00
						4.950,00
P-101AMB-MP09	m Jalonamiento de protección cinta Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
	trazado de las conducciones 25%	1	24.750,00	2,00		49.500,00
						49.500,00
P1MTGB001	m³ Fábrica gaviones DN 2,4. h<4m acero galv. Muro o fábrica de gaviones metálicos realizados con malla de triple torsión de acero galvanizado reforzado de DN 2,4 mm o superior, incluso anclajes. Totalmente colocado.					
	CN T12-T13 PK3+00-4+00	20	15,00	1,00	1,00	300,00
						300,00
P1MT08GTX-003	m² Geomalla refuerzo taludes Suministro y colocación de geomalla de refuerzo DLT Grid en taludes incluso enrejado con alambre galvanizado de Ø 2,00 mm y malla hexagonal 8x10-16 anclado al terreno con barras corrugadas de acero B 500 S, para protección de taludes, medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 1.5m) entre paños y mermas. Unidad totalmente terminada. Zonas de gran pendiente					
	CNT13-T13b PK 1+672	1	70,00	20,00		1.400,00
						1.400,00
P1MTMR001	m Fajina retención rollizo 0.5m altura ml de fajinada formada por estacas de pino de 1 m de longitud y 8 cm de diámetro,hincados en el suelo 50 cm, entre los que se entrelazan una fajina construida con ramas, hasta formar una pantalla de 50 cm de altura, construida para reducir la escorrentía superficial. Incluso herramientas y medios auxiliares.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Zonas de gran pendiente					
	CNT13-T13b PK 1+672	14	20,00			280,00
						280,00
P-102AMBPL001	m² Hidrosiembra incluso rastrillado y tapado					
	Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.					
	Zonas de gran pendiente					
	CNT13-T13b PK 1+672	1	70,00	20,00		1.400,00
						1.400,00
02.13.01.03	HIDROLOGIA (T12-DC)					
P-101AMB-MP05	m Barrera de retención sedimentos					
	Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.					
	Cruces de arroyos/ cauces singulares	10	10,00	2,00		200,00
	Barreras de sedimentos c/1000m s/ n	25	20,00			500,00
	Barreas cruce río Ebro	2	100,00	2,00		400,00
	Reutilización de barreras tras ejec. obra					
						1.100,00
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones					
	Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.					
	Una por cada zona de instalaciones	12				12,00
						12,00
02.13.01.04	FAUNA Y FLORA (T12-DC)					
P-101AMB-MP03	m Jalonamiento de protección malla					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
	trazado de las conducciones 5%	0,05	24.750,00	2,00		2.475,00
						2.475,00
P-101AMB-MP09	m Jalonamiento de protección cinta					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
	trazado de las conducciones 15%	0,15	24.750,00	2,00		7.425,00
						7.425,00
P-101AMB-MP10	ud Protector de fauna					
	Protector de fauna: Instalación de vallas plásticas y elementos necesarios.					
	Zonas de riesgo	12	10,00			120,00
						120,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.13.02	SEGUIMIENTO ARQUEOLÓGICO (T12-DC)					
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo. Informe inicial	1				1,00
						1,00
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz. Informe arqueológico previo incluidas tramitaciones y tasas. un informe previo	1				1,00
						1,00
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual Plazo obra	36				36,00
						36,00
P-103AMBAR02B	día Seguimiento intensivo arqueológico de las obras+informe Día de control y seguimiento arqueológico de carácter intensivo realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluida maquinaria de desbroce y excavación, medios auxiliares necesarios y presencia permanente de técnicos, generación de informe de seguimiento Ramalete	5				5,00
						5,00
P-103AMBAR-03	km² Prospección arqueológica detallada, análisis y trabajo de campo Prospección arqueológica intensiva de cobertura total en una superficie afectada de 1Km2, incluyendo excavaciones, sondeos arqueológicos, medios humanos, maquinaria, material auxiliar necesario, análisis documental, proyecto de actuación arqueológica y trabajo de campo. Unidad completa Varios Ramalete	2				2,00
						2,00
02.13.03	PROGRAMA VIGILANCIA AMBIENTAL (T12-DC)					
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación PVA y PGR	1				1,00
						1,00
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento. Meses de duracion obra	36				36,00
	Duración obra+ demoliciones y remates					36,00
P-104AMBVA02A	mes Seguimiento acústico (ruido ambiental) Medida de niveles de ruido en zona de obra. Desarrollada la medición a lo largo de una jornada laboral, con toma de datos en diversos puntos de la obra, y elaboración de informes periódicos posteriores por especialista cualificado, incluidos materiales y elementos auxiliares. Unidad totalmente terminada. Seguimiento ruido en las zonas habitadas	36				36,00
						36,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P-104AMBVA03A	ud Informe especializado de flora Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina.					
	1 al principio de obra	1				1,00
						1,00
P-104AMBVA04A	ud Informe especializado de fauna Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe.					
	1 antes de inicio de obra	1				1,00
						1,00
P-104AMBVA05	ud Informe y analítica de muestra de aguas Informe y analítica de muestras de agua en puntos de cruce singulares. unidad totalmente ejecutada.					
	Cruce del Río Ebro	2	3,00			6,00
	Antes y despues de la obra					
	Durante la obra en cruce del Río Ebro	2	3,00			6,00
						12,00
P-104AMBVA06	ud Informe de prevención acústica Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio. Unidad completa.					
		1				1,00
						1,00
02.13.04	INTEGRACIÓN PAISAJÍSTICA (T12-DC)					
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos. s/med aux					
	a deducir zonas depósito excedentes	1	173.787,94			173.787,94
	a deducir acopios temporales	1	105.812,67			105.812,67
						279.600,61
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones. s/med aux					
	zonas depósito excedentes	1	173.787,94			173.787,94
	acopios temporales	1	105.812,67			105.812,67
						279.600,61

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccione Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones. s/med aux					
	zonas depósito excedentes	1	173.787,94			173.787,94
	acopios temporales	1	105.812,67			105.812,67
						279.600,61
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales. s/med aux					
	zonas depósito excedentes	0,5	173.787,94			86.893,97
	acopios temporales	0,5	105.812,67			52.906,34
						139.800,31
P-102AMB-PL06	Pie Apeo árboles ø >20-<=30 cm densidad <=750 pies/ha c/mat (R.E.A.) Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y densidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la intensidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, incluido canon de vertido, herramientas y medios auxiliares. s/med aux					
	T12-T13	1	3.916,00	0,05		195,80
	T13-T13BIS	1	3.051,00	0,05		152,55
	T13BIS-BT	1	1.537,00	0,05		76,85
						425,20
P-102AMBPL08	mes Mantenimiento de plantaciones, riego y reposición extraordinaria Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de marras, realización de podas de realce necesarias y otras operaciones de mantenimiento. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande realizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, incluyendo la escarda y mezcla con el sustrato de malas hierbas, herramientas y medios auxiliares. Duración Subtramo	36				36,00
						36,00
P-102AMBPL38B	ud Plantación de Crataegus monogyna de 0,6-0,8 m en contenedor Plantación de Crataegus monogyna 0,6-0,8 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación. Tratamiento 4	96				96,00
						96,00
P-102AMBPL03B	ud Plantación de Pinus halepensis de 1,0-1,5 m en contenedor Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso apertura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación. Tratamiento 3a	436				436,00
						436,00
P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m en contenedor Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Tratamiento 3a	109				109,00
						109,00
P-102AMBPL36	ud Plantación de Salvia officinalis 20-30cm. CONT.					
	Salvia officinalis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, formación de alcorque y primer riego.					
	Tratamiento 3a	109				109,00
						109,00
P-102AMBPL37	ud Plantación de Thymus vulgaris de 0,2-0,4 m en envase forestal					
	Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso apertura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 3a	109				109,00
	Tratamiento 6	1.132				1.132,00
						1.241,00
P-102AMBPL12B	m² Formación de pasto gramíneas y leguminosas					
	Formación de pasto por siembra de una mezcla de especies gramíneas y leguminosas, a determinar por la Dirección de Obra, incluso la limpieza del terreno, laboreo con dos pases de motocultor cruzados y abonado de fondo, rastrillado y retirada de todo material de tamaño superior a 2 cm., distribución de la semilla.					
	Tratamiento 2					
	ZONAS DEPOSITO EXCEDENTES	1	173.787,94			173.787,94
	ACOPIOS INTERMEDIOS	1	105.812,67			105.812,67
	Tratamiento 3b					
	ZONAS EN PENDIENTE	1	40.510,89			40.510,89
	Tratamiento 6	1	14.146,00			14.146,00
						334.257,50
P-102AMBPL01	ud Plantación de Genista scorpius 0.3-0.5m en contenedor					
	Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 3a	109				109,00
	Tratamiento 6	1.132				1.132,00
						1.241,00
P-102AMBPL003	ud Plantación de Artemisia herba-alba 0,2-0,5m en contenedor					
	Plantación de Artemisia herba-alba 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 6	1.132				1.132,00
						1.132,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
02.14	GESTIÓN DE RESIDUOS (T12-D.C.)					
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos					
	Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un enchado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.					
	Puntos de vertido intermedio	12				12,00
						12,00
PGESRES180B	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (T12-DC)					
	Carga , transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC.	1				1,00
						1,00
PGESRES150B	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (T12-DC)					
	Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC	1				1,00
						1,00
PGESRES200B	ud Carga, transporte y depos.de Res. peligrosos (T12-DC)					
	Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC.	1				1,00
						1,00
02.15	VARIOS (T12-D.C.)					
P90VAR4	ud Difusión y comunicación actuación del tramo					
	Difusión y comunicación de las obras del tramo consistente en : a)-Emisión de 2 anuncios en periódico de gran tirada, b)-2 anuncios publicitarios en medio de radiodifusión , c)-edición de 200 folletos explicativos tipo tríptico de alta calidad, d)-desarrollo de WEB informativa y de seguimiento de las obras con el volcado informativo del avance de obra, estado f)-Reportaje fotográfico de evolución de obra g)-CD video divulgativo h)-Presentación y actos varios i)-Monolito actuación	1				1,00
						1,00
02.16	SEGURIDAD Y SALUD (T12-D.C.)					
PSEGSAL.02	ud Seguridad y Salud.Subtramo T12-D.C. (Derivación Corella)					
	Seguridad y salud en el Subtramo T12-D.C. (Derivación Corella),(según valoración realizada en el Anejo nº20 del proyecto).					1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03	SUBTRAMO D.C.-T21 y DC-T14/15					
03.01	MOVIMIENTO DE TIERRAS (DC-T21 y DC-T14/15)					
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico					
	Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.					
	SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	DC-T16	0,5	89.385,34			44.692,67
	T16-T14/15	0,5	157.230,37			78.615,19
	T16-T14/15	0,5	2.678,56			1.339,28
	DC-T17	0,5	113.098,80			56.549,40
	DC-T17	0,5	58.970,91			29.485,46
	T17-T18	0,5	203.858,55			101.929,28
	T18-T19	0,5	196.935,27			98.467,64
	T18-T19	0,5	99.548,85			49.774,43
	T19-T20	0,5	64.464,50			32.232,25
	T19-T20	0,5	15.245,72			7.622,86
	T20-T21	0,5	31.099,87			15.549,94
	T20-T21	0,5	39.269,57			19.634,79
						535.893,19
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea)					
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
	SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	DC-T16	1	89.385,34			89.385,34
	T16-T14/15	1	157.230,37			157.230,37
	DC-T17	1	113.098,80			113.098,80
	T17-T18	1	203.858,55			203.858,55
	T18-T19	1	196.935,27			196.935,27
	T19-T20	1	64.464,50			64.464,50
	T20-T21	1	31.099,87			31.099,87
						856.072,70

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos. SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	T16-T14/15	1	2.678,56			2.678,56
	DC-T17	1	58.970,91			58.970,91
	T18-T19	1	99.548,85			99.548,85
	T19-T20	1	15.245,72			15.245,72
	T20-T21	1	39.269,57			39.269,57
						215.713,61
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio inter-medio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones. SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	DC-T16	1	89.385,34			89.385,34
	T16-T14/15	1	157.230,37			157.230,37
	T16-T14/15	1	2.678,56			2.678,56
	DC-T17	1	113.098,80			113.098,80
	DC-T17	1	58.970,91			58.970,91
	T17-T18	1	203.858,55			203.858,55
	T18-T19	1	196.935,27			196.935,27
	T18-T19	1	99.548,85			99.548,85
	T19-T20	1	64.464,50			64.464,50
	T19-T20	1	15.245,72			15.245,72
	T20-T21	1	31.099,87			31.099,87
	T20-T21	1	39.269,57			39.269,57
						1.071.786,31
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccione Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones. SEGÚN SUPERFICIES OBTENIDAS EN GIS					
	DC-T16	1	89.385,34			89.385,34
	T16-T14/15	1	157.230,37			157.230,37
	T16-T14/15	1	2.678,56			2.678,56

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	DC-T17	1	113.098,80			113.098,80
	DC-T17	1	58.970,91			58.970,91
	T17-T18	1	203.858,55			203.858,55
	T18-T19	1	196.935,27			196.935,27
	T18-T19	1	99.548,85			99.548,85
	T19-T20	1	64.464,50			64.464,50
	T19-T20	1	15.245,72			15.245,72
	T20-T21	1	31.099,87			31.099,87
	T20-T21	1	39.269,57			39.269,57
						1.071.786,31
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted.					
	Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ...) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med	1	445.433,68			445.433,68
	Saneos terciarios	0,05	20.456,37	5,50	0,15	843,83
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	0,75	20.456,37	1,55	0,08	1.902,44
						448.179,95
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/m	1	55.814,98			55.814,98
	Saneos aluvial	0,05	20.456,37	5,50	0,15	843,83
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	0,25	20.456,37	1,55	0,08	634,15
						57.292,96
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno					
	Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos terciarios	0,05	20.456,37	5,50	0,15	843,83
	Saneos aluvial	0,05	20.456,37	5,50	0,15	843,83
						1.687,66
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15					
	Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.					
	cama de tuberías	1	34.700,16			34.700,16

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Riñonera garbancillo	1	4.257,71			4.257,71
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	1	20.426,37	1,55	0,08	2.532,87
						41.490,74
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/m riñoneras	1	95.756,62			95.756,62
	Rellenos de cobertura con suelo seleccionado (nulo)					
						95.756,62
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/ m	1	290.699,52			290.699,52
						290.699,52
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Rellenos de sobrantes en vertedero	1	60.002,35			60.002,35
	Sobrantes de saneos					
	Saneos terciarios	0,05	20.456,37	5,50	0,15	843,83
	Saneos aluvial	0,05	20.456,37	5,50	0,15	843,83
	Exc ejecución de soldaduras en juntas tubo L=12m (0.5mx0.5m)	1	20.456,37	1,55	0,08	2.536,59
						64.226,60
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Camas de tuberías	1	2.139,90			2.139,90
	Rellenos riñoneras	1	4.812,45			4.812,45
	Rellenos de cobertura	1	284,57			284,57
						7.236,92
P1MT08ESC500	m³ Escollera 500 kg careada Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	s/m	1	240,00			240,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Taludes del río Queiles	2	5,00	30,00	0,50	150,00
						390,00
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2					
	Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	s/m	1,05	240,00	2,00		504,00
	Taludes del río Queiles	1,05	5,00	30,00	2,00	315,00
						819,00
03.02	TUBERÍAS (DC-T21 y DC-T14/15)					
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC					
	M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	s/med	1	26.284,32			26.284,32
						26.284,32
P1T1300.8.0A	m Tubería acero helic. L275, Ø1321 esp. 8					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.321 mm y espesor mínimo de 8,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	1.655,00			1.655,00
						1.655,00
P1T1300.10.0A	m Tubería acero helic. L275, Ø1321 esp10					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.321 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	400,00			400,00
						400,00
P1T1500.9.5A	m Tubería acero helic. L275, Ø1524 esp. 9.5					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 9,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	1.522,00			1.522,00
						1.522,00
P1T1500.10.5A	m Tubería acero helic. L275, Ø1524 esp. 10.5					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 10.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	450,00			450,00
						450,00
P1T1500.16.0A	m Tubería acero helic. L275, Ø1524 esp. 16.0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 16 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	468,00			468,00
						468,00
P1T1600.10.0A	m Tubería acero helic. L275, Ø1626 esp. 10.0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	9.440,00			9.440,00
						9.440,00
P1T1600.12.5A	m Tubería acero helic. L275, Ø1626 esp. 12,5					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	261,37			261,37
						261,37
P1T1800.11.5A	m Tubería acero helic. L275, Ø1829 esp. 11,5					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	11.651,00			11.651,00
						11.651,00
P1T1800.14.0A	m Tubería acero helic. L275, Ø1829 esp. 14.0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	212,00			212,00
						212,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1T1800.18.0A	m Tubería acero helic. L275, Ø1829 esp. 18.0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 18,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	357,00			357,00
						357,00
03.03	DESAGÜES (DC-T21 y DC-T14/15)					
03.03.01	ARQUETA DESAGÜE, VALVULERÍA Y CALDERERÍA (DC-T21 y DC-T14/15)					
03.03.01.01	MOV. TIERRAS Y DREN (DESAGÜES DC-T21 y T14/15)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
		1	23,00			23,00
						23,00
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil					
	Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.					
		1	80,00			80,00
						80,00
03.03.01.02	ESTRUCTURA DE HORMIGÓN Y METÁLICA (DESAGÜES DC-T21 y T14/15)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	7,70			7,70
						7,70
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales					
	Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
		1	7,20			7,20
						7,20
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
		1	11,90			11,90
						11,90
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	40,90			40,90
						40,90
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
		1	29,50			29,50
						29,50
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
		1	186,50			186,50
						186,50
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
		1	6.617,40			6.617,40
						6.617,40
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
		286				286,00
						286,00
P4JTAPVC150	m Junta elastomérica de estanqueidad PVC 150					
	Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.					
		1	55,60			55,60
						55,60
P5ARQP-1.5A	ud Arq. pref DN=1.5 m H=1.5m +pates para desagües tipo D					
	UD de Arqueta prefabricada de diámetro 1.5 m y altura 1.5m para desagües tipo D formada por anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, con pates de polipropileno montados, incluida excavación localizada y rellenos necesarios. Unidad totalmente terminada.					
		37				37,00
						37,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte					
	Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa laminada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y candado. Totalmente terminada y colocada.					
		1	141,50			141,50
						141,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	1	13,60			13,60
						13,60
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	1	4,80			4,80
						4,80
03.03.01.03	VÁLVULAS Y CALDERERÍA (DESAGÜES DC-T21 y T14/15)					
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicoidada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	36,90			36,90
						36,90
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	Anclajes	1	2.523,300			2.523,300
	Tubos	1	2.099,800			2.099,800
						4.623,10
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífuga y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	1	1.931,30			1.931,30
						1.931,30
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	42				42,00
						42,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1BRIDA150.25	ud Brida ciega PN 25 Ø150 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN150 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	4				4,00
						4,00
P1BRIDA250.25	ud Brida ciega PN 25 Ø250 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 250 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	1				1,00
						1,00
P6PM100INX	ud Carrete pasamuros 100 mm AISI 316 brida-brida Carrete pasamuros con placa de estanquidad, extremos brida - brida de acero inoxidable de 100mm de diámetro.	42				42,00
						42,00
P6PM150INX	ud Carrete pasamuros 150mm AISI 316 brida-brida Carrete pasamuros con placa de estanquidad, extremos brida - brida de acero inoxidable de 150mm de diámetro.	4				4,00
						4,00
P6VM.250.25	ud Válvula mariposa ø 250 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 250 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	1				1,00
						1,00
P6VO.250.25	ud Válvula globo PN25 Ø250 multiorificio Válvula de regulación de globo, de paso recto de 250 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1				1,00
						1,00
P6CD.150.16	ud Carrete desmontaje DN150PN16 Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	24				24,00
						24,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	17				17,00
						17,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6CD.250.16	ud Carrete desmontaje DN250 PN16 Carrete de desmontaje de diametro 250 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	19				19,00
						19,00
P6CD.150.25	ud Carrete desmontaje DN150PN25 Carrete de desmontaje de diametro 150 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	17				17,00
						17,00
P6CD.200.25	ud Carrete desmontaje DN200 PN25 Carrete de desmontaje de diametro 200 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	17				17,00
						17,00
P6CD.250.25	ud Carrete desmontaje DN250 PN25 Carrete de desmontaje de diametro 250 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	17				17,00
						17,00
P6VD.150.25	ud Válvula dilatadora y compensadora de goma DN 150 PN25 Válvula dilatadora y compensadora de goma de DN 150 PN25. Unidad totalmente instalada.	1				1,00
						1,00
03.03.02	CONDUCCIÓN A VERTIDO (DC-T21 y DC-T14/15)					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	s/med aux.	1	6.204,490		6.204,490
						6.204,49
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	s/med aux.	1	32,27		32,27
						32,27

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	s/med aux.	1	32,27			32,27
						32,27
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/med aux.	1	54,59			54,59
						54,59
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/med aux.	1	14,67			14,67
						14,67
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/med aux.	1	32,42			32,42
						32,42
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/med aux.	1	76,54			76,54
						76,54
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	s/med aux.	1	2,86			2,86
						2,86
03.03.03	ARQUETA ROTURA Y VERTIDO A CAUCE (DC-T21 y DC-T14/15))					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
		1	554,90			554,90
						554,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	408,60			408,60
						408,60
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	1	83,60			83,60
						83,60
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	1	183,90			183,90
						183,90
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	1	2,60			2,60
						2,60
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	1,25			1,25
						1,25
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	7,70			7,70
						7,70
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	1	19,10			19,10
						19,10
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	1	12,20			12,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						12,20
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.						
		1	63,70			63,70
						63,70
P4ETT-002	kg Acero B-500-S					
Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.						
		1	2.703,30			2.703,30
						2.703,30
P4PATE01	ud Pate polipropileno					
Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.						
		28				28,00
						28,00
03.04	VENTOSAS (DC-T21;T14)					
03.04.01	MOVIMIENTO DE TIERRAS VENTOSAS (DC-T21; T14)					
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted.					
Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ..) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.						
		1	103,20			103,20
						103,20
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.						
		1	103,20			103,20
						103,20
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil					
Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.						
		1	775,00			775,00
						775,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.04.02 OBRAS DE FÁBRICA VENTOSAS (DC-T21; T14)						
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	51,60			51,60
						51,60
P5ELECAS01	ud Caseta prefabricada 1.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 1.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada. s/ nec. varios	19				19,00
						19,00
P5ELECAS02	ud Caseta prefabricada 4.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 4.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	12				12,00
						12,00
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.	1	29,80			29,80
						29,80
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.	1	31,00			31,00
						31,00
03.04.03 VÁLVULAS Y CALDERERÍA VENTOSAS (T12-DC)						
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	1	4.497,300			4.497,300
						4.497,30

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	84,60			84,60
						84,60
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	43				43,00
						43,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	43				43,00
						43,00
03.05	TOMAS (DC-T21 y DC-T14/15)					
03.05.01	TOMA-17					
03.05.01.01	MOVIMIENTO DE TIERRAS (TOMA-17)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Saneos plataforma s/ cad	1	3.094,00		0,30	928,20
	Excav. general s/m	1	362,78			362,78
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	2	40,00	5,00		400,00
	Excav macizos					
	Macizos T	2	80,00		1,50	240,00
	Cajeos cámara de descarga en capítulo correspondiente					
						2.330,98
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma	1	3.094,00		0,30	928,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						928,20
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	281,00			281,00
	A vertedero	1	2.330,98			2.330,98
		-1	281,00			-281,00
		-1	458,00			-458,00
						1.872,98
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	2	40,00	5,00		400,00
		-2	28,50	3,00		-171,00
		-2	28,50	3,00		-171,00
						458,00
03.05.01.02	CALDERERÍA Y VALVULERÍA (TOMA-17)					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	79.455,670			79.455,670
						79.455,67
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanqueidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Tub. principal	2	2,00			4,00
	Tomas derivación T conex. ventosa	1				1,00
	Toma tras caudalímetro	1				1,00
						6,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	Desagües	2	3,00			6,00
						6,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass	4				4,00
						4,00
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Desagües	2				2,00
						2,00
P6CD.800.16	ud Carrete desmontaje virola acero inox. PN16 DN 800 Carrete telescópico autoportante, PN 16 atm, DN 800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornilleria de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Caudalímetro	1				1,00
						1,00
P6CD.1000.16	ud Carrete desmontaje virola acero inox. PN16 DN 1000 Carrete telescópico autoportante, PN 16 atm, DN 1.000 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornilleria de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Deriv. tomas	2				2,00
						2,00
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800 Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornilleria de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Conducción principal-1	1				1,00
	Conducción principal-2	1				1,00
						2,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	4	1,00			4,00
						4,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Cámara de descarga desagüe	2				2,00
						2,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornilleria de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Bypass	4	2,00			8,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						8,00
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual					
	Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o ex-céntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Desagüe-1	1				1,00
	Desagüe-2	1				1,00
						2,00
P6VM.1000.16M	ud Válvula mariposa motorizada PN 16 Ø1000 I					
	Válvula de mariposa, DN 1000 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, ex-céntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Deriv. tomas	2				2,00
						2,00
P6VM.1600.16M	ud Válvula mariposa motorizada PN 16 Ø1600 I					
	Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, ex-céntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Conducción-1	1				1,00
	Conducción-2	1				1,00
						2,00
P6FG.250.16	ud Filtro globo PN 16 Ø250					
	Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.					
	Descarga	2				2,00
						2,00
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250					
	Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.					
	Descarga	2				2,00
						2,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete					
	Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Conducción principal-1	2	1,00			2,00
	Conducción principal-2	2	1,00			2,00
	T toma	1	1,00			1,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.01.03	LOSA Y ANCLAJES (TOMA-17)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	32,70	29,60	0,10	96,79
						96,79
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	32,70	29,60	0,30	290,38
	A descontar cámara descarga	-1	16,40	3,40	0,30	-16,73
	A descontar macizos	-1	80,00		0,30	-24,00
		-4	5,00	2,80	0,30	-16,80
	Macizos T solera	1	80,00		1,50	120,00
	Macizo T alzado s/ losa	2	5,60	1,70		19,04
	Macizo T toma alzado s/ losa	1	5,60	1,40		7,84
	Macizos concavos/ convexos	4	40,00	2,80		448,00
		-2	10,50	3,14	0,81	-53,41
		-2	10,50	3,14	0,64	-42,20
	Apoyos tuberías					
	tramo conduc. principal	2	3,00	2,60	0,80	12,48
	Tramo derivación tomas	2	2,00	1,50	0,80	4,80
	Tramo caudalímetro	1	2,00	1,50	0,80	2,40
	Apoyos Válvulas	4	3,00	1,50	0,80	14,40
	Apoyo caudalímetro	1	2,00	1,20	0,80	1,92
	Bypass	4	3,00	1,50	0,50	9,00
	Otros pequeños apoyos	10	0,50	0,50	0,50	1,25
						778,37
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Solera	1	124,50		0,30	37,35
						37,35

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Macizos T	2	16,00		1,50	48,00
		1	14,00		1,20	16,80
	Alzado	2	5,60			11,20
	Alzado	2	1,75		3,30	11,55
	Macizo T (apoyo toma)	1	9,50		1,70	16,15
	Macizos concavos/ convexos	8	40,00			320,00
		2	3,00	4,20		25,20
		2	3,00	4,20		25,20
		2	3,00	2,80		16,80
		2	3,00	2,80		16,80
	Apoyos					
	Apoyos Válvulas	4	9,00		0,80	28,80
	Apoyo de caudalímetro	1	7,00		0,80	5,60
	Apoyos tubería-anclajes	4	8,00		0,80	25,60
	Deriv. tomas	4	7,00		0,80	22,40
	Toma-caudalimero	2	6,00		0,80	9,60
	Apoyos bypass	2	4,00	1,70	0,50	6,80
	Otros apoyos	3	1,50		0,50	2,25
						608,75
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Solera #1620 16.3 kg/m2)	2	32,70	29,60	16,30	31.554,19
	A descontar cámara descarga	-2	74,50		16,30	-2.428,70
	A descontar macizos T	-2	80,00		16,30	-2.608,00
	A descontar p.p. concav	-4	5,00	2,80	16,30	-912,80
	Macizos T #16/15 (21.7kg/m2)					
	base (superficiex2)	2	80,00		21,70	3.472,00
	Alzados (perímetroxaltura)	1	60,00	1,50	21,70	1.953,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Tacón T derivación macizo	2	5,10		21,70	221,34
		2	12,20	2,00	21,70	1.058,96
	Tacón T apoyo macizo	1	7,00	1,00	21,70	151,90
		2	5,50			11,00
	Refuerzos fi 16/15 T derivación	65	1,00	2,00	1,73	224,90
	Refuerzos fi 16/15 T apoyo	46	1,00	2,00	1,73	159,16
	Macizos concavos/ convexos	8	40,00		21,70	6.944,00
		4	28,00	2,80	21,70	6.805,12
	Refuerzos 20/15 macizos cóncav.					
	Entrada	4	11,40		34,00	1.550,40
	Salida	4	11,40		34,00	1.550,40
	Entrada	4	15,10	3,00	34,00	6.160,80
	Salida	4	15,10	3,00	34,00	6.160,80
	Apoyos Válvulas #16/15					
	Apoyos Válvulas	4	9,00	21,70	0,80	624,96
	Basex2	4	4,50	21,70	2,00	781,20
	Apoyo de caudalímetro	1	7,00	21,70	0,80	121,52
	Basex2	2	4,50	21,70	1,00	195,30
	Apoyos tubería-ancclajes	4	8,00	21,70	0,80	555,52
		4	4,50	21,70	2,00	781,20
	Deriv. tomas	4	7,00	21,70	0,80	486,08
		4	4,00	21,70	2,00	694,40
	Toma-caudalimero	2	6,00	21,70	0,80	208,32
		2	4,00	21,70	1,00	173,60
	Apoyos bypass	4	3,00	21,70	0,85	221,34
		4	3,00	21,70	0,15	39,06
	Otros apoyos	6	1,50	21,70	0,50	97,65
		6	2,00	21,70	0,15	39,06
	Solera #16/15. Adicional hierro	2	80,00		7,70	1.232,00
		1	45,00		7,70	346,50
	Pérdidas	0,15	68.626,00			10.293,90
						78.920,08

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes T	4	11,00			44,00
		1	8,00			8,00
	Anclajes conv	4	13,00			52,00
						104,00
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	29,60			29,60
						29,60
03.05.01.04	PROTECCIÓN Y ENCINTADOS (TOMA-17)					
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Tubería salida	2	10,50			21,00
						21,00
P4CINT1600	m Encintado anticorrosivo DN1600 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
		2	10,50			21,00
						21,00
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Desagües	4	0,30			1,20
						1,20
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	2	2,00	0,80	6,28	20,10
	Apoyos tubería T	2	2,00	0,80	1,60	5,12
	Apoyos tubería toma	2		0,80	2,50	4,00
	Apoyos válvulas	2	2,00	1,00	1,00	4,00
		2	2,00	0,80	1,00	3,20
	MAcizos de anclaje					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T	2	4,50	1,70		15,30
	T tomas	1	2,50	2,50		6,25
	Varios desagüe	4	1,00	0,50		2,00
	Varios apoyos menores	0,15	65,00			9,75
						69,72
03.05.01.05	OBRA DE DESAGÜE (TOMA-17)					
03.05.01.05.1	ARQUETA ROTURA (TOMA-17)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Excav	1	127,00		1,00	127,00
						127,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excav	1	127,00		1,00	127,00
		-1	74,50		1,00	-74,50
						52,50
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	74,50		0,10	7,45
						7,45
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales					
	Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cuñas	1	16,00	2,00	0,20	6,40
						6,40
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	74,50		0,30	22,35
						22,35
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Alzados	2	13,20	0,20	1,40	7,39

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	3,00	0,20	1,40	0,84
		2	3,20	0,20	2,50	3,20
		1	3,00	0,20	2,50	1,50
		1	3,00	0,20	1,10	0,66
		1	7,00	0,20	1,50	2,10
		1	7,00	0,20	0,60	0,84
		2	2,50	0,20	1,50	1,50
						18,03

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

perímetro losa	2	16,40	0,30	9,84
	2	3,40	0,30	2,04
	1	7,00	0,30	2,10
	2	2,50	0,30	1,50
				15,48

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Alzados	4	9,20	0,20	1,40	10,30
	2	2,00	0,20	1,40	1,12
	4	3,20	0,20	2,50	6,40
	2	2,00	0,20	2,50	2,00
	2	2,00	0,20	1,10	0,88
	2	7,00	0,20	1,50	4,20
	2	7,00	0,20	0,60	1,68
	4	2,50	0,20	1,50	3,00
					29,58

P4ETT-002 kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

#12/15

Alzados	4	13,20	12,30	1,40	909,22
---------	---	-------	-------	------	--------

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	3,00	12,30	1,40	103,32
		4	3,20	12,30	2,50	393,60
		2	3,00	12,30	2,50	184,50
		2	3,00	12,30	1,10	81,18
		2	7,00	12,30	1,50	258,30
		2	7,00	12,30	0,60	103,32
		4	2,50	12,30	1,50	184,50
	Solera	2	74,60	12,30		1.835,16
	Ref. solera-alzado					
		14	0,92	35,00		450,80
		14	0,92	9,00		115,92
	Esquinas	8	20,00	0,92	1,50	220,80
	Solpaes y varios	0,15	4.840,00			726,00
						5.566,62
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	45,00			45,00
		1	9,00			9,00
						54,00
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2					
	Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	35,00	1,00		35,00
						35,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte					
	Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero Al-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
	Arqueta	1	2,70	7,00		18,90
						18,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.01.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-17)						
P4TUB120HA135	m Tubería hormigón armado junta elastomérica 135 Ø1200					
	Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.200 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
		1	8,00			8,00
						8,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	8,00	2,50	1,80	36,00
						36,00
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert					
	Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Desagüe	1	8,00	2,50	1,80	36,00
	A descontar tubo	-1	8,00	1,13		-9,04
	Embocadura					
	Solera	1	1,30	1,50	0,30	0,59
	Tacón entronque	1	1,30	0,40	0,50	0,26
						27,81
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo					
	Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Vertido	1	1,00	2,50	0,30	0,75
						0,75
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Embocadura zapatas					
	Aletas	2	1,50	1,25	0,50	1,88
						1,88
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Embocadura					
	Aletas	2	1,50	0,30	1,50	1,35
	Frontal	1	1,50	0,30	1,50	0,68
						2,03

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada. Embocadura					
	Aletas	4	1,50		0,50	3,00
						3,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. Embocadura					
	Aletas	2	1,50		1,50	4,50
	Frontal	1	1,50		1,50	2,25
						6,75
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. Embocadura					
	Aletas #12/20	2	1,50	9,20	1,50	41,40
	Frontal #12/20	2	1,50	9,20	1,50	41,40
	Zapatas #12/20	4	1,50	1,25	9,20	69,00
	Solera	2	1,30	1,50	9,20	35,88
	Solapes	0,15	187,00			28,05
						215,73
03.05.01.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-17)					
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desagüe	1	195,00	3,00		585,00
						585,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	195,00	3,00		585,00
						585,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	195,00	1,50	1,00	292,50
	Reperfilado de azarbe					
						292,50
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Desagüe	1	5,00	2,50	0,30	3,75
						3,75
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	Desagüe	1	5,00	2,50		12,50
						12,50
03.05.01.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-17)					
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		4	12,20			48,80
						48,80
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm, barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante, incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.					
	Ángulo 45°	4	3,20			12,80
						12,80
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					
		4	1,50	2,00		12,00
						12,00
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.					
	Acceso escaleras	4	1,00			4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada. Escaleras					
	Soportes UPN-200	4	13,000	25,300		1.315,600
	Pilares UPN-200	4	4,000	25,300	2,000	809,600
	Placas	4	4,000	15,000		240,000
						2.365,20
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje, incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.					
	Línea de vida	2				2,00
						2,00
03.05.01.07	URBANIZACIÓN (TOMA-17)					
03.05.01.07.1	PAVIMENTOS (T17)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	2.572,00		0,30	771,60
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque camino existente	1	60,00		0,30	18,00
						775,93
03.05.01.07.2	CERRAMIENTOS (T17)					
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
	Acceso	2				2,00
						2,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
	Acceso	2				2,00
						2,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeo de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Cerramiento perimetral	1	198,00			198,00
						198,00
03.05.01.07.3 DRENAJES (T17)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Cuneta guardas perimetral	1	113,00			113,00
		1	40,00			40,00
		1	70,00			70,00
						223,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
	Entronque con embocadura desagüe	2	3,00			6,00
						6,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
		1	9,00			9,00
						9,00
P1MT08ESC150	m³ Escollera 50-150 Kg careada					
	Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	s/nec entronque	2	1,00	1,00	0,50	1,00
						1,00
P1MT08ESC200	m³ Escollera 200 kg careada					
	Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
		2	2,00	2,00	0,50	4,00
						4,00

03.05.02 TOMA-18

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.02.01	MOVIMIENTO DE TIERRAS (TOMA-18)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Saneamiento plataforma s/ cad	1	2.715,00		0,30	814,50
	Excav. general s/m	1	4.020,00			4.020,00
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	1	40,00	5,00		200,00
	Excav macizos					
	Macizos T	1	88,00		2,00	176,00
	Cajeos cámara de descarga en capítulo correspondiente					
						5.610,50
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneamiento proc. de excav de tubería	1	2.715,00		0,30	814,50
						814,50
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	166,38			166,38
	Resto de material sobrante excavado a vertedero					
	Extendido en vertedero	1	5.610,50			5.610,50
	Utilizados en terraplenados	-1	166,38			-166,38
	Rellenos localizados	-1	343,50			-343,50
						5.267,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	2	40,00	5,00		400,00
	Excavación de tub. salientes (sup.x ancho)	1	40,00	5,00		200,00
		-2	28,50	3,00		-171,00
		-1	28,50	3,00		-85,50
						343,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.02.02	CALDERERÍA Y VALVULERÍA (TOMA-18)					
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	72.005,310			72.005,310
						72.005,31
P1BRID1300.25	ud Brida ciega PN 25 Ø1300					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas					
	Toma	1				1,00
						1,00
P1BRIDA800.25	ud Brida ciega PN 25 Ø800					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Tub. principal	1	2,00			2,00
	Derivación toma	1				1,00
						3,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanquidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	Desagües	1	2,00			2,00
		1	2,00			2,00
						4,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16					
	Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass	3				3,00
						3,00
P6CD.300.16	ud Carrete desmontaje DN 300 PN16					
	Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Desagüe	2				2,00
						2,00
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300					
	Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Caudalímetro	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P6CD.1600.16	ud Carrete desmontaje virola acero inox. PN16 DN1600 Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Deriv. toma	1				1,00
	Toma	1				1,00
						2,00
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800 Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Conducción principal-1	1				1,00
						1,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	3	1,00			3,00
						3,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Cámara de descarga	2				2,00
						2,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Bypass	3	2,00			6,00
						6,00
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Desagüe-1	1				1,00
	Desagüe-2	1				1,00
						2,00
P6VM.1600.16M	ud Válvula mariposa motorizada PN 16 Ø1600 I Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Deriv. toma	1				1,00
	Toma	1				1,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6VM.1800.16M	ud Válvula mariposa motorizada PN 16 Ø1800 I Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, ex-céntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Cond. principal	1				1,00
						1,00
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.					
	Descarga	2				2,00
						2,00
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.					
	Descarga	2				2,00
						2,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Conducción principal-1	2	1,00			2,00
	Conducción principal-2	1	1,00			1,00
						3,00
03.05.02.03	LOSA Y ANCLAJES (TOMA-18)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	26,10	37,10	0,10	96,83
						96,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	26,10	37,10	0,30	290,49
	A descontar cámara descarga	-1	13,40	3,40	0,30	-13,67
	A descontar macizos	-1	2,70	7,00	0,30	-5,67
	A descontar macizos	-1	88,00		0,30	-26,40
	Macizos convexos	-4	5,00	3,00	0,30	-18,00
	Macizos T solera	1	88,00		2,00	176,00
	Macizo T toma alzados s/ losa	2	5,60	1,70		19,04
	Macizo T toma alzado s/ losa	1	5,60	1,40		7,84
	Macizos concavos/ convexos	3	40,00	3,00		360,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		-2	10,50	3,14	0,64	-42,20
		-1	10,50	3,14	0,81	-26,71
	Apoyos tuberías					
	tramo conduc. principal	1	2,00	2,60	0,80	4,16
	Tramo derivación tomas	1	2,00	1,50	0,80	2,40
	Tramo caudalímetro	1	2,00	1,50	0,80	2,40
	Apoyos Válvulas	3	3,00	1,50	0,80	10,80
	Apoyo caudalímetro	1	2,00	1,20	0,80	1,92
	Bypass	3	3,00	1,50	0,50	6,75
	Otros pequeños apoyos	9	0,50	0,50	0,50	1,13
						750,28

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

Solera	1	126,40	0,30	37,92
				37,92

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Macizos T	2	45,20	2,00	180,80
	2	5,60		11,20
	2	2,30	3,30	15,18
Macizos concavos/ convexos	8	40,00		320,00
	2	3,00	4,20	25,20
	2	3,00	2,85	17,10
Apoyos				
Apoyos Válvulas	3	9,00	0,80	21,60
Apoyo de caudalímetro	1	7,00	0,80	5,60
Apoyos tubería-ancajes	4	8,00	0,80	25,60
Deriv. tomas	2	7,00	0,80	11,20
Toma-caudalimero	2	6,00	0,80	9,60
Apoyos bypass	3	3,00	1,70	7,65
Otros apoyos	9	1,50	0,50	6,75

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						657,48
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Solera #1620 16.3 kg/m2)	2	37,10	26,10	16,30	31.566,91
	A descontar cámara descarga	-2	629,00		16,30	-20.505,40
	A descontar macizos T	-2	88,00		16,30	-2.868,80
	A descontar p.p. concav	-4	5,00	2,80	16,30	-912,80
	Macizos T #16/15 (21.7kg/m2)					
	base (superficiex2)	2	88,00		21,70	3.819,20
	Alzados (perímetroxaltura)	1	45,20	2,00	21,70	1.961,68
	Tacón T derivación macizo	4	5,10		21,70	442,68
		2	12,20	2,30	21,70	1.217,80
	Tacón T apoyo toma	1	9,50	0,80	21,70	164,92
		2	5,50		21,70	238,70
	Refuerzos fi 16/15 T derivación	155	1,00	2,00	1,73	536,30
	Macizos concavos/ convexos	6	40,00		21,70	5.208,00
		3	28,00	3,00	21,70	5.468,40
	Refuerzos 20/15 macizos cóncav.	6	15,10	3,00	34,00	9.241,20
		6	11,40		34,00	2.325,60
	Apoyos Válvulas #16/15					
	Apoyos Válvulas	3	9,00	21,70	0,80	468,72
	Basex2	3	4,50	21,70	2,00	585,90
	Apoyo de caudalímetro	1	7,00	21,70	0,80	121,52
	Basex2	1	4,50	21,70	2,00	195,30
	Apoyos tubería-anclajes	4	8,00	21,70	0,80	555,52
		4	4,50	21,70	2,00	781,20
	Deriv. tomas	2	7,00	21,70	0,80	243,04
		2	4,00	21,70	2,00	347,20
	Toma-caudalimero	2	6,00	21,70	0,80	208,32
		2	4,00	21,70	1,00	173,60
	Apoyos bypass	3	3,00	21,70	0,85	166,01
	3	3,00	21,70	0,15	29,30	

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Otros apoyos	9	1,50	21,70	0,50	146,48
		9	2,00	21,70	0,15	58,59
	Solera #16/15. Adicional hierro	1	93,00		7,70	716,10
		1	82,00		7,70	631,40
	Solapes y varios	0,15	43.332,00			6.499,80
						49.832,39
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes T	2	11,00			22,00
	Anclajes conv	3	13,00			39,00
						61,00
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200					
	Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	26,10			26,10
						26,10
03.05.02.04	PROTECCIÓN Y ENCINTADOS (TOMA-18)					
P4CINT1800	m Encintado anticorrosivo DN1800 mm					
	Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Tubería salida	1	10,50			10,50
						10,50
P4CINT1600	m Encintado anticorrosivo DN1600 mm					
	Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
		2	10,50			21,00
						21,00
P4CINT300	m Encintado anticorrosivo DN300 mm					
	Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Desagües	6	0,30			1,80
						1,80
P4PCAT01	ud Conjunto protección anticorrosiva en toma					
	Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm2 Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción.					
	Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías					
	Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	1	2,00	0,80	6,28	10,05

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	2,00	0,80	6,28	10,05
	Apoyos tubería T	2	2,00	0,80	1,60	5,12
	Apoyos tubería toma	2		0,80	2,50	4,00
	Apoyos válvulas	2	2,00	1,00	1,00	4,00
		1	2,00	0,80	1,00	1,60
	MACIZOS de anclaje					
	T	2	4,50	1,70		15,30
	T tomas	1	2,50	2,50		6,25
	Varios desagüe	4	1,00	0,50		2,00
	Varios apoyos menores	0,15	58,00			8,70
						67,07

03.05.02.05 OBRA DE DESAGÜE (TOMA-18)

03.05.02.05.1 ARQUETA ROTURA (TOMA-18)

P1MT03B1 m³ Excavación localizadas medio-duro+agotam+Tte vertedero

Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.

Excav	1	90,00		1,00	90,00
					90,00

P1MT04B m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN

Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.

Excav	1	90,00		1,00	90,00
	-1	45,50		1,00	-45,50
					44,50

P4HG-002A m³ Hormigón HL-150/B/20 Elementos horizontales y verticales

Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.

	1	45,50		0,10	4,55
					4,55

P4HG-002B m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales

Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.

Cuñas	1	13,00	3,00	0,20	7,80
					7,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	45,50		0,30	13,65
						13,65
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Alzados	2	10,20	0,20	1,40	5,71
		1	3,00	0,20	1,40	0,84
		2	3,20	0,20	2,50	3,20
		1	3,00	0,20	2,50	1,50
		1	3,00	0,20	1,10	0,66
		1	7,00	0,20	1,50	2,10
		1	7,00	0,20	0,60	0,84
		2	2,50	0,20	1,50	1,50
						16,35
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	perímetro losa	2	13,40		0,30	8,04
		2	3,40		0,30	2,04
		1	7,00		0,30	2,10
		2	2,50		0,30	1,50
						13,68
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Alzados	4	13,20	0,20	1,40	14,78
		2	2,00	0,20	1,40	1,12
		4	3,20	0,20	2,50	6,40
		2	2,00	0,20	2,50	2,00
		2	2,00	0,20	1,10	0,88
		2	7,00	0,20	1,50	4,20
		2	7,00	0,20	0,60	1,68

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		4	2,50	0,20	1,50	3,00
						34,06
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#12/15					
	Alzados	4	10,20	12,30	1,40	702,58
		2	3,00	12,30	1,40	103,32
		4	3,20	12,30	2,50	393,60
		2	3,00	12,30	2,50	184,50
		2	3,00	12,30	1,10	81,18
		2	7,00	12,30	1,50	258,30
		2	7,00	12,30	0,60	103,32
		4	2,50	12,30	1,50	184,50
	Solera	2	45,60	12,30		1.121,76
	Ref. solera-alzado					
		14	0,92	35,00		450,80
		14	0,92	12,00		154,56
	Esquinas	14	0,92	6,40		82,43
	Solpaes y varios	0,15	3.820,00			573,00
						4.393,85
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	33,60			33,60
		1	3,00			3,00
						36,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	33,60	0,50		16,80
		1	13,50	1,00		13,50
						30,30
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero Al-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
	Arqueta	1	2,70	7,00		18,90
						18,90
03.05.02.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-18)						
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Desagüe	1	36,50			36,50
						36,50
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	36,50	2,00	1,60	116,80
						116,80
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Desagüe	1	36,50	2,00	1,60	116,80
	A descontar tubo	-1	36,50	0,50		-18,25
	Embocadura					
	Solera	1	1,30	1,50	0,30	0,59
	Tacón entronque	1	1,30	0,40	0,50	0,26
						99,40
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Vertido	1	1,00	2,50	0,30	0,75
						0,75
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Embocadura zapatas					
	Aletas	2	1,50	1,25	0,50	1,88
						1,88
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Embocadura					
	Aletas	2	1,50	0,30	1,50	1,35
	Frontal	1	1,50	0,30	1,50	0,68
						2,03
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	4	1,50		0,50	3,00
						3,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	2	1,50		1,50	4,50
	Frontal	1	1,50		1,50	2,25
						6,75
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Embocadura					
	Aletas #12/20	2	1,50	9,20	1,50	41,40
	Frontal #12/20	2	1,50	9,20	1,50	41,40
	Zapatas #12/20	4	1,50	1,25	9,20	69,00
	Solera	2	1,30	1,50	9,20	35,88
	Solapes	0,15	187,00			28,05
						215,73

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.02.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-18)						
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio inter-medio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesaria), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
Desagüe		1	75,00	3,00		225,00
						225,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion					
	Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	75,00	3,00		225,00
						225,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
Desagüe		1	75,00	0,75	1,00	56,25
Reperfilado de azarbe						
						56,25
P1MT08ESC200	m³ Escollera 200 kg careada					
	Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
Desagüe		1	5,00	2,50	0,30	3,75
		1	5,00	2,50	0,30	3,75
						7,50
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2					
	Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
Desagüe		1	5,00	2,50		12,50
						12,50
03.05.02.06 ESTRUCTURA METÁLICA Y VARIOS (TOMA-18)						
P41BARAND01	m Barandilla metálica galv.+pintura					
	Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		3	12,20			36,60
						36,60
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr					
	Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm, barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante, incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Ángulo 45°	3	3,20			9,60
						9,60
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2)					
	Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilaría acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	3	1,50	2,00		9,00
						9,00
P41CADENA III	m Cadena acero inox 8 mm					
	Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.					
	Acceso escaleras	3	1,00			3,00
						3,00
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C.					
	Montaje e instalación completa en obra.					
	Unidad totalmente instalada.					
	Escaleras					
	Soportes UPN-200	3	13,000	25,300		986,700
	Pilares UPN-200	3	4,000	25,300	2,000	607,200
	Placas	3	4,000	15,000		180,000
						1.773,90
P41LV001	ud Línea de vida					
	Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje, incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud.					
	Unidad totalmente instalada.					
	Línea de vida	2				2,00
						2,00
03.05.02.07	URBANIZACIÓN (TOMA-18)					
03.05.02.07.1	PAVIMENTOS (T18)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	2.715,00		0,30	814,50
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque camino existente	1	159,00		0,30	47,70
						848,53

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.02.07.2 CERRAMIENTOS (T18)						
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint					
	Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
Acceso		2				2,00
						2,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint					
	Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
Acceso		2				2,00
						2,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment.					
	Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
Cerramiento perimetral		1	210,00			210,00
						210,00
03.05.02.07.3 DRENAJES (T18)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
Cuneta guarda inferior		1	80,00			80,00
Entronques cunetas		3	5,00			15,00
						95,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
Entronque con embocadura desagüe		5	3,00			15,00
						15,00
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5					
	Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
Cuneta guarda superior		1	126,00			126,00
						126,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
		2	10,00			20,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	12,00			12,00
						32,00
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	s/nec entronque	2	1,00	1,00	0,50	1,00
						1,00
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
		2	2,00	2,00	0,50	4,00
						4,00
03.05.03	TOMA-19					
03.05.03.01	MOVIMIENTO DE TIERRAS (TOMA-19)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Saneos plataforma s/ cad	1	2.432,00		0,30	729,60
	Excav. general s/m	1	1.525,35			1.525,35
	Excavación de tub. entrantes (sup.x ancho)	1	40,00	5,00		200,00
	Excavación de tub. salientes (sup.x ancho)	1	40,00	5,00		200,00
	Excav macizos					
	Macizos T	1	74,00		2,00	148,00
	Cajeos cámara de descarga en capítulo correspondiente					
						2.802,95
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma s/ cad	1	2.432,00		0,30	729,60
						729,60
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	1,59			1,59
	Sobrantes a vertedero	1	2.802,95			2.802,95
		-1	1,59			-1,59

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Rellenos localizados	-1	229,00			-229,00
						2.573,95
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	1	40,00	5,00		200,00
	Excavación de tub. salientes (sup.x ancho)	1	40,00	5,00		200,00
		-1	28,50	3,00		-85,50
		-1	28,50	3,00		-85,50
						229,00
03.05.03.02	CALDERERÍA Y VALVULERÍA (TOMA-19)					
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	49.216,920			49.216,920
						49.216,92
P1BRID1500.25	ud Brida ciega PN 25 Ø1500					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Toma	2				2,00
						2,00
P1BRID1300.25	ud Brida ciega PN 25 Ø1300					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas					
	Toma	1				1,00
						1,00
P1BRIDA800.25	ud Brida ciega PN 25 Ø800					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Tub. principal paso hombre	1	2,00			2,00
						2,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro. desagüe a cámara de descarga	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A arqueta de válvulas desagüe	1				1,00
						2,00
P6PM400INX	ud Carrete pasamuros 400mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 400mm de diámetro.					
	Sobrepresión a cámara de descarga	1				1,00
						1,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16					
	Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass	2				2,00
						2,00
P6CD.300.16	ud Carrete desmontaje DN 300 PN16					
	Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	desagüe	1				1,00
						1,00
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300					
	Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornilleria de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Caudalímetro	1				1,00
						1,00
P6CD.1500.16	ud Carrete desmontaje virola acero inox. PN16 DN1500					
	Carrete telescópico autoportante, PN 16 atm, DN 1.500 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornilleria de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Tub. principal	1				1,00
	deriv. toma	1				1,00
						2,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio					
	Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	2	1,00			2,00
						2,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio					
	Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Cámara de descarga	1				1,00
						1,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual					
	Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornilleria de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Bypass	2	2,00			4,00
						4,00
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o ex-céntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Desagüe-1	1				1,00
	Conducto desagüe	1				1,00
						2,00
P6VM.1500.16M	ud Válvula mariposa motorizada PN 16 Ø1500 I Válvula de mariposa, DN 1500 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, ex-céntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Tub. principal	1				1,00
	Toma	1				1,00
						2,00
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400 Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.					
	Sobrepresión	1				1,00
						1,00
P6FG.400.16	ud Filtro globo PN 16 Ø400 Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.					
	Sobrepresión	1				1,00
						1,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Conducción principal-1	2	1,00			2,00
						2,00
03.05.03.03	LOSA Y ANCLAJES (TOMA-19)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	38,00	23,10	0,10	87,78
						87,78
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	38,00	23,10	0,30	263,34
	A descontar cámara descarga	-1	13,40	3,40	0,30	-13,67

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A descontar macizos	-1	74,00		0,30	-22,20
	Macizos convexos	-2	5,00	3,00	0,30	-9,00
	Macizos T solera	1	74,00		2,00	148,00
	Macizo T toma alzados s/ losa	1	5,60	1,70		9,52
	Macizo T toma alzado s/ losa	1	5,60	1,40		7,84
	Macizos concavos/ convexos	1	40,00	3,00		120,00
		1	36,70	3,00		110,10
	Tubo entrante	-1	10,50	3,14	0,64	-21,10
	Tubo saliente	-1	10,50	3,14	0,56	-18,46
	Apoyos tuberías					
	tramo conduc. principal	1	2,00	2,60	0,80	4,16
	Tramo derivación tomas	1	2,00	1,50	0,80	2,40
	Tramo caudalímetro	1	2,00	1,50	0,80	2,40
	Apoyos Válvulas	2	3,00	1,50	0,80	7,20
	Apoyo caudalímetro	1	2,00	1,20	0,80	1,92
	Bypass	2	3,00	1,50	0,50	4,50
	Otros pequeños apoyos	3	0,50	0,50	0,50	0,38
						597,33

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

Solera	1	122,20		0,30	36,66
					36,66

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Macizos T	2	48,00		2,00	192,00
Alzado T	2	5,60			11,20
Alzado T	2	1,75		3,20	11,20
Macizo T alzado (apoyo toma)	1	9,50		1,40	13,30
Macizos concavos/ convexos	2	40,00			80,00
	2	35,00			70,00
	1	3,00	4,20		12,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	3,00	3,80		11,40
		1	3,00	2,80		8,40
		1	3,00	2,60		7,80
	Apoyos Válvulas	2	9,00		0,80	14,40
	Apoyo de caudalímetro	1	7,00		0,80	5,60
	Apoyos tubería-ancclajes	2	8,00		0,80	12,80
	Deriv. tomas	2	7,00		0,80	11,20
	Toma-caudalimero	2	6,00		0,80	9,60
	Apoyos bypass	2	3,00	1,70	0,50	5,10
	Otros apoyos	3	1,50		0,50	2,25
						478,85

P4ETT-002

kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

Solera #16/20 (16.3 kg/m2)	2	878,00		16,30	28.622,80
A descontar cámara descarga	-2	56,00		16,30	-1.825,60
A descontar macizos T	-2	74,00		16,30	-2.412,40
A descontar p.p. concav	-2	5,00	3,00	16,30	-489,00
Macizos T #16/15 (21.7kg/m2)					
Cara sup.+ cara inf.	2	74,00		21,70	3.211,60
Alzados (perímetroxaltura)	1	48,00	2,00	21,70	2.083,20
Tacón T derivación macizo	2	5,10		21,70	221,34
	2	12,20	1,72	21,70	910,71
Tacón T apoyo toma	1	9,50	0,80	21,70	164,92
	2	5,50		21,70	238,70
Refuerzos fi 16/15 T derivación	155	1,00	2,00	1,73	536,30
Macizos concavos/ convexos	2	40,00		21,70	1.736,00
	2	38,00		21,70	1.649,20
	1	27,20	3,00	21,70	1.770,72
	1	27,60	3,00	21,70	1.796,76
Refuerzos 20/15 macizos cóncav.					
	2	11,40		34,00	775,20
	2	10,80		34,00	734,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	15,10	3,00	34,00	1.540,20
		1	15,10	3,00	34,00	1.540,20
	Apoyos Válvulas #16/15					
	Apoyos Válvulas	2	9,00	21,70	0,80	312,48
	Basex2	2	4,50	21,70	2,00	390,60
	Apoyo de caudalímetro	1	7,00	21,70	0,80	121,52
	Basex2	2	4,50	21,70	1,00	195,30
	Apoyos tubería-anclajes	2	8,00	21,70	0,80	277,76
		2	4,50	21,70	2,00	390,60
	Deriv. tomas	2	7,00	21,70	0,80	243,04
		2	4,00	21,70	2,00	347,20
	Toma-caudalimero	2	6,00	21,70	0,80	208,32
		2	4,00	21,70	1,00	173,60
	Apoyos bypass	2	3,00	21,70	0,85	110,67
		2	3,00	21,70	0,15	19,53
	Otros apoyos	3	1,50	21,70	0,50	48,83
		3	2,00	21,70	0,15	19,53
	Losa #16/15 hierro adicional	1	80,00		7,70	616,00
		1	38,00		7,70	292,60
	Pérdidas	0,15	46.572,80			6.985,92
						53.558,75
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes T	1	11,00			11,00
	Anclajes conv	2	13,00			26,00
						37,00
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200					
	Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	38,00			38,00
		2	22,50			45,00
						83,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.03.04	PROTECCIÓN Y ENCINTADOS (TOMA-19)					
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Tubería entrada	1	10,50			10,50
						10,50
P4CINT1500	m Encintado anticorrosivo DN1500 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1500mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Tub. salida	1	10,50			10,50
						10,50
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Desagües	3	0,30			0,90
						0,90
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	1	2,00	0,80	6,28	10,05
		1	2,00	0,80	6,28	10,05
	Apoyos tubería T	2	2,00	0,80	1,60	5,12
	Apoyos tubería toma	2		0,80	2,50	4,00
	Apoyos válvulas	2	2,00	2,00	1,00	8,00
	MACizos de anclaje					
	T	1	4,50	1,70		7,65
	T tomas	1	2,50	2,50		6,25
	Varios desagüe	3	1,00	0,50		1,50
	Varios apoyos menores	0,15	52,62			7,89
						60,51

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.03.05	OBRA DE DESAGÜE (TOMA-19)					
03.05.03.05.1	ARQUETA ROTURA (TOMA-19)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Excav	1	90,00		1,00	90,00
						90,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excav	1	90,00		1,00	90,00
		-1	45,50		1,00	-45,50
						44,50
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	45,50		0,10	4,55
						4,55
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cuñas	1	13,00	3,00	0,20	7,80
						7,80
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	45,50		0,30	13,65
						13,65
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Alzados	2	10,20	0,20	1,40	5,71
		1	3,00	0,20	1,40	0,84
		2	3,20	0,20	2,50	3,20
		1	3,00	0,20	2,50	1,50
		1	3,00	0,20	1,10	0,66
		1	3,90	0,20	1,50	1,17

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	3,90	0,20	0,60	0,47
		2	2,50	0,20	1,50	1,50
						15,05

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

perímetro losa	2	13,40	0,30	8,04
	2	3,40	0,30	2,04
	1	3,90	0,30	1,17
	2	2,50	0,30	1,50
				12,75

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Alzados	4	10,20	0,20	1,40	11,42
	2	10,20	0,20	1,40	5,71
	4	3,20	0,20	2,50	6,40
	2	3,20	0,20	2,50	3,20
	2	3,20	0,20	1,10	1,41
	2	3,90	0,20	1,50	2,34
	2	3,90	0,20	0,60	0,94
	4	2,50	0,20	1,50	3,00
					34,42

P4ETT-002 kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

#12/15

Alzados	4	10,20	12,30	1,40	702,58
	2	3,00	12,30	1,40	103,32
	4	3,20	12,30	2,50	393,60
	2	3,00	12,30	2,50	184,50
	2	3,00	12,30	1,10	81,18
	2	3,90	12,30	1,50	143,91

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	3,90	12,30	0,60	57,56
		4	2,50	12,30	1,50	184,50
	Solera	2	45,50	12,30		1.119,30
	Ref. solera-alzado					
		14	0,92	30,00		386,40
		14	0,92	9,00		115,92
	Esquinas	12	20,00	0,92	1,50	331,20
	Solpaes y varios	0,15	3.803,00			570,45
						4.374,42
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	33,60			33,60
		1	3,00			3,00
		1	3,90			3,90
		2	2,70			5,40
						45,90
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2					
	Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	33,60	0,50		16,80
		1	13,50	1,00		13,50
						30,30
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte					
	Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero Al-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado. Totalmente terminada y colocada.					
	Arqueta	1	2,70	3,90		10,53
						10,53

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.03.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-19)						
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000					
	Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
		1	12,00			12,00
		1	5,00			5,00
		1	5,00			5,00
						22,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	22,00	2,50	1,80	99,00
						99,00
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert					
	Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Desagüe	1	22,00	2,50	1,80	99,00
	A descontar tubo DN 1000	-1	22,00	0,78		-17,16
	Embocadura					
	Solera	1	2,30	2,00	0,30	1,38
	Tacón entronque	1	2,30	0,40	0,50	0,46
						83,68
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo					
	Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Vertido	1	1,00	2,50	0,30	0,75
						0,75
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Embocadura zapatas					
	Aletas	2	2,00	1,25	0,50	2,50
		4	2,00	1,25	0,50	5,00
		4	2,00	1,25	0,50	5,00
	Solera	5	3,40		0,30	5,10
						17,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Embocadura					
	Aletas	2	2,00	0,30	1,50	1,80
	Frontal	1	2,00	0,30	1,50	0,90
	Embocadura					
	Aletas	4	2,00	0,30	1,50	3,60
	Frontal	2	2,00	0,30	1,50	1,80
	Embocadura					
	Aletas	4	2,00	0,30	1,50	3,60
	Frontal	2	2,00	0,30	1,50	1,80
	13,50					
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	4	2,00		0,50	4,00
	Embocadura					
	Aletas	8	2,00		0,50	8,00
	Embocadura					
	Aletas	8	2,00		0,50	8,00
	20,00					
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	2	2,00		1,50	6,00
	Frontal	1	2,00		1,50	3,00
	Embocadura					
	Aletas	4	2,00		1,50	12,00
	Frontal	2	2,00		1,50	6,00
	Embocadura					
	Aletas	4	2,00		1,50	12,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Frontal	2	2,00		1,50	6,00
						45,00
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Embocadura					
	Aletas #12/20	2	10,00	9,20	3,00	552,00
	Frontal #12/20	2	10,00	9,20	3,00	552,00
	Zapatillas #12/20	2	10,00	3,13	9,20	575,92
		5	3,75		9,20	172,50
	Solera	10	3,50		9,20	322,00
	Solapes	0,15	2.174,42			326,16
						2.500,58
03.05.03.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-19)					
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desagüe	1	67,00	3,00		201,00
						201,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion					
	Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	67,00	3,00		201,00
						201,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	67,00	1,50	1,50	150,75
	Reperfilado de azarbe					
						150,75
P1MT08ESC200	m³ Escollera 200 kg careada					
	Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Desagüe	1	5,00	2,50	0,50	6,25
		1	5,00	2,50	0,50	6,25
						12,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2					
	Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	Desagüe	2	5,00	2,50		25,00
						25,00
03.05.03.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-19)					
P41BARAND01	m Barandilla metálica galv.+pintura					
	Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		2	12,20			24,40
						24,40
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr					
	Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.					
	Ángulo 45°	2	3,20			6,40
						6,40
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2)					
	Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					
		2	1,50	2,00		6,00
						6,00
P41CADENA III	m Cadena acero inox 8 mm					
	Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.					
	Acceso escaleras	2	1,00			2,00
						2,00
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C.					
	Montaje e instalación completa en obra.					
	Unidad totalmente instalada.					
	Escaleras					
	Soportes UPN-200	2	13,000	25,300		657,800
	Pilares UPN-200	2	4,000	25,300	2,000	404,800
	Placas	2	4,000	15,000		120,000
						1.182,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.					
	Línea de vida	1				1,00
						1,00
03.05.03.07	URBANIZACIÓN (TOMA-19)					
03.05.03.07.1	PAVIMENTOS (T19)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	1.963,00		0,30	588,90
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque camino existente	1	118,20		0,30	35,46
	Desvío camino perimetral	1	256,00		0,30	76,80
	Acceso a fincas	2	5,00	5,00	0,30	15,00
						702,49
03.05.03.07.2	CERRAMIENTOS (T19)					
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
	Acceso	2				2,00
						2,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
	Acceso	2				2,00
						2,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeo de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
	Cerramiento perimetral	1	91,00			91,00
		1	77,00			77,00
						168,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.03.07.3 DRENAJES (T19)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Cuneta guarda inferior	1	83,00			83,00
		1	67,00			67,00
		1	22,00			22,00
						172,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
	Entronque con embocadura desagüe	3	3,00			9,00
						9,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
	Camino perimetral+	1	5,00			5,00
	Acceso a toma	1	7,00			7,00
						12,00
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	s/nec entronque	2	1,00	1,00	0,50	1,00
						1,00
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
		2	2,00	2,00	0,50	4,00
						4,00
03.05.04 TOMA-20						

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.04.01	MOVIMIENTO DE TIERRAS (TOMA-20)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Saneos plataforma s/ cad	1	2.760,00		0,30	828,00
	Excav. general s/m	1	808,27			808,27
	Excavación de tub. entrantes (sup.x ancho)	1	26,10	5,00		130,50
	Excavación de tub. salientes (sup.x ancho)	1	26,60	5,00		133,00
	Excav macizos					
	Macizos T	1	73,20		2,00	146,40
	Cajeos cámara de descarga en capítulo correspondiente					
						2.046,17
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma s/ cad	1	2.760,00		0,30	828,00
						828,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	1,59			1,59
	Sobranes a vertedero	1	2.046,17			2.046,17
		-1	1,59			-1,59
	Rellenos localizados	-1	154,00			-154,00
						1.892,17
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	1	26,10	5,00		130,50
	Excavación de tub. salientes (sup.x ancho)	1	26,60	5,00		133,00
		-1	18,25	3,00		-54,75
		-1	18,25	3,00		-54,75
						154,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.04.02	CALDERERÍA Y VALVULERÍA (TOMA-20)					
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	36.314,960			36.314,960
						36.314,96
P1BRID1100.25	ud Brida ciega PN 25 Ø1100					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas					
	Toma	2				2,00
						2,00
P1BRID900.25	ud Brida ciega PN 25 Ø900					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 900 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Toma	1				1,00
						1,00
P1BRIDA800.25	ud Brida ciega PN 25 Ø800					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Tub. principal paso hombre	1	2,00			2,00
						2,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanquidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	desagüe a cámara de descarga	1				1,00
	A arqueta de válvulas desagüe	1				1,00
	Sobrepresión a cámara de descarga	1				1,00
						3,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16					
	Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass conducción	2				2,00
	Bypass toma	2				2,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	desagüe	1				1,00
						1,00
P6CD900.16	ud Carrete desmontaje virola acero inox. PN16 DN 900 Carrete telescópico autoportante, PN 16 atm, DN 900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Caudalímetro	1				1,00
						1,00
P6CD.1100.16	ud Carrete desmontaje virola acero inox. PN16 DN 1100 Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	deriv. toma	1				1,00
						1,00
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Tub. principal	1				1,00
						1,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass conducción	1				1,00
	Bypass toma	1				1,00
						2,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Cámara de descarga	1				1,00
						1,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Bypass conducción	2				2,00
	Bypass toma	2				2,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas. Desagüe-1	1				1,00
						1,00
P6VM.1100.16M	ud Válvula mariposa motorizada PN 16 Ø1100 I Válvula de mariposa, DN 1100 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Toma	1				1,00
						1,00
P6VM.1300.16M	ud Válvula mariposa motorizada PN 16 Ø1300 I Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Tub. principal	1				1,00
						1,00
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400 Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas. Sobrepresión	1				1,00
						1,00
P6FG.400.16	ud Filtro globo PN 16 Ø400 Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado. Sobrepresión	1				1,00
						1,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje. Conducción principal-1	2	1,00			2,00
						2,00
03.05.04.03	LOSA Y ANCLAJES (TOMA 20)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada. Solera	1	34,50	24,00	0,10	82,80
						82,80
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. Solera	1	34,50	24,00	0,30	248,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A descontar cámara descarga	-1	13,40	3,40	0,30	-13,67
	A descontar macizo T	-1	73,20		0,30	-21,96
	Macizo convexo salida	-1	4,29	3,33	0,30	-4,29
	Macizo convexo entrada	-1	4,42	3,53	0,30	-4,68
	Macizos T solera	1	73,20		2,00	146,40
	Macizo T toma alzado 1 s/losa	1	3,74	1,30		4,86
	Macizo T toma alzado 2 s/ losa	1	4,35	1,70		7,40
	Macizos concavos/ convexos	1	26,10	3,00		78,30
		1	26,60	3,00		79,80
	Tubo entrante	-1	9,85	3,14	0,56	-17,32
	Tubo saliente	-1	10,40	3,14	0,42	-13,72
	Apoyos tuberías					
	tramo conduc. principal	2	1,90	0,86	0,60	1,96
	Tramo derivación tomas	2	2,00	0,86	0,65	2,24
	Tramo caudalímetro	2	1,52	0,72	0,65	1,42
	Apoyos Válvulas	2	2,30	1,00	0,55	2,53
	Apoyo caudalímetro	1	1,50	1,00	0,55	0,83
	Bypass1	2	0,60	0,25	0,10	0,03
	Bypass2	2	0,60	0,25	0,10	0,03
	Apoyos desagües	3	0,51	0,30	0,10	0,05
						498,61

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

Solera	1	117,00		0,30	35,10
					35,10

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Macizos T	2	48,00		2,00	192,00
Alzado T	2	5,60			11,20
Alzado T	2	1,75		3,20	11,20
Macizo T alzado (apoyo toma)	1	9,50		1,40	13,30

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Macizos concavos/ convexos	2	40,00			80,00
		2	35,00			70,00
		1	3,00	4,20		12,60
		1	3,00	3,80		11,40
		1	3,00	2,80		8,40
		1	3,00	2,60		7,80
	Apoyos Válvulas	2	9,00		0,80	14,40
	Apoyo de caudalímetro	1	7,00		0,80	5,60
	Apoyos tubería-ancclajes	2	8,00		0,80	12,80
	Deriv. tomas	2	7,00		0,80	11,20
	Toma-caudalimero	2	6,00		0,80	9,60
	Apoyos bypass	2	3,00	1,70	0,50	5,10
	Otros apoyos	3	1,50		0,50	2,25
						478,85

P4ETT-002

kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

Solera #16/20 (16.3 kg/m2)	2	816,00		16,30	26.601,60
A descontar cámara descarga	-2	56,10		16,30	-1.828,86
A descontar macizos T	-2	73,20		16,30	-2.386,32
A descontar p.p. concav	-1	4,42	3,53	16,30	-254,32
	-1	4,39	3,32	16,30	-237,57
Solera #16/15. Adicional hierro	1	85,50		7,70	658,35
	1	34,10		7,70	262,57
Macizos T #16/15 (21.7kg/m2)					
Cara sup.+ cara inf.	2	73,20		21,70	3.176,88
Alzados (perímetro x altura)	1	41,50	2,00	21,70	1.801,10
Tacón T derivación macizo	2	4,35		21,70	188,79
	2	12,90	1,70	21,70	951,76
Tacón T apoyo toma	2	2,75	2,10	21,70	250,64
	1	7,30	1,80	21,70	285,14
Refuerzos fi 16/15 T derivación	155	1,00	2,00	1,73	536,30
Macizos concavos/ convexos	2	26,10		21,70	1.132,74

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	26,60		21,70	1.154,44
		1	25,70	3,00	21,70	1.673,07
		1	26,51	3,00	21,70	1.725,80
	Refuerzos 20/15 macizos cóncav.					
		2	6,42		34,00	436,56
		2	6,81		34,00	463,08
		1	11,00	3,00	34,00	1.122,00
		1	11,40	3,00	34,00	1.162,80
	Apoyos Válvulas #16/15					
	Apoyos Válvulas	2	5,00	21,70	0,80	173,60
	Basex2	2	1,35	21,70	2,00	117,18
	Apoyo de caudalímetro	1	5,00	21,70	0,80	86,80
	Basex2	2	1,35	21,70	2,00	117,18
	Apoyos tubería-anclajes	1	5,50	21,70	0,80	95,48
		1	6,88	21,70	0,80	119,44
		1	1,65	21,70	2,00	71,61
		1	2,40	21,70	2,00	104,16
	Deriv. tomas	2	5,70	21,70	0,80	197,90
		2	1,80	21,70	2,00	156,24
	Toma-caudalimero	2	4,50	21,70	0,80	156,24
		2	1,10	21,70	1,00	47,74
	Apoyos bypass	2	1,50	21,70	2,00	130,20
		2	1,70	21,70	0,15	11,07
	Otros apoyos	3	1,50	21,70	2,00	195,30
		3	1,62	21,70	0,15	15,82
	Pérdidas	0,15	40.672,00			6.100,80
						46.773,31
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes T	1	11,00			11,00
	Anclajes conv	2	11,00			22,00
						33,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	34,50			34,50
		1	24,00			24,00
						58,50
03.05.04.04	PROTECCIÓN Y ENCINTADOS (TOMA 20)					
P4CINT1500	m Encintado anticorrosivo DN1500 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1500mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Tub. entrada	1	10,50			10,50
						10,50
P4CINT1300	m Encintado anticorrosivo DN1300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Tub. salida	1	10,50			10,50
						10,50
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Desagües	3	0,30			0,90
						0,90
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	1	2,40			2,40
		1	1,64			1,64
	Encintado tub. principal	1	2,04	0,22	2,00	0,90
		1	2,35	0,22	2,00	1,03
	Apoyos tubería T	2	1,70			3,40
	Encintado tub. T	2	1,73	0,22	2,00	1,52
	Apoyos tubería toma	2	1,10			2,20
	Encintado tub. toma	2	1,41	0,22	2,00	1,24
	Apoyos válvulas tub. ppal	1	1,50	0,75		1,13
		1	1,50	0,75		1,13

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	1,50	0,75		1,13
	Apoyos válvulas bypass	4	1,00	0,50		2,00
	Macizos de anclaje					
	T	1	1,40	2,00		2,80
	T tomas	1	2,60	1,70		4,42
	Varios desagüe	3	1,00	0,50		1,50
	Varios apoyos menores	0,15	27,94			4,19
						32,63

03.05.04.05 OBRA DE DESAGÜE (TOMA 20)

03.05.04.05.1 ARQUETA ROTURA (TOMA-20)

P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero				
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.				
	Excav	1	45,60	0,90	41,04
		1	10,40	2,00	20,80
					61,84

P1MT04B	m³	Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN			
Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
Excav		1	45,60	0,90	41,04
		1	10,50	2,00	21,00
		-1	25,50	1,00	-25,50
					36,54

P4HG-002A	m³	Hormigón HL-150/B/20 Elementos horizontales y verticales			
Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	45,60	0,10	4,56
					4,56

P4HG-002B	m³	Hormigón HM-20/B/20/X0 Elementos horizontales y verticales				
Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.						
Cuñas		1	13,00	3,00	0,20	7,80
						7,80

P4HG-004A2H	m³	Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados
Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.		

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Solera	1	56,10		0,30	16,83
						16,83
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.				
	Alzados	2	10,20	0,20	1,40	5,71
		1	3,00	0,20	1,40	0,84
		2	3,20	0,20	2,50	3,20
		1	3,00	0,20	2,50	1,50
		1	3,00	0,20	1,10	0,66
		1	3,90	0,20	1,50	1,17
		1	3,90	0,20	0,60	0,47
		2	2,50	0,20	1,50	1,50
						15,05
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.				
	perímetro losa	2	13,40		0,30	8,04
		2	3,40		0,30	2,04
		1	3,90		0,30	1,17
		2	2,50		0,30	1,50
						12,75
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.				
	Alzados	4	10,20	0,20	1,40	11,42
		2	10,20	0,20	1,40	5,71
		4	3,20	0,20	2,50	6,40
		2	3,20	0,20	2,50	3,20
		2	3,20	0,20	1,10	1,41
		2	3,90	0,20	1,50	2,34
		2	3,90	0,20	0,60	0,94
		4	2,50	0,20	1,50	3,00
						34,42

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#12/15					
	Alzados	4	10,20	12,30	1,40	702,58
		2	3,00	12,30	1,40	103,32
		4	3,20	12,30	2,50	393,60
		2	3,00	12,30	2,50	184,50
		2	3,00	12,30	1,10	81,18
		2	3,90	12,30	1,50	143,91
		2	3,90	12,30	0,60	57,56
		4	2,50	12,30	1,50	184,50
	Solera	2	45,50	12,30		1.119,30
	Ref. solera-alzado					
		14	0,92	30,00		386,40
		14	0,92	9,00		115,92
	Esquinas	12	20,00	0,92	1,50	331,20
	Solpaes y varios	0,15	3.803,00			570,45
						4.374,42
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	33,60			33,60
		1	3,00			3,00
		1	3,90			3,90
		2	2,70			5,40
						45,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	33,60	0,50		16,80
		1	13,20	1,00		13,20
						30,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero Al-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
	Arqueta	1	2,70	3,90		10,53
						10,53
03.05.04.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-20)						
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
		1	21,30			21,30
						21,30
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	21,30	2,50	1,80	95,85
						95,85
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Desagüe	1	21,30	2,50	1,80	95,85
	A descontar tubo DN 1000	-1	21,30	0,78		-16,61
	Embocadura					
	Solera	1	2,30	2,00	0,30	1,38
	Tacón entronque	1	2,30	0,40	0,50	0,46
						81,08
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Vertido	1	1,00	2,50	0,30	0,75
						0,75
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Embocadura zapatas					
	Aletas	2	2,00	1,25	0,50	2,50
	Solera	1	3,40		0,30	1,02
						3,52
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Embocadura					
	Aletas	2	2,00	0,30	1,50	1,80
	Frontal	1	2,00	0,30	1,50	0,90
						2,70
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	4	2,00		0,50	4,00
						4,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	2	2,00		1,50	6,00
	Frontal	1	2,00		1,50	3,00
	Embocadura					
						9,00
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Embocadura					
	Aletas #12/20	2	2,00	9,20	3,00	110,40
	Frontal #12/20	2	2,00	9,20	3,00	110,40
	Zapatas #12/20	2	2,00	3,13	9,20	115,18
		1	3,75		9,20	34,50
	Solera	2	3,50		9,20	64,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Solapes	0,15	434,88			65,23
						500,11
03.05.04.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-20)						
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desagüe	1	101,90	3,00		305,70
						305,70
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion					
	Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	101,90	3,00		305,70
						305,70
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	101,90	1,50	1,50	229,28
						229,28
P1MT08ESC200	m³ Escollera 200 kg careada					
	Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Desagüe	1	5,00	2,50	0,50	6,25
		1	94,60		0,50	47,30
						53,55
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2					
	Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	Desagüe	2	5,00	2,50		25,00
						25,00
03.05.04.06 ESTRUCTURA METÁLICA Y VARIOS (TOMA 20)						
P41BARAND01	m Barandilla metálica galv.+pintura					
	Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilería, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		2	12,20			24,40
						24,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada. Ángulo 45°	2	3,20			6,40
						6,40
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilaría acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	2	1,50	2,00		6,00
						6,00
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada. Acceso escaleras	2	1,00			2,00
						2,00
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada. Escaleras					
	Soportes UPN-200	2	13,000	25,300		657,800
	Pilares UPN-200	2	4,000	25,300	2,000	404,800
	Placas	2	4,000	15,000		120,000
						1.182,60
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.					
	Línea de vida	1				1,00
						1,00
03.05.04.07	URBANIZACIÓN (TOMA 20)					
03.05.04.07.1	PAVIMENTOS (T20)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	2.086,00		0,30	625,80
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque camino existente	1	15,00		0,30	4,50
	Acceso a fincas	2	5,00	5,00	0,30	15,00
						631,63

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.04.07.2 CERRAMIENTOS (T20)						
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+ pint					
	Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
Acceso		2				2,00
						2,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint					
	Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
Acceso		2				2,00
						2,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment.					
	Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
Cerramiento perimetral		1	187,00			187,00
						187,00
03.05.04.07.3 DRENAJES (T20)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
Cuneta guarda inferior		1	192,00			192,00
						192,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
Entronque con embocadura desagüe		2	3,00			6,00
Entronque con salvacuneta		1	3,00			3,00
						9,00
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5					
	Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
Cuneta descarga		1	102,00			102,00
						102,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
Acceso a toma		1	8,00			8,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						8,00
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	s/nec entronque	2	1,00	1,00	0,50	1,00
						1,00
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Descarga cuneta perimetral	1	11,20		0,50	5,60
	Descarga cuneta trapezoidal	1	94,60		0,50	47,30
						52,90
03.05.05	TOMA-21					
03.05.05.01	MOVIMIENTO DE TIERRAS (TOMA-21)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Saneos plataforma s/ cad	1	2.600,00		0,30	780,00
	Excav. general s/m	1	106,35			106,35
	Excavación de tub. entrantes (sup.x ancho)	1	26,10	5,00		130,50
	Excav macizos					
	Cajeos cámara de descarga en capítulo correspondiente					
						1.016,85
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma s/ cad	1	2.600,00		0,30	780,00
						780,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	61,24			61,24
	Sobrantes a vertedero	1	1.016,85			1.016,85
		-1	61,24			-61,24
	Rellenos localizados	-1	75,75			-75,75
						941,10

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	1	26,10	5,00		130,50
		-1	18,25	3,00		-54,75
						75,75
03.05.05.02	CALDERERÍA Y VALVULERÍA (TOMA-21)					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	19.774,500			19.774,500
						19.774,50
P1BRID1100.25	ud Brida ciega PN 25 Ø1100 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas					
	Toma	1				1,00
						1,00
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Tub. principal paso hombre	1	1,00			1,00
						1,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanquidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	desagüe a cámara de descarga	1				1,00
	A arqueta de válvulas desagüe	1				1,00
	Sobrepresión a cámara de descarga	1				1,00
						3,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	desagüe	1				1,00
						1,00
P6CD.1100.16	ud Carrete desmontaje virola acero inox. PN16 DN 1100 Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Caudalímetro	1				1,00
						1,00
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Tub. principal	1				1,00
						1,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	1				1,00
						1,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Cámara de descarga	1				1,00
						1,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Bypass	2				2,00
						2,00
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Desagüe	1				1,00
						1,00
P6VM.1300.16M	ud Válvula mariposa motorizada PN 16 Ø1300 I Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Tub. principal	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.					
	Sobrepresión	1				1,00
						1,00
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.					
	Sobrepresión	1				1,00
						1,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Conducción principal-1	1				1,00
						1,00
03.05.05.03	LOSA Y ANCLAJES (TOMA-21)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	29,00	15,00	0,10	43,50
						43,50
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	29,00	15,00	0,30	130,50
	A descontar cámara descarga	-1	13,40	3,40	0,30	-13,67
	Macizo convexo entrada	-1	4,30	3,35	0,30	-4,32
	Macizos concavos/ convexos	1	26,10	3,00		78,30
	Tubo entrante	-1	10,40	3,14	0,43	-14,04
	Apoyos tuberías					
	tramo conduc. principal	1	1,90	0,86	0,60	0,98
	Tramo caudalímetro	2	1,52	0,72	0,65	1,42
	Apoyos Válvulas	1	2,30	1,00	0,55	1,27
	Apoyo caudalímetro	1	1,50	1,00	0,55	0,83
	Bypass1	2	0,60	0,25	0,10	0,03
	Apoyos desagües	3	0,51	0,30	0,10	0,05
						181,35

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Solera	1	88,00		0,30	26,40
						26,40
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlite que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Macizos concavos/ convexos	2	26,10			52,20
		1	3,00	2,35		7,05
		1	3,00	1,85		5,55
		1	3,00	7,15		21,45
		1	3,00	3,50		10,50
	Apoyos Válvulas	1	9,00		0,80	7,20
	Apoyo de caudalímetro	1	7,00		0,80	5,60
	Apoyos tubería-ancajes	1	8,00		0,80	6,40
	Toma-caudalimero	2	6,00		0,80	9,60
	Apoyos bypass	1	3,00	1,70	0,50	2,55
	Otros apoyos	3	1,50		0,50	2,25
						130,35
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Solera #16/20 (16.3 kg/m2)	2	435,00		16,30	14.181,00
	A descontar cámara descarga	-2	45,56		16,30	-1.485,26
	A descontar p.p. concav	-2	5,00	3,00	16,30	-489,00
	Solera #16/15. Adicional hierro	1	114,50		7,70	881,65
	Macizos concavos/ convexos	1	26,10		21,70	566,37
		1	26,52	3,00	21,70	1.726,45
	Refuerzos 20/15 macizos cóncav.					
		2	6,41		34,00	435,88
		1	11,00	3,00	34,00	1.122,00
	Apoyos Válvulas #16/15					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Apoyos Válvulas	1	9,00	21,70	0,80	156,24
	Basex2	2	4,50	21,70	2,00	390,60
	Apoyo de caudalímetro	1	7,00	21,70	0,80	121,52
	Basex2	2	4,50	21,70	1,00	195,30
	Apoyos tubería-anclajes	1	8,00	21,70	0,80	138,88
		1	4,50	21,70	2,00	195,30
	Toma-caudalimero	2	6,00	21,70	0,80	208,32
		2	4,00	21,70	1,00	173,60
	Apoyos bypass	1	3,00	21,70	0,85	55,34
		1	3,00	21,70	0,15	9,77
	Otros apoyos	3	1,50	21,70	0,50	48,83
		3	2,00	21,70	0,15	19,53
	Pérdidas	0,15	18.652,31			2.797,85
						21.450,17
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes conv	1	11,00			11,00
						11,00
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200					
	Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	29,00			29,00
		1	15,00			15,00
						44,00
03.05.05.04	PROTECCIÓN Y ENCINTADOS (TOMA-21)					
P4CINT1300	m Encintado anticorrosivo DN1300 mm					
	Encintado para recubrimiento de protección anticorrosiva de tubería de DN1300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Tubería salida	1	10,50			10,50
						10,50
P4CINT300	m Encintado anticorrosivo DN300 mm					
	Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Desagües	3	0,30			0,90
						0,90
P4PCAT01	ud Conjunto protección anticorrosiva en toma					
	Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción.					
	Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías					
	Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	1	1,64			1,64
	Encintado tub. principal	1	2,04	0,22	2,00	0,90
	Apoyos tubería toma	2	1,70			3,40
	Encintado tub. toma	2	1,73	0,22	2,00	1,52
	Apoyos válvulas tub. ppal	1	1,50	0,75		1,13
		1	1,50	0,75		1,13
	Apoyos válvulas bypass	3	1,00	0,50		1,50
	Varios apoyos menores	0,15	11,22			1,68
						12,90
03.05.05.05	OBRA DE DESAGÜE (TOMA-21)					
03.05.05.05.1	ARQUETA ROTURA (TOMA-21)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Excav	1	90,00		1,00	90,00
						90,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excav	1	90,00		1,00	90,00
		-1	45,50		1,00	-45,50
						44,50
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	45,50		0,10	4,55
						4,55
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales					
	Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cuñas	1	13,00	3,00	0,20	7,80
						7,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	45,50		0,30	13,65
						13,65
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Alzados	2	10,20	0,20	1,40	5,71
		1	3,00	0,20	1,40	0,84
		2	3,20	0,20	2,50	3,20
		1	3,00	0,20	2,50	1,50
		1	3,00	0,20	1,10	0,66
		1	3,90	0,20	1,50	1,17
		1	3,90	0,20	0,60	0,47
		2	2,50	0,20	1,50	1,50
						15,05
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	perímetro losa	2	13,40		0,30	8,04
		2	3,40		0,30	2,04
		1	3,90		0,30	1,17
		2	2,50		0,30	1,50
						12,75
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Alzados	4	10,20	0,20	1,40	11,42
		2	10,20	0,20	1,40	5,71
		4	3,20	0,20	2,50	6,40
		2	3,20	0,20	2,50	3,20
		2	3,20	0,20	1,10	1,41
		2	3,90	0,20	1,50	2,34
		2	3,90	0,20	0,60	0,94

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		4	2,50	0,20	1,50	3,00
						34,42
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#12/15					
	Alzados	4	10,20	12,30	1,40	702,58
		2	3,00	12,30	1,40	103,32
		4	3,20	12,30	2,50	393,60
		2	3,00	12,30	2,50	184,50
		2	3,00	12,30	1,10	81,18
		2	3,90	12,30	1,50	143,91
		2	3,90	12,30	0,60	57,56
		4	2,50	12,30	1,50	184,50
	Solera	2	45,50	12,30		1.119,30
	Ref. solera-alzado					
		14	0,92	30,00		386,40
		14	0,92	9,00		115,92
	Esquinas	12	20,00	0,92	1,50	331,20
	Solpaes y varios	0,15	3.803,00			570,45
						4.374,42
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	33,60			33,60
		1	3,00			3,00
		1	3,90			3,90
		2	2,70			5,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						45,90
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	33,60	0,50		16,80
		1	13,20	1,00		13,20
						30,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero Al-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
	Arqueta	1	2,70	3,90		10,53
						10,53
03.05.05.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-21)						
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Conducción	1	141,81			141,81
						141,81
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Excavación embocadura	0,5	6,00	2,75	0,50	4,13
						4,13
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Conducción desagüe	1	91,64			91,64
						91,64
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Conducción desagüe	1	259,28			259,28
						259,28
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Conducción desagüe					
	Cama de apoyo	1	7,71			7,71
	Relleno riñonera	1	48,37			48,37

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Relleno cobertura	1	24,27			24,27
	Base embocadura	0,5	2,25	6,00	0,50	3,38
						83,73
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Conducción desagüe	1	466,45			466,45
						466,45
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Embocadura zapatas					
	Aletas	2	2,50	2,05	0,50	5,13
						5,13
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Embocadura zapatas					
	Aletas	2	2,50	2,05	0,15	1,54
	Frontal	1	1,40	2,10	0,30	0,88
						2,42
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Zapatas	2	2,05	2,50	0,50	5,13
	Zapatas	2	2,05	2,50	0,50	5,13
						10,26
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	2	1,60	2,50	0,50	4,00
	Aletas	2	1,60	2,50	0,50	4,00
	Frontal	1	1,40	2,10		2,94

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						10,94
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Embocadura					
	Aletas #12/20	4	2,00		9,20	73,60
		4	2,75	0,30	9,20	30,36
	Frontal #12/20	1	1,80	1,40	9,20	23,18
		2	0,20		9,20	3,68
	Zapatas #12/20	2	5,10	2,50	9,20	234,60
		2	1,05		9,20	19,32
	Solapes	0,15	384,74			57,71
						442,45
P5ARQP-1.2A	ud Arq. pref DN=1.2 m H=3.0m+ tapa fundición DN600 +pates					
	UD de Arqueta prefabricada, altura variable hasta 3.0m de tipo pozo de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltos en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base.					
	Unidad totalmente terminada.					
	Conducción desagüe	4				4,00
						4,00
P5ARQP-1.2B	ud Arq. pref DN=1.2 m resalto H=3.5m+ tapa fundición DN600 +pates					
	UD de pozo de resalto de altura variable hasta 3,5m de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltos en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base.					
	Unidad totalmente terminada.					
	Conducción desagüe	1				1,00
						1,00
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC					
	M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	Conducción desagüe	1	141,81			141,81
						141,81

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.05.05.3 MOVIMIENTO DE TIERRAS (TOMA-21)						
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desagüe	1	1.206,00			1.206,00
						1.206,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion					
	Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	1.206,00			1.206,00
						1.206,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Conducción desagüe	1	941,51			941,51
						941,51
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Excedente conducción desagüe	1	69,33			69,33
						69,33
P1MT08ESC200	m³ Escollera 200 kg careada					
	Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
	Desagüe	1	8,20	5,50	0,50	22,55
						22,55
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2					
	Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	Desagüe	1	8,20	5,50		45,10
						45,10
03.05.05.06 ESTRUCTURA METÁLICA Y VARIOS (TOMA-21)						
P41BARAND01	m Barandilla metálica galv.+pintura					
	Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		1	12,20			12,20
						12,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada. Ángulo 45°	1	3,20			3,20
						3,20
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilaría acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	1	1,50	2,00		3,00
						3,00
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada. Acceso escaleras	1	1,00			1,00
						1,00
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada. Escaleras					
	Soportes UPN-200	1	13,000	25,300		328,900
	Pilares UPN-200	1	4,000	25,300	2,000	202,400
	Placas	1	4,000	15,000		60,000
						591,30
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.					
	Línea de vida	1				1,00
						1,00
03.05.05.07	URBANIZACIÓN (TOMA-21)					
03.05.05.07.1	PAVIMENTOS (T21)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	1.320,00		0,30	396,00
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque camino	1	20,00		0,30	6,00
	Acceso a fincas	2	5,00	5,00	0,30	15,00
						403,33

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.05.07.2 CERRAMIENTOS (T21)						
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint					
	Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
Acceso		1				1,00
						1,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint					
	Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
Acceso		1				1,00
						1,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment.					
	Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
Cerramiento perimetral		1	141,00			141,00
						141,00
03.05.05.07.3 DRENAJES (T21)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
Cuneta guarda inferior		1	53,00			53,00
						53,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
Entronque con cuneta camino		1	5,00			5,00
						5,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
Acceso a toma		1	8,50			8,50
						8,50
P1MT08ESC150	m³ Escollera 50-150 Kg careada					
	Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
s/hec entronque		2	1,00	1,00	0,50	1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	2	2,00	2,00	0,50	4,00
						4,00
03.05.06	TOMA-16					
03.05.06.01	MOVIMIENTO DE TIERRAS (TOMA-16)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. Saneamiento plataforma s/ cad Excav. general s/m Excavación de tub. entrantes (sup.x ancho) Excavación de tub. salientes (sup.x ancho) Excav macizos Macizos T Cajeos cámara de descarga en capítulo correspondiente	1 1 1 1	2.800,00 193,61 39,80 37,80	 5,00 5,00	0,30	840,00 193,61 199,00 189,00
						1.524,21
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada. Saneamiento plataforma s/ cad	1	2.800,00		0,30	840,00
						840,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil. Terraplenado s/ med Sobrantes a vertedero Rellenos localizados	1 1 -1	239,88 1.524,21 239,88			239,88 1.524,21 -239,88
						-217,30
						1.306,91
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada. Excavación de tub. entrantes (sup.x ancho)	1	39,80	5,00		199,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Excavación de tub. salientes (sup.x ancho)	1	37,80	5,00		189,00
		-1	29,20	3,00		-87,60
		-1	27,70	3,00		-83,10
						217,30
03.05.06.02	CALDERERÍA Y VALVULERÍA (TOMA-16)					
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	46.464,860			46.464,860
						46.464,86
P1BRID1300.25	ud Brida ciega PN 25 Ø1300					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas					
	Toma	3				3,00
						3,00
P1BRID1100.25	ud Brida ciega PN 25 Ø1100					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas					
	Toma	1				1,00
						1,00
P1BRIDA800.25	ud Brida ciega PN 25 Ø800					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Tub. principal paso hombre	1	2,00			2,00
						2,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	desagüe a cámara de descarga	1				1,00
	A arqueta de válvulas desagüe	1				1,00
	Sobrepresión a cámara de descarga	1				1,00
						3,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16					
	Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass conducción	2				2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Bypass toma	2				2,00
						4,00
P6CD.300.16	ud Carrete desmontaje DN 300 PN16					
	Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	desagüe	1				1,00
						1,00
P6CD.1100.16	ud Carrete desmontaje virola acero inox. PN16 DN 1100					
	Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Caudalímetro	1				1,00
						1,00
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300					
	Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Derivación toma	1				1,00
						1,00
P6CD.1600.16	ud Carrete desmontaje virola acero inox. PN16 DN1600					
	Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Conducción principal	1				1,00
						1,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio					
	Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	2	1,00			2,00
						2,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio					
	Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Cámara de descarga	1				1,00
						1,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual					
	Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Bypass conducción	2				2,00
	Bypass toma	2				2,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas. Desagüe Conducto desagüe	1 1				1,00 1,00 2,00
P6VM.1300.16M	ud Válvula mariposa motorizada PN 16 Ø1300 I Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Toma	1				1,00 1,00
P6VM.1600.16M	ud Válvula mariposa motorizada PN 16 Ø1600 I Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Conducción principal	1				1,00 1,00
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado. Sobrepresión	1				1,00 1,00
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas. Sobrepresión	1				1,00 1,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje. Conducción principal-1	2	1,00			2,00 2,00
03.05.06.03	LOSA Y ANCLAJES (TOMA-16)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada. Solera	1	29,40	23,60	0,10	69,38 69,38
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Solera	1	29,40	23,60	0,30	208,15
	A descontar cámara descarga	-1	13,40	3,40	0,30	-13,67
	A descontar macizos	-1	51,30		0,30	-15,39
	Macizos convexos	-2	5,00	3,00	0,30	-9,00
	Macizos T solera	1	51,30		2,00	102,60
	Macizo T toma alzados s/ losa	1	2,24	2,62		5,87
	Macizo T toma alzado s/ losa	1	5,15	1,75		9,01
	Macizos concavos/ convexos	1	40,00	3,00		120,00
		1	37,70	3,00		113,10
	Tubo entrante	-1	10,40	3,14	0,81	-26,45
	Tubo saliente	-1	10,40	3,14	0,64	-20,90
	Apoyos tuberías					
	tramo conduc. principal	1	2,00	2,60	0,80	4,16
	Tramo derivación tomas	2	2,00	1,50	0,80	4,80
	Tramo caudalímetro	2	2,00	1,50	0,80	4,80
	Apoyos Válvulas	2	3,00	1,50	0,80	7,20
	Apoyo caudalímetro	1	2,00	1,20	0,80	1,92
	Bypass	2	3,00	1,50	0,50	4,50
	Otros pequeños apoyos	3	0,50	0,50	0,50	0,38
						501,08

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

Solera	1	106,00		0,30	31,80
					31,80

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Macizos T	2	40,70		2,00	162,80
Alzado T	2	5,15			10,30
Alzado T	2	1,75		3,00	10,50
Macizo T alzado (apoyo toma)	1	9,50		1,40	13,30
Macizos concavos/ convexos	2	40,00			80,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	37,70			75,40
		1	3,00	2,82		8,46
		1	3,00	4,18		12,54
		1	3,00	5,22		15,66
		1	3,00	7,15		21,45
		1	3,00	2,63		7,89
		1	3,00	3,95		11,85
		1	3,00	5,30		15,90
		1	3,00	7,15		21,45
	Apoyos Válvulas	2	9,00		0,80	14,40
	Apoyo de caudalímetro	1	7,00		0,80	5,60
	Apoyos tubería-ancajes	3	8,00		0,80	19,20
	Deriv. tomas	2	7,00		0,80	11,20
	Toma-caudalimero	2	6,00		0,80	9,60
	Apoyos bypass	2	3,00	1,70	0,50	5,10
	Otros apoyos	3	1,50		0,50	2,25
						534,85

P4ETT-002

kg Acero B-500-S

Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.

Solera #16/20 (16.3 kg/m2)	2	694,00		16,30	22.624,40
A descontar cámara descarga	-2	56,00		16,30	-1.825,60
A descontar macizos T	-2	51,30		16,30	-1.672,38
A descontar p.p. concav	-1	5,10	2,83	16,30	-235,26
	-1	4,70	3,00	16,30	-229,83
Solera #16/15. Adicional hierro	1	45,00		7,70	346,50
	1	39,00		7,70	300,30
Macizos T #16/15 (21.7kg/m2)					
Cara sup.+ cara inf.	2	51,30		21,70	2.226,42
Alzados (perímetroxaltura)	1	40,70	2,00	21,70	1.766,38
Tacón T derivación macizo	2	5,15		21,70	223,51
	2	13,00	1,72	21,70	970,42
Tacón T apoyo toma	2	6,20	2,62	21,70	704,99

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	2,26		21,70	98,08
	Refuerzos fi 16/15 T derivación	155	1,00	2,00	1,73	536,30
	Macizos concavos/ convexos	2	40,00		21,70	1.736,00
		2	37,70		21,70	1.636,18
		1	27,70	3,00	21,70	1.803,27
		1	27,30	3,00	21,70	1.777,23
	Refuerzos 20/15 macizos cóncav.					
		2	11,40		34,00	775,20
		2	10,80		34,00	734,40
		1	15,10	3,00	34,00	1.540,20
		1	14,60	3,00	34,00	1.489,20
	Apoyos Válvulas #16/15					
	Apoyos Válvulas	2	9,00	21,70	0,80	312,48
	Basex2	2	4,50	21,70	2,00	390,60
	Apoyo de caudalímetro	1	7,00	21,70	0,80	121,52
	Basex2	2	4,50	21,70	1,00	195,30
	Apoyos tubería-anclajes	3	8,00	21,70	0,80	416,64
		3	4,50	21,70	2,00	585,90
	Deriv. tomas	2	7,00	21,70	0,80	243,04
		2	4,00	21,70	2,00	347,20
	Toma-caudalimero	2	6,00	21,70	0,80	208,32
		2	4,00	21,70	1,00	173,60
	Apoyos bypass	2	3,00	21,70	0,85	110,67
		2	3,00	21,70	0,15	19,53
	Otros apoyos	3	1,50	21,70	0,50	48,83
		3	2,00	21,70	0,15	19,53
	Pérdidas	0,15	40.287,33			6.043,10
						46.562,17
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes T	1	11,00			11,00
	Anclajes conv	2	12,00			24,00
						35,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	29,40			29,40
		1	23,60			23,60
						53,00
03.05.06.04	PROTECCIÓN Y ENCINTADOS (TOMA-16)					
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Tubería entrada	1	10,50			10,50
						10,50
P4CINT1500	m Encintado anticorrosivo DN1500 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1500mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Tub. salida	1	10,50			10,50
						10,50
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementtos asociados. Unidad totalmente instalada.					
	Desagües	3	0,30			0,90
						0,90
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	2	2,00			4,00
		1	2,01			2,01
	Encintado tub. principal	2	2,50	0,22	2,00	2,20
		1	2,82	0,22	2,00	1,24
	Apoyos tubería T	2	1,88			3,76
	Encintado tub. T	2	2,04	0,22	2,00	1,80
	Apoyos tubería toma	2	1,70			3,40
	Encintado tub. toma	2	1,75	0,22	2,00	1,54
	Apoyos válvulas tub. ppal	1	1,50	0,75		1,13
		1	1,50	0,75		1,13

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	1,50	0,75		1,13
	Apoyos válvulas bypass	4	1,00	0,50		2,00
	Macizos de anclaje					
	T	1	3,55	1,73		6,14
	T tomas	1	1,82	1,40	4,00	10,19
	Varios desagüe	3	1,00	0,50		1,50
	Varios apoyos menores	0,15	43,17			6,48
						49,65
03.05.06.05	OBRA DE DESAGÜE (TOMA-16)					
03.05.06.05.1	ARQUETA ROTURA (TOMA-16)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Excav	1	90,00		1,00	90,00
						90,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excav	1	90,00		1,00	90,00
		-1	45,50		1,00	-45,50
						44,50
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	45,50		0,10	4,55
						4,55
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales					
	Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cuñas	1	13,00	3,00	0,20	7,80
						7,80
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	45,50		0,30	13,65
						13,65

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Alzados	2	10,20	0,20	1,40	5,71
		1	3,00	0,20	1,40	0,84
		2	3,20	0,20	2,50	3,20
		1	3,00	0,20	2,50	1,50
		1	3,00	0,20	1,10	0,66
		1	3,90	0,20	1,50	1,17
		1	3,90	0,20	0,60	0,47
		2	2,50	0,20	1,50	1,50
						15,05
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	perímetro losa	2	13,40		0,30	8,04
		2	3,40		0,30	2,04
		1	3,90		0,30	1,17
		2	2,50		0,30	1,50
						12,75
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Alzados	4	10,20	0,20	1,40	11,42
		2	10,20	0,20	1,40	5,71
		4	3,20	0,20	2,50	6,40
		2	3,20	0,20	2,50	3,20
		2	3,20	0,20	1,10	1,41
		2	3,90	0,20	1,50	2,34
		2	3,90	0,20	0,60	0,94
		4	2,50	0,20	1,50	3,00
						34,42

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#12/15					
	Alzados	4	10,20	12,30	1,40	702,58
		2	3,00	12,30	1,40	103,32
		4	3,20	12,30	2,50	393,60
		2	3,00	12,30	2,50	184,50
		2	3,00	12,30	1,10	81,18
		2	3,90	12,30	1,50	143,91
		2	3,90	12,30	0,60	57,56
		4	2,50	12,30	1,50	184,50
	Solera	2	45,50	12,30		1.119,30
	Ref. solera-alzado					
		14	0,92	30,00		386,40
		14	0,92	9,00		115,92
	Esquinas	12	20,00	0,92	1,50	331,20
	Solpaes y varios	0,15	3.803,00			570,45
						4.374,42
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	33,60			33,60
		1	3,00			3,00
		1	3,90			3,90
		2	2,70			5,40
						45,90

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	33,60	0,50		16,80
		1	13,20	1,00		13,20
						30,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero Al-SI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
	Arqueta	1	2,70	3,90		10,53
						10,53
03.05.06.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-16)						
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
		1	26,90			26,90
						26,90
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	26,90	2,50	1,80	121,05
						121,05
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Desagüe	1	26,90	2,50	1,80	121,05
	A descontar tubo DN 1000	-1	26,90	0,78		-20,98
	Embocadura					
	Solera	1	2,30	2,00	0,30	1,38
	Tacón entronque	1	2,30	0,40	0,50	0,46
						101,91
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Vertido	1	1,00	2,50	0,30	0,75
						0,75
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Embocadura zapatas					
	Aletas	2	2,00	1,25	0,50	2,50
	Solera	1	3,40		0,30	1,02
						3,52
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Embocadura					
	Aletas	2	2,00	0,30	1,50	1,80
	Frontal	1	2,00	0,30	1,50	0,90
						2,70
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	4	2,00		0,50	4,00
						4,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Embocadura					
	Aletas	2	2,00		1,50	6,00
	Frontal	1	2,00		1,50	3,00
						9,00
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Embocadura					
	Aletas #12/20	2	2,00	9,20	3,00	110,40
	Frontal #12/20	2	2,00	9,20	3,00	110,40
	Zapatas #12/20	2	2,00	3,13	9,20	115,18
		1	3,75		9,20	34,50
	Solera	2	3,50		9,20	64,40
	Solapes	0,15	434,88			65,23
						500,11

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.06.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-16)						
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
Desagüe		1	84,45	3,00		253,35
						253,35
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion					
	Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	84,45	3,00		253,35
						253,35
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
Desagüe		1	84,45	1,50	1,50	190,01
						190,01
P1MT08ESC200	m³ Escollera 200 kg careada					
	Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
Desagüe		1	5,50	2,40	0,50	6,60
		1	6,25	3,90	0,50	12,19
						18,79
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2					
	Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
Desagüe		2	5,00	2,50		25,00
						25,00
03.05.06.06 ESTRUCTURA METÁLICA Y VARIOS (TOMA-16)						
P41BARAND01	m Barandilla metálica galv.+pintura					
	Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		2	12,20			24,40
						24,40
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr					
	Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm, barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante, incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.					
Ángulo 45°		2	3,20			6,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						6,40
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2)					
	Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilaría acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					
		2	1,50	2,00		6,00
						6,00
P41CADENA III	m Cadena acero inox 8 mm					
	Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.					
	Acceso escaleras	2	1,00			2,00
						2,00
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C.					
	Montaje e instalación completa en obra.					
	Unidad totalmente instalada.					
	Escaleras					
	Soportes UPN-200	2	13,000	25,300		657,800
	Pilares UPN-200	2	4,000	25,300	2,000	404,800
	Placas	2	4,000	15,000		120,000
						1.182,60
P41LV001	ud Línea de vida					
	Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje, incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud.					
	Unidad totalmente instalada.					
	Línea de vida	1				1,00
						1,00
03.05.06.07	URBANIZACIÓN (TOMA-16)					
03.05.06.07.1	PAVIMENTOS (T16)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	1.980,00		0,30	594,00
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque camino existente	1	10,00		0,30	3,00
	Acceso a fincas	1	5,00	5,00	0,30	7,50
						590,83

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.06.07.2 CERRAMIENTOS (T16)						
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint					
	Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
Acceso		1				1,00
						1,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint					
	Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
Acceso		1				1,00
						1,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment.					
	Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
Cerramiento perimetral		1	183,00			183,00
						183,00
03.05.06.07.3 DRENAJES (T16)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
Cuneta guarda inferior		1	148,00			148,00
						148,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
Entronque con salvacunetas		1	3,00			3,00
Entronque en descarga		2	3,00			6,00
						9,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
Acceso a toma		1	9,80			9,80
						9,80
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000					
	Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
Acceso trafo		1	3,00			3,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.07	TOMA-14 Y 15					
03.05.07.01	MOVIMIENTO DE TIERRAS (TOMA-14/15)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Saneos plataforma s/ cad	1	4.800,00		0,30	1.440,00
	Excav. general s/m	1	4,41			4,41
	Excavación de tub. entrantes (sup.x ancho)	1	37,70	5,00		188,50
	Excav macizos					
	Macizos T	1	21,00		2,00	42,00
	Cajeos cámara de descarga en capítulo correspondiente					
						1.674,91
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Saneos plataforma s/ cad	1	4.800,00		0,30	1.440,00
						1.440,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Terraplenado s/ med	1	886,67			886,67
	Sobrantes a vertedero	1	1.674,91			1.674,91
		-1	886,67			-886,67
	Rellenos localizados	-1	105,70			-105,70
						1.569,21
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación de tub. entrantes (sup.x ancho)	1	37,70	5,00		188,50
		-1	27,60	3,00		-82,80
						105,70

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.07.02	CALDERERÍA Y VALVULERÍA (TOMA-14/15)					
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	s/ med	1	32.943,970			32.943,970
						32.943,97
P1BRID1100.25	ud Brida ciega PN 25 Ø1100					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas					
	Toma	1				1,00
						1,00
P1BRIDA800.25	ud Brida ciega PN 25 Ø800					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Tub. principal paso hombre	1	1,00			1,00
						1,00
P1BRIDA700.25	ud Brida ciega PN 25 Ø700					
	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 700 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.					
	Toma	1				1,00
						1,00
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida					
	Carrete pasamuros con placa de estanquidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.					
	desagüe a cámara de descarga	1				1,00
	A arqueta de válvulas desagüe	1				1,00
	Sobrepresión a cámara de descarga	1				1,00
						3,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16					
	Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Bypass	2				2,00
						2,00
P6CD.300.16	ud Carrete desmontaje DN 300 PN16					
	Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	desagüe	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P6CD.700.16	ud Carrete desmontaje DN 700 PN16 Carrete de desmontaje de diametro 700 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.					
	Caudalímetro	1				1,00
						1,00
P6CD900.16	ud Carrete desmontaje virola acero inox. PN16 DN 900 Carrete telescópico autoportante, PN 16 atm, DN 900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	deriv. toma	1				1,00
						1,00
P6CD.1100.16	ud Carrete desmontaje virola acero inox. PN16 DN 1100 Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Caudalímetro	1				1,00
						1,00
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	deriv. toma	1				1,00
						1,00
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Bypass	2	1,00			2,00
						2,00
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.					
	Cámara de descarga	1				1,00
						1,00
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Bypass	2	2,00			4,00
						4,00
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.					
	Desagüe-1	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P6VM.900.16M	ud Válvula mariposa motorizada PN 16 Ø900 I Válvula de mariposa, DN 900 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Toma	1				1,00
						1,00
P6VM.1300.16M	ud Válvula mariposa motorizada PN 16 Ø1300 I Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.					
	Toma	1				1,00
						1,00
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.					
	Sobrepresión	1				1,00
						1,00
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación , incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.					
	Sobrepresión	1				1,00
						1,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					
	Conducción principal-1	1	1,00			1,00
						1,00
03.05.07.03	LOSA Y ANCLAJES (TOMA-14/15)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	34,50	29,00	0,10	100,05
						100,05
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	34,50	29,00	0,30	300,15
	A descontar cámara descarga	-1	13,40	3,40	0,30	-13,67
	A descontar macizos	-1	21,00		0,30	-6,30
	Macizos convexos	-1	4,86	3,10	0,30	-4,52
	Macizos T solera	1	21,00		2,00	42,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Macizo T toma alzados s/ losa	1	5,25	1,70		8,93
	Macizos concavos/ convexos	1	37,70	3,00		113,10
	Tubo entrante	-1	10,40	3,14	0,64	-20,90
	Apoyos tuberías					
	tramo conduc. principal	1	2,00	2,60	0,80	4,16
	Tramo derivación tomas	4	2,00	1,50	0,80	9,60
	Tramo caudalímetro	4	2,00	1,50	0,80	9,60
	Apoyos Válvulas	2	3,00	1,50	0,80	7,20
	Apoyo caudalímetro	2	2,00	1,20	0,80	3,84
	Bypass	2	3,00	1,50	0,50	4,50
	Otros pequeños apoyos	3	0,50	0,50	0,50	0,38
						458,07

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

Solera	1	127,00		0,30	38,10
					38,10

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

Macizos T	2	21,00		2,00	84,00
Alzado T	2	5,25			10,50
Alzado T	2	1,75		3,20	11,20
Macizos concavos/ convexos	2	37,70			75,40
	1	3,00	2,63		7,89
	1	3,00	3,95		11,85
	1	3,00	5,30		15,90
	1	3,00	7,15		21,45
Apoyos Válvulas	2	9,00		0,80	14,40
Apoyo de caudalímetro	2	7,00		0,80	11,20
Apoyos tubería-ancclajes	1	8,00		0,80	6,40
Deriv. tomas	4	7,00		0,80	22,40
Toma-caudalimero	4	6,00		0,80	19,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Apoyos bypass	4	3,00	1,70	0,50	10,20
	Otros apoyos	3	1,50		0,50	2,25
						324,24
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Solera #16/20 (16.3 kg/m2)	2	1.005,00		16,30	32.763,00
	A descontar cámara descarga	-2	56,00		16,30	-1.825,60
	A descontar macizos T	-2	21,00		16,30	-684,60
	A descontar p.p. concav	-2	5,00	3,00	16,30	-489,00
	Solera #16/15. Adicional hierro	1	42,65		7,70	328,41
		1	50,00		7,70	385,00
	Macizos T #16/15 (21.7kg/m2)					
	Cara sup.+ cara inf.	2	21,00		21,70	911,40
	Alzados (perímetroxaltura)	1	20,00	2,00	21,70	868,00
	Tacón T derivación macizo	2	5,25		21,70	227,85
		2	13,25	1,70	21,70	977,59
	Refuerzos fi 16/15 T derivación	155	1,00	2,00	1,73	536,30
	Macizos concavos/ convexos	2	37,70		21,70	1.636,18
		1	27,25	3,00	21,70	1.773,98
	Refuerzos 20/15 macizos cóncav.					
		2	10,80		34,00	734,40
		1	14,65	3,00	34,00	1.494,30
	Apoyos Válvulas #16/15					
	Apoyos Válvulas	2	9,00	21,70	0,80	312,48
	Basex2	4	4,50	21,70	2,00	781,20
	Apoyo de caudalímetro	2	7,00	21,70	0,80	243,04
	Basex2	4	4,50	21,70	1,00	390,60
	Apoyos tubería-anclajes	2	8,00	21,70	0,80	277,76
		2	4,50	21,70	2,00	390,60
	Deriv. tomas	4	7,00	21,70	0,80	486,08
		4	4,00	21,70	2,00	694,40
	Toma-caudalimero	2	6,00	21,70	0,80	208,32

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	4,00	21,70	1,00	173,60
	Apoyos bypass	4	3,00	21,70	0,85	221,34
		4	3,00	21,70	0,15	39,06
	Otros apoyos	3	1,50	21,70	0,50	48,83
		3	2,00	21,70	0,15	19,53
	Pérdidas	0,15	42.921,51			6.438,23
						50.362,28
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Anclajes conv	1	12,00			12,00
						12,00
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Juntas	1	34,50			34,50
		1	29,00			29,00
						63,50
03.05.07.04	PROTECCIÓN Y ENCINTADOS (TOMA-14/15)					
P4CINT1600	m Encintado anticorrosivo DN1600 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Tubería entrada	1	10,40			10,40
						10,40
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.					
	Desagües	3	0,30			0,90
						0,90
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.					
	Global toma	1				1,00
						1,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos tubería principal	1	2,00			2,00
	Encintado tub. principal	1	5,02	0,22	2,00	2,21
	Apoyos tubería T	1	0,93			0,93
	Encintado tub. T	1	2,82	0,22	2,00	1,24

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Apoyo tubería toma	2	1,64			3,28
		2	1,70			3,40
		1	0,93			0,93
		2	0,80			1,60
	Encintado tub. toma	2	4,10	0,22	2,00	3,61
		1	2,82	0,22	2,00	1,24
		2	2,20	0,22	2,00	1,94
		2	1,75	0,22	2,00	1,54
	Apoyos válvulas tub. ppal	1	1,50	0,75		1,13
		1	1,50	0,75		1,13
		2	1,50	0,75		2,25
	Apoyos válvulas bypass	4	1,00	0,50		2,00
	Macizos de anclaje					
	T	1	3,10	1,75		5,43
	Varios desagüe	3	1,00	0,50		1,50
	Varios apoyos menores	0,15	37,36			5,60
						42,96

03.05.07.05 OBRA DE DESAGÜE (TOMA-14/15)

03.05.07.05.1 ARQUETA ROTURA (TOMA-14/15)

P1MT03B1 m³ Excavación localizadas medio-duro+agotam+Tte vertedero
 Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.

Excav	1	90,00		1,00	90,00
					90,00

P1MT04B m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN

Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.

Excav	1	90,00		1,00	90,00
	-1	45,50		1,00	-45,50
					44,50

P4HG-002A m³ Hormigón HL-150/B/20 Elementos horizontales y verticales

Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.

	1	45,50		0,10	4,55
--	---	-------	--	------	------

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						4,55
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Cuñas	1	13,00	3,00	0,20	7,80
						7,80
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera	1	45,50		0,30	13,65
						13,65
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Alzados	2	10,20	0,20	1,40	5,71
		1	3,00	0,20	1,40	0,84
		2	3,20	0,20	2,50	3,20
		1	3,00	0,20	2,50	1,50
		1	3,00	0,20	1,10	0,66
		1	3,90	0,20	1,50	1,17
		1	3,90	0,20	0,60	0,47
		2	2,50	0,20	1,50	1,50
						15,05
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	perímetro losa	2	13,40		0,30	8,04
		2	3,40		0,30	2,04
		1	3,90		0,30	1,17
		2	2,50		0,30	1,50
						12,75
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Alzados	4	10,20	0,20	1,40	11,42
		2	10,20	0,20	1,40	5,71

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		4	3,20	0,20	2,50	6,40
		2	3,20	0,20	2,50	3,20
		2	3,20	0,20	1,10	1,41
		2	3,90	0,20	1,50	2,34
		2	3,90	0,20	0,60	0,94
		4	2,50	0,20	1,50	3,00
						34,42
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#12/15					
	Alzados	4	10,20	12,30	1,40	702,58
		2	3,00	12,30	1,40	103,32
		4	3,20	12,30	2,50	393,60
		2	3,00	12,30	2,50	184,50
		2	3,00	12,30	1,10	81,18
		2	3,90	12,30	1,50	143,91
		2	3,90	12,30	0,60	57,56
		4	2,50	12,30	1,50	184,50
	Solera	2	45,50	12,30		1.119,30
	Ref. solera-alzado					
		14	0,92	30,00		386,40
		14	0,92	9,00		115,92
	Esquinas	12	20,00	0,92	1,50	331,20
	Solpaes y varios	0,15	3.803,00			570,45
						4.374,42
P4PATE01	ud Pate polipropileno					
	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
	Acceso arqueta	5				5,00
	Interior arq	5				5,00
	Acceso cámara descarga	3				3,00
	Cámara descarga	7				7,00
						20,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
		1	33,60			33,60
		1	3,00			3,00
		1	3,90			3,90
		2	2,70			5,40
						45,90
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	Perímetro	1	33,60	0,50		16,80
		1	13,20	1,00		13,20
						30,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.					
	Arqueta	1	2,70	3,90		10,53
						10,53
03.05.07.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-14/15)						
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
		1	32,37			32,37
						32,37
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Desagüe	1	32,37	2,50	1,80	145,67
						145,67
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Desagüe	1	32,37	2,50	1,80	145,67
	A descontar tubo DN 1000	-1	32,37	0,78		-25,25
	Embocadura					
	Solera	1	2,30	2,00	0,30	1,38
	Tacón entronque	1	2,30	0,40	0,50	0,46
						122,26

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Vertido	1	1,00	2,50	0,30	0,75
						0,75
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. Embocadura zapatas					
	Aletas	2	2,00	1,25	0,50	2,50
	Solera	1	3,40		0,30	1,02
						3,52
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada. Embocadura					
	Aletas	2	2,00	0,30	1,50	1,80
	Frontal	1	2,00	0,30	1,50	0,90
						2,70
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada. Embocadura					
	Aletas	4	2,00		0,50	4,00
						4,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. Embocadura					
	Aletas	2	2,00		1,50	6,00
	Frontal	1	2,00		1,50	3,00
						9,00
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. Embocadura					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Aletas #12/20	2	2,00	9,20	3,00	110,40
	Frontal #12/20	2	2,00	9,20	3,00	110,40
	Zapatas #12/20	2	2,00	3,13	9,20	115,18
		1	3,75		9,20	34,50
	Solera	2	3,50		9,20	64,40
	Solapes	0,15	434,88			65,23
						500,11

03.05.07.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-14/15)

P1MT02A	m²	Excavación de tierra vegetal de 50 cm (medio) en conduc.			
Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio inter-medio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
Desagüe	1	83,35	3,00		250,05
					250,05

P1MT02B	m²	Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccione			
Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
	1	83,35	3,00		250,05
					250,05

P1MT03B1	m³	Excavación localizadas medio-duro+agotam+Tte vertedero				
Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.						
Desagüe		1	83,35	1,50	1,50	187,54
						187,54

P1MT08ESC200	m³	Escollera 200 kg careada				
Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.						
Desagüe		1	6,10	2,50	0,50	7,63
		1	5,50	3,80	0,50	10,45
						18,08

P1MT08GTX-002	m²	Geotextil Geotesant-295gr/m2			
Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
Desagüe		2	5,00	2,50	25,00
					25,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.07.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-14/15)					
P41BARAND01	m Barandilla metálica galv.+pintura					
	Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.					
		2	12,20			24,40
						24,40
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr					
	Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.					
	Ángulo 45º	2	3,20			6,40
						6,40
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2)					
	Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					
		2	1,50	2,00		6,00
						6,00
P41CADENA III	m Cadena acero inox 8 mm					
	Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.					
	Acceso escaleras	2	1,00			2,00
						2,00
P41ETT-001C	kg Acero galvanizado					
	Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C.					
	Montaje e instalación completa en obra.					
	Unidad totalmente instalada.					
	Escaleras					
	Soportes UPN-200	2	13,000	25,300		657,800
	Pilares UPN-200	2	4,000	25,300	2,000	404,800
	Placas	2	4,000	15,000		120,000
						1.182,60
P41LV001	ud Línea de vida					
	Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud.					
	Unidad totalmente instalada.					
	Línea de vida	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.05.07.07	URBANIZACIÓN (TOMA-14/15)					
03.05.07.07.1	PAVIMENTOS (T14/15)					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Sup.	1	2.670,50		0,30	801,15
	Cámara descarga	-1	13,40	3,40	0,30	-13,67
	Entronque camino a trafo	1	105,00		0,30	31,50
	Acceso a fincas	1	5,00	5,00	0,30	7,50
						826,48
03.05.07.07.2	CERRAMIENTOS (T14/15)					
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.					
	Acceso	1				1,00
						1,00
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.					
	Acceso	1				1,00
						1,00
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeador de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)					
	Cerramiento perimetral	1	200,00			200,00
						200,00
03.05.07.07.3	DRENAJES (T14/15)					
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Cuneta guarda inferior	1	185,00			185,00
						185,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
	Entronque con embocadura desagüe	2	3,00			6,00
	Entronque salvacuneta	1	3,00			3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						9,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y repelido de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.						
	Camino acceso	1	8,50			8,50
	Acceso a trafo	1	9,00			9,00
						17,50
03.06	HINCAS (DC-T21 y DC-T14/15)					
03.06.01	HINCA NA-160					
03.06.01.01	TRABAJOS PREPARATORIOS+MT (HINCA NA-160)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repelido necesarias. Unidad totalmente terminada medido sobre perfil teórico.						
	s/ med acceso y preparación de plataforma	1	12.296,19			12.296,19
	Excav. zahorras y acceso provisional	1	88,50			88,50
						12.384,69
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repelido y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.						
Pozo salida						
	Acceso	1	30,00	5,00	0,15	22,50
	Plataforma de trabajo s/ med CAD	1	13,00	15,00	0,15	29,25
Pozo ataque						
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	13,00	15,00	0,15	29,25
						88,50
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.						
Cuneta perimetral provisional						
	Pozo salida	1	90,00			90,00
		1	90,00			90,00
	Pozo ataque	2	65,00			130,00
						310,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.06.01.02	ESTRUCTURA (HINCA NA-160)					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Fondo solera pozo de ataque	1	13,60	15,00	0,10	20,40
						20,40
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	rellenos muro de reacción	1	14,00	0,75		10,50
	Rellenos frontales s/nec	1	14,00	0,50		7,00
						17,50
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Solera provisional hinca	1	13,60	15,00	0,40	81,60
						81,60
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Muro empuje	1	0,60	13,00	4,50	35,10
	Muros perimetrales					
		2	15,00	0,30	1,00	9,00
		1	13,60	0,30	5,00	20,40
		1	13,60	0,30	5,00	20,40
						84,90
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Muros perimetrales #16/20					
		4	15,00	16,30	1,00	978,00
		2	13,60	16,30	5,00	2.216,80
		2	13,60	16,30	5,00	2.216,80
						5.411,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. Muros perimetrales					
		4	15,00		1,00	60,00
		2	13,60		5,00	136,00
		2	13,60		5,00	136,00
						332,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción. Apertura de hueco hincas					
		2	9,42			18,84
						18,84
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Demolición muro empuje+muro Resto se queda, incluida la losa y muros laterales					
		1	13,60	0,90	3,00	36,72
						36,72
03.06.01.03	HINCA(HINCA NA-160)					
P6HINCA2000B1	ud Implantación equipo escudo abierto hinca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo abierto, para hinca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.					
		1				1,00
						1,00
P6HINCA2000B3	ud Retirada de equipos esc. abierto+ traslado+imp. interior de obra Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto. Traslado desde pozo de extracción hinca-1 a pozo ataque hinca-2					
		1				1,00
						1,00
P6HINCA2000B	m Tubería hincada hormigón armado DN 2000 escudo abierto Tubería hincada de DN 2.000 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
	Hinca-1	1	40,00			40,00
	Hinca-2	1	40,00			40,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						80,00
P6HINCATUB01	m Sobre coste tubería int. hinca					
	Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas , operaciones de empuje y tiro-arrastré, p.p. de anillo de estanqueidad. Unidad totalmente instalada.					
	Instalación de tubería en interior	2	40,00			80,00
						80,00
03.06.01.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA NA-160)					
03.06.01.04.1	TRATAMIENTO (HINCA NA-160)					
P6HINC.T01	m³ Lechada cemento tratamientos					
	Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).					
	Relleno del gap incluido	2	40,00	9,42	0,20	150,72
	Relleno de mortero entre tub. de hormigón y tub. de acero (m3)	1	182,40			182,40
						333,12
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20					
	Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.					
	Se consideran frentes estables si bien se dota ante riesgo					
	en transiciones geológicas					
	Frente extracción taludes pozo de extracción	1	20,00		5,00	100,00
	Frente de ataque	1	20,00		5,00	100,00
						200,00
03.06.01.04.2	AUSCULTACIÓN (HINCA NA-160)					
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p					
	Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada					
	Auscultación carretera	10	2,00			20,00
						20,00
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen					
	Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.					
	Auscultación carretera	10	2,00			20,00
						20,00
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m					
	Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.06.02	HINCA N-113					
03.06.02.01	TRABAJOS PREPARATORIOS+MT (HINCA N-113)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med acceso y preparación de plataforma	1	1.164,13			1.164,13
	Excav. zahorras y acceso provisional	1	166,80			166,80
						1.330,93
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.					
	s/ med recinto interior	1	1.298,28			1.298,28
						1.298,28
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Pozo salida					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
	Pozo ataque					
	Acceso	1	10,00	5,00	0,15	7,50
	Plataforma de trabajo s/ med CAD	1	506,00		0,15	75,90
						166,80
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada. Cuneta perimetral provisional					
	Pozo salida	2	60,00			120,00
	Pozo ataque	2	70,00			140,00
						260,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.06.02.02	PANTALLA Y ESTRUCTURA (HINCA N-113)					
P5PANT01	ud Transporte y montaje equipos ejec. pantallas Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	1				1,00
						1,00
P5PANT03	ud Desmontaje/ desplazamiento equipos pantallas a fábricas Desmontaje final de pantallas y transporte a punto de origen. Unidad completa. Traslados a fábrica	1				1,00
						1,00
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.					
	Muro guía pozo entrada	2	17,00			34,00
		2	6,80			13,60
	Muro pozo salida	2	17,00			34,00
		1	6,80			6,80
						88,40
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o reperforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Hormigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.					
	s/ med	1	1.414,40			1.414,40
						1.414,40
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Fondo solera pozo de ataque	1	6,80	15,00	0,10	10,20
						10,20
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Solera provisional hinca	1	40,80			40,80
						40,80
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas					
	Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	Vigas de arriostre	1	123,01			123,01
	Muro empuje	1	0,60	6,80	2,50	10,20
						133,21
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/ med aux pantallas	1	12.459,40			12.459,40
	Muro empuje #16/20	2	6,80	16,30	2,50	554,20
	Losa #16/20+15%	2	1,15	102,00	16,30	3.823,98
						16.837,58
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy					
	Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios conectores	1	10,00			10,00
						10,00
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy					
	Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios s/nec viga	1	10,00			10,00
						10,00
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy					
	Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Pozo ataque					
	Conectores losas fi 16/20	436				436,00
						436,00
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy					
	Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.					
	Varios conectores s/ nec viga	1	10,00			10,00
						10,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	s/ med pantallas vigas	1	300,84			300,84

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Muro de empuje	1	6,80		2,50	17,00
						317,84
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo					
	Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.					
	s/ med	1	43,60			43,60
						43,60
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco					
	Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.					
	Apertura de hueco hınca	1	7,54			7,54
						7,54
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon					
	Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	Demolición de frontal de pantalla pozo de ataque	1	27,20			27,20
	Demolición muro empuje	1	6,80	0,60	3,00	12,24
	Resto se queda, incluida la losa y pantallas..					
						39,44
03.06.02.03	HINCA (HINCA N-113)					
P6HINCA2000A1	ud Implantación equipo escudo cerrado hınca DN 2000-2500 desde fáb.					
	Implantación y transporte de equipo perforador de escudo cerrado, para hınca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.					
		1				1,00
						1,00
P6HINCA2000A2	ud Retirada equipo escudo cerrado hınca DN 2.000-2500 a fábrica					
	Retirada completa de obra y transporte a punto de origen de proveedor de equipo perforador de escudo cerrado, para hınca de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.					
	Retirada a fábrica	1				1,00
						1,00
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado					
	Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
	Hınca	1	50,00			50,00
						50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas , operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.					
	Instalación de tubería en interior	1	50,00			50,00
						50,00
03.06.02.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA N-113)					
03.06.02.04.1	TRATAMIENTO (HINCA N-113)					
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).					
	Relleno del gap incluido	1	50,00	7,54	0,20	75,40
	Relleno de mortero entre tub. de hormigón y tub. de acero (m3)	1	53,20			53,20
						128,60
03.06.02.04.2	AUSCULTACIÓN (HINCA N-113)					
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada					
	Auscultación FFCC plataforma y Vía	3	2,00			6,00
						6,00
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.					
	Auscultación FFCC	3	2,00			6,00
						6,00
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.					
		1				1,00
						1,00
03.07	CAMINOS DE SERVICIO (DC-T21 y DC-T14/15)					
03.07.01	MOVIMIENTO DE TIERRAS Y PAVIMENTOS (DC-T21; T14)					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. s/med aux					
	T16-T14YT15	1	1.128,04			1.128,04
	DC-T17	1	208,96			208,96
	T17-T18	1	2.577,05			2.577,05
	T18-T19	1	2.360,21			2.360,21

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T19-T20	1	1.085,21			1.085,21
	T20-T21	1	495,29			495,29
						7.854,76
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil. s/med aux					
	T16-T14YT15	1	162,62			162,62
	DC-T17	1	142,03			142,03
	T17-T18	1	1.438,18			1.438,18
	T18-T19	1	1.294,81			1.294,81
	T19-T20	1	216,70			216,70
	T20-T21	1	264,51			264,51
						3.518,85
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. s/med aux					
	T16-T14YT15	1	1.018,90			1.018,90
	DC-T17	1	242,74			242,74
	T17-T18	1	1.511,06			1.511,06
	T18-T19	1	2.046,18			2.046,18
	T19-T20	1	620,52			620,52
	T20-T21	1	650,40			650,40
						6.089,80
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. s/med aux					
	T18-T19	1	57,00			57,00
						57,00
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. s/med aux					
	T18-T19	1	108,70			108,70

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						108,70
03.07.02	DRENAJE TRANSVERSAL(DC-T21; T14)					
03.07.02.01	MOVIMIENTO DE TIERRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. s/med aux					
	DC-T16	1	22,28			22,28
	DC-T17	1	23,90			23,90
	T17-T18	1	26,30			26,30
	T18-T19	1	23,00			23,00
	T19-T20	1	34,25			34,25
	T20-T21	1	23,60			23,60
						153,33
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada. s/med aux					
	DC-T16	1	14,55			14,55
	DC-T17	1	24,90			24,90
	T17-T18	1	40,22			40,22
	T18-T19	1	19,15			19,15
	T19-T20	1	33,51			33,51
	T20-T21	1	22,98			22,98
						155,31
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. s/med aux					
	DC-T16	1	2,28			2,28
	DC-T17	1	3,90			3,90
	T17-T18	1	6,30			6,30
	T18-T19	1	3,00			3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T19-T20	1	5,25			5,25
	T20-T21	1	3,60			3,60
						24,33

P1MT08ESC150 m³ Escollera 50-150 Kg careada

Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.

s/med aux

DC-T16	1	20,00	20,00
DC-T17	1	20,00	20,00
T17-T18	1	20,00	20,00
T18-T19	1	20,00	20,00
T19-T20	1	29,00	29,00
T20-T21	1	20,00	20,00
			129,00

03.07.02.02 OBRAS DE FÁBRICA

P3SCDN300 m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20

Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localiazada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5 , incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.

s/med aux

T16-T14YT15	1	6,30	6,30
T18-T19	1	15,00	15,00
			21,30

P3SCDN500 m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20

Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.

s/med aux

DC-T16	1	8,30	8,30
T16-T14YT15	1	43,60	43,60
DC-T17	1	21,75	21,75
T17-T18	1	73,00	73,00
T18-T19	1	118,85	118,85
T19-T20	1	14,80	14,80
T20-T21	1	36,20	36,20

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						316,50
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000					
Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.						
s/med aux						
DC-T16		1	3,80			3,80
DC-T17		1	6,50			6,50
T17-T18		1	10,50			10,50
T18-T19		1	5,00			5,00
T19-T20		1	8,75			8,75
T20-T21		1	6,00			6,00
						40,55
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales					
Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.						
s/med aux						
DC-T16		1	11,17			11,17
DC-T17		1	11,17			11,17
T17-T18		1	11,17			11,17
T18-T19		1	11,17			11,17
T19-T20		1	14,50			14,50
T20-T21		1	11,17			11,17
						70,35
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.						
s/med aux						
DC-T16		1	17,10			17,10
DC-T17		1	17,10			17,10
T17-T18		1	17,10			17,10
T18-T19		1	17,10			17,10
T19-T20		1	28,80			28,80
T20-T21		1	17,10			17,10
						114,30

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlite que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	s/med aux					
	DC-T16	1	15,77			15,77
	DC-T17	1	15,77			15,77
	T17-T18	1	15,77			15,77
	T18-T19	1	15,77			15,77
	T19-T20	1	21,57			21,57
	T20-T21	1	15,77			15,77
						100,42
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/med aux					
	DC-T16	1	949,24			949,24
	DC-T17	1	949,24			949,24
	T17-T18	1	949,24			949,24
	T18-T19	1	949,24			949,24
	T19-T20	1	1.232,71			1.232,71
	T20-T21	1	949,24			949,24
						5.978,91
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2					
	Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.					
	s/med aux					
	DC-T16	1	9,23			9,23
	DC-T17	1	9,23			9,23
	T17-T18	1	9,23			9,23
	T18-T19	1	9,23			9,23
	T19-T20	1	14,63			14,63
	T20-T21	1	9,23			9,23
						60,78

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P3LAM1	m² Imperm. muros+Lámina dren PE+Geotex 200 g Drenaje de muros con lámina nodular con marcado CE de polietileno virgen con geotextil incorporado y doble nódulo de 12 mm. de altura nod, capacidad de drenaje 1,2 l / s y resistencia a compresión de 90 kn/m2. Delta Drain o similar, p.p. de fijación al soporte con taco espiga de polipropileno, a razón de 3 uds / m2 y sellado de solapes de anchura de 10 cm. con banda autoadhesiva a dos caras de caucho butilo Delta Fix, incluso impermeabilización del paramento de hormigón con dos manos de emulsión bituminosa modificada 0.7kg/m2 , según CTE/DB-HS 1. Unidad totalmente terminada, incluso remate de conexión a dren. s/med aux					
	DC-T16	1	10,15			10,15
	DC-T17	1	10,15			10,15
	T17-T18	1	10,15			10,15
	T18-T19	1	10,15			10,15
	T19-T20	1	16,09			16,09
	T20-T21	1	10,15			10,15
						66,84
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada. s/med aux					
	DC-T16	1	10,80			10,80
	DC-T17	1	10,80			10,80
	T17-T18	1	10,80			10,80
	T18-T19	1	10,80			10,80
	T19-T20	1	34,80			34,80
	T20-T21	1	10,80			10,80
						88,80
03.07.03	DRENAJE LONGITUDINAL(DC-T21; T14)					
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada. s/med aux					
	T18-T19	1	108,57			108,57
						108,57

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.08	PROTECCIÓN CATÓDICA (DC-T21 y DC-T14/15)					
P2CAT002	ud Rectificador 70V-25A en armario intemperie. Rectificador 70V-25A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	1				1,00
	DC-T16	1				1,00
						2,00
P2CAT004	ud Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2 Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	8				8,00
	DC-T16	10				10,00
						18,00
P2CAT005	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vía Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	7				7,00
	DC-T16	9				9,00
						16,00
P2CAT006	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	2				2,00
	DC-T16	2				2,00
						4,00
P2CAT007	m Cable anódico tipo RV-K de sección 1x25mm2 Cable anódico tipo RV-K de sección 1x25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	1	110,00			110,00
	DC-T16	1	130,00			130,00
						240,00
P2CAT008	Kg Coque petróleo calcinado Coque petróleo calcinado s/med aux					
	T19-T20	1	3.600,00			3.600,00
	DC-T16	1	4.800,00			4.800,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						8.400,00
P2CAT009	m Manguera perforada Manguera perforada s/med aux					
	T19-T20	1	44,00			44,00
	DC-T16	1	64,00			64,00
						108,00
P2CAT010	ud Arqueta riego protección catódica Arqueta riego ide protección catódica incluidos p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	2				2,00
	DC-T16	2				2,00
						4,00
P2CAT012	ud Caja de conexionado 10 ánodos IP.55 y prensaestopas. Caja de conexionado 10 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	1				1,00
	DC-T16	1				1,00
						2,00
P2CAT013	ud Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0. Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0.6/1 KV 1 x 6 mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	1				1,00
	DC-T16	1				1,00
						2,00
P2CAT014	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 (cantidad estimada) y Handy cap, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	2				2,00
	DC-T16	2				2,00
						4,00
P2CAT015	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	2				2,00
	DC-T16	2				2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						4,00
P2CAT016C	ud Obra civil, mont.conex EPC+TP+TPEs+ P.Func (DC-T14/15 Y DC-T21) Obra civil, montaje y conexionado EPC, y material en línea de TPs y TPEs en todo el conjunto del subtramo (DC-T14/15 Y DC-T21) Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	1				1,00
	T17-T18	1				1,00
	T18-T19	1				1,00
	T19-T20	1				1,00
	T20-T21	1				1,00
	DC-T16	1				1,00
	T16-T14,15	1				1,00
						7,00
P2CAT017	ud Caja toma de potencial de policarbonato con prensaestopas Caja toma de potencial de policarbonato con prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	1				1,00
	T17-T18	1				1,00
	T18-T19	2				2,00
	T20-T21	1				1,00
	T16-T14,15	1				1,00
						6,00
P2CAT018	ud Caja toma de potencial TPE (200 X 200) con poste acero galvaniza Caja toma de potencial TPE (200 X 200) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	1				1,00
	T16-T14,15	2				2,00
						3,00
P2CAT019	ud Caja toma de potencial TPE (320 x 320) con poste acero galvaniza Caja toma de potencial TPE (320 x 320) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/ med aux					
	DC-T17	1				1,00
	T17-T18	1				1,00
	T18-T19	1				1,00
	T19-T20	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T20-T21	1				1,00
	DC-T16	1				1,00
	T16-T14,15	1				1,00
						7,00
P2CAT022	ud Electrodo probeta estándar					
	Electrodo probeta estándar, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.					
	s/med aux					
	DC-T17	3				3,00
	T17-T18	2				2,00
	T18-T19	3				3,00
	T20-T21	2				2,00
	T16-T14,15	4				4,00
						14,00
P2CAT025	ud Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados					
	Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados con mezcla activadora y 5 m de cable (Protección catódica provisional), incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.					
	s/med aux					
	DC-T17	36				36,00
	T17-T18	24				24,00
	T18-T19	18				18,00
	T19-T20	6				6,00
	T20-T21	12				12,00
	DC-T16	6				6,00
	T16-T14,15	24				24,00
						126,00
P2CAT026	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable R					
	Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable RV 0.6/1 KV 1 x 6 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.					
	s/med aux					
	DC-T17	6				6,00
	T17-T18	2				2,00
	T18-T19	2				2,00
	T20-T21	1				1,00
	T16-T14,15	5				5,00
						16,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT027	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable RV 0.6/1 KV 1 x 25 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	7				7,00
	T17-T18	5				5,00
	T18-T19	4				4,00
	T19-T20	4				4,00
	T20-T21	4				4,00
	DC-T16	4				4,00
	T16-T14,15	4				4,00
						32,00
P2CAT028	ud Cable acero galvanizado 12 mm Cable acero galvanizado 12 mm, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	1	15,00			15,00
	T17-T18	1	15,00			15,00
	T18-T19	1	15,00			15,00
	T19-T20	1	15,00			15,00
	T20-T21	1	15,00			15,00
	DC-T16	1	15,00			15,00
	T16-T14,15	1	15,00			15,00
						105,00
P5ELEM1X25TT	m Manguera eléctrica 1 x 25 mm2 Cu Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado. s/med aux					
	DC-T17	1	10,00			10,00
	T17-T18	1	10,00			10,00
	T18-T19	1	10,00			10,00
	T19-T20	1	10,00			10,00
	T20-T21	1	10,00			10,00
	DC-T16	1	10,00			10,00
	T16-T14,15	1	10,00			10,00
						70,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT029	ud Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	4				4,00
	T17-T18	4				4,00
	T18-T19	4				4,00
	T19-T20	4				4,00
	T20-T21	4				4,00
	DC-T16	4				4,00
	T16-T14,15	4				4,00
						<hr/> 28,00
P2CAT030	ud Picas de zinc 1000 mm ensacada Picas de zinc 1000 mm ensacada, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	4				4,00
	T17-T18	4				4,00
	T18-T19	4				4,00
	T19-T20	4				4,00
	T20-T21	4				4,00
	DC-T16	4				4,00
	T16-T14,15	4				4,00
						<hr/> 28,00
P2CAT031	ud Vías de chispas con cable y pletina para conexión Vías de chispas con cable y pletina para conexión, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	5				5,00
	T17-T18	4				4,00
	T18-T19	3				3,00
	T19-T20	3				3,00
	T20-T21	3				3,00
	DC-T16	3				3,00
	T16-T14,15	3				3,00
						<hr/> 24,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT035A	ud Junta aislante embridada DN 1800 mm PN16 Junta aislante embridada DN 1800 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	2				2,00
	T17-T18	1				1,00
						3,00
P2CAT036	ud Junta aislante embridada DN 1600 mm PN16 Junta aislante embridada DN 1600 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	2				2,00
	T17-T18	2				2,00
	T18-T19	1				1,00
	DC-T16	1				1,00
						6,00
P2CAT037	ud Junta aislante embridada DN 1500 mm PN16 Junta aislante embridada DN 1500 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T18-T19	1				1,00
	T19-T20	1				1,00
	DC-T16	1				1,00
	T16-T14,15	1				1,00
						4,00
P2CAT038	ud Junta aislante embridada DN 1300 mm PN16 Junta aislante embridada DN 1300 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T17-T18	1				1,00
	T18-T19	1				1,00
	T19-T20	1				1,00
	T20-T21	2				2,00
						5,00
P2CAT039	ud Junta aislante embridada DN 1100 mm PN16 Junta aislante embridada DN 1100 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T16	1				1,00
	T16-T14,15	1				1,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P2CAT041	ud Junta aislante embridada DN 800mm PN16 Junta aislante embridada DN 800mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	1				1,00
						1,00
P2CAT043	ud Junta aislante embridada DN 700mm PN16 Junta aislante embridada DN 700mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	T19-T20	1				1,00
	T16-T14,15	1				1,00
						2,00
P2CAT045	ud Junta aislante embridada DN 300mm PN16 Junta aislante embridada DN 300mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento. s/med aux					
	DC-T17	2				2,00
	T17-T18	2				2,00
	T18-T19	1				1,00
	T19-T20	1				1,00
	T20-T21	1				1,00
	DC-T16	1				1,00
	T16-T14,15	1				1,00
						9,00
03.09	INSTALACIONES ELÉCTRICAS (DC-T21 y DC-T14/15)					
03.09.01	TOMA-17 (FOTOV)					
03.09.01.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-17)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexión, y operaciones necesarias de retirada. Unidad completa Varios conexionados	5				5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexión a trafo Operación de conexionado y desconexión de LMT.	1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
03.09.01.02	FOTOVOLTAICA (TOMA-17)					
P5ELEF001	ud Panel Cel. fotovoltaicas 400w Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 % Datos eléctricos de CA - Modelo de inversor: IQ 7A A 230 V CA - Potencia máxima de salida 366 VA - Máx. potencia de salida continua 349 VA - Rango/Tensión nom. (LN) 219 264 V - Máx. corriente de salida continua 1,52 A - Máx. unidades por circuito derivado de 20 A (LN) 10 - Eficiencia ponderada 10 96,5 % - Frecuencia nominal 50 Hz - Rango de frecuencia ampliado 45-55 Hz - Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo Datos de alimentación de CC - Potencia nominal 11 (Pnom) 400 W - Tol. de potencia +5/0 % - Eficiencia del módulo 21,5 % - Coef. temp. (Potencia) -0,29 %/°C Datos mecánicos - Células solares 66 células monocristalinas Maxeon Generación 5 - Cristal frontal - Cristal templado antirreflejos de gran transmisividad - Clasificación ambiental Microinversor con clasificación para exteriores - IP67 - (UL: NEMA tipo 6) - Marco Anodizado negro de clase 1 Caja de conexiones: IP65. Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión . Unidad totalmente instalada y operativa Panel	14				14,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						14,00
P5ELEF002	ud Regulador 12/24/48V 208V 15 Amp Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp. Unidad totalmente instalada y operativa					
	Varios	1				1,00
						1,00
P5ELEF003	ud Baterías de gel 200PZV2500 o similar Baterías de gel 200PZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora. Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento. Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00
P5ELEF004	ud Inversor-cargador 8.000w Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo electrógeno). Cumplirá: - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretensión en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. Características técnicas - Entrada DC o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal; 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEF005	ud Convertidor CC/CC Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobrecalentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00
P5ELEF006	ud Estructura aluminio y hormigón soporte de placas fotovoltaicas Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.					
	Varios	14				14,00
						14,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Conex. reguladores	1	50,00			50,00
	Conex inversores	1	20,00			20,00
	Conex. paneles	14	2,50			35,00
						105,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
		1				1,00
						1,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
		6				6,00
						6,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
		1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P5ELET8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	1				1,00
						1,00
P5ELET5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	1	20,00			20,00
						20,00
P5ELECT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1				1,00
						1,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Paneles	14	2,50			35,00
	Varios conex	1	5,00			5,00
						40,00
03.09.01.03	CUADROS ELÉCTRICOS (TOMA-17)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Base	1	4,00	6,00	0,40	9,60
						9,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECGBT1A	ud Modulo acometida+aparamenta					
	Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II					
	Descargador de sobretensiones tipo I+II	1				1,00
						1,00
P5ELECGBT17	ud CGBT Toma-17 incl. cabina y aparamenta					
	Suministro y montaje de módulo de alimentación, control y protección de Toma-17 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	4				4,00
	Pulsador general de corte	1				1,00
						5,00
03.09.01.04	CANALIZACIONES (TOMA-17)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a)					
	Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. paneles fotov	1	15,00			15,00
	Conex. CCTV	1	2,50			2,50
	Conex Tuberías	1	16,00			16,00
		1	25,00			25,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	7,50			7,50
		1	12,00			12,00
						78,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm					
	Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interor caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm					
	Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm					
	Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	4	5,00			20,00
		1	5,00			5,00
						25,00
P5ELEBAND2	m Bandeja PVC 200x60mm					
	Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	12,50			12,50
		1	12,50			12,50
		1	6,00			6,00
						31,00
P5ELEBAND3	m Bandeja PVC 100x60mm					
	Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20					
	Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32					
	Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Conex. Fotov	2				2,00
	Conex CCTV	1				1,00
	Conex. valv.	8				8,00
						11,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	CCTV	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería	5				5,00
						9,00
03.09.01.05	LÍNEAS DE BT (TOMA-17)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	3				3,00
	Salida SAI	3				3,00
	L-6 Agrupacion	3				3,00
	L-6.3 Trafo 230/24V	5				5,00
	L-7 Agupacion	3				3,00
	L-7.4 Trafo 230/24V	5				5,00
	L-7.5 Señales Contr	3				3,00
	L-3.1 Alumb. Int.	30				30,00
	L-3.2 Alumb. Emerg.	30				30,00
	L-3.3 Alumb. Ext.	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-4.1 Vent-1	5				5,00
	L-4.2 R. Caldeo	5				5,00
	L-4.3 Al. Cuadro	48				48,00
	L-6.1 CCTV	25				25,00
	L-6.2 Reserva	5				5,00
	L-6.3.1 Reserva	10				10,00
	L-7.1 PLC y Control	1				1,00
	L-7.2 Señales Varia	50				50,00
	L-7.3 Cuadro Comuni	1				1,00
	L-7.4.1 Varios	5				5,00
	L-7.5.1 Señal Val 1	50				50,00
	L-7.5.2 Señal Val 2	50				50,00
	L-7.5.3 Señal Val 3	50				50,00
	L-7.5.4 Señal Val 4	50				50,00
	L-7.5.5 Señal Cauda	50				50,00
	L-7.5.6 Varios	50				50,00
	L-7.5.7 Varios	50				50,00
	L-7.5.8 Varios	50				50,00
	L-7.5.9 Varios	50				50,00
	L-7.5.10 Varios	50				50,00
	L-7.5.11 (Reserva)	50				50,00
	L-7.5.12 (Reserva)	50				50,00
	L-7.5.13 (Reserva)	50				50,00
	L-7.5.14 (Reserva)	50				50,00
	L-4 Agrupacion	2				2,00
						943,00

P5ELEM2X2.5TT m Manguera eléctrica 2 x 2.5 + TT 2.5mm2

Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	1	5,00	5,00
			5,00

P5ELEM2X2.5T2 m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado

Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

L-3.4 Reserva	25		25,00
---------------	----	--	-------

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Reserva Monofasica	5				5,00
	L.4.4 T.C.	5				5,00
	L-5.1 Tomas Monof	15				15,00
						50,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2					
	Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu					
	Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	50				50,00
	Actuador Valv. N°02	75				75,00
	Actuador Valv. N°03	50				50,00
	Actuador Valv. N°04	50				50,00
	Reserva Trifasica	5				5,00
	L-5.1 Tomas Trif	15				15,00
						245,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Entrada SAI	5				5,00
	ACOMETIDA PRINCIPAL	30				30,00
	ACOMETIDA GRUPO	5				5,00
						40,00
P5ELEM01	ud Conjunto pequeño material líneas BT					
	Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.01.06	TOMA TIERRA (TOMA-17)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					6,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					6,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.					1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.					138,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					5,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					2,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					1,00
03.09.01.07	MECANISMOS (TOMA-17)					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta	1				1,00
						1,00
03.09.01.08	ALUMBRADO (TOMA-17)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa. Caseta	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa. Emergencia en interior de caseta Exterior de caseta	1 1				1,00 1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado. Caseta	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.02	TOMA-18 (FOTOV)					
03.09.02.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-18)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.					
		1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.					
		1				1,00
						1,00
03.09.02.02	FOTOVOLTAICA (TOMA-18)					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEF001	ud Panel Cel. fotovoltaicas 400w Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 % Datos eléctricos de CA - Modelo de inversor: IQ 7A A 230 V CA - Potencia máxima de salida 366 VA - Máx. potencia de salida continua 349 VA - Rango/Tensión nom. (LN) 219 264 V - Máx. corriente de salida continua 1,52 A - Máx. unidades por circuito derivado de 20 A (LN) 10 - Eficiencia ponderada 10 96,5 % - Frecuencia nominal 50 Hz - Rango de frecuencia ampliado 45-55 Hz - Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo Datos de alimentación de CC - Potencia nominal 11 (Pnom) 400 W - Tol. de potencia +5/0 % - Eficiencia del módulo 21,5 % - Coef. temp. (Potencia) -0,29 %/°C Datos mecánicos - Células solares 66 células monocristalinas Maxeon Generación 5 - Cristal frontal - Cristal templado antirreflejos de gran transmisividad - Clasificación ambiental Microinversor con clasificación para exteriores - IP67 - (UL: NEMA tipo 6) - Marco Anodizado negro de clase 1 Caja de conexiones: IP65. Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión . Unidad totalmente instalada y operativa					
	Panel	14				14,00
						14,00
P5ELEF002	ud Regulador 12/24/48V 208V 15 Amp Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp. Unidad totalmente instalada y operativa					
	Varios	1				1,00
						1,00
P5ELEF003	ud Baterías de gel 200PZV2500 o similar Baterías de gel 200PZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora. Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento. Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEF004	ud Inversor-cargador 8.000w Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo eléctrico). Cumplirá: - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretensión en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. Características técnicas - Entrada DC o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal; 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00
P5ELEF005	ud Convertidor CC/CC Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobre calentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00
P5ELEF006	ud Estructura aluminio y hormigón soporte de placas fotovoltaicas Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Varios	14				14,00
						14,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Conex. reguladores	1	50,00			50,00
	Conex inversores	1	20,00			20,00
	Conex. paneles	14	2,50			35,00
						105,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
		1				1,00
						1,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
		6				6,00
						6,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
		1				1,00
						1,00
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.					
		1				1,00
						1,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					
		1	20,00			20,00
						20,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
		1				1,00
						1,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Paneles	14	2,50			35,00
	Varios conex	1	5,00			5,00
						40,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.02.03	CUADROS ELÉCTRICOS (TOMA-18)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m)					
	Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.					
		1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta					
	Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					
		1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías					
	Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Base	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2					
	Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELECGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
		1				1,00
						1,00
P5ELECGBT18	ud CGBT Toma-18 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-18 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	3				3,00
	Pulsador general de corte	1				1,00
						4,00
03.09.02.04	CANALIZACIONES (TOMA-18)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. paneles fotov	1	15,00			15,00
	Conex. CCTV	1	5,00			5,00
	Conex Tuberías	1	65,00			65,00
						85,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interior caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	4	5,00			20,00
		1	5,00			5,00
						25,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	6,00			6,00
		1	10,00			10,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	15,00			15,00
		1	3,00			3,00
						34,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada. Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada. varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada. varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada. Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada. Conex. Fotov Conex CCTV Conex. valv.	2 2 6				2,00 2,00 6,00
						10,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada. CCTV	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca Interior caseta	4				4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Valvulería	5				5,00
						9,00
03.09.02.05	LÍNEAS DE BT (TOMA-18)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado					
	Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	1	3,00			3,00
	L-3.1 Alumb. Int.	1	30,00			30,00
	L-3.2 Alumb. Emerg.	1	30,00			30,00
	L-3.3 Alumb. Ext.	1	1,00			1,00
	L-4.1 Vent-1	1	5,00			5,00
	L-4.2 R. Caldeo	1	5,00			5,00
	L-4.3 Al. Cuadro	1	48,00			48,00
	L-6 Agrupacion	1	3,00			3,00
	L-6.1 CCTV	1	25,00			25,00
	L-6.2 Reserva	1	5,00			5,00
	L-6.3 Trafo 230/24V	1	5,00			5,00
	L-6.3.1 Reserva	1	10,00			10,00
	L-7 Agupacion	1	3,00			3,00
	L-7.1 PLC y Control	1	1,00			1,00
	L-7.2 Señales Varia	1	50,00			50,00
	L-7.3 Cuadro Comuni	1	1,00			1,00
	L-7.4 Trafo 230/24V	1	5,00			5,00
	L-7.4.1 Varios	1	5,00			5,00
	L-7.5 Señales Contr	1	3,00			3,00
	L-7.5.1 Señal Val 1	1	50,00			50,00
	L-7.5.2 Señal Val 2	1	50,00			50,00
	L-7.5.3 Señal Val 3	1	50,00			50,00
	L-7.5.4 Señal Cauda	1	50,00			50,00
	L-7.5.5 Otra Señal	1	50,00			50,00
	L-7.5.6 Otra Señal	1	50,00			50,00
	L-7.5.7 Otra Señal	1	50,00			50,00
	L-7.5.8 Otra Señal	1	50,00			50,00
	L-7.5.9 (Reserva)	1	50,00			50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-7.5.10 (Reserva)	1	50,00			50,00
	L-7.5.11 (Reserva)	1	50,00			50,00
	L-7.5.12 (Reserva)	1	50,00			50,00
	L-7.5.13 (Reserva)	1	50,00			50,00
	L-7.5.14 (Reserva)	1	50,00			50,00
						938,00

P5ELEM2X2.5TT m Manguera eléctrica 2 x 2.5 + TT 2.5mm2

Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	1	5,00	5,00
			5,00

P5ELEM2X4TT m Manguera eléctrica 2 x 4 + TT4 mm2

Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	2	2,00	4,00
			4,00

P5ELEM2X2.5T2 m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado

Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

L-3.4 Reserva	1	25,00	25,00
Reserva Monofasica	1	5,00	5,00
L-4 Agrupacion	1	2,00	2,00
L.4.4 T.C.	1	5,00	5,00
L-5.1 Tomas Monof	1	15,00	15,00
Entrada SAI	1	5,00	5,00
Salida SAI	1	3,00	3,00
			60,00

P5ELEM2X4T2 m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado

Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	2	2,00	4,00
			4,00

P5ELEM2X6T2 m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado

Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	1	5,00	5,00
			5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	1	50,00			50,00
	Actuador Valv. N°02	1	75,00			75,00
	Reserva Trifasica	1	5,00			5,00
	L-5.1 Tomas Trif	1	15,00			15,00
						145,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	ACOMETIDA PRINCIPAL	1	30,00			30,00
	ACOMETIDA GRUPO	1	5,00			5,00
						35,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00
03.09.02.06	TOMA TIERRA (TOMA-18)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
						6,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
						8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
						6,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.					
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELET4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.					138,00
P5ELET5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					5,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					2,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					1,00
03.09.02.07 MECANISMOS (TOMA-18)						
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1				1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta	1				1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.02.08	ALUMBRADO (TOMA-18)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65					
	Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	Caseta	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm					
	Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.					
	Emergencia en interior de caseta	1				1,00
	Exterior de caseta	1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo					
	Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	Caseta	1				1,00
						1,00
03.09.03	TOMA-19 (FOTOV)					
03.09.03.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-19)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares					
	Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA					
	Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil					
	Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.	1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
03.09.03.02	FOTOVOLTAICA (TOMA-19)					
P5ELEF001	ud Panel Cel. fotovoltaicas 400w Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 % Datos eléctricos de CA - Modelo de inversor: IQ 7A A 230 V CA - Potencia máxima de salida 366 VA - Máx. potencia de salida continua 349 VA - Rango/Tensión nom. (LN) 219 264 V - Máx. corriente de salida continua 1,52 A - Máx. unidades por circuito derivado de 20 A (LN) 10 - Eficiencia ponderada 10 96,5 % - Frecuencia nominal 50 Hz - Rango de frecuencia ampliado 45-55 Hz - Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo Datos de alimentación de CC - Potencia nominal 11 (Pnom) 400 W - Tol. de potencia +5/0 % - Eficiencia del módulo 21,5 % - Coef. temp. (Potencia) -0,29 %/°C Datos mecánicos - Células solares 66 células monocristalinas Maxeon Generación 5 - Cristal frontal - Cristal templado antirreflejos de gran transmisividad - Clasificación ambiental Microinversor con clasificación para exteriores - IP67 - (UL: NEMA tipo 6) - Marco Anodizado negro de clase 1 Caja de conexiones: IP65. Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión . Unidad totalmente instalada y operativa	14				14,00
	Panel					14,00
P5ELEF002	ud Regulador 12/24/48V 208V 15 Amp Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp. Unidad totalmente instalada y operativa	1				1,00
	Varios					1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEF003	ud Baterías de gel 20OPZV2500 o similar Baterías de gel 20OPZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora. Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento. Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00
P5ELEF004	ud Inversor-cargador 8.000w Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo eléctrico). Cumplirá: <ul style="list-style-type: none"> - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretensión en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. Características técnicas <ul style="list-style-type: none"> - Entrada DC <ul style="list-style-type: none"> o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) <ul style="list-style-type: none"> o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal; 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEF005	ud Convertidor CC/CC Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobrecalentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.					
	Varios	1				1,00
						1,00
P5ELEF006	ud Estructura aluminio y hormigón soporte de placas fotovoltaicas Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.					
	Varios	14				14,00
						14,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Conex. reguladores	1	50,00			50,00
	Conex inversores	1	20,00			20,00
	Conex. paneles	14	2,50			35,00
						105,00
P5ELET2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
		1				1,00
						1,00
P5ELET7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
		6				6,00
						6,00
P5ELET10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
		1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P5ELET8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	1				1,00
						1,00
P5ELET5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	1	20,00			20,00
						20,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1				1,00
						1,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Paneles	14	2,50			35,00
	Varios conex	1	5,00			5,00
						40,00
03.09.03.03	CUADROS ELÉCTRICOS (TOMA-19)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Base	1	4,00	6,00	0,40	9,60
						9,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm² (20 N/mm²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm²., 1 bloque de bornas de 2,5 mm². y 1 bloque de bornas de 25 mm². para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm². para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm². para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECGBT1A	ud Modulo acometida+aparamenta					
	Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II					
	Descargador de sobretensiones tipo I+II	1				1,00
						1,00
P5ELECGBT19	ud CGBT Toma-19 incl. cabina y aparamenta					
	Suministro y montaje de módulo de alimentación, control y protección de Toma-19 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	3				3,00
	Pulsador general de corte	1				1,00
						4,00
03.09.03.04	CANALIZACIONES (TOMA-19)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a)					
	Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. paneles fotov	1	15,00			15,00
	Conex. CCTV	1	5,00			5,00
	Conex Tuberías	1	38,00			38,00
						58,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interior caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	4	5,00			20,00
		1	5,00			5,00
						25,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	6,00			6,00
		1	18,00			18,00
		1	3,00			3,00
						27,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD					
	Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Conex. Fotov	2				2,00
	Conex CCTV	2				2,00
	Conex. valv.	6				6,00
						10,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD					
	Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	CCTV	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95					
	Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería+caudalim.	3				3,00
						7,00
03.09.03.05	LÍNEAS DE BT (TOMA-19)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado					
	Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	1	3,00			3,00
	L-3.1 Alumb. Int.	1	30,00			30,00
	L-3.2 Alumb. Emerg.	1	30,00			30,00
	L-3.3 Alumb. Ext.	1	1,00			1,00
	L-4.1 Vent-1	1	5,00			5,00
	L-4.2 R. Caldeo	1	5,00			5,00
	L-4.3 Al. Cuadro	1	48,00			48,00
	L-6 Agrupacion	1	3,00			3,00
	L-6.1 CCTV	1	25,00			25,00
	L-6.2 Reserva	1	5,00			5,00
	L-6.3 Trafo 230/24V	1	5,00			5,00
	L-6.3.1 Reserva	1	10,00			10,00
	L-7 Agupacion	1	3,00			3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-7.1 PLC y Control	1	1,00			1,00
	L-7.2 Señales Varia	1	50,00			50,00
	L-7.3 Cuadro Comuni	1	1,00			1,00
	L-7.4 Trafo 230/24V	1	5,00			5,00
	L-7.4.1 Varios	1	5,00			5,00
	L-7.5 Señales Contr	1	3,00			3,00
	L-7.5.1 Señal Val 1	1	50,00			50,00
	L-7.5.2 Señal Val 2	1	50,00			50,00
	L-7.5.3 Señal Val 3	1	50,00			50,00
	L-7.5.4 Señal Cauda	1	50,00			50,00
	L-7.5.5 Otra Señal	1	50,00			50,00
	L-7.5.6 Otra Señal	1	50,00			50,00
	L-7.5.7 Otra Señal	1	50,00			50,00
	L-7.5.8 Otra Señal	1	50,00			50,00
	L-7.5.9 (Reserva)	1	50,00			50,00
	L-7.5.10 (Reserva)	1	50,00			50,00
	L-7.5.11 (Reserva)	1	50,00			50,00
	L-7.5.12 (Reserva)	1	50,00			50,00
	L-7.5.13 (Reserva)	1	50,00			50,00
	L-7.5.14 (Reserva)	1	50,00			50,00
						938,00

P5ELEM2X2.5TT m Manguera eléctrica 2 x 2.5 + TT 2.5mm2

Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	1	5,00	5,00
			5,00

P5ELEM2X4TT m Manguera eléctrica 2 x 4 + TT4 mm2

Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	2	2,00	4,00
			4,00

P5ELEM2X2.5T2 m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado

Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

L-3.4 Reserva	1	25,00	25,00
Reserva Monofasica	1	5,00	5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-4 Agrupacion	1	2,00			2,00
	L.4.4 T.C.	1	5,00			5,00
	L-5.1 Tomas Monof	1	15,00			15,00
	Entrada SAI	1	5,00			5,00
	Salida SAI	1	3,00			3,00
						60,00
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	2	2,00			4,00
						4,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2					
	Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu					
	Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	1	50,00			50,00
	Actuador Valv. N°02	1	75,00			75,00
	Reserva Trifasica	1	5,00			5,00
	L-5.1 Tomas Trif	1	15,00			15,00
						145,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	ACOMETIDA PRINCIPAL	1	30,00			30,00
	ACOMETIDA GRUPO	1	5,00			5,00
						35,00
P5ELEM01	ud Conjunto pequeño material líneas BT					
	Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.03.06	TOMA TIERRA (TOMA-19)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
		1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba. Losa . TT independiente	2				2,00
	Pararrayos	3				3,00
	Fotov	1				1,00
						6,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2. Varios	8				8,00
						8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro. TT	2				2,00
		3				3,00
		1				1,00
						6,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica. Losa	1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas. Losa+conex	1	123,00			123,00
	Conexionados de elementos varios	5	3,00			15,00
						138,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada. Pararrayos y otros	1	5,00			5,00
						5,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características. Varios	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120					
	Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por:					
	* Cabeza ionizante no radiactiva tipo S/150-300					
	* Mástil troncocónico de chapa de acero de 10m de altura					
	* Línea de puesta a tierra en conductor de cobre desnudo de 95mm ²					
	* Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas					
	* Material auxiliar					
	Unidad completa, incluidas comprobaciones de toma tierra.					
		1				1,00
						1,00
03.09.03.07	MECANISMOS (TOMA-19)					
P5ELEC01	ud Interruptor monopolar					
	Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar					
	Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC03	ud Conmutador serie básica					
	Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor					
	Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
		1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66					
	Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66					
	Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
03.09.03.08	ALUMBRADO (TOMA-19)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65					
	Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	Caseta	4				4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm					
	Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.					
	Emergencia en interior de caseta	1				1,00
	Exterior de caseta	1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo					
	Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	Caseta	1				1,00
						1,00
03.09.04	TOMA-20+EPC					
03.09.04.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-20)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares					
	Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA					
	Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil					
	Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo					
	Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECLM1T20	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-20 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexión a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-20	1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
03.09.04.02	LÍNEA DE MEDIA TENSIÓN (TOMA-20)					
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada. -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafa BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de canon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1				1,00
	Inicio de LMT					1,00
						1,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas, elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	3	8,00	1,10		26,40
	LA-56					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Asume 10% sobre long. por catenaria					26,40
03.09.04.03 TRANSFORMACIÓN Y GENERACIÓN (TOMA-20)						
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA					
	Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1				1,00
						1,00
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota					
	Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					
		1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra					
	Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
		1				1,00
						1,00
03.09.04.04 CUADROS ELÉCTRICOS (TOMA-20)						
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m)					
	Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.					
		1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta					
	Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Base	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm² (20 N/mm²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R					
	Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.	1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta					
	Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1				1,00
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II					
	Descargador de sobretensiones tipo I+II	1				1,00
						1,00
P5ELEGBT20	ud CGBT Toma-20 incl. cabina y aparamenta					
	Suministro y montaje de módulo de alimentación, control y protección de Toma-20 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	2				2,00
	Pulsador general de corte	1				1,00
						3,00
03.09.04.05	CANALIZACIONES (TOMA-20)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	1	3,00			3,00
	Vasrios s/n	1	3,00			3,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. CCTV	1	13,00			13,00
	Conex Tuberías	1	50,00			50,00
						63,00
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	Conex trafo a caseta	1	6,00			6,00
						6,00
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Protección catódica	1	105,00			105,00
						105,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interior caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	2	5,00			10,00
		1	5,00			5,00
						15,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	18,00			18,00
		1	3,00			3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	3,00			3,00
						24,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada. Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada. varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada. varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada. Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada. Conex. LMT a caseta Conex CCTV Conex. valv.	2 3 5				2,00 3,00 5,00
						10,00
P5ARQPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada. Protección catódica	5				5,00
						5,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada. Varios CCTV	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm. s/nec	1				1,00
						1,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm. s/ nec	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca Interior caseta Valvulería	4 3				4,00 3,00
						7,00
03.09.04.06	LÍNEAS DE BT (TOMA-20)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	1	3,00			3,00
	L-3.1 Alumb. Int.	1	30,00			30,00
	L-3.2 Alumb. Emerg.	1	30,00			30,00
	L-3.3 Alumb. Ext.	1	1,00			1,00
	L-4.1 Vent-1	1	5,00			5,00
	L-4.2 R. Caldeo	1	5,00			5,00
	L-4.3 Al. Cuadro	1	48,00			48,00
	L-6 Agrupacion	1	3,00			3,00
	L-6.1 CCTV	1	25,00			25,00
	L-6.2 Reserva	1	5,00			5,00
	L-6.3 Trafo 230/24V	1	5,00			5,00
	L-6.3.1 Reserva	1	10,00			10,00
	L-7 Agupacion	1	3,00			3,00
	L-7.1 PLC y Control	1	1,00			1,00
	L-7.2 Señales Varia	1	50,00			50,00
	L-7.3 Cuadro Comuni	1	1,00			1,00
	L-7.4 Trafo 230/24V	1	5,00			5,00
	L-7.4.1 Varios	1	5,00			5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-7.5 Señales Contr	1	3,00			3,00
	L-7.5.1 Señal Val 1	1	50,00			50,00
	L-7.5.2 Señal Val 2	1	50,00			50,00
	L-7.5.3 Señal Cauda	1	50,00			50,00
	L-7.5.4 Otra Señal	1	50,00			50,00
	L-7.5.5 Otra Señal	1	50,00			50,00
	L-7.5.6 Otra Señal	1	50,00			50,00
	L-7.5.7 Otra Señal	1	50,00			50,00
	L-7.5.8 Otra Señal	1	50,00			50,00
	L-7.5.9 (Reserva)	1	50,00			50,00
	L-7.5.10 (Reserva)	1	50,00			50,00
	L-7.5.11 (Reserva)	1	50,00			50,00
	L-7.5.12 (Reserva)	1	50,00			50,00
	L-7.5.13 (Reserva)	1	50,00			50,00
	L-7.5.14 (Reserva)	1	50,00			50,00
						938,00
P5ELEM2X2.5TT m Manguera eléctrica 2 x 2.5 + TT 2.5mm2						
Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	Varios conex	1	5,00			5,00
						5,00
P5ELEM2X4TT m Manguera eléctrica 2 x 4 + TT4 mm2						
Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	Varios conex	2	2,00			4,00
						4,00
P5ELEM2X2.5T2 m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado						
Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	L-3.4 Reserva	1	25,00			25,00
	Protec Catodica	1	5,00			5,00
	Reserva Monofasica	1	5,00			5,00
	L-4 Agrupacion	1	2,00			2,00
	L.4.4 T.C.	1	5,00			5,00
	L-5.1 Tomas Monof	1	15,00			15,00
	Entrada SAI	1	5,00			5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Salida SAI	1	3,00			3,00
						65,00
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	2	2,00			4,00
						4,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2					
	Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu					
	Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	1	50,00			50,00
	Actuador Valv. N°02	1	50,00			50,00
	Reserva Trifasica	1	5,00			5,00
	L-5.1 Tomas Trif	1	15,00			15,00
						120,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	ACOMETIDA PRINCIPAL	1	30,00			30,00
	ACOMETIDA GRUPO	1	5,00			5,00
						35,00
P5ELEM01	ud Conjunto pequeño material líneas BT					
	Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.04.07	TOMA TIERRA (TOMA-20)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
		1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba. Losa . TT independiente	2				2,00
	Pararrayos	3				3,00
						5,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2. Varios	8				8,00
						8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro. TT	5				5,00
						5,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica. Losa	1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas. Losa	1	140,00			140,00
		2	2,00			4,00
						144,00
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada Pararrayos y otros	1	5,00			5,00
						5,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada. Pararrayos y otros	1	5,00			5,00
						5,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características. Varios	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120					
	Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por:					
	* Cabeza ionizante no radiactiva tipo S/150-300					
	* Mástil troncocónico de chapa de acero de 10m de altura					
	* Línea de puesta a tierra en conductor de cobre desnudo de 95mm ²					
	* Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas					
	* Material auxiliar					
	Unidad completa, incluidas comprobaciones de toma tierra.					
		1				1,00
						1,00
03.09.04.08	MECANISMOS (TOMA-20)					
P5ELEC01	ud Interruptor monopolar					
	Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar					
	Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC03	ud Conmutador serie básica					
	Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor					
	Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
		1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66					
	Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66					
	Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
03.09.04.09	ALUMBRADO (TOMA-20)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65					
	Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	Caseta	4				4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm					
	Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.					
	Emergencia en interior de caseta	1				1,00
	Exterior de caseta	1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo					
	Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	Caseta	1				1,00
						1,00
03.09.05	TOMA-21					
03.09.05.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-21)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares					
	Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA					
	Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil					
	Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo					
	Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00
P5ELEC1M1T21	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-21					
	Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma -21.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P5ELECTM	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
03.09.05.02	LÍNEA DE MEDIA TENSIÓN (TOMA-21)					
P5ELECTMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	Apoyos	7				7,00
	Inicio y fin	-2				-2,00
	Apoyo flojos	2				2,00
						7,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.					
	LA-56	3	327,15	1,10		1.079,60
	Asume 10% sobre long. por catenaria					
						1.079,60
03.09.05.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-21)					
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1				1,00
						1,00
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra					
	Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1				1,00
						1,00
03.09.05.04	CUADROS ELÉCTRICOS (TOMA-21)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m)					
	Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta					
	Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías					
	Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2					
	Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	3,50	5,50	0,20	3,85
						3,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm ² (20 N/mm ²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm ² ., 1 bloque de bornas de 2,5 mm ² . y 1 bloque de bornas de 25 mm ² . para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm ² . para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm ² . para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECGBT21	ud CGBT Toma-21 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-21 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexas. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusión. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
		1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	2				2,00
	Pulsador general de corte	1				1,00
						3,00
03.09.05.05	CANALIZACIONES (TOMA-21)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. CCTV	1	13,00			13,00
	Conex Tuberías	1	50,00			50,00
						63,00
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	Conex trafo a caseta	1	6,00			6,00
						6,00
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Protección catódica	1	105,00			105,00
						105,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interior caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	2	5,00			10,00
		1	5,00			5,00
						15,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	18,00			18,00
		1	3,00			3,00
		1	3,00			3,00
						24,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Conex. LMT a caseta	2				2,00
	Conex CCTV	3				3,00
	Conex. valv.	5				5,00
						10,00
P5ARQPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, tronco-piramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.					
	Protección catódica	5				5,00
						5,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	Varios CCTV	1				1,00
						1,00
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.					
	s/nec	1				1,00
						1,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	s/ nec	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería	3				3,00
						7,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.05.06	LÍNEAS DE BT (TOMA-21)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado					
	Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	1	3,00			3,00
	L-3.1 Alumb. Int.	1	30,00			30,00
	L-3.2 Alumb. Emerg.	1	30,00			30,00
	L-3.3 Alumb. Ext.	1	1,00			1,00
	L-4.1 Vent-1	1	5,00			5,00
	L-4.2 R. Caldeo	1	5,00			5,00
	L-4.3 Al. Cuadro	1	48,00			48,00
	L-6 Agrupacion	1	3,00			3,00
	L-6.1 CCTV	1	25,00			25,00
	L-6.2 Reserva	1	5,00			5,00
	L-6.3 Trafo 230/24V	1	5,00			5,00
	L-6.3.1 Reserva	1	10,00			10,00
	L-7 Agupacion	1	3,00			3,00
	L-7.1 PLC y Control	1	1,00			1,00
	L-7.2 Señales Varia	1	50,00			50,00
	L-7.3 Cuadro Comuni	1	1,00			1,00
	L-7.4 Trafo 230/24V	1	5,00			5,00
	L-7.4.1 Varios	1	5,00			5,00
	L-7.5 Señales Contr	1	3,00			3,00
	L-7.5.1 Señal Val 1	1	50,00			50,00
	L-7.5.2 Señal Val 2	1	50,00			50,00
	L-7.5.3 Señal Cauda	1	50,00			50,00
	L-7.5.4 Otra Señal	1	50,00			50,00
	L-7.5.5 Otra Señal	1	50,00			50,00
	L-7.5.6 Otra Señal	1	50,00			50,00
	L-7.5.7 Otra Señal	1	50,00			50,00
	L-7.5.8 Otra Señal	1	50,00			50,00
	L-7.5.9 (Reserva)	1	50,00			50,00
	L-7.5.10 (Reserva)	1	50,00			50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-7.5.11 (Reserva)	1	50,00			50,00
	L-7.5.12 (Reserva)	1	50,00			50,00
	L-7.5.13 (Reserva)	1	50,00			50,00
	L-7.5.14 (Reserva)	1	50,00			50,00
						938,00
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM2X4TT	m Manguera eléctrica 2 x 4 + TT4 mm2 Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	2	2,00			4,00
						4,00
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-3.4 Reserva	1	25,00			25,00
	Reserva Monofasica	1	5,00			5,00
	L-4 Agrupacion	1	2,00			2,00
	L.4.4 T.C.	1	5,00			5,00
	L-5.1 Tomas Monof	1	15,00			15,00
	Entrada SAI	1	5,00			5,00
	Salida SAI	1	3,00			3,00
						60,00
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	2	2,00			4,00
						4,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu					
	Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	1	50,00			50,00
	Actuador Valv. N°02	1	50,00			50,00
	Reserva Trifasica	1	5,00			5,00
	L-5.1 Tomas Trif	1	15,00			15,00
						120,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	ACOMETIDA PRINCIPAL	1	30,00			30,00
	ACOMETIDA GRUPO	1	5,00			5,00
						35,00
P5ELEM01	ud Conjunto pequeño material líneas BT					
	Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00
03.09.05.07	TOMA TIERRA (TOMA-21)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas					
	Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
		1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita					
	Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
	Losa . TT independieente	2				2,00
	Pararrayos	3				3,00
						5,00
P5ELETT7	ud Soldadura aluminotérmica					
	Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
	Varios	8				8,00
						8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable					
	Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
	TT	5				5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.					
	Losa	1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.					
	Losa	1	88,00			88,00
		2	2,00			4,00
						92,00
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada					
	Pararrayos y otros	1	5,00			5,00
						5,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					
	Pararrayos y otros	1	5,00			5,00
						5,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
	Varios	2				2,00
						2,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					
		1				1,00
						1,00
03.09.05.08	MECANISMOS (TOMA-21)					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco. Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente. Caseta	1				1,00
						1,00
03.09.05.09 ALUMBRADO (TOMA-21)						
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa. Caseta	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa. Emergencia en interior de caseta Exterior de caseta	1 1				1,00 1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado. Caseta	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.06	TOMA-16+EPC					
03.09.06.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-16)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00
P5ELEC1M1T16	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-16 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-16.					
		1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.					
		1				1,00
						1,00
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
03.09.06.02	LÍNEA DE MEDIA TENSIÓN (TOMA-16)					
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1				1,00
						1,00
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	32				32,00
	Apoyos	32				32,00
	Inicio y fin	-2				-2,00
	Apoyos blandos	2				2,00
						32,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	3	2.189,12	1,10		7.224,10
	LA-56	3	2.189,12	1,10		7.224,10
	Asume 10% sobre long. por catenaria					7.224,10

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.06.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-16)					
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA					
	Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de canon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1				1,00
						1,00
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota					
	Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					
		1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra					
	Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
		1				1,00
						1,00
03.09.06.04	CUADROS ELÉCTRICOS (TOMA-16)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m)					
	Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.					
		1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta					
	Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					
		1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías					
	Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,10	1,93

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Base	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R					
	Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.	1				1,00
						1,00
P5ELEGBT1A	ud Módulo acometida+aparamenta					
	Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1				1,00
	Cuadro corte	1				1,00
						1,00
P5ELEGDS1	ud Descargador de sobretensiones tipo I+II					
	Descargador de sobretensiones tipo I+II	1				1,00
						1,00
P5ELEGBT16	ud CGBT Toma-16 incl. cabina y aparamenta					
	Suministro y montaje de módulo de alimentación, control y protección de Toma-14/15 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	2				2,00
	Pulsador general de corte	1				1,00
						3,00
03.09.06.05	CANALIZACIONES (TOMA-16)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	1	3,00			3,00
	Vasrios s/n	1	3,00			3,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. CCTV	1	3,00			3,00
	Conex Tuberías	1	30,00			30,00
						33,00
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	Conex trafo a caseta	1	18,00			18,00
						18,00
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Protección catódica	1	45,00			45,00
						45,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interior caseta	1	30,00			30,00
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	2	5,00			10,00
		1	5,00			5,00
						15,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	18,00			18,00
		1	3,00			3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	3,00			3,00
						24,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada. Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada. varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada. varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada. Interior caseta	4	1,00			4,00
						4,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada. Conex. LMT a caseta Conex CCTV Conex. valv.	4 1 3				4,00 1,00 3,00
						8,00
P5ARQPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada. Protección catódica	3				3,00
						3,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada. Varios CCTV	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75					
	Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.					
	s/nec	1				1,00
						1,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95					
	Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	s/ nec	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95					
	Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería	3				3,00
						7,00
03.09.06.06	LÍNEAS DE BT (TOMA-16)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado					
	Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	1	3,00			3,00
	L-3.1 Alumb. Int.	1	30,00			30,00
	L-3.2 Alumb. Emerg.	1	30,00			30,00
	L-3.3 Alumb. Ext.	1	1,00			1,00
	L-4.1 Vent-1	1	5,00			5,00
	L-4.2 R. Caldeo	1	5,00			5,00
	L-4.3 Al. Cuadro	1	48,00			48,00
	L-6 Agrupacion	1	3,00			3,00
	L-6.1 CCTV	1	25,00			25,00
	L-6.2 Reserva	1	5,00			5,00
	L-6.3 Trafo 230/24V	1	5,00			5,00
	L-6.3.1 Reserva	1	10,00			10,00
	L-7 Agupacion	1	3,00			3,00
	L-7.1 PLC y Control	1	1,00			1,00
	L-7.2 Señales Varia	1	50,00			50,00
	L-7.3 Cuadro Comuni	1	1,00			1,00
	L-7.4 Trafo 230/24V	1	5,00			5,00
	L-7.4.1 Varios	1	5,00			5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-7.5 Señales Contr	1	3,00			3,00
	L-7.5.1 Señal Val 1	1	50,00			50,00
	L-7.5.2 Señal Val 2	1	50,00			50,00
	L-7.5.3 Señal Cauda	1	50,00			50,00
	L-7.5.4 Otra Señal	1	50,00			50,00
	L-7.5.5 Otra Señal	1	50,00			50,00
	L-7.5.6 Otra Señal	1	50,00			50,00
	L-7.5.7 Otra Señal	1	50,00			50,00
	L-7.5.8 Otra Señal	1	50,00			50,00
	L-7.5.9 (Reserva)	1	50,00			50,00
	L-7.5.10 (Reserva)	1	50,00			50,00
	L-7.5.11 (Reserva)	1	50,00			50,00
	L-7.5.12 (Reserva)	1	50,00			50,00
	L-7.5.13 (Reserva)	1	50,00			50,00
	L-7.5.14 (Reserva)	1	50,00			50,00
						938,00
P5ELEM2X2.5TT m Manguera eléctrica 2 x 2.5 + TT 2.5mm2						
Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	Varios conex	1	5,00			5,00
						5,00
P5ELEM2X4TT m Manguera eléctrica 2 x 4 + TT4 mm2						
Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	Varios conex	2	2,00			4,00
						4,00
P5ELEM2X2.5T2 m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado						
Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.						
	L-3.4 Reserva	1	25,00			25,00
	Protec Catodica	1	5,00			5,00
	Reserva Monofasica	1	5,00			5,00
	L-4 Agrupacion	1	2,00			2,00
	L.4.4 T.C.	1	5,00			5,00
	L-5.1 Tomas Monof	1	15,00			15,00
	Entrada SAI	1	5,00			5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Salida SAI	1	3,00			3,00
						65,00
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	2	2,00			4,00
						4,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2					
	Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu					
	Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. N°01	1	50,00			50,00
	Actuador Valv. N°02	1	50,00			50,00
	Reserva Trifasica	1	5,00			5,00
	L-5.1 Tomas Trif	1	15,00			15,00
						120,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	ACOMETIDA PRINCIPAL	1	30,00			30,00
	ACOMETIDA GRUPO	1	5,00			5,00
						35,00
P5ELEM01	ud Conjunto pequeño material líneas BT					
	Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.06.07	TOMA TIERRA (TOMA-16)					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
		1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba. Losa . TT independiente	2				2,00
	Pararrayos	3				3,00
						5,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2. Varios	8				8,00
						8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro. TT	5				5,00
						5,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica. Losa	1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas. Losa	1	110,00			110,00
		2	2,00			4,00
						114,00
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada Pararrayos y otros	1	5,00			5,00
						5,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada. Pararrayos y otros	1	5,00			5,00
						5,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características. Varios	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120					
	Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por:					
	* Cabeza ionizante no radiactiva tipo S/150-300					
	* Mástil troncocónico de chapa de acero de 10m de altura					
	* Línea de puesta a tierra en conductor de cobre desnudo de 95mm ²					
	* Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas					
	* Material auxiliar					
	Unidad completa, incluidas comprobaciones de toma tierra.					
		1				1,00
						1,00
03.09.06.08	MECANISMOS (TOMA-16)					
P5ELEC01	ud Interruptor monopolar					
	Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar					
	Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC03	ud Conmutador serie básica					
	Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor					
	Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
		1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66					
	Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66					
	Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
03.09.06.09	ALUMBRADO (TOMA-16)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65					
	Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	Caseta	4				4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm					
	Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.					
	Emergencia en interior de caseta	1				1,00
	Exterior de caseta	1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo					
	Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	Caseta	1				1,00
						1,00
03.09.07	TOMA-14/15					
03.09.07.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-14/15)					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares					
	Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	Varios	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA					
	Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	5	100,00			500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil					
	Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	5				5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo					
	Operación de conexionado y desconexiónado de LMT.					
		1				1,00
						1,00
P5ELEC1M1T21	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-21					
	Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma -21.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P5ELECTM	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
03.09.07.02 LÍNEA DE MEDIA TENSIÓN (TOMA-14/15)						
P5ELECTMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	Apoyos	8				8,00
	Inicio y fin	-2				-2,00
	Apoyo flojos	2				2,00
						8,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.					
	LA-56	3	328,82	1,10		1.085,11
	Asume 10% sobre long. por catenaria					
						1.085,11
03.09.07.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-14/15)					
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1				1,00
						1,00
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra					
	Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
		1				1,00
						1,00
03.09.07.04	CUADROS ELÉCTRICOS (TOMA-14/15)					
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m)					
	Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.					
		1				1,00
						1,00
P5ELECAS01B	ud Equipamiento auxiliar caseta					
	Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					
		1				1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías					
	Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Base	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2					
	Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm ² (20 N/mm ²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm ² ., 1 bloque de bornas de 2,5 mm ² . y 1 bloque de bornas de 25 mm ² . para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm ² . para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm ² . para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	Cuadro corte	1				1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECGBT14	ud CGBT Toma-14/15 incl. cabina y aparamenta					
	Suministro y montaje de módulo de alimentación, control y protección de Toma-14/15 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
		1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
	Válvulas motorizadas	2				2,00
	Pulsador general de corte	1				1,00
						3,00
03.09.07.05	CANALIZACIONES (TOMA-14/15)					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, Acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Vasrios s/n	1	3,00			3,00
						3,00
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a)					
	Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	Conex. CCTV	1	3,00			3,00
	Conex Tuberías	1	52,00			52,00
						55,00
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b)					
	Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada					
	Conex trafo a caseta	1	6,00			6,00
						6,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm					
	Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Alumbrado interor caseta	1	30,00			30,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Alumbrado ext. caseta	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Varios conex.	1	3,00			3,00
						3,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Conex. valv.+instrum	2	5,00			10,00
		1	5,00			5,00
						15,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válvulas	1	18,00			18,00
		1	3,00			3,00
		1	3,00			3,00
						24,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Bandeja interior de caseta	1	35,00			35,00
						35,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	varios conex.	5	0,50			2,50
						2,50
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Interior caseta	4	1,00			4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	Conex. LMT a caseta	2				2,00
	Conex CCTV	3				3,00
	Conex. valv.	6				6,00
						11,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	Varios CCTV	1				1,00
						1,00
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.					
	s/nec	1				1,00
						1,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	s/ nec	1				1,00
						1,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca					
	Interior caseta	4				4,00
	Valvulería	3				3,00
						7,00
03.09.07.06	LÍNEAS DE BT (TOMA-14/15)					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Agrupacion 1	1	3,00			3,00
	L-3.1 Alumb. Int.	1	30,00			30,00
	L-3.2 Alumb. Emerg.	1	30,00			30,00
	L-3.3 Alumb. Ext.	1	1,00			1,00
	L-4.1 Vent-1	1	5,00			5,00
	L-4.2 R. Caldeo	1	5,00			5,00
	L-4.3 Al. Cuadro	1	48,00			48,00
	L-6 Agrupacion	1	3,00			3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	L-6.1 CCTV	1	25,00			25,00
	L-6.2 Reserva	1	5,00			5,00
	L-6.3 Trafo 230/24V	1	5,00			5,00
	L-6.3.1 Reserva	1	10,00			10,00
	L-7 Agupacion	1	3,00			3,00
	L-7.1 PLC y Control	1	1,00			1,00
	L-7.2 Señales Varia	1	50,00			50,00
	L-7.3 Cuadro Comuni	1	1,00			1,00
	L-7.4 Trafo 230/24V	1	5,00			5,00
	L-7.4.1 Varios	1	5,00			5,00
	L-7.5 Señales Contr	1	3,00			3,00
	L-7.5.1 Señal Val 1	1	50,00			50,00
	L-7.5.2 Señal Val 2	1	50,00			50,00
	L-7.5.3 Señ. Cauda1	1	50,00			50,00
	L-7.5.4 Señ. Cauda2	1	50,00			50,00
	L-7.5.5 Otra Señal	1	50,00			50,00
	L-7.5.6 Otra Señal	1	50,00			50,00
	L-7.5.7 Otra Señal	1	50,00			50,00
	L-7.5.8 Otra Señal	1	50,00			50,00
	L-7.5.9 (Reserva)	1	50,00			50,00
	L-7.5.10 (Reserva)	1	50,00			50,00
	L-7.5.11 (Reserva)	1	50,00			50,00
	L-7.5.12 (Reserva)	1	50,00			50,00
	L-7.5.13 (Reserva)	1	50,00			50,00
	L-7.5.14 (Reserva)	1	50,00			50,00
						938,00

P5ELEM2X2.5TT m Manguera eléctrica 2 x 2.5 + TT 2.5mm2

Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	1	5,00	5,00
--------------	---	------	------

5,00

P5ELEM2X4TT m Manguera eléctrica 2 x 4 + TT4 mm2

Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.

Varios conex	2	2,00	4,00
--------------	---	------	------

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						4,00
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-3.4 Reserva	1	25,00			25,00
	Reserva Monofasica	1	5,00			5,00
	L-4 Agrupacion	1	2,00			2,00
	L.4.4 T.C.	1	5,00			5,00
	L-5.1 Tomas Monof	1	15,00			15,00
	Entrada SAI	1	5,00			5,00
	Salida SAI	1	3,00			3,00
						60,00
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	2	2,00			4,00
						4,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	L-5	3				3,00
						3,00
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Actuador Valv. Nº01	1	50,00			50,00
	Actuador Valv. Nº02	1	75,00			75,00
	Reserva Trifasica	1	5,00			5,00
	L-5.1 Tomas Trif	1	15,00			15,00
						145,00
P5ELEM4X6T2	m Manguera eléctrica 4 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	ACOMETIDA PRINCIPAL	1	30,00			30,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	ACOMETIDA GRUPO	1	5,00			5,00
						35,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1				1,00
						1,00
03.09.07.07 TOMA TIERRA (TOMA-14/15)						
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1				1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba. Losa . TT independieente	2				2,00
	Pararrayos	3				3,00
						5,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2. Varios	8				8,00
						8,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro. TT	5				5,00
						5,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica. Losa	1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas. Losa	1	130,00			130,00
		2	2,00			4,00
						134,00
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada Pararrayos y otros	1	5,00			5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					
	Pararrayos y otros	1	5,00			5,00
						5,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
	Varios	2				2,00
						2,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					
		1				1,00
						1,00
03.09.07.08	MECANISMOS (TOMA-14/15)					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	Caseta alumbrado	1				1,00
						1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
		1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	Caseta	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.09.07.09	ALUMBRADO (TOMA-14/15)					
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65					
	Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	Caseta	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm					
	Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.					
	Emergencia en interior de caseta	1				1,00
	Exterior de caseta	1				1,00
						2,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo					
	Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	Caseta	1				1,00
						1,00
03.10	CONTROL Y AUTOMATISMO (DC-T21 y DC-T14/15)					
03.10.01	INGENIERÍA Y FORMACIÓN (DC-T21 y DC-T14/15)					
P7ING003	ud Ingeniería PLC's y comunicaciones (DC-T21 y DC-T14/15)					
	Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.					
		1				1,00
						1,00
P73COMSCADA3	ud Ingeniería adecuación SCADA, control y supervisión (DC-T21/T14)					
	Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P73COMPUESTA3	ud Pruebas y puesta en marcha de instalaciones Balsa Tudela					
	Control de Calidad de señales y Pruebas Funcionales de la instalación de la Balsa Tudela incluyendo:					
	- Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico.					
	- Verificación de señales entre campo y PLC.					
	- Redacción y cumplimentación de protocolo de pruebas.					
	- Verificación de señales en CPC.					
	- Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra.					
	- Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra.					
	- En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse.					
	Unidad completa.					
		1				1,00
						1,00
P73COMFORMA	ud Formación y documentación					
	Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la ·1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.					
		1				1,00
						1,00
03.10.02	SISTEMA DE CONTROL Y COMUNICACIONES (DC-T21 y DC-T14/15)					
P7COMARM01	ud Armario de control 2000 x 800 x 600mm					
	Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de autómatas y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de caldeo y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc.,..., incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexiados y probados.					
	T-17	1				1,00
	T-18	1				1,00
	T-19	1				1,00
	T-20	1				1,00
	T-21	1				1,00
	T-16	1				1,00
	T-14/15	1				1,00
						7,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMNODO1	ud Nodo comunicaciones GSM/GPRS G3-5. incl.cuadro protec.					
	Ud Suministro e instalación equipo de comunicaciones bidireccional compuesto de alimentación autónomo de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y modem de comunicaciones , armario IP65, armario mural de 19", 12 U y 600 mm de profundidad. , RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C), 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°C A 80°C contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica), electrificación cuadro (magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.					
	T-17	1				1,00
	T-18	1				1,00
	T-19	1				1,00
	T-20	1				1,00
	T-21	1				1,00
	T-16	1				1,00
	T-14/15	1				1,00
						7,00
P7COMNODO2	ud Nodo comunicaciones radiofrecuencia. incl.cuadro protec.					
	Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio modem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.					
	T-17	1				1,00
	T-18	1				1,00
	T-19	1				1,00
	T-20	1				1,00
	T-21	1				1,00
	T-16	1				1,00
	T-14/15	1				1,00
						7,00
P7COMP005	ud Bastidor Autómata					
	Suministro de bastidor para autómata de 10 slots, tipo 1756-A10 de Allen Bradley o similar.					
	T-17	1	1,00			1,00
	T-18	1	1,00			1,00
	T-19	1	1,00			1,00
	T-20	1				1,00
	T-21	1				1,00
	T-16	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T-14/15	1				1,00
						7,00
P7COMPLC02	ud PLC proglamable integrable (ED:128 SD:32 EA:16 SA:8)					
	PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje					
	T17	1				1,00
	T18	1				1,00
	T19	1				1,00
						3,00
P7COMPLCT12	ud PLC proglamable integrable (ED:96 SD:32; EA:8 SA:8)					
	PLC centralizador de todos los sistemas (ED:96 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.					
	T-16	1				1,00
	T-20	1				1,00
	T-21	1				1,00
	T14/15	1				1,00
						4,00
P7COMP011	ud Módulos conexión cableado E/D (IB32)					
	Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según referencias (V8 INPUT PLC V8/FLK14/IN - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	T17	4				4,00
	T18	4				4,00
	T19	4				4,00
	T20	3				3,00
	T21	3				3,00
	T16	3				3,00
	T14/15	3				3,00
						24,00
P7COMP012	ud Módulos conexión cableado S/D (OB32)					
	Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, según referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	T17	1				1,00
	T18	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T19	1				1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP013	ud Módulos conexión cableado E/A (IF16)					
	Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC - FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	T17	1				1,00
	T18	1				1,00
	T19	1				1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP014	ud Módulos conexión cableado S/A (OF8)					
	Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC - FLK14/EZ-DR/300/CONFEC (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.					
	T17	1				1,00
	T18	1				1,00
	T19	1				1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMPLC1C	ud Pantallas gráficas HMI 15" táctil+cableado conex.					
	Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado numérico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instalación y conexionado de unidad; Configuración Remota, Pruebas y Puesta en Servicio.					
	T17	1				1,00
	T18	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T19	1				1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMPLC1B	ud Cuadro, protecciones electricas y pantalla PLC					
	Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión.					
	T17	1				1,00
	T18	1				1,00
	T19	1				1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP001	ud Protección contra sobretensiones equipos 230 Vca					
	Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.					
	T17	1				1,00
	T18	1				1,00
	T19	1				1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP002	ud Protección contra sobretensiones analógicas					
	Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); dobles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP003	ud Protección contra sobretensiones 24Vcc					
	Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&-TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP006	ud Fuente de alimentación automática 24 Vcc 10 A					
	Suministro e instalación de fuente de alimentación para automático programable para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P71COMSAH11	ud Sistema alimentación ininterrumpido-com 24 VDC					
	Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P71COMSAH12	ud Sistema alimentación ininterrumpido 2500w					
	Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y bypass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación:					
	1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min					
	1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para bypass manual del SAI					
	1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos					
	1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI					
	1.00 Protección Magnetotérmica II 10A 6kA. Protección foma de enchufe e instrumentación					
	4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos					
	Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación.					
	Totalmente instalado, conexionado y funcionando.					
	Unidad totalmente instalada					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP004	ud CPU autómatas L72 memoria 4 Mb con memoria SD					
	Suministro e instalación de CPU para autómatas programable con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 61131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP015	ud Tarjeta comunicaciones Ethernet/IP					
	Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T14/15	1				1,00
						7,00
P7COMP016	ud Tarjeta Ethernet/IP 2-PORT CLX HI-CAP ENET/P BRIDG o similar Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP017	ud Tarjeta comunicaciones Modbus Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
P7COMP018	ud Pasarela comunicaciones POWELOGIC EGX 100 o similar Suministro y montaje de pasarela de comunicaciones POWERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexionada.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMP022	ud Puente de diodos Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1				1,00
	T21	1				1,00
	T16	1				1,00
	T14/15	1				1,00
						7,00
03.10.03	INSTRUMENTACIÓN (DC-T21 y DC-T14/15)					
P6VALV1	ud Valv bola y conexiones Válvulas de tipo bola de 1", piezas T y conexiones, totalmente instalado y probado.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1	1,00			1,00
	T21	1	1,00			1,00
	T16	1	1,00			1,00
	T14/15	1	1,00			1,00
						7,00
P6SENS01	ud Sensor humedad e inundación caseta Suministro, instalación y puesta en servicio de sensor de humedad e inundación, alimentación eléctrica a 24Vcc, incluso 15 m de tubo PVC y cable de conexión, totalmente instalado y probado.					
	T17	1	1,00			1,00
	T18	1	1,00			1,00
	T19	1	1,00			1,00
	T20	1	1,00			1,00
	T21	1	1,00			1,00
	T16	1	1,00			1,00
	T14/15	1	1,00			1,00
						7,00
P6MAN01	ud Manómetro en baño de glicerina Suministro, instalación y puesta en servicio de manómetro en baño de glicerina, escala 0-6 y 0-10 kg/cm2, sistema de medida Bourdon, diámetro 100 mm 1/2" montado y probado .					
	T17	4	1,00			4,00
	T18	3	1,00			3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T19	2	1,00			2,00
	T20	2	1,00			2,00
	T21	2	1,00			2,00
	T16	2	1,00			2,00
	T14/15	2	1,00			2,00
						17,00
P6PRES01	ud Transductor presión 0,1 % Analógico Suministro, instalación y puesta en servicio de Transductor de presión con salida analógica, alimentación eléctrica a 24Vcc, con técnica de 2 ó 4 hilos, con precisión mejor del 0,1%, IP 67, indicación digital de medida en frontal del equipo, señal de salida 4-20 mA, totalmente instalado y probado.					
	T17	4	2,00			8,00
	T18	3	2,00			6,00
	T19	2	2,00			4,00
	T20	2	2,00			4,00
	T21	2	2,00			4,00
	T16	2	2,00			4,00
	T14/15	2	2,00			4,00
						34,00
P6Q700.16	ud Caudalímetro ultrasónico PN 16 Ø700 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 700 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.					
	t14/15	1				1,00
						1,00
P6Q800.16	ud Caudalímetro ultrasónico PN 16 Ø800 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 800 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.					
	T17	1				1,00
						1,00
P6Q900.16	ud Caudalímetro ultrasónico PN 16 Ø900 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 900 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.					
	T20	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6Q1100.16	ud Caudalímetro ultrasónico PN 16 Ø1100 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.100 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, porta-sondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.					
	T14/15	1				1,00
	T16	1				1,00
	T21	1				1,00
						3,00
P6Q1300.16	ud Caudalímetro ultrasónico PN 16 Ø1300 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, porta-sondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.					
	T18	1				1,00
	T19	1				1,00
						2,00
03.10.04	CANALIZACIÓN Y CABLEADOS (DC-T21 y DC-T14/15)					
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antioedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.					
	Connex. com's	7	2,00			14,00
						14,00
P7COMCABL2	m Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (Rj45), tendido y conectorizado. Unidad totalmente instalada.					
	Varios s/n	7	5,00			35,00
						35,00
P5COMCBL001A	m Cable multihilo coms. VHOV-K y VOV-K apantall.8x0,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.					
	Conex. valvulería					
	Toma-17					
	Valv-1	1	45,00			45,00
	Valv-2	1	50,00			50,00
	Valv-3	1	60,00			60,00
	Valv-4	1	75,00			75,00
	Caudalímetro	1	75,00			75,00
	Toma-18					
	Valv-1	1	45,00			45,00
	Valv-2	1	50,00			50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Valv-3	1	75,00			75,00
	Caudalímetro	1	75,00			75,00
	Toma-19,20,21,16,14/15					
	Valv-1	5	45,00			225,00
	Valv-2	5	50,00			250,00
	Caudalímetro	5	75,00			375,00
						1.400,00

P5COMCBL001B m Cable multihilo com. VHOV-K y VOV-K apantall. 8x1,5mm2

Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.

Varios instr.	7	20,00	140,00
			140,00

P5COMCBL001C m Cable multihilo comunicaciones señales digitales interior 19p

Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.

Fotov	3	30,00	90,00
Transformador	4	30,00	120,00
EPC	2	5,00	10,00
CGBT	7	3,00	21,00
SAI	7	3,00	21,00
Cuadro de control	7	5,00	35,00
Disparo de protecciones comunicaciones	7	5,00	35,00
Intrusionismo	7	5,00	35,00
Instrumentación T17			
Válvula-1	1	40,00	40,00
Válvula-2	1	55,00	55,00
Válvula-3	1	65,00	65,00
Válvula-4	1	75,00	75,00
Instrumentación T18			
Válvula-1	1	40,00	40,00
Válvula-2	1	55,00	55,00
Válvula-3	1	65,00	65,00
Instrumentación T19,20,21,16,14/15			
Válvula-1	5	40,00	200,00
Válvula-2	5	60,00	300,00
			1.262,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5COMCBL001D	m Cable multihilo comunicaciones señales analógica interior 19p Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.					
	SAI	7	5,00			35,00
	Intrusionismo	7	5,00			35,00
	Instrumentación T17					
	Válvula-1	1	40,00			40,00
	Válvula-2	1	55,00			55,00
	Válvula-3	1	65,00			65,00
	Válvula-4	1	75,00			75,00
	Instrumentación T18					
	Válvula-1	1	40,00			40,00
	Válvula-2	1	55,00			55,00
	Válvula-3	1	65,00			65,00
	Instrumentación T19,20,21,16,14/15					
	Válvula-1	5	40,00			200,00
	Válvula-2	5	60,00			300,00
	Presostatos en bypass					
	T17	4		55,00		220,00
	T18	3		55,00		165,00
	T19	2		55,00		110,00
	T20	2		55,00		110,00
	T21	2		55,00		110,00
	T16	2		55,00		110,00
	T14/15	2		55,00		110,00
						1.900,00
P5COMCBL004	m Cable comunicaciones RS232 Cable comunicaciones RS232. Unidad totalmente instalada.					
	conexionados	7	20,00			140,00
						140,00
P5COMCBL005	m Cable comunicaciones RS485 multipar Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.					
	conexionados	7	20,00			140,00
						140,00
P5COMCBL007	m Cable comunicaciones RJ45 Cable comunicaciones RS45 .Unidad totalmente instalada.					
	conexionados	7	20,00			140,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						140,00
P5COMCBL006	m Cable profibus					
	Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.					
	conexionados	7	20,00			140,00
						140,00
P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, con gestión comunic					
	Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100Base-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.					
	Tomas	7				7,00
						7,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm					
	Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Presostatos					
	T17	4	2,00			8,00
	T18	3	2,00			6,00
	T19	2	2,00			4,00
	T20	2	2,00			4,00
	T21	2	2,00			4,00
	T16	2	2,00			4,00
	T14/15	2	2,00			4,00
						34,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm					
	Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	Válvulas T17	4	2,00			8,00
	Válv T18	3	2,00			6,00
	Val T19, 20,21,16,14/15	5	2,00	2,00		20,00
	Cadalímetros	7	2,00			14,00
						48,00
P5ELEBAND2	m Bandeja PVC 200x60mm					
	Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Conex. válv	7	25,00			175,00
						175,00
P5ELEBAND3	m Bandeja PVC 100x60mm					
	Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	Interior caseta	7	20,00			140,00
	Independiente de cables eléctricos					
						140,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE25PVC	m Tubo. electricidad Polímero term libre de halógenos ríg M25 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	caudalim.	7	3,00			21,00
						21,00
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	Varios conex. señales	7	4,00	2,00		56,00
						56,00
P5ELE50PVC	m tubo. electricidad Polímero term libre de halógenos ríg M50 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada					
	Varios s/ n	7	3,00			21,00
						21,00
P5ELE75PVC	m Tubo PVC 75 mm liso adosado o embebido Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes median-te pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	Caseta	7				7,00
						7,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pa-santes de la serie 55 de dimensiones 175 x 175 x 95mm.					
	Válvulas T17	1	4,00			4,00
	T18	1	3,00			3,00
	T19,20,21,16,14/15	5	2,00			10,00
	Caudalímetros	7				7,00
	Presostatos					
	T17	4	2,00			8,00
	T18	3	2,00			6,00
	T19,20,21,16,14/15	5	2,00	2,00		20,00
	Varios inter. cuadros	7				7,00
						65,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.10.05	INTRUSISMO (DC-T21 y DC-T14/15)					
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de					
	Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antirroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.					
CCTV		7	30,00			210,00
						210,00
P7COMSEG1	ud Sistema de Alarma-Intrusionismo					
	Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS , incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expensor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.					
		7				7,00
						7,00
P7COMCCTV6	m Inst. +Cable RG59 + tubo PVC32+cajasc/50m CCTV					
	Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2 , repetidor de señal cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexionado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.					
Interior		7	5,00			35,00
						35,00
P7COMCABL1B	m Cable de fibra óptica 8F+fusiones+cajas					
	Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua , elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antirroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro . Según EN 60794. Incluidas cajas de empalme para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.					
CCTV		7	30,00			210,00
						210,00
P7COMCCTV5	ud Cámara visión nocturna IP-66+carcasa+columna y cimentación					
	CCTV					
	Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcasas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenes de máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Vídeo, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad:Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.					
		7				7,00
						7,00
P7COMCCTV9	ud Switch 3 puertos RJ45 para video IP y cámaras					
	Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30.Switch gestionable para la red de video y seguridad de diversos elementos.					
Tomas		7				7,00
						7,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMCCTV12	ud Columna 8m+ soporte CCTV					
	Ud. báculo de 8 m. de altura troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; anclaje a dado de hormigón , puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión , tubo de unión, incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3 , operaciones de excavación y rellenos.					
	Tomas	7				7,00
						7,00
P7COMCCTV1	Ud Hardware de control CCTV					
	Hardware para gestión y control de CCTV en centro de control compuesto por : Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 píxeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.					
	Centro de control	1				1,00
						1,00
P7COMCCTV2	ud Software gestión CCTV intrusivo					
	Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player," Site builder", e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCADA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.					
	Centro de control	1				1,00
						1,00
P7COMCCTV3	ud Sistema de instalación configuración in situ videocam seguridad					
	Servicios de instalación , configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores).					
	Para toda la obra	1				1,00
						1,00
P7COMCCTV4	ud Servidor CCTV					
	Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8TeraBytes. Unidad totalmente instalada y probada.					
	Centro de control	1				1,00
						1,00
P7COMCCTV8	ud Formación y manuales sistema CCTV					
	Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias.					
	toda la obra	1				1,00
						1,00
03.11	SERVICIOS AFECTADOS (DC-T21 y DC-T14/15)					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.11.01	R.S.PAVIMENTOS (DC-T21/T14-15)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	RS-342-T19-T20 PK 620 - 650	1	5,40			5,40
	RS-363-T20-T21 PK 20 - 60	1	1,50			1,50
	rs-381-T20-T21	1	11,40			11,40
						18,30
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa					
	RS-342-T19-T20 PK 620 - 650	1	22,32			22,32
	RS-363-T20-T21 PK 20 - 60	1	48,00			48,00
	RS-381-T20-T21 PK N/A - N/A	1	22,32			22,32
						92,64
P1MT06C	m² Demolición pavimento hormigón o acerado 40 cm espesor+tte+canon Demolición de pavimento hidráulico de hormigón, base de hormigón o acerado hasta 40 cm de espesor, con corte de junta con hilo diamante o radial, retirada de bordillos y elementos lineales, i retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	RS-342-T19-T20 PK 620 - 650	1	195,00			195,00
	RS-363-T20-T21 PK 20 - 60	1	400,00			400,00
	RS-381-T20-T21 PK N/A - N/A	1	195,00			195,00
						790,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	rs-381-T20-T21	1	7,50			7,50
						7,50
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	s/m	1	96,00			96,00
						96,00
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	36,00			36,00
	rs-381-T20-T21 PK N/A - N/A	1	36,00			36,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						72,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.					
	RS-363-T20-T21 PK 20 - 60	1	5,00			5,00
						5,00
P5PAVFRES	m²cm Fresado pavimentos+trabajos preparatorios					
	Metro cuadrado por centímetro de espesor, de fresado de pavimento asfáltico con máquina fresadora o levantapavimentos, incluso precorte previo y carga de productos y limpieza, así como trabajos preparatorios para extendido de MB, incluido transporte a vertedero autorizado y canon de vertido.					
	RS-342-T19-T20 PK 620 - 650	1	310,00			310,00
	RS-363-T20-T21 PK 20 - 60	1	500,00			500,00
	RS-381-T20-T21 PK N/A - N/A	1	310,00			310,00
						1.120,00
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2					
	Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	186,00			186,00
	RS-363-T20-T21 PK 20 - 60	1	400,00			400,00
	RS-381-T20-T21 PK N/A - N/A	1	186,00			186,00
						772,00
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2					
	Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	204,00			204,00
	RS-363-T20-T21 PK 20 - 60	1	416,00			416,00
	RS-381-T20-T21 PK N/A - N/A	1	204,00			204,00
						824,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	64,80			64,80
	RS-363-T20-T21 PK 20 - 60	1	132,00			132,00
	rs-381-T20-T21 PK N/A - N/A	1	64,80			64,80
						261,60
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales					
	Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	39,00			39,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-363-T20-T21 PK 20 - 60	1	84,00			84,00
	RS-381-T20-T21 PK N/A - N/A	1	39,00			39,00
						162,00
P5BORD2	m Bordo granito 15x25x120 cm Bordo de granito gris (similar al existente en caso de reposición) de dimensiones 15x25x120 cms., asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	s/m	1	30,00			30,00
						30,00
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.					
	RS-342-T19-T20 PK 620 - 650	1	3,00			3,00
	RS-363-T20-T21 PK 20 - 60	1	2,00			2,00
	RS-381-T20-T21 PK N/A - N/A	1	2,00			2,00
						7,00
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	RS-342-T19-T20 PK 620 - 650	1	100,00			100,00
	RS-363-T20-T21 PK 20 - 60	1	180,00			180,00
	RS-381-T20-T21 PK N/A - N/A	1	150,00			150,00
						430,00
03.11.02	R.S. CAMINOS (DC-T21/T14-15)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	RS-261-DC-T17 PK 400 - 480	1	10,00			10,00
	RS-275-DC-T17 PK 1850 - 1860	1	25,00			25,00
	RS-284-DC-T17 PK 2660 - 2700	1	2,50			2,50
	RS-286-T17-T18 PK 255 - 265	1	2,50			2,50
	RS-303-T17-T18 PK 0 - 70	1	3,50			3,50
	RS-364-T20-T21 PK 20 - 60	1	2,50			2,50
	RS-374-T20-T21 PK 800 - 1630	1	2,50			2,50
	RS-376-T20-T21 PK 1080 - 1100	1	2,50			2,50
	RS-386-DC-T16 PK 730 - 760	1	2,50			2,50
	RS-261-DC-T17 PK 400 - 480	1	10,00			10,00
	RS-275-DC-T17 PK 1850 - 1860	1	25,00			25,00
	RS-284-DC-T17 PK 2660 - 2700	1	2,50			2,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-286-T17-T18 PK 255 - 265	1	2,50			2,50
	RS-303-T17-T18 PK 0 - 70	1	3,50			3,50
	RS-364-T20-T21 PK 20 - 60	1	2,50			2,50
	RS-374-T20-T21 PK 800 - 1630	1	2,50			2,50
	RS-376-T20-T21 PK 1080 - 1100	1	2,50			2,50
	RS-386-DC-T16 PK 730 - 760	1	2,50			2,50
	RS-388-DC-T16 PK 730 - 1150	1	2,50			2,50
	RS-391-T16-T14/15 PK 10 - 1027	1	2,50			2,50
	RS-403-T16-T14/15 PK 1400 - 1410	1	2,50			2,50
	RS-404-T16-T14/15 PK 1700 - 1730	1	4,00			4,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	17,90			17,90
						136,40
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon					
	Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	s/ n	1	1,50			1,50
						1,50
P1MT08BASEZA2	m² Escarificado camino +30%Zahorra artificial 95%PM					
	Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.					
	RS-264-DC-T17 PK 750 - 800	1	75,00			75,00
	RS-274-DC-T17 PK 1750 - 1765	1	45,00			45,00
	RS-279-DC-T17 PK 1850 - 2500	1	1.950,00			1.950,00
	RS-284-DC-T17 PK 2660 - 2700	1	40,00			40,00
	RS-291-T17-T18 PK 1020 - 1080	1	180,00			180,00
	RS-294-T17-T18 PK 1480 - 1510	1	180,00			180,00
	RS-298-T17-T18 PK 2100 - 2150	1	180,00			180,00
	RS-307-T17-T18 PK 720 - 800	1	270,00			270,00
	RS-348-T19-T20 PK 1550 - 1570	1	120,00			120,00
	RS-370-T20-T21 PK 580 - 600	1	70,00			70,00
	RS-388-DC-T16 PK 730 - 1150	1	1.470,00			1.470,00
	RS-391-T16-T14/15 PK 10 - 1027	1	3.559,50			3.559,50
	RS-405-T16-T14/15 PK 1810 - 1830	1	210,00			210,00
	RS-408-T16-T14/15 PK 2160 - 2180	1	210,00			210,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						8.559,50
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.						
RS-261-DC-T17	PK 400 - 480	1	189,00			189,00
RS-263-DC-T17	PK 750 - 800	1	54,00			54,00
RS-267-DC-T17	PK 1020 - 1040	1	55,80			55,80
RS-270-DC-T17	PK 1320 - 1340	1	72,00			72,00
RS-275-DC-T17	PK 1850 - 1860	1	63,00			63,00
RS-276-DC-T17	PK 1920 - 1940	1	9,00			9,00
RS-278-DC-T17	PK 2165 - 2185	1	54,00			54,00
RS-282-DC-T17	PK 2500 - 2520	1	54,00			54,00
RS-284-DC-T17	PK 2660 - 2700	1	54,00			54,00
RS-286-T17-T18	PK 255 - 265	1	54,00			54,00
RS-303-T17-T18	PK 0 - 70	1	54,00			54,00
RS-311-T17-T18	PK 1620 - 1640	1	54,00			54,00
RS-312-T17-T18	PK 1620 - 1640	1	54,00			54,00
RS-313-T17-T18	PK 2170 - 2190	1	54,00			54,00
RS-314-T17-T18	PK 2670 - 2900	1	207,00			207,00
RS-315-T17-T18	PK 3060 - 3110	1	45,00			45,00
RS-316-T17-T18	PK 3210 - 3230	1	45,00			45,00
RS-317-T17-T18	PK 3300 - 3320	1	45,00			45,00
RS-321-T17-T18	PK 3650 - 3670	1	45,00			45,00
RS-322-T17-T18	PK 3800 - 3820	1	54,00			54,00
RS-324-T17-T18	PK 4035 - 4055	1	54,00			54,00
RS-329-T17-T18	PK 4675 - 4685	1	36,00			36,00
RS-330-T17-T18	PK 4680 - 4690	1	36,00			36,00
RS-333-T17-T18	PK 5970 - 5980	1	36,00			36,00
RS-342-T19-T20	PK 620 - 650	1	20,00			20,00
RS-342-T19-T20	PK 620 - 650	1	25,50			25,50
RS-346-T19-T20	PK 1430 - 1440	1	36,00			36,00
RS-351-T19-T20	PK 1800 - 1810	1	36,00			36,00
RS-355-T19-T20	PK 2090 - 2100	1	31,50			31,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-364-T20-T21 PK 20 - 60	1	21,00			21,00
	RS-367-T20-T21 PK 375 - 395	1	36,00			36,00
	RS-368-T20-T21 PK 410 - 420	1	31,50			31,50
	RS-374-T20-T21 PK 800 - 1630	1	10,50			10,50
	RS-376-T20-T21 PK 1080 - 1100	1	31,50			31,50
	RS-378-T20-T21 PK 1540 - 1560	1	47,25			47,25
	RS-384-DC-T16 PK -	1	47,25			47,25
	RS-386-DC-T16 PK 730 - 760	1	36,00			36,00
	RS-389-DC-T16 PK 1100 - 1110	1	36,00			36,00
	RS-391-T16-T14/15 PK 10 - 1027	1	63,00			63,00
	RS-393-T16-T14/15 PK 250 - 280	1	36,00			36,00
	RS-396-T16-T14/15 PK 460 - 480	1	36,00			36,00
	RS-400-T16-T14/15 PK 775 - 790	1	36,00			36,00
	RS-401-T16-T14/15 PK 1010 - 1020	1	36,00			36,00
	RS-403-T16-T14/15 PK 1400 - 1410	1	36,00			36,00
	RS-404-T16-T14/15 PK 1700 - 1730	1	36,00			36,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	117,00			117,00
	RS-414-T16-T14/15 PK 2880 - 2890	1	36,00			36,00

2.355,80

P3CUN-001 m Cuneta guarda o pie de talud sin revestir V h=0.5m

Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.

RS-263-DC-T17 PK 750 - 800	1	20,00	20,00
RS-264-DC-T17 PK 750 - 800	1	70,00	70,00
RS-274-DC-T17 PK 1750 - 1765	1	50,00	50,00
RS-275-DC-T17 PK 1850 - 1860	1	140,00	140,00
RS-276-DC-T17 PK 1920 - 1940	1	40,00	40,00
RS-278-DC-T17 PK 2165 - 2185	1	130,00	130,00
RS-279-DC-T17 PK 1850 - 2500	1	50,00	50,00
RS-282-DC-T17 PK 2500 - 2520	1	75,00	75,00
RS-284-DC-T17 PK 2660 - 2700	1	60,00	60,00
RS-286-T17-T18 PK 255 - 265	1	60,00	60,00
RS-291-T17-T18 PK 1020 - 1080	1	50,00	50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	RS-303-T17-T18 PK 0 - 70	1	30,00			30,00
	RS-321-T17-T18 PK 3650 - 3670	1	60,00			60,00
	RS-322-T17-T18 PK 3800 - 3820	1	60,00			60,00
	RS-324-T17-T18 PK 4035 - 4055	1	60,00			60,00
	RS-329-T17-T18 PK 4675 - 4685	1	40,00			40,00
	RS-342-T19-T20 PK 620 - 650	1	60,00			60,00
	RS-367-T20-T21 PK 375 - 395	1	60,00			60,00
	RS-374-T20-T21 PK 800 - 1630	1	30,00			30,00
	RS-376-T20-T21 PK 1080 - 1100	1	30,00			30,00
	RS-403-T16-T14/15 PK 1400 - 1410	1	40,00			40,00
	RS-404-T16-T14/15 PK 1700 - 1730	1	40,00			40,00
	RS-408-T16-T14/15 PK 2160 - 2180	1	60,00			60,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	260,00			260,00
						1.575,00

P3SCDN500 m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20

Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.

RS-275-DC-T17 PK 1850 - 1860	1	50,00	50,00
RS-284-DC-T17 PK 2660 - 2700	1	5,00	5,00
RS-286-T17-T18 PK 255 - 265	1	5,00	5,00
RS-303-T17-T18 PK 0 - 70	1	7,00	7,00
RS-364-T20-T21 PK 20 - 60	1	5,00	5,00
RS-374-T20-T21 PK 800 - 1630	1	5,00	5,00
RS-376-T20-T21 PK 1080 - 1100	1	5,00	5,00
RS-386-DC-T16 PK 730 - 760	1	5,00	5,00
RS-388-DC-T16 PK 730 - 1150	1	5,00	5,00
RS-391-T16-T14/15 PK 10 - 1027	1	5,00	5,00
RS-403-T16-T14/15 PK 1400 - 1410	1	5,00	5,00
RS-404-T16-T14/15 PK 1700 - 1730	1	8,00	8,00
RS-410a-T16-T14/15 PK 2200 - 2260	1	7,00	7,00
			117,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	RS-342-T19-T20 PK 620 - 650	1	12,00			12,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	5,00			5,00
						17,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	RS-321-T17-T18 PK 3650 - 3670	1	120,00			120,00
	RS-322-T17-T18 PK 3800 - 3820	1	138,00			138,00
	RS-324-T17-T18 PK 4035 - 4055	1	138,00			138,00
	RS-342-T19-T20 PK 620 - 650	1	51,60			51,60
	RS-374-T20-T21 PK 800 - 1630	1	48,00			48,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	254,00			254,00
						749,60
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	4,80			4,80
	RS-410a-T16-T14/15 PK 2200 - 2260	1	2,00			2,00
						6,80
P1MT04A	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	37,38			37,38
	RS-410a-T16-T14/15 PK 2200 - 2260	1	248,08			248,08
						285,46
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	RS-321-T17-T18 PK 3650 - 3670	1	30,00			30,00
	RS-322-T17-T18 PK 3800 - 3820	1	30,00			30,00
	RS-324-T17-T18 PK 4035 - 4055	1	30,00			30,00
	RS-342-T19-T20 PK 620 - 650	1	30,00			30,00
	RS-374-T20-T21 PK 800 - 1630	1	30,00			30,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	30,00			30,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						180,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	2,40			2,40
	RS-410a-T16-T14/15 PK 2200 - 2260	1	2,40			2,40
						4,80
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	12,00			12,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	12,00			12,00
						24,00
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	RS-342-T19-T20 PK 620 - 650	1	1.020,00			1.020,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	1.020,00			1.020,00
						2.040,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	40,00			40,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	40,00			40,00
						80,00
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	RS-342-T19-T20 PK 620 - 650	1	4,00			4,00
	RS-410a-T16-T14/15 PK 2200 - 2260	1	4,00			4,00
						8,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.11.03	R.S. ABASTECIMIENTO (DC-T21/T14-15)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1				1,00
						1,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	1				1,00
						1,00
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.	1				1,00
						1,00
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	1	60,00			60,00
						60,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	144,00			144,00
						144,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1	14,40			14,40
						14,40
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	50,40			50,40
						50,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	SM	1	79,20			79,20
						79,20
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	SM	1	60,00			60,00
						60,00
TUB.FD.200A	m Tubería de FD DN 200 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 200 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
	SM	1	60,00			60,00
						60,00
03.11.04	R.S. RED RIEGO (DC-T21/T14-15)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	sm	4				4,00
						4,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN=<500 mm, prismas de MT, ..), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	sm	3				3,00
						3,00
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ..), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	sm	1				1,00
						1,00
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.					
		4				4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4RSACEQ01	m Reposición acequia+excav+rellenos Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembreada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluidas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.	1	235,00			235,00
						235,00
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.	sm	1	160,00		160,00
						160,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	s/m	1	10,00		10,00
						10,00
P4RSSFIBC1	m Demolición y gest. residuos conduc. fibrocemento DN<1200 Demolición y gestión de residuos de conducciones de fibrocemento de DN<1200mm, desmontaje manual por personal especializado y medios auxiliares necesarios , paletizado, flejado y etiquetado a pie de obra, carga, transporte y gestión de residuos a cargo de empresa registrada R.E.R.A., incluso redacción de plan de trabajo y unidad de descontaminación, carga y transporte a vertedero, canon de vertido, tratamiento si procede de aspiración con filtros adecuados y pulverización con líquido encapsulante adecuado, según mediciones exigidas por ley, transporte autorizado, desplazamiento de equipos de desamiantado con esclusas de descontaminación en los compartimentos que sean necesarios, equipos de protección EPI's P3, coordinado con el al Plan de Seguridad y Salud. Unidad completa incluso colocación de bridas ciegas en T.		1	165,00		165,00
						165,00
P4RSS1C	m Dem, desmont y retirada tubería DN >1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento/riego y/o saneamiento/ pluviales de DN >1000mm, Incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexión. Unidad totalmente terminada.	sm	1	30,00		30,00
						30,00
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.		1	46,75		46,75
						46,75
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	sm	1	858,00		858,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						858,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	sm	1	55,00			55,00
						55,00
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	sm	1	50,10			50,10
						50,10
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
		1	208,35			208,35
						208,35
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	sm	1	242,55			242,55
						242,55
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.					
	sm	1	195,00			195,00
						195,00
P5ARQPREF1	ud Arqueta prefabricada 1.0x1.0x2,5+ tapa FD+pates+rellenos Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de de 1,5-2,5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales, pieza tapa con apertura DN600 mm, huecos preformados para conexión de tuberías de diámetro múltiple apoyada sobre fondo de caja excavado y compactado, ejecución de 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado. Unidad totalmente colocada.					
	s/ nec	1				1,00
						1,00
P6PM250INX	ud Carrete pasamuros 250mm AISI 316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 250 mm de diámetro.					
	s/nec ventosa	2				2,00
						2,00
P6VENT.080.16	ud Ventosa trifuncional DN80 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanqueidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	s/ nec afecciones	1				1,00
						1,00
TUB.FD.200A	m Tubería de FD DN 200 C40+pp piezas+J. Flex					
	Tubería de fundición dúctil de diámetro nominal 200 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
		1	110,00			110,00
						110,00
TUB.FD.250A	m Tubería de FD DN250 C40+pp piezas+J. Flex					
	Tubería de fundición dúctil de diámetro nominal 250 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
		1	30,00			30,00
						30,00
TUB.FD.600A	m Tubería de FD DN600 C30+pp piezas+J. Flex					
	Tubería de fundición dúctil de diámetro nominal 600 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN 545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.					
	sm	1	55,00			55,00
						55,00
03.11.05	R.S. DRENAJE Y ARROYOS (DC-T21/T14-15)					
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon					
	Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.					
	sm	1	36,00			36,00
						36,00
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon					
	Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	s/ nec varios	1	1,50			1,50
						1,50
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5					
	Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.					
	sm	1	5.577,00			5.577,00
						5.577,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	sm	1	67,50			67,50
						67,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5 , incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.	1	5,00			5,00
						5,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	1	51,00			51,00
						51,00
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1	12,00			12,00
						12,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	15.185,45			15.185,45
						15.185,45
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1	4,80			4,80
						4,80
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	321,78			321,78
						321,78
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1	2.909,00			2.909,00
						2.909,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	1	2,40			2,40
						2,40
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	1	14,50			14,50
						14,50
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	1	1.207,50			1.207,50
						1.207,50
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	1	56,67			56,67
						56,67
03.11.06	R.S. ELECTRICIDAD (DC-T21/T14-15)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización. Posible afección no identificada toma 21	1				1,00
						1,00
03.11.07	R.S. COMUNICACIONES (DC-T21/T14-15)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	2				2,00
						2,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	2				2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2,00
P5ELEZ110X6H	m Can. horm PVC 110 mm x6 Ud cualq. terreno + zanja+rell.					
	Canalización hormigonada de 4x110mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada.					
	RS-359-T19-T20 PK 2400 - 2500	1	120,00			120,00
	RS-361-T20-T21 PK 20 - 60	1	70,00			70,00
						190,00
P5ARQPREF1.0R	ud Arqueta tipo 2P comunicaciones 100x100x150 cm con tapa FD					
	Arqueta tipo 2P comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1x1x1.5 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.0x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.					
	RS-359-T19-T20 PK 2400 - 2500	2				2,00
	RS-361-T20-T21 PK 20 - 60	2				2,00
						4,00
P5COM12F	m Cable 12 fibras monomodo					
	Suministro e instalación de cable de 12 fibras ópticas en Mono-modo 9/125, con aislamiento PEAP, bajo canalización de tritubo según especificaciones , incluso parte proporcional de empalmes, fusionado y conectorización, probado y certificado.					
	RS-359-T19-T20 PK 2400 - 2500	1	120,00			120,00
	RS-361-T20-T21 PK 20 - 60	1	70,00			70,00
						190,00
P5COMREP64F	ud Repartidor 64 FO					
	Suministro e instalación de repartidor de 64 fibras ópticas para un total de 64 adaptadores de tipo FC-FC y sus correspondientes 64 pig-tail de monomodos, todos fusionados y comprobados con equipo ODTR.					
	RS-359-T19-T20 PK 2400 - 2500	1				1,00
	RS-361-T20-T21 PK 20 - 60	1				1,00
						2,00
P5COMCAJA64F	ud Caja empalme 64 FO					
	Suministro e instalación de cajas de empalme estanca para 64 fibras ópticas de tipo monomodo, ejecutados por fusión, con p/p de verificación de tipo ODTR.					
	RS-359-T19-T20 PK 2400 - 2500	2				2,00
	RS-361-T20-T21 PK 20 - 60	2				2,00
						4,00
03.11.08	R.S. GAS (DC-T21/T14-15)					
P4RSV0A	ud Localización de servicio					
	Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	RS-360-T19-T20 PK 2400 - 2500	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	RS-360-T19-T20 PK 2400 - 2500	1				1,00
						1,00
P4RSV2B	ud Corte programado servicio GAS pequeño diam. Corte programa del servicio de GAS en conducciones de distribución.					
		1				1,00
						1,00
P4RSGPE160	m Reposición tub. DN160mm PE-SDR11+arq+valv.+excav+rellenos GAS Localización, desmontaje programado, y reposición de tubería de gas DN160 mm PE,SDR11 arquetas y valvulería asociada, incluyendo operaciones de localización mediante calas y/o sistemas de microgravimetría con técnico cualificado, programación de corte y rotura con empresa de servicios, gestión y pago de canon y tasas requeridas, demolición, carga y retirada de conducciones, arquetas y elementos asociados, transporte a vertedero autorizado, pago de canon de vertido, reposición de servicio mediante retranqueo, con excavación en zanja de ancho especificado en planos mínimo 0.8m, con base de apoyo de cama de arena de 15 cm, relleno con arena hasta 30 cm sobre clave de tubería, posterior relleno localizado con suelo seleccionado procedente de préstamo tamaño máximo 100 mm, relleno con zahorra artificial hasta sección de pavimento, lámina PVC señalizadora de servicio normalizada, losa de protección en pavimentos de 0.15m de espesor con al menos 1.20m de ancho, conexiones de elementos, juntas especiales, p.p. de arquetas normalizadas con tapa de fundición C-400, según detalle definido en planos con base y anclaje de hormigón en caso de valvulerías, arquetas en cambios de dirección, conexiones y puntos de ubicación de valvulería. Unidad totalmente ejecutada.					
	RS-360-T19-T20 PK 2400 - 2500	1	50,00			50,00
						50,00
03.11.09	R.S. HIDROCARBUROS (DC-T21/T14-15)					
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.					
	RS-415-T16-T14/15 PK 3020 - 3040	1				1,00
						1,00
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.					
	RS-415-T16-T14/15 PK 3020 - 3040	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.11.10	R.S. CERRAMIENTOS (DC-T21/T14-15)					
P1MT06K	m² Demolición muro bloque o ladrillo Demolición de muro bloque o ladrillo hormigón con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	Varios en zonas de riego s/n	3	15,00	2,00		90,00
						90,00
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.					
	Varios en zonas de riego s/n	1	15,00	2,00	0,30	9,00
						9,00
P5CERRAM0D	m Reposición de cerramiento muro mampuesto Reposición de muro bancal de espesor medio 0,5 m , altura variable hasta 1,5 m y longitud 4 m. incluyendo retirada de muro existente, acopio y posterior reconstrucción mediante aporte de mampuestos, ripios, perfectamente alineado, aplomado, con excavación y preparación de la superficie de asiento (20 cm de HM-20), completamente terminado. incluyendo las operaciones de acopio,recolocación de la piedra original y/o reposición de otra de características similares a la original.					
	s/ nec zonas de riego	1	15,00			15,00
						15,00
P5CERRAM0A	m Desmontaje de cerramiento metálico, vallado y barandillas. Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar , existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos.					
	Chamizos de zonas de riego	4	15,00			60,00
						60,00
P5CERRAM2	m Cerramiento tipo-2 Valla de D/T metálica Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, sin incluir puerta de acceso.					
	s/nec varios zonas de riego	3	20,00			60,00
						60,00
P5CERRAM4	m Cerramiento tipo-4 ganadero Cerramiento ganadero a base de postes de hormigón de 17x12x170 cm y 1,40 m o metálicos sobre el terreno a 7 m separación media, empotrados y anclados en el terreno 30 cm y guarnecido con un malla 100x8x15 mm y dos hiladas superiores de alambre, doble hilo 13x15, tensado en tramos de 50 m, y con dos riostras cada 100 m. Unidad completamente terminada.					
	Varios sin identificar	4	30,00			120,00
						120,00
P3EDIF012B	m² Fab. Bloq. split 40x20x20 dos caras color Fábrica de bloques de hormigón Mod. Split de medidas 40x20x20 cm., color, ejecutado a dos caras vistas, i/relleno de hormigón H-200/20 y armadura en zona según normativa y recibido con mortero de cemento y arena de río M 5 según UNE-EN 998-2, i/p.p. de piezas especiales, roturas, nivelados, aplomados, llagueados y limpieza todo ello según CTE/ DB-SE-F.Unidad totalmente terminada					
	Chamizos de zonas de riego	3	30,00	3,00		270,00
						270,00
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Chamizos de zonas de riego	3	30,00	0,50	0,50	22,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Losas	3	5,00	5,00	0,20	15,00
						37,50
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint					
Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.						
	varios s/n zonas de riego	2				2,00
						2,00
P4RSS1A	m Dem, desmont y retirada tubería riego varios diám. DN<200					
Localización, demolición, desmontaje programado y retirada de tubería de riego de varios diámetros menores a 200 mm, incluyendo arquetas y desmontaje de válvulas , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.						
	varios	10	50,00			500,00
						500,00
03.11.11	R.R.VARIOS (DC-R21/T14-15)					
P5ARQLD2	ud Arqueta de registro 80x80x100 1/2 tapa FD					
Arqueta de registro de dimensiones interiores 80x80x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 80x80 normalizada D-400. Unidad totalmente terminada.						
	varios	3				3,00
						3,00
P4RSS1A	m Dem, desmont y retirada tubería riego varios diám. DN<200					
Localización, demolición, desmontaje programado y retirada de tubería de riego de varios diámetros menores a 200 mm, incluyendo arquetas y desmontaje de válvulas , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.						
	varios	10	50,00			500,00
						500,00
P5ARQR001	ud Arqueta riego+elem. aux.+valv.					
Arqueta riego incluida compuerta y p.p. medios auxiliares, 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.						
	varios	3				3,00
						3,00
03.11.12	R.R. DESV. TRAFICO (DC-R21/T14-15)					
03.11.12.01	DESVÍO NA-6900					
03.11.12.01.1	DRENAJES (DESVÍO NA-6900)					
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20					
Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localiazada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5 , incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.						
	Fase-1	1	15,00			15,00
						19,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						34,50
P4RSV2D	m Demolición y retirada de tubería de hormigón < 500 mm Demolición y retirada de tuberías de hormigón en masa, salvacunetas y conducciones, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.					
	Fase-1	1	15,00			15,00
		1	19,50			19,50
						34,50
03.11.12.01.2 PAVIMENTOS (DESVÍO NA-6900)						
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa					
	desv. provisional fase-1	1	254,00	9,00	0,12	274,32
						274,32
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 surf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	desv. provisional fase-1	1	254,00	9,00		2.286,00
						2.286,00
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	desv. provisional fase-1	1	254,00	9,00		2.286,00
						2.286,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Base provisional	1	254,00	11,00	0,30	838,20
						838,20
03.11.12.01.3 SEÑALIZACIÓN (DESVÍO NA-6900)						
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA MI. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Fase-1	3	475,00			1.425,00
						1.425,00
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final					
	Desvío fase-1	3	475,00			1.425,00
		-3	50,00			-150,00
						1.275,00
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales Estarco en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.					
	Flechas	10	3,00			30,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						30,00
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm MI. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje. Repintado completo	1	475,00			475,00
						475,00
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm MI. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje. Repintado completo	2	475,00			950,00
						950,00
P6SÑL-020	m Banda sonora 90cmx50cmx5cm Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada. Bandas sonoras reducción velocidad					
	Sentido-1	2	3,50			7,00
	Sentido-2	2	3,50			7,00
						14,00
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.					
	Lateral	1	70,00			70,00
		1	61,00			61,00
	Central	1	14,00			14,00
						145,00
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.					
	Fase-1	2				2,00
	Fase-2	2				2,00
						4,00
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.					
	Fase-1	8				8,00
	Fase-2	8				8,00
						16,00
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ...) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.					
	Fase-1	2				2,00
	Fase-2	2				2,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.					
	Fase-1	2	2,00			4,00
	Fase-2	2	2,00			4,00
						8,00
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.					
	Fase-1	1	45,00			45,00
	Fase-2	1	45,00			45,00
						90,00
P6SÑL-110	ud Semáforo portátil en desvíos de tráfico Semáforo portátil con mutado. Desvíos de obra					
	Fase-1 y fase-2	2				2,00
						2,00
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señáltica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.					
		1				1,00
						1,00
03.11.12.02	DESVÍO N-121					
03.11.12.02.1	MOV. TIERRAS (DESVÍO N-121)					
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
	Desv. fase-1	1	260,00	15,00		3.900,00
						3.900,00
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desv. fase-1	1	260,00	15,00		3.900,00
						3.900,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
	Desv. fase-1	1	260,00	15,00		3.900,00
						3.900,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Fase-1					
	Cajeado	1	260,00	13,00	0,50	1.690,00
	Fase-2. Excav tras desvío a vertedero					
	Terraplenado	1	260,00	13,00	1,50	5.070,00
	Zahorra	1	260,00	9,00	0,30	702,00
						7.462,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Mat. prov. de excavaciones de tubos					
	Cajeado	1	260,00	13,00	0,50	1.690,00
	Terraplenado	1	260,00	13,00	1,00	3.380,00
						5.070,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Reposición de camino afectado por desvío	1	145,00		0,30	43,50
						43,50
03.11.12.02.2 DRENAJES (DESVÍO N-121)						
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Perimetral fase-1	1	275,00			275,00
						275,00
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20					
	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizadora de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5, incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.					
	Fase-1	1	16,00			16,00
		1	16,00			16,00
						32,00
P4RSV2D	m Demolición y retirada de tubería de hormigón < 500 mm					
	Demolición y retirada de tuberías de hormigón en masa, salvacunetas y conducciones, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.					
	Fase-1	1	16,00			16,00
		1	16,00			16,00
						32,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.11.12.02.3 PAVIMENTOS (DESVÍO N-121)						
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon					
	Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa					
	desv. provisional fase-1	1	254,00	9,00	0,12	274,32
						274,32
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2					
	Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y popsteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	desv. provisional fase-1	1	254,00	9,00		2.286,00
						2.286,00
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2					
	Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y popsteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	desv. provisional fase-1	1	254,00	9,00		2.286,00
						2.286,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Base provisional	1	254,00	11,00	0,30	838,20
						838,20
03.11.12.02.4 SEÑALIZACIÓN (DESVÍO N-121)						
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA					
	MI. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Desvío fase-1	3	300,00			900,00
						900,00
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal					
	Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final					
	Desvío fase-1	3	300,00			900,00
		-3	265,00			-795,00
						105,00
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales					
	Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.					
	Flechas	2	6,00			12,00
						12,00
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm					
	MI. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Repintado completo	1	300,00			300,00
						300,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje. Repintado completo	2	300,00			600,00
						600,00
P6SÑL-020	m Banda sonora 90cmx50cmx5cm Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada. Bandas sonoras reducción velocidad					
	Sentido-1	2	3,50			7,00
	Sentido-2	2	3,50			7,00
						14,00
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje. Fase-1					
	Lateral	2	98,00			196,00
	Central	1	15,00			15,00
	Fase-2	1	16,00			16,00
						227,00
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Señales TBs	4	3,00			12,00
						12,00
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Fase-1	10				10,00
						10,00
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ...) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Fase-1	2				2,00
	Fase-2	2				2,00
						4,00
P6SÑL-060	ud Señal advertencia e indicatoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Fase-1	4				4,00
						4,00
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97. Fase-1					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	TB	3	4,00			12,00
	TS	1	4,00			4,00
	VArios criculares	6				6,00
						22,00
P6SÑL-092	ud Lámpara luminosa intermitente en trípode					
	Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.					
	Varios señales	2				2,00
						2,00
P6SÑL-004	ud Señal octogonal normal L=60 cm Nivel1					
	Señal octogonal de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.					
	Fase-1	1				1,00
						1,00
P6SÑL-100	m Barrera New Jersey plástico. desv. tráfico					
	Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco lastrable, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico					
	Desvío	1	210,00			210,00
		-1	41,00			-41,00
						169,00
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico					
	Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.					
	NY en excavación	1	41,00			41,00
						41,00
P6DT001	ud Reposición y mantenimiento de desvío de tráfico					
	Reposición y mantenimiento señálica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.					
		1				1,00
						1,00
03.11.12.03	DESVÍO NA-3042					
03.11.12.03.1	MOV. TIERRAS (DESVÍO NA-3042)					
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea)					
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
	Desv. fase-1	1	120,00	15,00		1.800,00
						1.800,00
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
	Desv. fase-1	1	120,00	15,00		1.800,00
						1.800,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion					
	Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
	Desv. fase-1	1	120,00	15,00		1.800,00
						1.800,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Fase-1					
	Cajeadado	1	120,00	13,00	0,50	780,00
	Fase-2. Excav tras desvío a vertedero					
	Terraplenado	1	120,00	13,00	1,50	2.340,00
	Zahorra	1	120,00	9,00	0,30	324,00
						3.444,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN					
	Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.					
	Mat. prov. de excavaciones de tubos					
	Cajeadado	1	120,00	13,00	0,50	780,00
	Terraplenado	1	120,00	13,00	1,00	1.560,00
						2.340,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Reposición de camino afectado por desvío	1	50,00		0,30	15,00
						15,00
03.11.12.03.2	DRENAJES (DESVÍO NA-3042)					
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m					
	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Perimetral fase-1	1	130,00			130,00
						130,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.11.12.03.3 PAVIMENTOS (DESVÍO NA-3042)						
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa					
	desv. provisional fase-1	1	120,00	9,00	0,12	129,60
						129,60
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y popsteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	desv. provisional fase-1	1	120,00	9,00		1.080,00
						1.080,00
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y popsteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.					
	desv. provisional fase-1	1	120,00	9,00		1.080,00
						1.080,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	Base provisional	1	120,00	11,00	0,30	396,00
						396,00
03.11.12.03.4 SEÑALIZACIÓN (DESVÍO NA-3042)						
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA MI. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Desvío fase-1	3	640,00			1.920,00
						1.920,00
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final					
	Desvío fase-1	3	640,00			1.920,00
		-3	120,00			-360,00
						1.560,00
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.					
	Flechas	2	19,00			38,00
						38,00
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm MI. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.					
	Repintado completo	1	640,00			640,00
						640,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje. Repintado completo	2	640,00			1.280,00
						1.280,00
P6SÑL-020	m Banda sonora 90cmx50cmx5cm Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada. Bandas sonoras reducción velocidad					
	Sentido-1	2	3,50			7,00
	Sentido-2	2	3,50			7,00
						14,00
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje. Fase-1					
	Lateral	2	140,00			280,00
	Central	1	30,00			30,00
	Fase-2	1	10,00			10,00
						320,00
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. TB	2	8,00			16,00
						16,00
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Fase-1	9				9,00
						9,00
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Fase-1	2				2,00
	Fase-2	2				2,00
						4,00
P6SÑL-060	ud Señal advertencia e indicatoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico. Fase-1	4				4,00
						4,00
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97. TB	2	2,00	8,00		32,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	TS	2	4,00			8,00
	Varios criculares	8				8,00
						48,00
P6SÑL-092	ud Lámpara luminosa intermitente en trípode					
	Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.					
	Varios señales	4				4,00
						4,00
P6SÑL-100	m Barrera New Jersey plástico. desv. tráfico					
	Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco lastrable, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico					
	Desvío	1	50,00			50,00
		-1	30,00			-30,00
						20,00
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico					
	Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.					
	Fase-1					
	Zona excavación	1	30,00			30,00
	Fase-2					
	Zona excavación	1	30,00			30,00
						60,00
P6DT001	ud Reposición y mantenimiento de desvío de tráfico					
	Reposición y mantenimiento señalítica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.					
		1				1,00
						1,00
03.12	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (DC-T21 y DC-T14/15)					
03.12.01	MEDIDAS PROTECTORAS, CORRECTORAS (DC-T21;T14)					
03.12.01.01	ATMÓSFERA (DC-T21;T14)					
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora					
	Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.					
	Total obra meses secos 6/12	0,5	36,00			18,00
						18,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.12.01.02	SUELO (DC-T21;T14)					
P-101AMB-MP03	m Jalonamiento de protección malla					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
	trazado de las conducciones 10%	0,1	20.500,00	2,00		4.100,00
						4.100,00
P-101AMB-MP09	m Jalonamiento de protección cinta					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
	trazado de las conducciones 25%	1	20.500,00	2,00		41.000,00
						41.000,00
P1MT08GTX-003	m² Geomalla refuerzo taludes					
	Suministro y colocación de geomalla de refuerzo DLT Grid en taludes incluso enrejado con alambre galvanizado de Ø 2,00 mm y malla hexagonal 8x10-16 anclado al terreno con barras corrugadas de acero B 500 S, para protección de taludes, medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 1.5m) entre paños y mermas. Unidad totalmente terminada.					
	T17-18 PK0+36	1	60,00	20,00		1.200,00
	T18-19 PK 1+421	1	30,00	20,00		600,00
						1.800,00
P1MTMR001	m Fajina retención rollizo 0.5m altura					
	ml de fajinada formada por estacas de pino de 1 m de longitud y 8 cm de diámetro,hincados en el suelo 50 cm, entre los que se entrelazan una fajina construida con ramas, hasta formar una pantalla de 50 cm de altura, construida para reducir la escorrentía superficial. Incluso herramientas y medios auxiliares.					
	Zonas de gran pendiente					
	T17-18 PK0+36	12	20,00			240,00
	T18-19 PK 1+421	6	20,00			120,00
						360,00
P-102AMBPL001	m² Hidrosiembra incluso rastrillado y tapado					
	Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.					
	T17-18 PK0+36	1	60,00	20,00		1.200,00
	T18-19 PK 1+421	1	30,00	20,00		600,00
						1.800,00
03.12.01.03	HIDROLOGIA (DC-T21;T14)					
P-101AMB-MP05	m Barrera de retención sedimentos					
	Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.					
	Cruces de arroyos/ cauces	34	10,00	2,00		680,00
	Barreras de sedimentos c/1000m	22	20,00			440,00
						1.120,00
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones					
	Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.					
	Una por cada zona de instalaciones	15				15,00
						15,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.12.01.04	FAUNA Y FLORA (DC-T21;T14)					
P-101AMB-MP03	m Jalonamiento de protección malla					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
	trazado de las conducciones 5%	0,05	20.500,00	2,00		2.050,00
						2.050,00
P-101AMB-MP09	m Jalonamiento de protección cinta					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
	trazado de las conducciones 15%	0,15	20.500,00	2,00		6.150,00
						6.150,00
P-101AMB-MP10	ud Protector de fauna					
	Protector de fauna: Instalación de vallas plásticas y elementos necesarios.					
	Zonas de peligro	11	10,00			110,00
						110,00
03.12.02	SEGUIMIENTO ARQUEOLÓGICO (DC-T21;T14)					
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones					
	Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.					
	Informe inicial	1				1,00
						1,00
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz.					
	Informe arqueológico previo incluidas tramitaciones y tasas.					
	un informe previo	1				1,00
						1,00
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe					
	Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual					
	Plazo obra	36				36,00
	Seguimiento intensivo	-2				-2,00
						34,00
P-103AMBAR02B	día Seguimiento intensivo arqueológico de las obras+informe					
	Día de control y seguimiento arqueológico de carácter intensivo realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluida maquinaria de desbroce y excavación, medios auxiliares necesarios y presencia permanente de técnicos, generación de informe de seguimiento					
	Seguimiento intenso	2	30,00			60,00
						60,00
P-103AMBAR-03	km² Prospección arqueológica detallada, análisis y trabajo de campo					
	Prospección arqueológica intensiva de cobertura total en una superficie afectada de 1Km2, incluyendo excavaciones, sondeos arqueológicos, medios humanos, maquinaria, material auxiliar necesario, análisis documental, proyecto de actuación arqueológica y trabajo de campo. Unidad completa					
	Varios	1	10,00			10,00
						10,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.12.03	PROGRAMA VIGILANCIA AMBIENTAL (DC-T21;T14)					
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación PVA y PGR	1				1,00
						1,00
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras Informe mensual de seguimiento del Plan de Vigilancia Ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento. Meses de duracion obra	36				36,00
	Duración obra+ demoliciones y remates					36,00
P-104AMBVA02A	mes Seguimiento acústico (ruido ambiental) Medida de niveles de ruido en zona de obra. Desarrollada la medición a lo largo de una jornada laboral, con toma de datos en diversos puntos de la obra, y elaboración de informes periódicos posteriores por especialista cualificado, incluidos materiales y elementos auxiliares. Unidad totalmente terminada. Seguimiento ruido en las zonas habitadas	36				36,00
						36,00
P-104AMBVA03A	ud Informe especializado de flora Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina. 1 al principio de obra	1				1,00
						1,00
P-104AMBVA04A	ud Informe especializado de fauna Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe. 1 antes de inicio de obra	1				1,00
						1,00
P-104AMBVA05	ud Informe y analítica de muestra de aguas Informe y analítica de muestras de agua en puntos de cruce singulares. unidad totalmente ejecutada. Cruce del río Queiles	2	3,00			6,00
	Antes y despues de la obra					
	Durante la obra en cruce del río Queiles	2	3,00			6,00
						12,00
03.12.04	INTEGRACIÓN PAISAJÍSTICA (DC-T21;T14)					
P-102AMB-PL06	Pie Apeo árboles ø >20-<=30 cm densidad <=750 pies/ha c/mat (R.E.A.) Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y densidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la intensidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, incluido canon de vertido, herramientas y medios auxiliares. s/med aux					
	T16-T14/15	1	200,00	0,05		10,00
	DC-T17	1	4.422,00	0,05		221,10
	T18-T19	1	7.466,00	0,05		373,30
	T19-T20	1	1.143,00	0,05		57,15

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	T20-T21	1	2.945,00	0,05		147,25
						808,80
P-102AMBPL08	mes Mantenimiento de plantaciones, riego y reposición extraordinaria					
	Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de marras, realización de podas de realce necesarias y otras operaciones de mantenimiento. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande realizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, incluyendo la escarda y mezcla con el sustrato de malas hierbas, herramientas y medios auxiliares.					
	Duración Subtramo	36				36,00
						36,00
P-102AMBPL38B	ud Plantación de Crataegus monogyna de 0,6-0,8 m en contenedor					
	Plantación de Crataegus monogyna 0,6-0,8 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 4	13				13,00
						13,00
P-102AMBPL03B	ud Plantación de Pinus halepensis de 1,0-1,5 m en contenedor					
	Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso apertura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación.					
	Tratamiento 3a	407				407,00
	Tratamiento 7a	1.596				1.596,00
						2.003,00
P-102AMBPL31A	ud Plantación de Quercus coccifera 1,8-2,0m alt. CEP.					
	Quercus ilex de 1,8-2,0m alt. de perímetro de tronco, suministrado en cepellón y plantación en hoyo de 1x1x1 m., incluso apertura del mismo con los medios indicados, abonado, formación de alcorque, tutor y primer riego.					
	Tratamiento 7c	3.225				3.225,00
						3.225,00
P-102AMBPL34E	ud Plantación de Rosa canina 20-30 cm. CONT.					
	Rosa canina de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,6x0,6x0,6 m., incluso apertura del mismo a mano, abonado, formación de alcorque y primer riego.					
	Tratamiento 4	189				189,00
						189,00
P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m en contenedor					
	Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 3a	102				102,00
	Tratamiento 7c	2.016				2.016,00
						2.118,00
P-102AMBPL17I	ud Plantación de Rubus ulmifolius 0,3-0,5m en contenedor					
	Plantación de Rubus ulmifolius extensa de 0,3-0,50m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 4	302				302,00
						302,00
P-102AMBPL39	ud Plantación de Salix alba de 1,0-1,5 m en cepellón					
	Plantación de Salix alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x6,0 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto					
	Tratamiento 4	26				26,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						26,00
P-102AMBPL18	ud Plantación de Salix atrocinerea de 0,50-0,75 m en contenedor					
	Ud. Suministro y plantación de Salix atrocinerea (Sarga negra) de 0,50 a 0,75 m. de altura, suministrado en contenedor, y plantación en hoyo de 0,4 x 0,4 x 0,4 m., incluso apertura manual del mismo, abonado, formación de alcorque y primer riego.					
	Tratamiento 4	34				34,00
						34,00
P-102AMBPL36	ud Plantación de Salvia officinalis 20-30cm. CONT.					
	Salvia officinalis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, formación de alcorque y primer riego.					
	Tratamiento 3a	102				102,00
	Tratamiento 7c	2.016				2.016,00
						2.118,00
P-102AMBPL37	ud Plantación de Thymus vulgaris de 0,2-0,4 m en envase forestal					
	Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso apertura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 3a	102				102,00
	Tratamiento 6	1.132				1.132,00
	Tratamiento 7c	2.016				2.016,00
						3.250,00
P-102AMBPL12B	m² Formación de pasto gramíneas y leguminosas					
	Formación de pasto por siembra de una mezcla de especies gramíneas y leguminosas, a determinar por la Dirección de Obra, incluso la limpieza del terreno, laboreo con dos pases de motocultor cruzados y abonado de fondo, rastrillado y retirada de todo material de tamaño superior a 2 cm., distribución de la semilla.					
	ZONAS DEPOSITO EXCEDENTES	67.945,02				67.945,02
	Tratamiento 6	31.667				31.667,00
						99.612,02
P-102AMBPL40	ud Tutor árbol					
	Entutorado de árbol con 1 tutor vertical de rollizo de pino torneado, de 3 m de longitud y 8 cm de diámetro con punta en un extremo y baquetón en el otro, tanalizado en autoclave, hincado en el fondo del hoyo de plantación, retacado con la tierra de plantación, y sujeción del tronco con cincha textil no degradable, de 3-4 cm de anchura y tornillos galvanizados.					
	Pinus halepensis					
	Tratamiento 3a	407				407,00
	Tratamiento 7a	1.596				1.596,00
						2.003,00
P-102AMBPL01	ud Plantación de Genista scorpius 0.3-0.5m en contenedor					
	Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 3a	102				102,00
	Tratamiento 6	2.533				2.533,00
	Tratamiento 7c	2.016				2.016,00
						4.651,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P-102AMBPL003	ud Plantación de Artemisia herba-alba 0,2-0,5m en contenedor					
	Plantación de Artemisia herba-alba 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 6	2.533				2.533,00
						2.533,00
P-102AMBPL004	ud Plantación de Juniperus oxycedrus 0,1-0,2m en contenedor					
	Plantación de Juniperus oxycedrus 0,1-0,2m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 7c	3.225				3.225,00
						3.225,00
03.13	GESTIÓN DE RESIDUOS (DC-T21 y DC-T14/15)					
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos					
	Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un enchachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.					
	Puntos de vertido intermedio	12				12,00
						12,00
PGESRES180C	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (DC-T21;T14)					
	Carga , transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15.					
		1				1,00
						1,00
PGESRES150C	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (DC-T21;T14)					
	Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15					
		1				1,00
						1,00
PGESRES200C	ud Carga, transporte y depos.de Res. peligrosos (DC-T21;T14)					
	Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
03.14	VARIOS (DC-T21 y DC-T14/15)					
P90VAR4	ud Difusión y comunicación actuación del tramo					
	Difusión y comunicación de las obras del tramo consistente en : a)-Emisión de 2 anuncios en periódico de gran tirada, b)-2 anuncios publicitarios en medio de radiodifusión , c)-edición de 200 folletos explicativos tipo tríptico de alta calidad, d)-desarrollo de WEB informativa y de seguimiento de las obras con el volcado informativo del avance de obra, estado f)-Reportaje fotográfico de evolución de obra g)-CD video divulgativo h)-Presentación y actos varios i)-Monolito actuación					
		1				1,00
						1,00
03.15	SEGURIDAD Y SALUD (DC-T21 y DC-T14/15)					
PSEGSAL.03	ud Seguridad y Salud.Subtramo D.C.-T21 Y DC-T14/15					
	Seguridad y salud en el Subtramo D.C.-T21 Y DC-T14/15 , (según valoración realizada en el Anejo nº20 del proyecto).					1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04	BALSA DE TUDELA					
04.01	CUERPO DE BALSA					
04.01.01	TERRAPLÉN DE PRUEBA					
04.01.01.01	TERRAPLÉN DE PRUEBA NÚCLEO					
PTU-001	ud Terraplén de prueba núcleo Terraplén de prueba para material del núcleo de balsa, de acuerdo con las especificaciones del pliego o, en su caso, del director de prueba, incluso ensayos previos y posteriores e informe con recomendaciones.	1				1,00
						1,00
PTU-002	m² Preparación terreno para terraplén Preparación de plataforma para realizar terraplén de prueba, según especificaciones del pliego, en su caso, direztrices del Director de Obra, totalmente terminado.	1	80,00	15,00		1.200,00
						1.200,00
04.01.01.02	TERRAPLÉN DE PRUEBA TODO-UNO					
PTU-002	m² Preparación terreno para terraplén Preparación de plataforma para realizar terraplén de prueba, según especificaciones del pliego, en su caso, direztrices del Director de Obra, totalmente terminado.	1	80,00	12,00		960,00
						960,00
PTU-003	ud Terraplén de prueba para todo-uno Terraplén de prueba para material todo uno en espaldón de balsa, de acuerdo con las especificaciones del pliego o, en su caso, del director de prueba, incluso ensayos previos y posteriores e informe con recomendaciones.	1				1,00
						1,00
04.01.02	MOVIMIENTO DE TIERRAS					
04.01.02.01	DESBROCES					
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	1	6.213,17			6.213,17
						6.213,17
PTU-020	m³ Desbroce y excavación de tierra vegetal en balsa Desbroce y excavación de tierra vegetal de espesor medio de 50 cm, en balsa de Tudela y balsa de Mostrakas incluso carga, transporte a cualquier distancia a acopio intermedio no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa.	1	138.070,42	0,50		69.035,21
						69.035,21

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.01.02.02	MOVIMIENTO DE TIERRAS					
PTU-004	m³ Excavación de cimientto de núcleo de balsa Excavación de terreno no clasificado en cimientto de núcleo balsa, con medios mecánicos y taqueos puntuales, incluso refino, con carga y transporte a acopio intermedio o vertedero, incluso canon de vertido, mantenimiento y restauración de vertedero. Según medición auxiliar	1	51.175,10			51.175,10
						51.175,10
PTU-006	m³ Excavación de terreno no clasificado en explanaciones Excavación de terreno no clasificado en explanaciones con medios mecánicos y taqueos puntuales incluso, refino de taludes y fondo de excavación, carga y transporte a vertedero, acopio o lugar de uso, incluso cánon de vertido, mantenimiento y restauración del vertedero. Según medición auxiliar	1	396.941,68			396.941,68
						396.941,68
PTU-008	m² Regularización de fondos de excavación en núcleo de balsa Regularización de la superficie de excavación en apoyo de cimientto de núcleo de balsa de Tudela incluyendo tratamiento y relleno con mortero de diacласas de espesor inferior a 3 cm, según P.C.T con carga y transporte de productos sobrantes a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero. Según planimetría	1	14.547,00		0,70	10.182,90
						10.182,90
PTU-009	m² Excavación en refino de cimientto de espaldones de balsa Excavación en refino de fondos de excavación en terciaro alterado en cimientto de presa con medios mecánicos y taqueos puntuales, con carga y transporte a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero. A deducir superficie núcleo	1 -1	138.070,42 20.114,00			138.070,42 -20.114,00
						117.956,42
PTU-022	m² Hormigón proyectado HM-35/B/20/X0, de 5 cm. de espesor reforzado Hormigon proyectado HM-35/B/20/X0, de 5 cm. de espesor reforzado con fibras de acero, con 700 j de energía de absorción, en tratamiento de desmonte, incluso aditivos y rechazo, puesto en obra Según planimetría	1	14.547,00		0,30	4.364,10
						4.364,10
04.01.02.03	DESBROCES EN PRÉSTAMOS					
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos. Según planimetría					
	Préstamo 6	1	25.004,25		0,80	20.003,40
	Préstamo 7	1	20.448,98		0,10	2.044,90
	Préstamo 8	1	25.627,14		0,50	12.813,57
	Préstamo 9	1	28.591,98		0,40	11.436,79

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						46.298,66
PTU-020	m³ Desbroce y excavación de tierra vegetal en balsa Desbroce y excavación de tierra vegetal de espesor medio de 50 cm, en balsa de Tudela y balsa de Mostrakas incluso carga, transporte a cualquier distancia a acopio intermedio no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa. Según planimetría					
	Préstamo 2	1	20.025,67		0,50	10.012,84
	Préstamo 3	1	31.334,28		0,50	15.667,14
	Préstamo 4	1	22.574,64		0,50	11.287,32
	Préstamo 5	1	222.321,39		0,50	111.160,70
	Préstamo 6	1	25.004,25		0,50	12.502,13
	Préstamo 7	1	20.448,98		0,50	10.224,49
	Préstamo 8	1	25.627,14		0,50	12.813,57
	Préstamo 9	1	28.591,98		0,50	14.295,99
						197.964,18
04.01.03	RELLENOS DEL CUERPO DE BALSA					
PTU-010	m³ Material limo - arcilloso, extendido en el núcleo de balsa Material "limo-arcilloso" en núcleo de balsa, procedente de la excavación de los suelos aluviales de los fondos de valle del vaso del embalse o préstamos próximos, carga, transporte, extendido, humectado y compactado según prescripciones técnicas del pliego o según condiciones extraídas del terraplén de prueba, incluso acopios intermedios y trabajos en acopio. Según medición auxiliar	1	435.170,43			435.170,43
						435.170,43
PTU-011	m³ Material "todouno" en espaldones procedente de excavaciones Material "todouno" en espaldones procedente de excavaciones efectuadas en el vaso del embalse o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones o según puesta en obra deducida de los terraplenes de prueba. Según medición auxiliar	1	1.287.077,49			1.287.077,49
						1.287.077,49
PTU-012	m³ Material tipo grava proc de la terraza aluvial en espaldones Material tipo gravas en espaldones procedente de la terraza aluvial superior al embalse, incluida su excavación mediante medios mecánicos, incluso taqueos puntuales, selección y troceado, carga, transporte, extendido, humectado y compactado en las condiciones indicadas en el pliego, incluso acopios intermedios y trabajos en acopio. Según medición auxiliar	1	457.208,82			457.208,82
						457.208,82
PTU-013	m³ Material procedente de costra calcarea en espaldón balsa Material procedente de la costra calcárea en espaldón de aguas abajo procedente de la terraza aluvial superior al embalse, incluida su excavación mediante medios mecánicos, incluso taqueos puntuales, selección y troceado, carga, transporte, extendido, humectado y compactado en las condiciones indicadas en el pliego, incluso acopios intermedios y trabajos en acopio. Según medición auxiliar	1	261.671,70			261.671,70

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						261.671,70
PTU-014	m³ Material granular para filtro, extendido y compactado balsa Material granular para filtro procedente de gravera o préstamos cercanos, incluye excavación y selección de la roca con resistencia a compresión simple superior a 15 Mpa, fabricación en planta de machaqueo y cribado hasta la obtención de la granulometría exigida en el Pliego, extendido y compactado junto a núcleo o en drenes horizontales de presa.					
	Según medición auxiliar	1	55.965,25			55.965,25
						55.965,25
PTU-015	m³ Material granular de transición, colocado y compactado Material granular de transición procedente de préstamo de gravas en terraza superior del embalses, incluye carga, transporte, selección del material y resto de operacionex asociadas según prescripciones del pliego, extendido y compactado en espaldón de presa. Unidad totalmente terminada en balsa.					
	Según medición auxiliar	1	37.852,14			37.852,14
						37.852,14
PTU-016	m³ Material granular tipo dren, extendido y compactado junto a núcleo Material granular para dren procedente de gravera o préstamos, incluye excavación y selección de la roca con resistencia a compresión simple superior a 15 Mpa, fabricación en planta de machaqueo y cribado hasta la obtención de la granulometría exigida en el Pliego, extendido y compactado junto a núcleo o en drenes horizontales de balsa.					
	Según medición auxiliar	1	64.467,70			64.467,70
						64.467,70
PTU-017	m³ Pedraplén extendido y compactado en relleno de pie de balsa y espaldones Pedraplén en relleno de pie de balsa y espaldones procedente del vaso del embalse o préstamos próximos, incluida su excavación mediante voladura, selección y troceado, carga, transporte, extendido, humectación y compactación en tongadas de 0,80 m de espesor y granulometría según lo especificado en el Pliego.					
		1	8.583,89			8.583,89
						8.583,89
PTU-018	m³ Material grueso (rip-rap) de cantera en balsa Material grueso (rip-rap) para protección de espaldón procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto, vertida en cualquier tipo de paramento de balsa, incluso suministro, transporte, colocación y compactación, medido sobre perfil teórico, según planos.					
	Según medición auxiliar	1	88.268,00			88.268,00
						88.268,00
04.01.04	CORONACIÓN DE Balsa					
PBATU003	m² Repaso+comp.explanada,m.mec.,95%PM Repaso y compactado de explanada ejecutada, con medios mecánicos y compactación del 95 % PM. Incluye material de refino en caso de ser necesario. Adecuación explanada ejecutada					
	Vial en coronación	716,18	8,00			5.729,44
						5.729,44
PBATU001	m³ Relleno con material filtrante, con grava de cantera 20-40 Relleno localizado de material filtrante (grava 20-40) procedente de cantera, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Aguas arriba	1	1.060,00	0,39		413,40
	Aguas abajo	1	1.060,00	0,39		413,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A deducir canalización	-1	150,00	0,40	0,20	-12,00
						814,80
P1MT08BASEZA1	m³ Zahorra artificial 95% PM	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.				
	Coronación	1	1.060,00	1,81		1.918,60
						1.918,60
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2	Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.				
	Vial en coronación	1	1.060,00	6,35		6.731,00
						6.731,00
PGF21M911	m Barrera con tubo de acero galvanizado, de 130 mm de diámetro y esp. 2mm	Barrera con tubo de acero galvanizado, de 130 mm de diámetro y 2 mm de espesor, incluido fijación a dado de hormigón con placa y tornillos, cualquier material auxiliar así como totalmente colocada en recta o curva de cualquier radio, incluido soldaduras necesarias, todo según planos.				
	Aguas arriba	212	4,29			909,48
	Aguas abajo	212	4,29			909,48
	a deducir zona de edificio	-7	4,29			-30,03
						1.788,93
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales	Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.				
	Anclajes de barreras					
	Aguas arriba	212	1,08	0,35	0,35	28,05
	Aguas abajo	212	1,08	0,35	0,35	28,05
	A deducir plataforma de edificio	-7	1,08	0,35	0,35	-0,93
	Hormigón para canalización	1	150,00	0,40	0,20	12,00
	A deducir tubos 90 mm	-2	150,00	0,01		-3,00
						64,17
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.				
	Canalización	1	150,00	0,40	0,20	12,00
	A deducir tuberías	-2	150,00	0,01		-3,00
						9,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004C-E2	m² Encof/desenc. muros y paramentos CURVOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Anclajes de barreras					
	Aguas arriba	212	1,08	0,35		80,14
	Aguas abajo	212	1,08	0,35		80,14
	A deducir plataforma de edificio	-7	1,08	0,35		-2,65
						157,63
PPIL12.004	ud Pilona prefabricada de hormigón					
	Pilona prefabricada de hormigón blanco, de sección cuadrada de 18 cm de lado y 80 cm de altura según planos, con los bordes en chaflán y rematada en punta, totalmente colocada.					
	Aguas arriba	212				212,00
	Aguas abajo	212				212,00
	A deducir zona de edificio	-7				-7,00
						417,00
P5ELE110PVC	m Tubo PVC 110 mm liso adosado o embebido					
	Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D= 110 mm, e=3,2 mm. embebido en hormigón o adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.					
	En canalización	2	150,00			300,00
						300,00
04.01.05	TRATAMIENTO DEL CIMIENTO					
04.01.05.01	PANTALLA DE IMPERMEABILIZACIÓN					
PINY001	ud Estudio de inyección					
	Estudio de optimización la mezcla de la inyección incluso ensayos previos de mezcla, propuesta de dosificación, parámetros GIN, incluso informe.					
		1				1,00
						1,00
PINY002	ud Transporte, montaje y desmontaje de equipos de inyección					
	Transporte, montaje y desmontaje de equipos de inyección.					
		1				1,00
						1,00
PINY003	ud Desplazamiento equipo de un punto a otro					
	Desplazamiento del equipo de perforación entre puntos de emplazamiento.					
		16				16,00
						16,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PINY004	m Perforación de taladro a rotopercusión para inyección entre 0 y 30° Perforación de taladro a rotopercusión para inyección con cualquier inclinación entre 10 y 30 con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.					
		1	5,00			5,00
		1	7,00			7,00
		1	11,00			11,00
		1	12,00			12,00
		1	19,00			19,00
		1	25,00			25,00
		1	30,00			30,00
		1	30,00			30,00
		1	30,00			30,00
		1	30,00			30,00
		1	30,00			30,00
		1	29,00			29,00
		1	28,00			28,00
		1	28,00			28,00
		1	29,00			29,00
		1	28,00			28,00
		1	29,00			29,00
		1	28,00			28,00
						428,00
PINY005	ud Posicionamiento de cada obturador Posicionamiento de cada obturador.					
	A 8 m	16				16,00
	Cada 5 m	82				82,00
						98,00
PINY006	t Materia seca de inyección Materia seca de inyección de cemento en lechada realmente inyectada con dosificación C/A entre 0,5 y 2 en función del as admisiones, incluso aditivo entre 50 y 75 kg, incluso instalación centralizada de inyección compuesta por silo báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.					
	(0,10x0.025x428)	1	1,0700			1,0700
						1,07
PINY007	t Materia seca de inyección de microcemento A-12 Materia seca de inyección de microcemento A-12 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	1,0000	0,0200	428,0000	8,5600
						8,56
PINY008	t Materia seca de inyección de microcemento A-6 Materia seca de inyección de microcemento A-6 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	1	0,1000	0,0500	428,0000	2,1400
						2,14
PENSLU001	ud Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de prof Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de profundidad, incluidas obturaciones y apoyo técnico.	3				3,00
						3,00
04.01.05.02	PRUEBA DE CONSOLIDACIÓN					
PINY003	ud Desplazamiento equipo de un punto a otro Desplazamiento del equipo de perforación entre puntos de emplazamiento.	8				8,00
						8,00
PINY004-B	m Perforación de taladro a rotopercusión para inyección entre 0-10° Perforación de taladro a rotopercusión para inyección con cualquier inclinación entre 0° y 10° con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.	9	10,00			90,00
						90,00
PINY007	t Materia seca de inyección de microcemento A-12 Materia seca de inyección de microcemento A-12 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	1		0,0200	90,0000	1,8000
						1,80
PENSLU001	ud Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de prof Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de profundidad, incluidas obturaciones y apoyo técnico.	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.01.05.03	TRATAMIENTO DE CONSOLIDACIÓN					
PINY003	ud Desplazamiento equipo de un punto a otro Desplazamiento del equipo de perforación entre puntos de emplazamiento.	472				472,00
						472,00
PINY004-B	m Perforación de taladro a rotopercusión para inyección entre 0-10° Perforación de taladro a rotopercusión para inyección con cualquier inclinación entre 0° y 10° con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.	473			10,00	4.730,00
						4.730,00
PINY005	ud Posicionamiento de cada obturador Posicionamiento de cada obturador.	2			473,00	946,00
						946,00
PINY006	t Materia seca de inyección Materia seca de inyección de cemento en lechada realmente inyectada con dosificación C/A entre 0,5 y 2 en función del as admisiones, incluso aditivo entre 50 y 75 kg, incluso instalación centralizada de inyección compuesta por silo báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra. (0,10x0,025x4.730)	1	11,8250			11,8250
						11,83
PINY007	t Materia seca de inyección de microcemento A-12 Materia seca de inyección de microcemento A-12 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	1		0,0200	4.730,0000	94,6000
						94,60
PINY008	t Materia seca de inyección de microcemento A-6 Materia seca de inyección de microcemento A-6 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra. (0,005x0,05x4.730)	1	0,0050	0,0500	4.730,0000	1,1825
						1,18
04.01.06	RECOGIDA DE FILTRACIONES					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.01.06.01	DREN					
PTUDREB250	m Tubería PVC 250 ranurada Tubo dren de PVC corrugado poroso, D= 250 mm, puesta en zanja, instalada, transporte, montaje. Unidad totalmente instalada y terminada. Ambas márgenes	2	2,50			5,00
						5,00
PTUB250PVC	m Tubería PVC D=250 mm SN-8 Tubería de PVC diámetro Nominal 250 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada. Dren derecho Hasta la arqueta Hasta el desagüe Dren izquierdo Hasta la arqueta Hasta el desagüe	1 1 1 1 1	142,00 15,00 90,00 10,00			142,00 15,00 90,00 10,00
						257,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. Dren derecho Hasta la arqueta Hasta el desagüe Dren izquierdo Hasta la arqueta Hasta finla plataform hasta el desagüe	1 1 1 1 1 1	142,00 15,00 21,00 61,50 7,00 10,00		6,89 2,39 2,39 8,79 6,10 1,15	978,38 35,85 85,32 540,59 42,70 14,72
						1.697,56
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. Dren derecho Hasta la arqueta Hasta el desagüe A deducir tubería	1 1 -1	142,00 15,00 157,00	0,80 0,80 0,05	0,60 0,60 0,05	68,16 7,20 -7,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Dren izquierdo					
	Hasta la arqueta	1	90,00	0,80	0,60	43,20
	Hasta el desagüe	1	10,00	0,80	0,60	4,80
	A deducir tubería	-1	100,00		0,05	-5,00
						110,51
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Total excavación	1	1.697,60			1.697,60
	Dren derecho					
	Hasta la arqueta	-1	142,00	0,80	0,60	-68,16
	Hasta el desagüe	-1	15,00	0,80	0,60	-7,20
	Dren izquierdo					
	Hasta la arqueta	-1	90,00	0,80	0,60	-43,20
	Hasta el desagüe	-1	10,00	0,80	0,60	-4,80
						1.574,24
04.01.06.02	ARQUETAS Y AFORADORES					
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Margen derecha					
	Cajeros	4	3,10		3,35	41,54
	A descontar tubo	-2	0,05			-0,10
	Margen Izquierda					
	Arqueta 1					
	Cajeros	4	2,60		3,69	38,38
	A descontar tubo	-2	0,05			-0,10
	Arqueta 2					
	Cajeros	4	3,10		2,85	35,34
	A descontar tubo	-2	0,05			-0,10
						114,96

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlite que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	Margen derecha					
	Cajeros	4	2,50		3,00	30,00
	A descontar tubo	-2	0,05			-0,10
	Aforador	2	2,50		0,50	2,50
		2	0,42	0,10		0,08
	A descontar	-1	0,30		0,30	-0,09
	Margen Izquierda					
	Arqueta 1					
	Cajeros	4	2,00		3,34	26,72
	A descontar tubo	-2	0,05			-0,10
	Arqueta 2					
	Cajeros	4	2,50		2,50	25,00
	A descontar tubo	-2	0,05			-0,10
	Aforador	2	2,50		0,50	2,50
		2	0,42	0,10		0,08
	A descontar	-1	0,30		0,30	-0,09
						86,40
P4HG-001A	m³ Hormigón HM-12.5/B/20/X0					
	Hormigón en masa HM-12.5/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación, p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Aforadores	2	3,10	3,10		19,22
		1	2,60	2,60		6,76
						25,98
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Margen derecha					
	Solera	1	3,10	3,10	0,35	3,36
	Cajeros	2	3,10	0,30	3,00	5,58

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	2,50	0,30	3,00	4,50
	A descontar tuberøa	-2	0,30		0,05	-0,03
	Aforador	1	2,50	0,20	0,50	0,25
	Margen izquierda					
	Arqueta aforador					
	Solera	1	3,10	3,10	0,35	3,36
	Cajeros	2	3,10	0,30	2,50	4,65
		2	0,50	0,30	2,50	0,75
	A descontar tuberøa	-2	0,30		0,05	-0,03
	Aforador	1	2,50	0,20	0,50	0,25
		-1	0,30	0,20	0,30	-0,02
		-1	0,30	0,20	0,30	-0,02
	Arqueta de conexi³n					
	Solera	1	2,60	2,60	0,35	2,37
	Cajeros	2	2,60	0,30	3,34	5,21
		2	2,00	0,30	3,34	4,01
	A descontar tuberøa	-2	0,30		0,05	-0,03
						34,16

P4ETT-002	kg	Acero B-500-S	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.			
		Según medición auxiliar	1	2.998,77		2.998,77

2.998,77

P41ESC2	m	Escalera vertical fija acero inox-tipo barco AISI 316L	Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaida y elementos extensibles. Unidad totalmente terminada.			
		Arqueta margen derecha	1		3,00	3,00
		Arquetas margen izquierda	1		3,34	3,34
			1		2,50	2,50
						8,84

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada. Margen derecha					
	Cajeros	4	3,10		3,35	41,54
	A descontar tubo	-2	0,05			-0,10
	Margen Izquierda					
	Arqueta 1					
	Cajeros	4	2,60		3,69	38,38
	A descontar tubo	-2	0,05			-0,10
	Arqueta 2					
	Cajeros	4	3,10		2,85	35,34
	A descontar tubo	-2	0,05			-0,10
						114,96
P4LOSA003	m² Losa prefabricada con entrada de hombre Losas prefabricadas de hormigón en tapas de grandes arquetas con entrada de hombre practicable dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contra-cerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.					
	Arqueta Margen derecha	1	3,25	3,25		10,56
	Arqueta margen izquierda	1	3,25	3,25		10,56
		1	2,75	2,75		7,56
						28,68
P41LAG004	ud Entrada de hombre con chapa lagrimada de 1,00x100 Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.					
		3				3,00
						3,00
04.01.07	CUNETA PIE DE Balsa					
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.					
	Cuneta pie de balsa margen derecha	1	280,00			280,00
	Cuneta pie de presa margen izquierda					
		1	187,00			187,00
		1	119,00			119,00
		1	360,00			360,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						946,00
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada. En plataforma					
	Margen derecha	1	122,00			122,00
	Margen izquierda	1	73,00			73,00
	Desagües finales	1	75,00			75,00
						270,00
P4TUB500PVC	m Tubería PVC D=500 mm SN-8 Tubería de PVC diámetro Nominal 500 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.					
	Margen derecha	1	180,00			180,00
	Margen izquierda	1	115,00			115,00
						295,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Margen derecha	1	180,00		16,43	2.957,40
	Margen izquierda	1	115,00		2,65	304,75
						3.262,15
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Margen derecha	1	180,00		1,57	282,60
	Adeducir tubería	-1	180,00		0,20	-36,00
	Margen izquierda	1	115,00		1,57	180,55
	A deducir tubería	-1	115,00		0,20	-23,00
						404,15
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavación	1	3.261,96			3.261,96

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Margen derecha	1	180,00		1,57	282,60
	Margen izquierda	1	115,00		1,57	180,55
						3.725,11

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

Arqueta margen derecha	4	1,40		1,70	9,52
A descontar cuneta	-2			0,50	-1,00
A decontar tubería	-1			0,20	-0,20
Arqueta margen izquierda	4	1,40		1,94	10,86
A descontar cuneta	-2			0,50	-1,00
A descontar tubería	-1			0,20	-0,20
Obra de salida					
Imposta	2	1,00		1,20	2,40
Aletas	4	0,50		0,95	1,90
	4	1,05		0,25	1,05
A descontar tubería	-2	0,20			-0,40

22,93

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

A descontar cuneta	-2			0,50	-1,00
A descontar tubería	-1			0,20	-0,20
Arqueta margen izquierda	4	1,00		1,74	6,96
A descontar cuneta	-2			0,50	-1,00
A descontar tubería	-1			0,20	-0,20
Obra de salida					
Imposta	2	1,00		1,00	2,00
Aletas	4	0,50		0,95	1,90
	4	1,05		0,05	0,21
A descontar tubería	-2	0,20			-0,40

8,27

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-001A	m³ Hormigón HM-12.5/B/20/X0 Hormigón en masa HM-12.5/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación, p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Arquetas	2	1,40	1,40		3,92
						3,92
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	En rellenos	1	315,00			315,00
						315,00
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Arqueta margen derecha					
	Solera	1	1,40	1,40	0,20	0,39
	Cajeros	4	1,00	0,20	1,50	1,20
	A deducir cuneta	-2	1,00	0,20	0,50	-0,20
	A deducir tubería	-1	0,20	0,20		-0,04
	Arqueta margen derecha					
	Solera	1	1,40	1,40	0,20	0,39
	Cajeros	4	1,00	0,20	1,74	1,39
	A deducir cuneta	-2	1,00	0,20	0,50	-0,20
	A deducir tubería	-1	0,20	0,20		-0,04
	Obra de salida					
	Solera	2	2,31	0,94	0,20	0,87
	Imposta	2	1,00	1,00	0,20	0,40
	Aletas	4	1,25	0,48	0,20	0,48
		4	1,25	0,05	0,30	0,08
	A deducir tubería	-2	0,20	0,20		-0,08
						4,64
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Cuantia 90 Kg/m3	1	90,00		4,63	416,70
						416,70

P1MTTU003	m² Geodrén PEAD 200 gr/m2	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.				
	Arqueta margen derecha	4	1,40		1,70	9,52
	A descontar cuneta	-2			0,50	-1,00
	A decontar tubería	-1			0,20	-0,20
	Arqueta margen izquierda	4	1,40		1,94	10,86
	A descontar cuneta	-2			0,50	-1,00
	A descontar tubería	-1			0,20	-0,20
	Obra de salida					
	Imposta	2	1,00		1,20	2,40
	Aletas	4	0,50		0,95	1,90
		4	1,05		0,25	1,05
	A descontar tubería	-2	0,20			-0,40
						22,93

04.02 CAMARA DE COMPUERTAS DEL DESAGÜE DE FONDO

04.02.01 MOVIMIENTO DE TIERRAS

P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.				
	(pk -0+112,626 a 0+97.746)	1	1.850,30			1.850,30
						1.850,30

P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.				
		1	35,50	21,00		745,50
						745,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.02.02	OBRA DE FABRICA					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	15,26			15,26
						15,26
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados					
	Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Zona embocadura	2	4,13		4,30	35,52
		2	0,39		4,30	3,35
		1	3,04		4,30	13,07
	Sección principal	2	35,40		12,60	892,08
		1	10,40	1,30	16,30	220,38
		1	10,40	1,30	6,94	93,83
	HM-Horm segunda fase	1	2,00	18,45	7,40	273,06
						1.531,29
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	S/med. aux	1	214.162,63			214.162,63
						214.162,63
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
		1	2,00	12,60	1,80	45,36
		1	2,00	12,60	1,00	25,20
						70,56
P4ETT-004C-E2	m² Encof/desenc. muros y paramentos CURVOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Zona embocadura	2	2,82	4,30		24,25
		1	4,28	4,30		18,40
		2	2,14	4,30		18,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Sección principal	1	12,60	11,70		147,42
		1	12,60	15,70		197,82
		2	16,80			33,60
						439,89
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.				
	Zona embocadura	2	3,30	4,30		28,38
	Sección principal	4	12,60	7,75		390,60
		2	12,60	7,40		186,48
		1	8,59	10,40		89,34
		1	10,40	5,64		58,66
						753,46
P4JTAPVC400	m Junta elastomérica de estanqueidad PVC 400	Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.				
		4	12,60			50,40
						50,40
PIMPEXT3	m² Impermeabilización exterior de la cámara mediante mortero elástico	Impermeabilización exterior de la cámara de compuertas mediante mortero elástico. Incluye los siguientes trabajos: - Preparación del soporte mediante medios manuales o mecánicos: limpieza de la superficie con agua a presión con el fin de eliminar la suciedad, restos de desencofrantes, etc. para conseguir una correcta adherencia. - Suministro y aplicación de mortero elástico Masterseal 6100 FX,o SIMILAR en el exterior de la cámara con una dotación aproximada de 3 kg/m2 y 3,0-3,5 mm de espesor medio. La aplicación se realizará de forma manual o proyectada en dos capas y sobre el soporte húmedo y limpio. Una vez aplicadas las dos capas formará una membrana superficial adherida al soporte que impide totalmente el paso del agua y de las humedades, en ambos sentidos, siendo un material que está homologado para agua potable y es compatible con hormigones y cemento Pórtland.				
		1	31,47	20,00		629,40
		1	5,45	10,00		54,50
		1	8,10	10,00		81,00
						764,90
P4CIMBRA	m³ Aparente cimbra	Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.				
		1	12,60	7,40	1,50	139,86
		1	10,00	7,40	11,00	814,00
						953,86

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41MRE002	m² Aplicación de resina epoxy					
	Aplicación de resina epoxy en obras de fábrica. Unidad completa incluidas operaciones de tratamiento y limpieza.					
	Superficiando plataforma	1	70,62			70,62
	A deducir	-1	3,00	7,40		-22,20
						48,42
04.02.03	CONDUCCIONES Y ELEMENTOS SINGULARES					
P1T2232.20.E	m Tubería acero helic. L275, Ø2232 esp. 16,0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2232 mm y espesor mínimo de 16,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		2	4,30			8,60
						8,60
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR					
	Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.					
	Kg calderería (pieza transición)	7.850	2,00	7,80	0,01	1.224,60
						1.224,60
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales					
	Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.					
	Apoyos tubería DN 2232	78	3,18	0,70	0,20	34,73
						34,73
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Apoyos tubería DN 2232	78	3,18		0,20	49,61
		78				78,00
		78		0,70	0,20	10,92
						138,53

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.02.04	ELEMENTOS HIDROMECÁNICOS Y ELECTROMECÁNICOS					
P6COMPBU_E	ud Compuerta Bureau 1700x2200 - PN10 -95 mca Compuerta Bureau con las siguientes características. Accionamiento: HIDRAULICO Cuerpo: S275JR + 304 Obturador: S275JR+304+BRONCE Cierre: INOX-BRONCE Brida: PN 10 Anchura: 1700 Altura: 2200 : Presión trabajo real: 95 mca Presión diseño: 95 mca Presión prueba cuerpo: 142,5 mca Presión prueba cierre: 104,5 mca La compuerta incluye lo siguiente: - By-pass DN 150 compuesto por 2 válvulas de compuerta. - Sistema de aireación DN 300 compuesto por 2 válvulas de compuertas + 2 válvulas de ventosa. - Grupo hidráulico (1 para 2 compuertas BU). - Panel de control (1 para 2 compuertas BU). - Repuestos recomendados. Totalmente colocada.					
		2				2,00
						2,00
PCOMO010	m Embebidos metálicos en 1ª y 2ª fase Embebidos metálicos en primera y segunda fase de hormigonado, en ranuras de elementos hidromecánicos, totalmente colocados.					
		4	5,30			21,20
						21,20
PREJ001	m² Reja formada por pletinas metálicas Reja formada por pletinas metálicas.					
		2		1,60	3,30	10,56
						10,56
04.02.05	ESTRUCTURA METÁLICA					
P41ESC4	m Escalera peldaño inclinada PRFV 1.0m ancho Suministro e instalación de escalera inclinada de PRFV, de 1000 mm de ancho y peldaños antideslizantes cada 230 mm, incluyendo pasamanos, montantes, rodapié y listones intermedios, estructura de soporte y resto de elementos. Las piezas de PRFV se fabricarán mediante pultrusión, con resina ISOFTÁLICA en espacios sin agresión química y con VINILESTER en espacios confinados con agresión química, con las siguientes características: - Resistencia UV 5 en la escala de grises conforme a norma UNE-EN ISO 4892-parte 2 y/o según normativa vigente - Resistencia al fuego M-1 (ASTM-E84) - Resistencia al humo F-1 (ASTM-E84) - Pigmentación mediante resina tintada incluso p.p. de elementos de sujeción en acero inoxidable austenítico AISI 316.					
		1	2,65			2,65
		1	3,54			3,54
						6,19
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilería acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Plataforma	1	7,40	1,50		11,10
						11,10
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga	Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.				
	s/med.aux	1	1.249,28			1.249,28
						1.249,28
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6	Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.				
		2	3,20			6,40
		1	1,30			1,30
						7,70
P41BARAND05	m Barandilla de acero en plataforma de tramex	Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por perfilera metálica y tubos metálicos 42,2x6 mm, montada en plataforma de tramex o elementos metálicos por soldadura, incluso parte proporcional de soldaduras, totalmente colocada y terminada.				
		1	7,40			7,40
						7,40
04.03	GALERÍA DEL DESAGÜE DE FONDO					
04.03.01	MOVIMIENTO DE TIERRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.				
	Según planos (pk -0+097.746-0+120)	1	30.431,70			30.431,70
						30.431,70
PTU-021	m³ Material de espaldón en relleno de excavación localizada	Material "todouno" en espaldones procedente de excavaciones efectuadas en el vaso del embalse o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones o según puesta en obra deducida de los terraplenes de prueba.				
	Según medición auxiliar	1	27.342,29			27.342,29
						27.342,29

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.03.02	OBRA DE FABRICA					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	234,00	13,00	0,10	304,20
						304,20
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
S1		1	60,00	62,64		3.758,40
S2		1	72,00	60,30		4.341,60
S3		1	31,75	54,90		1.743,08
S4		1	36,00	55,00		1.980,00
S5		1	24,70	61,34		1.515,10
		2	9,50	24,00		456,00
		1	1,00	19,91		19,91
						13.814,09
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. Bajo Núcleo de balsa					
De sección -0+010 a 0+000		1	45,02		10,00	450,20
De sección 0+000 a 0+010		1	45,12		10,00	451,20
						901,40
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocado, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. S/med. aux					
S1		1	670.259,18			670.259,18
S2		1	768.472,69			768.472,69
S3		1	273.403,75			273.403,75
S4		1	310.155,86			310.155,86
S5		1	228.084,15			228.084,15
		1	68.992,80			68.992,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	2.472,82			2.472,82
						2.321.841,25

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

S1	2	60,00	2,20	264,00
S2	2	72,00	2,00	288,00
S3	2	31,75	1,80	114,30
S4	2	36,00	1,80	129,60
S5	2	24,70	1,80	88,92
Losa intermedia	1	234,00	7,40	1.731,60
Losa superior	1	234,00	7,40	1.731,60
Parte final	2	9,50	1,80	34,20
				4.382,22

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

S1	2	60,00	5,63	675,60
	1	60,00	28,97	1.738,20
S2	2	72,00	5,25	756,00
	1	72,00	28,50	2.052,00
S3	2	31,75	4,95	314,33
	1	31,75	30,01	952,82
S4	2	36,00	4,95	356,40
	1	36,00	28,50	1.026,00
S5	2	24,70	7,60	375,44
	1	24,70	33,22	820,53
Parte final	4	9,50	6,32	240,16
				9.307,48

P4ETT-004C-E2 m² Encof/desenc. muros y paramentos CURVOS y VISTOS

Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	S1	1	60,00		26,45	1.587,00
	S2	1	72,00		27,31	1.966,32
	S3	1	31,75		27,33	867,73
	S4	1	36,00		27,29	982,44
	S5	1	24,70		27,02	667,39
						6.070,88
P4JTAPVC400	m Junta elastomérica de estanqueidad PVC 400	Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.				
		20	34,00	2,00		1.360,00
						1.360,00
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo	Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.				
		8	224,45			1.795,60
						1.795,60
P4CIMBRA	m³ Aparente cimbra	Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.				
	S1	1	60,00	7,40	5,35	2.375,40
	S2	1	72,00	7,40	5,35	2.850,48
	S3	1	31,75	7,40	5,35	1.256,98
	S4	1	36,00	7,40	5,35	1.425,24
	S5	1	24,70	7,40	7,71	1.409,23
	Parte final	1	9,50	7,40	3,72	261,52
	Losa inferior	1	234,00	7,40	1,50	2.597,40
						12.176,25
PSELLSEXTG	m Sellado elástico exterior de las juntas de la galería mediante banda elastomérica	Sellado elástico exterior de las juntas de la galería mediante banda elastomérica. Incluye los siguientes trabajos: - Preparación geométrica de la superficie portante de la junta mediante abujardado. Limpieza y saneo de ambos lados de la junta. - Aplicación de resina epoxi, Masterflex 3000 o similar adhesivo o similar. - Colocación en forma de omega invertida de la banda elastomérica Masterflex 3000 de alta resistencia de 20 cm de ancho o similar. - Aplicación de una segunda capa resina epoxi, Masterflex 3000 adhesivo o similar. - Una vez seca la resina se protegerá los lados de la junta mediante relleno de mortero de reparación Emaco S 88 o similar hasta igualar en altura con la superficie de la bóveda. - Por último y como protección de la junta se colocará de forma longitudinal una geomalla Hate X P 50 de polietileno de alta resistencia y 50 cm de ancho o similar.				
	S1	6	30,61			183,66
	S2	5	30,21			151,05

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	S3	4	29,21			116,84
	S4	3	29,21			87,63
	S5	2	33,93			67,86
						607,04
P4MOR-001_E	m³ Mortero de nivelación Formación de capa de mortero de nivelación.					
		1	566,28			566,28
						566,28
P3ACA001	m Formación de acanaladura con pendiente Formación de acanaladura con pendiente uniforme longitudinal mediante empleo de encofrado metálico perdido con una anchura de 20 cm y una altura de 10 cm, totalmente finalizada.					
		1	468,00			468,00
						468,00
04.03.03 CONDUCCIONES						
P1T2232.20.E	m Tubería acero helic. L275, Ø2232 esp. 16,0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2232 mm y espesor mínimo de 16,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		2	234,00			468,00
						468,00
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m² 700 g/m². Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	Apoyos tubería DN 2232	78	0,160	7.850,000		97.968,000
						97.968,00
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales Hormigón para armar HA-35/B/20/XC2+XA3, puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.					
	Apoyos tubería DN 2232	78	3,18	0,70	0,20	34,73
						34,73
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Apoyos tubería DN 2232	156	3,18		0,20	99,22
		156				156,00
		156		0,70	0,20	21,84
						277,06
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	78	3,96	0,30		92,66
						92,66
04.03.04 ACCESORIOS						
PCANDRE	m Canaleta de drenaje en galería Canaleta para recogida de agua en galería.	2	233,00			466,00
						466,00
PTAP600_E	ud Tapa acceso 600 x 600 Tapa de fundición dúctil para acceso a canal de descarga del aliviadero de dimensiones 0,600 x 0,600 m incluyendo cerco, mano de obra y colocación.	5				5,00
						5,00
PPOL2000.4VI	ud Polipasto electrico, trans. Eléctrica, carga = 2000 kg Polipasto con las siguientes características - Versión : carro eléctrico - Altura de elevación : 4 m - Voltaje: 400 V.50 Hz - Velocidad elevación : 4/1 m/min - Velocidad translación : 20/5 m/min - Potencia de elevación : 1,7 y 0,4 kw - Potencia del carro : 0,34 kw con variador - Incluye botonera a baja tensión suspendida del polipasto con 3 m de cable de mando y carro tomacorrientes Totalmente colocado.	1				1,00
		1				1,00
						2,00
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa. Carril polipasto IPN300	1	233,00	56,56		13.178,48
						13.178,48

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEBAND1	m Bandeja PVC 300x60mm Bandeja de PVC de dimensiones 300x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
		1	233,00			233,00
						233,00
04.03.05 ELECTRICIDAD						
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+Ip68 Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de poliparbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
		1	24,00			24,00
						24,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
		1	24,00			24,00
		1	250,00			250,00
						274,00
P5ELEM3X1.5TT	m Manguera eléctrica 3 x 1.5 + TT1.5 mm2 Manguera eléctrica de 3 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
		1	300,00			300,00
						300,00
04.04 ARQUETA Y EDIFICIO DE TOMAS						
04.04.01 MOVIMIENTO DE TIERRAS						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	S/med aux	1	4.101,20			4.101,20
						4.101,20
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavacion	1	4.326,57			4.326,57
	elemento	-1	704,50		5,20	-3.663,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						663,17
04.04.02	OBRA DE FABRICA					
04.04.02.01	ARQUETA INFERIOR					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.						
		1	704,50		0,10	70,45
						70,45
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales					
Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.						
losa de cimentación 1		1	18,35	12,15	0,60	133,77
losa de cimentacion 2		1	1,50	25,45	0,60	22,91
losa cimentacion 3		1	5,50	25,45	0,60	83,99
vigas de cierre						
m1		1	25,45	0,50	0,60	7,64
m2		1	6,20	0,50	0,60	1,86
m3		1	3,80	0,50	0,60	1,14
m4		1	18,35	0,50	0,60	5,51
m8		1	6,50	0,60	0,60	2,34
60x60		1	8,40	0,60	0,60	3,02
m13		1	3,00	0,60	0,60	1,08
m9		1	4,00	0,50	0,60	1,20
m6		1	18,35	0,60	0,60	6,61
m5		1	12,15	0,50	0,60	3,65
m15		1	8,40	0,60	0,60	3,02
m7		1	6,50	0,60	0,60	2,34
m14		1	3,00	0,60	0,60	1,08
losa inferior		1	9,40	25,45	0,60	143,54
forjado losa		1	9,40	25,45	0,60	143,54
muro 1		2	1,00	25,45	2,00	101,80
muro 2		1	16,90	0,60	4,50	45,63

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1	18,35	0,60	4,50	49,55
	muro 3	1	23,85	0,50	4,50	53,66
		1	9,40	0,50	4,50	21,15
		1	18,35	0,50	4,50	41,29
		1	11,05	0,50	4,50	24,86
		1	3,40	0,50	4,50	7,65
	muro 4	1	16,90	1,00	4,50	76,05
	viga arco	1	16,65	0,60	1,00	9,99
						999,87

P4ETT-004E-E1 m² Encof/desenc. Cimientos OCULTOS

Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

losa de cimentación 1	2	18,35		0,60	22,02
	2		12,15	0,60	14,58
losa de cimentacion 2	2	1,50		0,60	1,80
	2		25,45	0,60	30,54
losa cimentacion 3	2	5,50		0,60	6,60
	2		25,45	0,60	30,54
forjado losa	2	9,40		0,60	11,28
	2		25,45	0,60	30,54
vigas de cierre					
m1	2	25,45		0,60	30,54
	2		0,50	0,60	0,60
m2	2	6,20		0,60	7,44
	2		0,50	0,60	0,60
m3	2	3,80		0,60	4,56
	2		0,50	0,60	0,60
m4	2	18,35		0,60	22,02
	2		0,50	0,60	0,60
m8	2	6,50		0,60	7,80
	2		0,60	0,60	0,72
60x60	2	8,40		0,60	10,08

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2		0,60	0,60	0,72
m13		2	3,00		0,60	3,60
		2		0,60	0,60	0,72
m9		2	4,00		0,60	4,80
		2		0,50	0,60	0,60
m6		2	18,35		0,60	22,02
		2		0,60	0,60	0,72
m5		2	12,15		0,60	14,58
		2		0,50	0,60	0,60
m15		2	8,40		0,60	10,08
		2		0,60	0,60	0,72
m7		2	6,50		0,60	7,80
		2		0,60	0,60	0,72
m14		2	3,00		0,60	3,60
		2		0,60	0,60	0,72
losa inferior		2	9,40		0,60	11,28
		1				1,00
		1				1,00
		1		25,45		25,45
		2		25,45	0,60	30,54
						374,73

P4ETT-004C-E2 m² Encof/desenc. muros y paramentos CURVOS y VISTOS

Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.

viga arco	2	16,65	0,60		19,98
	2	16,65		1,00	33,30
	2		0,60	1,00	1,20

54,48

P4ETT-004A-E2 m² Encof/desenc. muros y paramentos RECTOS y VISTOS

Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	muro 1	4	25,45		2,00	203,60
	muro 2	2	16,90		4,50	152,10
		2	18,35		4,50	165,15
	muro 3	2	23,85		4,50	214,65
		2	9,40		4,50	84,60
		2	18,35		4,50	165,15
		2	11,05		4,50	99,45
		2	3,40		4,50	30,60
	muro 4	2	16,90		4,50	152,10
						1.267,40
P4CIMBRA	m³	Aparente cimbra				
Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.						
	forjado losa	1	9,40	25,45	1,60	382,77
	viga arco	1	16,65	0,60	5,35	53,45
						436,22
P4ETT-002	kg	Acero B-500-S				
Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.						
	Según mediciones auxiliares	1	140.459,05			140.459,05
						140.459,05
P4JTAPVC300	m	Junta elastomérica de estanqueidad PVC 300				
Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.						
	muro 1	2	25,45			50,90
	muro 2	1	16,90			16,90
		1	18,35			18,35
	muro 3	1	23,85			23,85
		1	9,40			9,40
		1	18,35			18,35
		1	11,05			11,05
		1	3,40			3,40
	muro 4	1	16,90			16,90
	juntas horizontales losa cimentacion	3	25,45			76,35

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	junta horizontal llegada galeria	1	9,40			9,40
	junta vertical llegada galeria	1	16,65			16,65
	junta horizontal salida galeria	1	9,40			9,40
	junta vertical salida galeria	1	16,65			16,65
						297,55
P1MTTU003	m² Geodrén PEAD 200 gr/m2					
	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.					
	muro 1	2		25,45	2,00	101,80
	muro 2	1	16,90		4,50	76,05
		1	18,35		4,50	82,58
	muro 3	1	23,85		4,50	107,33
		1	9,40		4,50	42,30
		1	18,35		4,50	82,58
		1	11,05		4,50	49,73
		1	3,40		4,50	15,30
	muro 4	1	16,90		4,50	76,05
						633,72
04.04.02.02	LOSA DE PASO Y ACCESO A GALERÍA					
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales					
	Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.					
	losa de transicion	1	9,40	8,50	0,50	39,95
	laterales losa	2	4,00	8,50	0,30	20,40
						60,35
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	losa de transicion	1	9,40	8,50		79,90
		2	9,40		0,50	9,40
		2		8,50	0,50	8,50
	laterales losa	4	4,00		0,30	4,80
		2				2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2				2,00
		1		8,50		8,50
		4		8,50	0,30	10,20
						125,30
P4CIMBRA	m³ Aparente cimbra					
	Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.					
	losa de transicion	1	9,40	8,50	3,90	311,61
						311,61
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Según medición auxiliar	1	10.892,37			10.892,37
						10.892,37
P4JTAHIDROF2	m Junta cordón unión prefabricado a hormigón in situ					
	Junta de estanqueidad en unión arquetas prefabricadas a hormigón de base ejecutado in situ, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.					
	laterales losa	2		8,50		17,00
						17,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM					
	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.					
	laterales losa	2	4,00	8,50	0,20	13,60
						13,60
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6					
	Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada pot tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.					
		1	7,40			7,40
						7,40
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro					
	Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado,soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.					
		2	1,00	1,00		2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.	1	1,00	2,10		2,10
						2,10
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa. S/med. aux	1	1.249,28			1.249,28
						1.249,28
04.04.02.03	ESTRUCTURA SUPERIOR					
PVPREFTVT25	m Viga prefabricada tubular correas tipo VT-25 Viga prefabricada tubular correas tipo VT-25 en cubierta, incluso transporte y colocación.					
	seccion 1	14	16,90			236,60
	seccion 6	10	17,85			178,50
						415,10
PVPREDEL182	m Viga prefabricada tipo Delta G182 T 10 Viga prefabricada tipo Delta G182 T 10, colocada con ayuda de grúa automóvil para montaje y apeos necesarios. Según CODIGO ESTRUCTURAL y CTE.					
	seccion 1	3	25,00			75,00
						75,00
PVPREDEL136	m Viga prefabricada tipo Delta G136 T 2 Viga prefabricada tipo Delta G136 T 2, colocada con ayuda de grúa automóvil para montaje y apeos necesarios. Según CODIGO ESTRUCTURAL y CTE.					
	seccion 6	3	15,75			47,25
						47,25
PVPREHAH	m Viga prefabricada HA portacanal tipo H Viga prefabricada HA portacanal tipo H, para recogida de aguas en cubierta, incluso pp de transporte y colocación.					
	seccion 1	2	16,90			33,80
	seccion 6	2	17,85			35,70
						69,50
PPILP5060	m. Pilar prefabricado de HA 50x60cm Pilar prefabricado de hormigón armado, HA-35/B/16/XC4, de sección 50x60 cm., de altura máxima 15 m., incluso p.p. de encofrado, desencofrado, vertido, vibrado, curado y armaduras, con ayuda de grúa telescópica sobre camión para montaje, aplomado, relleno del nudo de enlace con hormigón HA-35/B/16/XC4 para montaje y apeos necesarios, totalmente terminado.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	linea 1	2	7,20			14,40
	linea 2	1	8,20			8,20
		1	11,70			11,70
	linea 3	1	8,20			8,20
		1	11,70			11,70
	linea 4	2	11,70			23,40
		4	7,20			28,80
	linea 5	2	11,70			23,40
		2	7,20			14,40
	linea 6	4	7,20			28,80
						173,00
PVIGJAC4040	m	Viga jacena prefabricada de HA 40x40 cm				
Viga jacena prefabricada de hormigón armado de sección 40x40 cm., con armadura s/ cálculo y con la sección necesaria en cada nudo para acoplamiento de piezas de la estructura, incluso parte proporcional de apoyo, montaje con autogrúa, totalmente instalado.						
	perimetro fachada	1	119,60			119,60
						119,60
P4HG-002A	m³	Hormigón HL-150/B/20 Elementos horizontales y verticales				
Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.						
	zapatas	4	2,00	2,00	0,10	1,60
	vigas de atado	1	2,70	0,40	0,10	0,11
		2	3,95	0,40	0,10	0,32
		1	2,70	0,40	0,10	0,11
	losa	1	8,75	18,30	0,10	16,01
						18,15
PHA351031	m³	Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales				
Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.						
	zapatas	4	2,00	2,00	0,60	9,60
	vigas de atado	1	2,70	0,40	0,60	0,65
		2	3,95	0,40	0,60	1,90
		1	2,70	0,40	0,60	0,65
	losa	1	8,75	18,30	0,20	32,03
						44,83

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	zapatas	16	2,00		0,60	19,20
	losa	2	8,75		0,20	3,50
		2		18,30	0,20	7,32
						30,02
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	s/med. aux	1	1.686,00			1.686,00
						1.686,00
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga					
	Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífuga y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.					
	carril puente grua IPN 400	2	34,75	92,40		6.421,80
						6.421,80
04.04.03	ARQUITECTURA					
04.04.03.01	FACHADA Y CUBIERTA					
PCUBSAND	m² Cubierta panel sandwich e= 30 mm					
	Cubierta formada por panel de chapa de acero en perfil comercial, prelacada de 0,6 mm con núcleo de espuma de poliuretano de 40 kg/m3 con un espesor total de 30 mm sobre correas metálicas, i/p.p. de solapes, instalado, incluso medios auxiliares y elementos de seguridad, según normativa vigente.					
		1	704,50			704,50
						704,50
PCUBPLAPOL	m² Cubierta placas de policarbonato					
	Suministro y montaje de placas translúcidas planas de policarbonato, con una pendiente mayor del 10%, PC Celular "ONDULINE" o similar, de 10 mm de espesor, con una transmisión de luminosidad del 90%, fijadas mecánicamente a cualquier tipo de correa estructural (no incluida en este precio). Incluso p/p de elementos de fijación, accesorios, juntas, remates perimetrales y otras piezas de remate para la resolución de puntos singulares.					
		20	6,00			120,00
						120,00
PEP1017	m² Fábrica bloques hueco hormigón estriado visto 40x20x20 cm.					
	Fábrica de bloque hueco de hormigón estriado a cara vista, color blanco, dimensiones 40x20x20 cm, recibida con mortero M-250 de cemento BL 22,5 incluso rejuntado, limpieza de paños y piezas especiales, según normativa vigente.					
		1	119,60	7,60		908,96
						908,96

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PEP1020	m Trasdoso de chapa de acero galvanizado Trasdoso de chapa mediante chapa plegada de acero, con acabado galvanizado, de 0,8 mm de espesor, colocado con fijaciones mecánicas. Incluso junta de estanqueidad.	1	119,60			119,60
						119,60
PEP1021	m Albardilla metálica de acero galvanizado Suministro y colocación de albardilla metálica para cubrición de muros, de chapa plegada de acero galvanizado, con goterón, espesor 0,8 mm, sobre una capa de regularización de mortero de cemento, industrial, con aditivo hidrófugo, M-5, de 4 cm de espesor, creando una pendiente suficiente para evacuar el agua, sobre la que se aplica el adhesivo bituminoso de aplicación en frío para chapas metálicas, que sirve de base al perfil de chapa de acero y sellado de las juntas entre piezas y, en su caso, de las uniones con los muros con adhesivo especial para metales. Incluso p/p de replanteo, cortes y limpieza final. Incluye: Preparación de la superficie de apoyo. Preparación de la base y de los medios de fijación. Ejecución de la base de apoyo de mortero. Replanteo de las piezas. Aplicación del adhesivo. Colocación y fijación de las piezas metálicas niveladas y aplomadas. Sellado de juntas y limpieza. Criterio de medición de proyecto: Longitud medida a ejes, según documentación gráfica de Proyecto. Criterio de medición de obra: Se medirá, a ejes, la longitud realmente ejecutada según especificaciones de Proyecto.	1	119,60			119,60
						119,60
PCAN1022	m Canalón de acero galvanizado Canalón de acero galvanizado, de desarrollo 250 mm, para recogida de aguas, formado por piezas preformadas, fijadas con soportes colocados cada 50 cm, con una pendiente mínima del 0,5%. Incluso soportes, esquinas, tapas, remates finales, piezas de conexión a bajantes y piezas especiales.					
	seccion 1	2	16,90			33,80
	seccion 6	2	17,85			35,70
						69,50
PBPVC110	m Bajante PVC Ø 110 mm. Bajante con tubería de PVC de 110 mm de diámetro, incluso p.p. de piezas especiales, elementos de fijación y medios auxiliares para su ejecución, según normativa vigente.	8	7,60			60,80
						60,80
PEP1024	ud Arqueta de registro 50x50x60 1/2 tapa horm. Arqueta de registro de dimensiones interiores 50x50x60 cm, realizada con fábrica de ladrillo perforado tosco de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón HM-20/P/40/I de 20 cm de espesor, enfoscada y bruñida interiormente, con cerco y tapa de hormigón prefabricada, totalmente terminada, incluso p.p. de medios auxiliares.	8				8,00
						8,00
PMANG110	m Manguetón de PVC flexible de 110 mm en conexión a bajantes Manguetón de PVC flexible de 110 mm en conexión a bajantes. Totalmente terminado.	8	100,00			800,00
						800,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.04.03.02	CARPINTERÍA					
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.					
	Lamas ventilación	14	2,00	0,80		22,40
						22,40
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.					
		1	4,00		4,00	16,00
		2	2,40		4,00	19,20
						35,20
PALP1026	m Afeizar de piedra artificial, de color blanco, de 30x5 cm. Afeizar de piedra artificial, de color blanco, de 30x5 cm, recibido con mortero M-250 de cemento CEM-I/32,5 ó BLL 22,5 con goterón, incluso pulido y abrillantado.					
	ventanas	14	2,00			28,00
						28,00
PCAPMET	m² Carpintería metálica con perfiles de acero conf. frío en vent. Carpintería metálica con perfiles de acero conformado en frío, en ventanas o puertas abatibles, ejecutada con perfiles de tubo hueco de acero laminado en frío, esmaltados al horno, de 1,5 mm ó 2 mm de espesor, junquillos de 30x15 mm, con bulones a presión, perfil vierteaguas, herrajes de colgar y seguridad, patillas para anclaje i/corte, preparación y soldadura de perfiles en taller, ajuste y montaje en obra, i/ vidrio, recibido en obra.					
	ventanas	14	2,00	1,60		44,80
						44,80
PDOBACRAIS	m² Doble acristalamiento aislante 4/6/4 Doble acristalamiento aislante formado por dos lunas incoloras de 4 mm y cámara de aire deshidratado de 6 mm con perfil separador de aluminio y doble sellado perimetral, fijación sobre carpintería e incluso cortes de vidrio y colocación de junquillos, según normativa vigente.					
	ventanas	14	2,00	1,60		44,80
						44,80
PCARG3	m Cargadero huecos luz= 3 m Cargadero para huecos de hasta 3 m de luz formado por viguetas prefabricadas de hormigón armado de 20 cm de canto, incluso recibido y colocación totalmente terminado.					
	Lamas ventilación	14	2,00			28,00
	ventanas	14	2,00			28,00
	puertas	1	4,00			4,00
		2	2,40			4,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						64,80
04.04.04	CONDUCCIONES Y VALVULERÍA					
04.04.04.01	CONDUCCIONES Y VALVULERIA					
P1T1900.13.0A	m Tubería acero helic. L275, Ø1930 esp. 13.0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.930 mm y espesor mínimo de 13.0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		2	6,10			12,20
						12,20
P1T1600.10.0A	m Tubería acero helic. L275, Ø1626 esp. 10.0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		1	19,85			19,85
		2	4,60			9,20
		1	3,35			3,35
		2	5,75			11,50
						43,90
P1T2232.20.E	m Tubería acero helic. L275, Ø2232 esp. 16,0					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2232 mm y espesor mínimo de 16,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		2	19,70			39,40
						39,40
P1T762.6.E	m Tubería acero helic. L275, Ø762 esp 6					
	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 762 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
		2	8,20			16,40
						16,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1T600.6.E	m Tubería acero helic. L275, Ø600 esp 6 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 600 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	2	1,30			2,60
						2,60
P6VM.2200.16M	ud Válvula mariposa motorizada PN 16 Ø2200 Válvula de mariposa, DN 2200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2				2,00
						2,00
P6CD.2200.16	ud Carrete desmontaje virola acero inox. PN16 DN2200 Carrete telescópico autoportante, PN 25 atm, DN2.200 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2				2,00
						2,00
P6VM.1900.16M	ud Válvula mariposa motorizada PN 16 Ø1900 I Válvula de mariposa, DN 1900 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2				2,00
						2,00
P6CD.1900.25	ud Carrete desmontaje virola acero inox. PN25 DN 1900 Carrete telescópico autoportante, PN 25 atm, DN 1.900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2				2,00
						2,00
P6VM.1600.16M	ud Válvula mariposa motorizada PN 16 Ø1600 I Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	4				4,00
						4,00
P6CD.1600.16	ud Carrete desmontaje virola acero inox. PN16 DN1600 Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		4				4,00
						4,00
P6CD.700.16	ud Carrete desmontaje DN 700 PN16 Carrete de desmontaje de diametro 700 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4				4,00
						4,00
P6VM.700.16M	ud Válvula mariposa motorizada PN 16 Ø700 I Válvula de mariposa, DN 700 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	4				4,00
						4,00
P6VREG750	ud Válvula reguladora de control PN16 Ø750 Válvula de control de operación hidráulica (no eléctrica) y accionada por diafragma modelo WW-30"-M5L-753-66-55-18-G-C-16-EV-NN-jU o similar, DN750 (30") PN16, limitadora de caudal dinámica con doble solenoide de circuito de 3 vías (sin pérdida de carga adicional a la válvula (no orifico calibrado) especialmente diseñada para limitar un caudal dinámica, independientemente de las variaciones de la presión de entrada con solenoide extra para cambio a circuito hidráulico mantenedor de presión y control de nivel de balsa por piloto de altitud. Incluso actuador	2				2,00
						2,00
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	9				9,00
						9,00
P6VENT.150.16	ud Ventosa trifuncional DN150 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 150 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	4				4,00
						4,00
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.					
	Cono reductor	2	0,07	4,00	7.850,00	4.396,00
	bifurcaciones	4	0,02	3,14	7.850,00	1.971,92
						6.367,92

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PVHW600	ud Válvula Howell-Bunger DN 600 mm Suministro y montaje de válvula Howell-Bunger de 600 mm de diámetro, con carrete deflector de chorro incorporado a la válvula, construida en acero inoxidable, con accionamiento por cilindros oleohidráulicos, con indicador de posición electrónico digital con lectura en pupitre de mando. Unidad totalmente instalada y probada.	2				2,00
						2,00
P1T200	m Tubería de acero Ø200 esp 6,3 sin soldadura Suministro e instalación de tubería de acero de calidad ST 37.0 según DIN-1629 y ASTM-A 53, de diámetro nominal DN 219.1 mm y espesor mínimo de 6,3 mm, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	11	4,00			44,00
						44,00
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	11				11,00
						11,00
P6VC.200.16	ud Válvula compuerta ø200 mm, 16 atm Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 200 mm, instalada.	11				11,00
						11,00
P4CiNT1900	m Encintado anticorrosivo DN1900 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1900mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	2	0,80			1,60
						1,60
P4CiNT1600	m Encintado anticorrosivo DN1600 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	2	0,80			1,60
						1,60
P1T0400.4B	m Tubería de acero heli. L335 Ø400 esp 4,0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	63,15			63,15
						63,15

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1T300	m Tubería de acero Ø300 esp 4,0 sin soldadura Suministro e instalación de tubería de acero calidad ST 37.0 según DIN-1629 y ASTM- A-53 de diámetro nominal DN 308 y espesor mínimo de 4 mm. medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	55,23			55,23
						55,23
P6VC300.16	ud Válvula compuerta Ø300 mm, 16 atm Válvula de compuerta con lenteja de asiento elástico, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 300 mm instalada.	1				1,00
						1,00
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400 Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación , incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	1				1,00
						1,00
04.04.04.02	APOYOS					
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.					
	Apoyos tubería DN 2232	2	0,150	7.850,000		2.355,000
	Apoyos tubería DN 1930	2	0,140	7.850,000		2.198,000
	Apoyos tubería DN 1626	4	0,120	7.850,000		3.768,000
	Apoyos valvula DN 762 cartelas	32	2,540			81,280
	Apoyos valvula DN 1626 cartelas	24	3,800			91,200
	Apoyos valvula DN 1930 cartelas	24	3,800			91,200
	Apoyos valvula DN 2232 cartelas	16	3,800			60,800
						8.645,48
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.					
	Apoyos valvula DN 762 HEB 180	4	0,83	52,48		174,23
	Apoyos valvula DN 1626 HEB 220	3	1,15	71,50		246,68
	Apoyos valvula DN 1930 HEB 220	3	1,31	71,50		281,00
	Apoyos valvula DN 2232 HEB 220	2	1,35	71,50		193,05

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	15% pernos, anclajes, etc	0,15	894,96			134,24
						1.029,20
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR					
Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.						1,00
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales					
Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.						
	Apoyos tubería DN 2232	2	3,18	0,70	0,20	0,89
	Apoyos tubería DN 1930	2	2,88	0,70	0,60	2,42
	Apoyos tubería DN 1626	4	2,58	0,70	0,90	6,50
	Apoyos válvula DN 762	4	0,93	0,77	1,19	3,41
	Apoyos válvula DN 1626	3	1,25	1,25	0,63	2,95
	Apoyos válvula DN 1930	3	1,41	1,30	0,44	2,42
	Apoyos válvula DN 2232	2	1,45	1,35	0,26	1,02
						19,61
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.						
	Apoyos tubería DN 2232	4	3,18		0,20	2,54
		4				4,00
		4		0,70	0,20	0,56
	Apoyos tubería DN 1930	4	2,88		0,60	6,91
		4		0,70	0,60	1,68
	Apoyos tubería DN 1626	8	2,58		0,90	18,58
		8		0,70	0,90	5,04
	Apoyos válvula DN 762	8	0,93		1,19	8,85
		8		0,77	1,19	7,33
	Apoyos válvula DN 1626	6	1,25		0,63	4,73
		6				6,00
		6		1,25	0,63	4,73
	Apoyos válvula DN 1930	6	1,41		0,44	3,72
		6				6,00
		6		1,30	0,44	3,43

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Apoyos valvula DN 2232	4	1,45		0,26	1,51
		4				4,00
		4		1,35	0,26	1,40
						91,01
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Por cuantias	1	19,61	40,00		784,40
						784,40
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías					
	Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.					
	Apoyos valvula DN 762 cartelas	32	0,15	0,15		0,72
	Apoyos valvula DN 1626 cartelas	24	0,22	0,22		1,16
	Apoyos valvula DN 1930 cartelas	24	0,22	0,22		1,16
	Apoyos valvula DN 2232 cartelas	16	0,22	0,22		0,77
	Apoyos tubería DN 2232.Zunchos	2	2,00	3,96	0,30	4,75
	Apoyos tubería DN 1930.Zunchos	2	2,00	3,48	0,30	4,18
	Apoyos tubería DN 1626.Zunchos	4	2,00	3,00	0,30	7,20
						19,94
04.04.05	ESTRUCTURA METÁLICA DE ACCESO					
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr					
	Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.					
		6	2,80			16,80
						16,80
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2)					
	Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					
			120,42			120,42
						120,42

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41ETT-001	kg Acero laminado S-275JR + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífuga y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grúa de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.					
	Pilar HEB 200	37	4,50	61,30		10.206,45
	UPN 140	1	218,30	16,00		3.492,80
	IPN 140	75	1,20	12,90		1.161,00
	15% anclajes, etc	0,15	14.860,26			2.229,04
						17.089,29
P41ESC2	m Escalera vertical fija acero inox-tipo barco AISI 316L Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaída y elementos extensibles. Unidad totalmente terminada.					
	escaleras gato	3	4,50			13,50
						13,50
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6 Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.					
	En losa	1	18,90			18,90
						18,90
P41BARAND05	m Barandilla de acero en plataforma de tramex Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por perfilera metálica y tubos metálicos 42,2x6 mm, montada en plataforma de tramex o elementos metálicos por soldadura, incluso parte proporcional de soldaduras, totalmente colocada y terminada.					
	Resto	1	115,55			115,55
						115,55
04.04.06	ELEMENTOS VARIOS					
PPUENGR2000	ud Puente grúa monocarril 5.000 kg Puente grúa monocarril de 5.000 Kg y 14,05 m. de luz. Características detalladas en el documento de especificaciones técnicas, Incluido fabricación, transporte a obra, montaje, conexionado y puesta en marcha.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.04.07	ARQUETA DE CAUDALÍMETROS					
04.04.07.01	OBRA DE FÁBRICA					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	14,28	11,28	7,23	1.164,60
						1.164,60
PGRAV512	m³ Relleno con gravilla de tamaño 5-12 mm Gravilla de 5-12 mm de tamaño para la conformación del relleno de trasdós, incluido transporte y relleno.	2	7,40	6,13		90,72
		2				2,00
		2	4,40	6,13		53,94
	descuento tuberías	-6,28	0,80	0,80	3,50	-14,07
						132,59
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1	1.164,92			1.164,92
	Excavacion	1	1.164,92			1.164,92
	Gravilla	-1	132,59			-132,59
	arqueta	-1	7,20	4,20	4,88	-147,57
						884,76
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	1	7,40	4,40		32,56
						32,56
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	7,20	4,20	0,40	12,10
	solera	1	7,20	4,20	0,40	12,10
	muros					
	m1	2	7,20	0,35	6,63	33,42
	descuento tubería	-2	2,01	0,35		-1,41

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	m2	2	0,35	3,50	6,63	16,24
		-2	2,01	0,35		-1,41
						58,94
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	solera	2	7,20		7,03	101,23
		2		4,20	7,03	59,05
	A deducir tuberías	-4	2,01			-8,04
						152,24
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	muros					
	m1	2	6,50		6,63	86,19
	descuento tubería	-4	2,01			-8,04
	m2	2		3,50	0,63	4,41
						82,56
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Según medición auxiliar					
	Solera	1	6.203,90			6.203,90
						6.203,90
P1MTTU003	m² Geodrán PEAD 200 gr/m2					
	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.					
	Solera	2	7,20		7,03	101,23
		2		4,20	7,03	59,05
	A deducir tuberías	-4	2,01			-8,04
						152,24

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4LOSA003	m² Losa prefabricada con entrada de hombre Losas prefabricadas de hormigón en tapas de grandes arquetas con entrada de hombre practicable dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contra-cerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.					
	losa	1	7,35	4,35		31,97
						31,97
P41LAG004	ud Entrada de hombre con chapa lagrimada de 1,00x100 Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.					
		1				1,00
						1,00
04.04.07.02	EQUIPOS Y ELEMENTOS METÁLICOS					
P41LAG004	ud Entrada de hombre con chapa lagrimada de 1,00x100 Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.					
		3				3,00
						3,00
P41ESC1	m Escalera vertical telescópica acero inox. tipo barco AISI-316L Escalera de seguridad y protección telescópica de acero inoxidable extensible en tramos de 50 cm. anchura 60 cm, longitud 5.0 m, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Unidad totalmente terminada.					
	entradas de hombre	3			4,18	12,54
						12,54
PTOO300.10	m Tubería de PP 300 mm PN10 Tubería de PP masivo (Polipropileno Homopolimero), para aireación, de 300 mm de diámetro exterior, con junta colada, incluida la soportería en acero inoxidable, uniones, juntas y codos. Totalmente instalada.					
	Aireación	2	0,65			1,30
						1,30
P6CD.1600.16	ud Carrete desmontaje virola acero inox. PN16 DN1600 Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	Tuberia interior arqueta	2				2,00
						2,00
P6Q1600.16	ud Caudalímetro ultrasónico PN 16 Ø1600 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.600 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio					
		2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4CINT1600	m Encintado anticorrosivo DN1600 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	4	0,50			2,00
						2,00
04.04.08	URBANIZACIÓN					
PENC1016	m² Encachado en caja para base de solera. Encachado en caja para base de solera de 20 cm de espesor, mediante relleno y extendido en tongadas de espesor no superior a 20 cm de gravas procedentes de cantera caliza de 40/80 mm; y posterior compactación mediante equipo manual con bandeja vibrante, sobre la explanada homogénea y nivelada.					
	acera	1	119,60	1,00		119,60
						119,60
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	acera	1	119,60	1,00	0,15	17,94
						17,94
P5PAV1A	m² Pav. solado acerado baldosa 20x20+10 HM20 Solado de baldosas de hidráulicas de 20 x 20 gris o color (a criterio de la Dirección Facultativa), colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	acera	1	119,60	1,00		119,60
						119,60
P5BORD3	m Bordillo prefabricado hormigón bicapa 9-10x20 Bordillo de hormigón bicapa, achaflanado, de 9-10x20 cm. colocado sobre solera de hormigón HM-15/P/40, de 10 cm. de espesor, i/excavación necesaria, rejuntado y limpieza.					
	acera	1	119,60			119,60
						119,60
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial, incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas. Unidad totalmente terminada.					
	Planimetría margen izquierda plataforma	1	3.045,45			3.045,45
						3.045,45

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.05	ELEMENTOS DE ROTURA DE CARGA					
04.05.01	MOVIMIENTO DE TIERRAS					
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted.					
	Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ..) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	S/Med. aux					
	Cuenco deflector	1	1.307,70			1.307,70
	Cuenco amortiguador	1	1.328,90			1.328,90
						2.636,60
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea)					
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
	Cuenco deflector	1	15,00	15,00		225,00
	Cuenco amortiguador	1	15,00	10,00		150,00
						375,00
04.05.02	OBRA DE FÁBRICA					
04.05.02.01	CUENCO DEFLECTOR					
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales					
	Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.					
	Solera					
	Deflector	5,42	11,40			61,79
	Transicion	3,62	9,90			35,84
		8,762	8,40			73,60
		10,097	7,40			74,72
	Deflector centro	1	27,31			27,31
	LATERAL					
	deflector	2	6,00	3,94		47,28
	transición	2	3,00	2,51		15,06
	lateral inf defl	2	4,25	7,80		66,30
	lateral inf tra	2	4,25	5,00		42,50
						444,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Deflector		7,37			7,37
	Transicion		5,04			5,04
						12,41
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. s/med. aux					
	LOSA INCLINADA . TRAMO 1 (14,78 X 7,4)	2	7.554,98			15.109,96
	LOSA INCLINADA . TRAMO 2 (1,50X 7,4).	2	763,79			1.527,58
	VIGA PERIMETRAL	1	2.026,66			2.026,66
	ARMADURA DE PIEL	1	941,80			941,80
	ESTRIBOS	1	352,91			352,91
	MURO TIPO A. DEFLECTOR + TRANSICION (HMED=2,5X16,28)	1	3.892,34			3.892,34
	LOSA FORJADO (13,4 X 7,8).	2	7.213,82			14.427,64
	LOSA INCLINADA FORJADO . (1,50X 7,8)	2	807,62			1.615,24
	LOSA FORJADO . TRANSICION	2	3.447,80			6.895,60
	MURO TIPO C.	1	11.764,42			11.764,42
	MURO TIPO C.	1	3.895,15			3.895,15
	LOSA FORJADO DEFLECTOR	1	2.111,62			2.111,62
	VIGA DEFLECTOR	1	5.325,50			5.325,50
						69.886,42
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
		15	4,50	13,78	3,24	3.013,69
		2	1,63	13,78	1,23	55,26
		2	2,00		3,67	14,68
		0,5	12,50		6,25	39,06
		30,44	1,00		30,44	926,59

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						4.049,28
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.						
Deflector		5,42	2,00			10,84
Transición		3,62	2,00			7,24
		11,4	0,60			6,84
		14,363	4,50			64,63
		2	1,63	13,78		44,92
						134,47
P1MTTU003	m² Geodrén PEAD 200 gr/m2					
Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.						
Deflector		5,42	2,00			10,84
Transición		3,62	2,00			7,24
		11,4	0,60			6,84
		14,363	4,50			64,63
		2	1,63	13,78		44,92
						134,47
04.05.02.02	CUENCO DE AMORTIGUACIÓN					
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales					
Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.						
Solera		1	14,50	8,40	0,60	73,08
muros		2	14,50	0,50	5,00	72,50
Aletas		2	1,66	1,00		3,32
		2	2,35	0,50		2,35
						151,25
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.						
		0,1	8,40	14,50		12,18
						12,18

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	LOSA INCLINADA . TRAMO 4 (1,5* 7,4)	2	763,79			1.527,58
	VIGA PERIMETRAL	1	1.618,34			1.618,34
	ARMADURA DE PIEL	1	601,64			601,64
	ESTRIBOS	1	324,97			324,97
	MURO TIPO B.	1	6.261,46			6.261,46
						10.333,99
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	2	14,00	4,50		126,00
	Junta					
	Cajeros	2		0,50	4,39	4,39
	Solera	1	8,40		0,60	5,04
						135,43
P1MTTU003	m² Geodrén PEAD 200 gr/m2					
	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.					
	Aletas	2	5,00			10,00
						10,00
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300					
	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.					
	Cajeros	2	4,69			9,38
	Solera	1	7,90			7,90
						17,28
04.06	CANAL DE DESCARGA AL PULGUER					
04.06.01	MOVIMIENTO DE TIERRAS					
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea)					
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	1	435,00	10,00		4.350,00
						4.350,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	10	435,00			4.350,00
						4.350,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. S/ med. aux	1	27.091,90			27.091,90
						27.091,90
04.06.02	SECCIONES TIPO					
P1TU-019	m³ Escollera procedente de préstamo 500 kg balsas Escollera colocada de 500 kg procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto en el entorno de la balsa de Tudela y de la balsa de Mostrakas, colocada en cualquier tipo de paramento, incluso suministro, transporte, medido sobre perfil teórico, según planos.					
	Sección tipo 1	43,12	8,07			347,98
	Sección tipo 2	113	6,03			681,39
		124	6,03			747,72
	Sección tipo 3	89,2	8,15			726,98
						2.504,07
04.06.03	SALTOS					
P1TU-019	m³ Escollera procedente de préstamo 500 kg balsas Escollera colocada de 500 kg procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto en el entorno de la balsa de Tudela y de la balsa de Mostrakas, colocada en cualquier tipo de paramento, incluso suministro, transporte, medido sobre perfil teórico, según planos.					
	Salto 1	1	18,00	6,03		108,54
	Salto 2	1	17,50	8,50		148,75
	Salto 3	1	17,50	9,77		170,98
	Salto 4	1	17,50	8,50		148,75
						577,02

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.06.04	HINCA BAJO NA-160					
04.06.04.01	TRABAJOS PREPARATORIOS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	recinto interior	1	162,00	12,00		1.944,00
						1.944,00
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Pozo ataque:Mejora de cimiento losa (Prov. NF alto)	1	13,00	15,00	0,30	58,50
						58,50
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada. Cuneta perimetral provisional					
	Pozo salida	1	30,00			30,00
		1	60,00			60,00
	Pozo ataque	2	65,00			130,00
						220,00
04.06.04.02	ESTRUCTURA DE HINCA					
P5PANT01	ud Transporte y montaje equipos ejec. pantallas Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.					
		1	2,00	5,00	0,40	4,00
						4,00
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.					
	Traslado desde pozo de ataque a pozo de salida	1				1,00
						1,00
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	Fondo solera pozo de ataque	1	13,00	16,50	0,10	21,45

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						21,45
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales					
Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.						
Solera		5,6	16,50	0,40		36,96
tacon		0,315	5,60			1,76
muro trans		0,9	5,60	2,60		13,10
		0,3	1,30	5,60		2,18
		0,3	3,92	5,60		6,59
muro long		2	1,00	0,30	15,29	9,17
						69,76
P4ETT-002	kg Acero B-500-S					
Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.						
cuantia estimada 105 kg/m3		1	105,00	69,76		7.324,80
						7.324,80
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy					
Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.						
Varios conectores		1	10,00			10,00
						10,00
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy					
Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.						
Varios s/nec viga		1	10,00			10,00
						10,00
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy					
Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.						
Pozo ataque						
Conectores losas fi 16/20		560				560,00
						560,00
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy					
Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.						
Varios conectores s/ nec viga		1	10,00			10,00
						10,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.					
		1	56,00			56,00
						56,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulfurresistente sin retracción. Apertura de hueco hınca					
		1	18,84			18,84
						18,84
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Demolición pozo de ataque					
		1	71,50			71,50
						71,50
04.06.04.03	HINCA					
P6HINCA2000B1	ud Implantación equipo escudo abierto hınca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo abierto, para hınca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.					
		1				1,00
						1,00
P6HINCA2000B3	ud Retirada de equipos esc. abierto+ traslado+imp. interior de obra Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hınca, mano de obra para descarga, montaje y puesta a punto. Traslado desde pozo de extracción hınca-1 a pozo ataque hınca-2					
		1				1,00
						1,00
P6HINCA2500B	m Tubería hincada hormigón armado DN 2500 escudo abierto Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.					
		1	64,31			64,31
						64,31
P6HINCATUB01	m Sobre coste tubería int. hınca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hınca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada. Instalación de tubería en interior					
		1	64,61			64,61
						64,61

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.06.04.04	TRATAMIENTOS Y AUSCULTACIÓN					
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).					
	Relleno del gap incluido	2	9,42	35,00	0,20	131,88
						131,88
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.					
	Frente extracción taludes pozo de extracción	2	20,00		5,00	200,00
						200,00
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada					
	Auscultación carretera	8				8,00
						8,00
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.					
	Auscultación carretera	8				8,00
						8,00
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.					
		1				1,00
						1,00
04.07	ALIVIADERO					
04.07.01	OBRA DE FÁBRICA					
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Zona recta	1	48,56	3,60		174,82
	Zona embocadura	1	2,60	9,34		24,28
						199,10
P4ETT-004C-E2	m² Encof/desenc. muros y paramentos CURVOS y VISTOS Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
		1	7,54	6,60		49,76

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						49,76
P4ETT-002	kg Acero B-500-S					
Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.						
S/med. aux		1	26.168,35			26.168,35
						26.168,35
04.07.02	ELEMENTOS METÁLICOS					
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR					
Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.						
Aireación						
Pieza 1. Circular diámetro 600		7.850	2,40	0,01	1,93	363,61
Pieza 2. transición a sección rectangular		7.850	1,02	0,01	2,93	234,61
Cuña		7.850	0,06	0,01	2,66	12,53
Pieza 3, Transición a sector corona circular		7.850	3,09	0,01	2,73	662,20
Pieza 4. Sector corona circular		7.850	40,71	0,01	2,80	8.948,06
		7.850	1,82	0,01	2,80	400,04
Pieza 5. Transición a sección rectangular final		7.850	4,36	0,01	7,62	2.608,02
Aliviadero						
Embocadura		7.850	3,86	0,01	8,15	2.469,53
Pozo hasta codo		7.850	40,74	0,01	5,26	16.821,95
A deducir sector aireación		-7850	40,71	0,01	1,09	-3.483,35
Codo		7.850	3,41	0,01	5,26	1.408,02
		-7850	3,41	0,01	1,09	-291,78
Transición a sección rectangular						
Base Inferior		7.850	4,26	0,01	3,92	1.310,89
Base superior		7.850	4,36	0,01	3,92	1.341,66
Laterales		7.850	4,26	0,01	1,02	341,10
		7.850	4,26	0,01	1,02	341,10
A deducir chapa inferior aireación		-7850	4,36	0,01	3,48	-1.191,06
10% Solapes, rigidizadores		1	0,10	45.234,26		4.523,43
						36.820,56

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.07.03	VARIOS					
PBOY01	m Barrera protectora de boyas y cuerdas en zona de aliviadero					
	Barrera protectora de boyas y cuerdas en zona de aliviadero					
		1	102,00			102,00
						102,00
04.08	AUSCULTACIÓN E INSTRUMENTACIÓN					
04.08.01	SENSORES Y EQUIPOS					
PGQIN0A01	ud Piezómetro de cuerda vibrante para control de presiones intersti					
	Piezómetro de cuerda vibrante para control de presiones intersticiales en el cimiento y cuerpo de presa, con rango de 0-10 Kg/cm ² , precisión 0,1% del rango y sensibilidad 0,025 % del rango , completamente instalado, incluido embalaje, transporte, carga y descarga, material de montaje, incluso obra civil, sin cableado de señal.					
	Sección 1					
	Cimiento	4				4,00
	Presa	19				19,00
	Sección 2					
	Cimiento	4				4,00
	Presa	19				19,00
	Sección 3					
	Contacto galería	9				9,00
	Presa	11				11,00
						66,00
PGQIN0A02	ud Célula de presión total de cuerda vibrante para control de pres					
	Célula de presión total de cuerda vibrante para control de presiones totales en el núcleo y contactos con el cimiento, de rango entre 0 y 17,5 Kg/cm ² y precisión 0,1% del rango, con salida eléctrica para las lecturas, completamente instalada, incluido embalaje, transporte, carga y descarga, además del pequeño material necesario para el montaje, incluso obra civil, sin cableado de señal.					
	Sección 3	9				9,00
						9,00
PGQIN0A03	m Cable de 2 conductores x 1 mm2, apantallado y con malla de acero					
	Cable de 2 conductores x 1 mm ² , apantallado y con malla de acero, con recubrimiento de protección en PVC, conectado a cada sensor con señal eléctrica y colocado por la presa hasta las cajas de centralización, incluso zanjas, instalado y comprobado.					
		1	18.750,00			18.750,00
						18.750,00
PGQIN0A04	ud Empalme de resina, tipo SCOTCH o similar					
	Empalme de resina, tipo SCOTCH o similar, para la unión de cables en el interior del terreno asegurando la continuidad de la señal, colocado y comprobado.					
		1	75,00			75,00
						75,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PGQIN0A05	ud Punto de centralización y lectura manual para los sensores con señal elec. Punto de centralización y lectura manual para los sensores con señal eléctrica (piezómetros y células de cuerda vibrante) instalados en la presa, colocado en el interior de un armario de poliéster prensado con protección IP-55, frontal serigrafiado con identificación de cada sensor y conmutador o interruptores para selección del sensor a leer, incluyendo tarjetas de conexionado, canaletas, bornas y material de montaje, completamente colocado en casetas incluyendo conexionado de cables	75				75,00
						75,00
PGQIN0A06	ud Suministro del equipo portátil de lectura para sensores de cuerda vibrante Suministro del equipo portátil de lectura para sensores de cuerda vibrante, con frecuencia seleccionable, display digital de 5 dígitos, alojado en caja resistente de material plástico, baterías recargables con cargador incorporado, indicador de carga de batería, una resolución de 0,1 microsegundo e incluyendo cable de conexión y de carga y manual de utilización.	1				1,00
						1,00
PGQIN0A07	ud Célula hidráulica para el control de asientos en el interior del Célula hidráulica para el control de asientos en el interior del terreno, fabricada en PVC y con tubos interiores metálicos, completamente instalada en cuerpo de presa, incluyendo encofrado, hormigonado, zanjas y tubos.					
	Sección 1	15				15,00
	Sección 2	15				15,00
	Sección 3	15				15,00
						45,00
PGQIN0A08	m Tubo triple para conexión de células hidráulicas y paneles de lectura Tubo triple para conexión de células hidráulicas y paneles de lectura, recubierto de polietileno para protección ante roturas, completamente colocado en zanjas por el cuerpo de presa, incluso la ejecución de éstas y tubos de protección.	1	5.625,00			5.625,00
						5.625,00
PGQIN0A09	ud Juego de racores metálicos de empalme Juego de racores metálicos de empalme para longitudes largas del tubo triple de las células, de 12x10, 8x6 y 6x4, de latón y con anillo de apriete, colocado.	45				45,00
						45,00
PGQIN0A10	ud Panel de lectura para un punto de conexión de célula hidráulica Panel de lectura para un punto de conexión de célula hidráulica, fabricado en metacrilato negro, de 1,5 m. de longitud, con escala graduada de lectura, serigrafiada, con 1 mm. de apreciación, incluyendo soportes y piezas de conexión de los tubos, completamente instalado en casetas al efecto incluyendo conexionado de tubos y la obra civil de casetas.	45				45,00
						45,00
PGQIN0A11	ud Suministro de equipo de desaireación para las células hidráulica Suministro de equipo de desaireación para las células hidráulicas de una caseta (uno por caseta), incluyendo bomba de presión de accionamiento manual.	10				10,00
						10,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PGQIN0A20	ud Base fija para estacionamiento del taquímetro de precisión Base fija para estacionamiento del taquímetro de precisión en las lecturas topográficas, fabricada en acero inoxidable, con sistema de centraje, placa base y tapa de protección antivandalismo, completamente instalada, empotrada sobre pilar cilíndrico de hormigón armado y zapata anclada al terreno, con las dimensiones adecuadas para estacionar el equipo de lectura, incluyendo todos los materiales y la ejecución de la obra civil de construcción de zapata y pilar, terminado.	3				3,00
						3,00
PGQIN0A22	ud Base para nivelación de precisión con apoyo semiesférico para la Base para nivelación de precisión con apoyo semiesférico para la mira, contenida en arqueta cilíndrica de acero inoxidable con tapa roscada, completamente colocada empotrada en huecos preparados al efecto por la coronación y bermas de la presa, incluyendo la pequeña obra civil accesoria y la fijación al cuerpo de presa, terminada. En coronación En galería	19 5				19,00 5,00
						24,00
PGQIN0A23	ud Señal de referencia fija para cerrar los itinerarios de nivelaci Señal de referencia fija para cerrar los itinerarios de nivelación, consistente en un clavo de acero inoxidable con apoyo semiesférico en cabeza para la mira, completamente colocado empotrado en roca firme del terreno natural de los estribos de la presa o en un dado de hormigón preparado al efecto, instalado incluyendo la pequeña obra civil accesoria y materiales.	10				10,00
						10,00
PGQIN0A24	ud Aforador de filtraciones compuesto por un vertedero triangular o Aforador de filtraciones compuesto por un vertedero triangular o rectangular de pared delgada, de acero inoxidable, preparado para instalar en canaletas de recogida del agua de filtraciones en galerías y/o aguas abajo de la presa, fabricado a medida de la canaleta (hasta 400 x 400 mm), incluyendo reglilla graduada para lectura, de 200 mm. de rango, con 1 mm de apreciación, de acero inoxidable sobre placa de metacrilato, completamente instalado en canaletas, sin incluir la obra civil necesaria para recogida del agua en cada punto ni protecciones de los equipos.	2				2,00
						2,00
PGQIN0A25	ud Equipo para medida del nivel del embalse en las balsas Equipo para medida del nivel del embalse en las balsas, consistente en una balanza o telelimnómetro de muy alta precisión, con toma de presión hidrostática mediante sensor de cuarzo, con la electrónica de indicación de cota contenida en caja estanca de metal ligero, con puerta acristalada. Con indicador digital de 6 cifras para la cota, rango hasta 60 m., precisión 0,015 % del rango, alimentación eléctrica por línea independiente de 220 Vac., y protección de sobretensiones; salida eléctrica en código opcional (automatizable) desde emisor digital. completamente instalada y conectada a una toma de presión hidroestática situada por debajo de la cota mínima a medir, en un lugar protegido, sin incluir la obra civil de ejecución de la toma hidroestática pero incluyendo los tubos de inoxidable y válvula de corte para conexión al sensor y la alimentación eléctrica del equipo.	1				1,00
						1,00
PGQIN0A26	ud Estación Meteorológica con sistema automático de adquisición de Estación Meteorológica con sistema automático de adquisición de datos, incluyendo los siguientes sensores: pluviómetro de balancín, termómetro de ambiente, anemómetro y veleta, barómetro, higrómetro con protector de radiación solar y evaporímetro con tanque de acero inoxidable o fibra de vidrio, homologado, y sensor de medida del nivel, con torreta metálica de 6 m y soportes metálicos fabricados a medida para cada uno de los equipos y sensores, además de la Estación automática con memoria para registro de datos, display y teclado de configuración, en caja con protección de intemperie a fijar sobre soporte, con programas de adquisición de datos y puerto RS-232 para conexión a ordenador, módulo de alimentación eléctrica con baterías para autonomía de una semana y cargador para conexión a red o panel fotovoltaico (no incluidos), además del cableado de conexión entre sensores y Estación, todo completamente instalado y comprobado, sin incluir obra civil de vallado y acondicionamiento del recinto.	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
PGQIN0A27	ud Sensor para medida automática del nivel de agua en la canaleta Sensor para medida automática del nivel de agua en la canaleta junto a un aforador totalizador de filtraciones, del tipo ultrasonidos, con electrónica de tratamiento de la señal y display indicador de nivel, alimentación a 24 Vcc, rango hasta 5 m, protección IP-68, precisión 0,2% del rango, resolución 1 mm, salida 4-20 mA, protección de interferencias, completamente instalado y calibrado, incluyendo el soporte de fijación de acero galvanizado y el sistema de alimentación eléctrica desde algún cuadro cercano.	2				2,00
						2,00
PGQIN0A47	ud Ternas de base en juntas Ternas de base de elongómetro en juntas en obras de fábrica, totalmente instaladas.	19				19,00
						19,00
PGQIN0A48	ud Elongómetro digital Elongómetro digital con rango de medida de 27 mm, con precisión de +/- 1 centésima de mm, incluso base de calibración y maletín de protección y transporte.	1				1,00
						1,00
04.08.02 SISTEMA AUTOMATIZADO DE ADQUISICIÓN DE DATOS						
PGQIN0A28	m Cable multihilo de 11 pares trenzados y calibre 0,91 mm Cable multihilo de 11 pares trenzados y calibre 0,91 mm., para llevar la señal entre cajas de centralización de los piezómetros y células, el equipo de nivel del embalse y los aforadores hasta las Estaciones automáticas de Adquisición de datos, de tipo telefónico EAPSP, con pantalla de acero y recubrimiento de protección, incluso zanjas, arquetas, sin tubos metálicos de protección.	1	1.000,00			1.000,00
						1.000,00
PGQIN0A29	m Tubo metálico de acero galvanizado, para canalización de cables Tubo metálico de acero galvanizado, para canalización de cables, métrica 50, instalado por zanja o en paramento y otras zonas expuestas de la presa, incluyendo elementos de sujeción y obra civil de zanjas o arquetas.	1	450,00			450,00
						450,00
PGQIN0A30	m Tubo de material plástico reforzado, para canalización de cables Tubo de material plástico reforzado, para canalización de cables, métrica 63, instalado por zanja o en paramento y otras zonas de la presa, incluyendo elementos de sujeción y obra civil de zanjas o arquetas.	1	550,00			550,00
						550,00
PGQIN0A31	ud Estación Automática de Adquisición y registro de datos Estación Automática de Adquisición y registro de datos de los equipos de instrumentación, instalada en caseta junto a la presa y compuesta por: microprocesador, reloj, memorias RAM y ROM, teclado y display, fuente, convertidor A/D, interface serie, armario con protección IP-55 y puerta acristalada, frontal serigrafiado con teclado y display, 8 placas acondicionadoras de señal de los sensores y protecciones. Completamente instalada incluyendo conexionado de cables.	3				3,00
						3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PGQIN0A32	m Cable de comunicaciones de seis conductores (3x2x0,64) tipo FEAP Cable de comunicaciones de seis conductores (3x2x0,64) tipo FEAP, aislamiento del conductor en polietileno, cableado por pares, pantalla de aluminio, cubierta de polietileno y baja capacidad, para conexión entre las Estaciones de Adquisición, colocado y comprobado, incluso obra civil.	1	680,00			680,00
						680,00
PGQIN0A33	ud Convertidor optoelectrico y caja de empalmes especifica para con Convertidor optoelectrico y caja de empalmes especifica para conexión del cable de fibra óptica y paso a RS-485, instalada junto a la última Estación de Adquisición y junto al ordenador en las oficinas, incluyendo conexionado de cables.	5				5,00
						5,00
PGQIN0A34	m Cable de fibra óptica para comunicaciones Cable de fibra óptica para comunicaciones desde la última Estación automática hasta el ordenador de las oficinas de la presa, colocado en la zona exterior en el interior de tubos de protección en zanja y con arquetas intermedias, incluso obra civil.	1	850,00			850,00
						850,00
PGQIN0A35	ud Estación Central para el control del Sistema Automático de Adqui Estación Central para el control del Sistema Automático de Adquisición de datos de auscultación de las balsas de Tudela y Mostrakas, compuesta por: ordenador con disco duro, CDROM, teclado y ratón, tarjetas gráfica y de sonido, modem telefónico, monitor color 15" TFT, impresora color de inyección de tinta, licencias sistema operativo y Office. Todo instalado y comprobado en oficinas de la presa, incluyendo pruebas de comunicaciones.	1				1,00
						1,00
PGQIN0A36	ud Equipo SAI con autonomía de 10 minutos para protección de los eq Equipo SAI con autonomía de 10 minutos para protección de los equipos informáticos ante descargas y sobretensiones.	1				1,00
						1,00
PGQIN0A37	m Cable tipo RFV 06/1 KV, de 3 x 1,5 mm2 para alimentación Cable tipo RFV 06/1 KV, de 3 x 1,5 mm2 para alimentación eléctrica de las Estaciones Automáticas de adquisición y de los aforadores de ultrasonidos, convertidores, equipos informáticos y otros equipos que lo requieran, instalado por la presa, incluso obra civil.	1	500,00			500,00
						500,00
PGQIN0A38	ud Caja para derivación de la linea de alimentación eléctrica de lo Caja para derivación de la linea de alimentación eléctrica de los equipos de auscultación, protección IP-55, tapa practicable, instalada y comprobada incluyendo bornas, prensaestopas y conexionado de cables.	10				10,00
						10,00
PGQIN0A39	ud Equipo para protección ante descargas y sobretensiones Equipo para protección ante descargas y sobretensiones de la línea de alimentación especifica de los equipos de auscultación, tomada de alguno de los cuadros eléctricos de la presa, compuesto por descargadores de sobretensiones con el rango adecuado, fuente de alimentación, fusibles y magnetotérmico, con diferencial rearmable, todo ello colocado en el interior de un armario de poliester reforzado con fibra de vidrio, con grado de protección IP-66, enchufe frontal y puerta practicable, todo instalado y puesto a tierra en lugar protegido.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
PGQIN0A40	ud Toma de tierra de 4 electrodos, instalada junto a las oficinas de la presa Toma de tierra de 4 electrodos, instalada junto a las oficinas de la presa para proteger los equipos informáticos de la Estación Central, incluyendo cuatro picas de tierra de 2 m. de longitud, de acero cobreizado y diámetro 14,6 mm. con grapas de unión al cable de tierra, 30 m de cable de cobre desnudo de 35 mm ² de sección, caja de registro para la centralización de tierras, instalada y dotada de puente comprobador y una arqueta para registro y comprobación de la toma de tierra, prefabricada y con tapa en poliéster reforzado con fibra de vidrio, todo instalado y comprobado junto a las oficinas de la presa.	1				1,00
						1,00
PGQIN0A41	ud Suministro de la partida de repuestos de las placas Suministro de la partida de repuestos de las placas acondicionadoras para las Estaciones de Adquisición, incluyendo: 1 tarjeta de microprocesador; 1 tarjeta de comunicaciones; 1 tarjeta de alimentación; 2 tarjetas de cuerda vibrante; 1 tarjeta de entradas 4-20 mA.	1				1,00
						1,00
PGQIN0A42	ud Módulo de programa desarrollado para el control de auscultación Módulo de programa desarrollado para el control de auscultación de presas, diseñado para la adquisición, registro, tratamiento y presentación de los valores obtenidos con los sensores, además de gestionar las comunicaciones con las estaciones automáticas. Desarrollado en entorno Windows y completamente instalado en un ordenador compatible de las oficinas de la presa, incluyendo licencia de uso.	1				1,00
						1,00
P7GQIN0A39	ud Ampliación del Programa de presas Ampliación del Programa de presas con los módulos de aplicaciones gráficas con dibujos de la presa y sensores y el módulo de generación de informes numéricos y gráficos con los valores de auscultación recogidos, todo instalado y comprobado en el ordenador de la presa.	1				1,00
						1,00
PGQIN0A44	ud Configuración de Estaciones Automáticas y personalización del programa de presas Configuración de Estaciones Automáticas y personalización del programa de presas para los sensores y equipos de la balsa de Tudela, incluyendo la creación de bases de datos y de gráficos con sensores.	1				1,00
						1,00
PGQIN0A45	ud Calibración y puesta en marcha de sistema de presas Calibración y puesta en marcha del sistema automatizado de control instalado en la presa: un técnico especialista en instrumentación y un técnico informático para la comprobación de comunicaciones y primeras lecturas de los equipos, incluyendo horas de viaje, costes de estancia y horas de trabajo.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PGQIN0A46	ud Elaboración de la Documentación Final de Instalación Elaboración de la Documentación Final de Instalación tras la realización del montaje, que incluye los esquemas de localización definitiva de todos los equipos, esquemas de conexionado a cajas de centralización y a las Estaciones Automáticas, hojas de calibración, impresos de toma de datos, condiciones y procedimientos de lectura y fórmulas de conversión a unidades de ingeniería, manuales de programas, fichas técnicas y toda la información necesaria para la gestión del sistema de auscultación. Se entregarán tres ejemplares encuadernados y en soporte informático.	1				1,00
						1,00
04.08.03	INGENIERÍA Y FORMACIÓN Balsa de Tudela					
P7ING003EP1	ud Ingeniería PLC's y comunicaciones balsa de Tudela Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	1				1,00
						1,00
P73COMSCADA3E	ud Ingeniería adecuación SCADA, control y supervisión balsa de Tud Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	1				1,00
						1,00
P73COMPUESTA3	ud Pruebas y puesta en marcha de instalaciones Balsa Tudela Control de Calidad de señales y Pruebas Funcionales de la instalación de la Balsa Tudela incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	1				1,00
						1,00
P73COMFORMA	ud Formación y documentación Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la : 1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.08.04	SISTEMA DE CONTROL Y COMUNICACIONES BALSA DE TUDELA					
P7COMARM01	ud Armario de control 2000 x 800 x 600mm					
	Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de autómatas y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de caldeo y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc..., incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexiados y probados.	1				1,00
						1,00
P7COMNODO1	ud Nodo comunicaciones GSM/GPRS G3-5. incl.cuadro protec.					
	Ud Suministro e instalación equipo de comunicaciones bidireccional compuesto de alimentación autónomo de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y modem de comunicaciones, armario IP65, armario mural de 19", 12 U y 600 mm de profundidad. , RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C), 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°C A 80°C contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica), electrificación cuadro (magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.	1				1,00
						1,00
P7COMNODO2	ud Nodo comunicaciones radiofrecuencia. incl.cuadro protec.					
	Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio modem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.	1				1,00
						1,00
P7COMP005	ud Bastidor Automata					
	Suministro de bastidor para autómatas de 10 slots, tipo 1756-A10 de Allen Bradley o similar.	1				1,00
						1,00
P7COMPLC01EP	ud PLC proglamable integrable (ED:192 SD:96 EA:72 SA:32)					
	PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómatas, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMP011	ud Módulos conexión cableado E/D (IB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según refe-rencias (V8 INPUT PLC V8/FLK14/IN - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso acceso-rios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	6				6,00
						6,00
P7COMP012	ud Módulos conexión cableado S/D (OB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, se-gún referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KON-FEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elemen-tos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	3				3,00
						3,00
P7COMP013	ud Módulos conexión cableado E/A (IF16) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC - FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	9				9,00
						9,00
P7COMP014	ud Módulos conexión cableado S/A (OF8) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autó-mata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC - FLK14/EZ-DR/300/CONFEC (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de ele-mentos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servi-cio.	4				4,00
						4,00
P7COMPLC1C	ud Pantallas gráficas HMI 15" táctil+cableado conex. Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado númé-rico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instala-ción y conexionado de unidad; Configuración Remota, Pruebas y Puesta en Servicio.	1				1,00
						1,00
P7COMPLC1B	ud Cuadro, protecciones electricas y pantalla PLC Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y proteccio-nes de sobretensión.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMP001	ud Protección contra sobretensiones equipos 230 Vca Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.	1				1,00
						1,00
P7COMP002	ud Protección contra sobretensiones analógicas Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); dobles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.	1				1,00
						1,00
P7COMP003	ud Protección contra sobretensiones 24Vcc Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&-TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.	1				1,00
						1,00
P7COMP006	ud Fuente de alimentación automática 24 Vcc 10 A Suministro e instalación de fuente de alimentación para automático programable para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar	1				1,00
						1,00
P71COMSAH1	ud Sistema alimentación ininterrumpido-com 24 VDC Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.	1				1,00
						1,00
P71COMSAH2	ud Sistema alimentación ininterrumpido 2500w Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y bypass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación: 1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min 1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para bypass manual del SAI 1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos 1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI 1.00 Protección Magnetotérmica II 10A 6kA. Protección foma de enchufe e instrumentación 4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación. Totalmente instalado, conexionado y funcionando. Unidad totalmente instalada	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMP004	ud CPU automática L72 memoria 4 Mb con memoria SD Suministro e instalación de CPU para automático programable con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 61131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.	1				1,00
						1,00
P7COMP015	ud Tarjeta comunicaciones Ethernet/IP Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.	1				1,00
						1,00
P7COMP016	ud Tarjeta Ethernet/IP 2-PORT CLX HI-CAP ENET/P BRIDG o similar Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.	1				1,00
						1,00
P7COMP017	ud Tarjeta comunicaciones Modbus Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.	1				1,00
						1,00
P7COMP018	ud Pasarela comunicaciones POWELOGIC EGX 100 o similar Suministro y montaje de pasarela de comunicaciones POWERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexionada.	1				1,00
						1,00
P7COMP022	ud Puente de diodos Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.	1				1,00
						1,00
04.08.05	CANALIZACIÓN Y CABLEADOS					
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antioedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.	1	50,00			50,00
						50,00
P7COMCABL2	m Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (RJ45), tendido y conectorizado. Unidad totalmente instalada.	1	150,00			150,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						150,00
P5COMCBL001A	m Cable multihilo coms. VHOV-K y VOV-K apantall.8x0,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	1	100,00			100,00
						100,00
P5COMCBL001B	m Cable multihilo com. VHOV-K y VOV-K apantall. 8x1,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	1	50,00			50,00
						50,00
P5COMCBL001C	m Cable multihilo comunicaciones señales digitales interior 19p Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.	1	50,00			50,00
						50,00
P5COMCBL001D	m Cable multihilo comunicaciones señales analógica interior 19p Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.	1	50,00			50,00
						50,00
P5COMCBL004	m Cable comunicaciones RS232 Cable comunicaciones RS232. Unidad totalmente instalada.	1	80,00			80,00
						80,00
P5COMCBL005	m Cable comunicaciones RS485 multipar Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.	1	80,00			80,00
						80,00
P5COMCBL007	m Cable comunicaciones RJ45 Cable comunicaciones RS45 .Unidad totalmente instalada.	1	80,00			80,00
						80,00
P5COMCBL006	m Cable profibus Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.	1	80,00			80,00
						80,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, con gestión comunic Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100Base-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.	2				2,00
						2,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	1	60,00			60,00
						60,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	1	120,00			120,00
						120,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	1	120,00			120,00
						120,00
P5ELE25PVC	m Tubo. electricidad Polímero term libre de halógenos ríg M25 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	1	300,00			300,00
						300,00
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	1	250,00			250,00
						250,00
P5ELE50PVC	m tubo. electricidad Polímero term libre de halógenos ríg M50 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada	1	200,00			200,00
						200,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELE75PVC	m Tubo PVC 75 mm liso adosado o embebido Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	1	250,00			250,00
						250,00
P5ELE125PVC	m Tubo PVC 125 mm liso adosado o embebido Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D=125 mm, e=3,2 mm. adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	1	250,00			250,00
						250,00
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	40				40,00
						40,00
04.08.06	INTRUSISMO Balsa de Tudela					
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antirroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometría, Unidad totalmente instalada.	1	450,00			450,00
						450,00
P7COMSEG1	ud Sistema de Alarma-Intrusionismo Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS , incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expensor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.	2				2,00
						2,00
P7COMCCTV6	m Inst. +Cable RG59 + tubo PVC32+cajasc/50m CCTV Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2 , repetidor de señal cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexionado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.	1	20,00			20,00
						20,00
P7COMCABL1B	m Cable de fibra óptica 8F+fusiones+cajas Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua , elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antirroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro . Según EN 60794. Incluidas cajas de empalme para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.	1	450,00			450,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						450,00
P7COMCCTV5	ud Cámara visión nocturna IP-66+carcasa+columna y cimentación CCTV					
	Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcasas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenes de máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Vídeo, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0 Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad: Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.	2				2,00
						2,00
P7COMCCTV9	ud Switch 3 puertos RJ45 para video IP y cámaras					
	Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30. Switch gestionable para la red de video y seguridad de diversos elementos.	2				2,00
						2,00
P7COMCCTV12	ud Columna 8m+ soporte CCTV					
	Ud. báculo de 8 m. de altura troncoconico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; anclaje a dado de hormigón, puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión, tubo de unión, incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3, operaciones de excavación y rellenos.	2				2,00
						2,00
P7COMCCTV1	Ud Hardware de control CCTV					
	Hardware para gestión y control de CCTV en centro de control compuesto por : Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 píxeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.	1				1,00
	Centro de control					1,00
P7COMCCTV2	ud Software gestión CCTV intrusivo					
	Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player", "Site builder", e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCADA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.	1				1,00
	Centro de control					1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P7COMCCTV3	ud Sistema de instalación configuración in situ videocam segurid Servicios de instalación , configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores). Para toda la obra	1				1,00
						1,00
P7COMCCTV4	ud Servidor CCTV Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8TeraBytes. Unidad totalmente instalada y probada. Centro de control	1				1,00
						1,00
P7COMCCTV8	ud Formación y manuales sistema CCTV Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias. toda la obra	1				1,00
						1,00
04.09	ACCESOS					
04.09.01	MOVIMIENTO DE TIERRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. Camino perimetral 1 Camino perimetral 2	1 1	5.094,46 995,60			5.094,46 995,60
						6.090,06
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil. Camino perimetral 1 Camino perimetral 2	1 1	1.062,34 483,75			1.062,34 483,75
						1.546,09
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Camino perimetral 1 Camino perimetral 2	1 1	2.610,95 386,05			2.610,95 386,05
						2.997,09

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.09.03	DRENAJE LONGITUDINAL Y TRANSVERSAL					
P6CUN-09_E	m Cuneta guarda o pie de talud sin revestir V h=30 Cuneta triangular de altura variable según perfil longitudinal de altura entre 0.3 m a 0.5, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.					
	Camino perimetral 1	2	1.504,00			3.008,00
	Camino perimetral 2	2	221,00			442,00
						3.450,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	ODT	3	8,00	8,56		205,44
						205,44
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	ODT	3	8,00			24,00
						24,00
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	ODT	3	8,00	2,88		69,12
	A deducir tubería	3	8,00	0,50		12,00
						81,12
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	ODT	3	8,00	5,67		136,08
						136,08
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
		3	3,00	3,00	1,00	27,00
						27,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PEMB800	ud Embocadura de hormigón prefabricado con aletas de DN 800 Embocadura de hormigón prefabricado con aletas de DN 800.					
	ODT	3	2,00			6,00
						6,00
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#12@20	1	41,00	4,35	0,89	158,73
	#12@20	1	24,00	7,85	0,89	167,68
						326,41
04.09.04	SEÑALIZACIÓN					
P6SÑL-002A	ud Señal triangular normal L=90 cm. Nivel1 Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.					
		1				1,00
						1,00
04.10	EDIFICIO DE CONTROL					
04.10.01	MOVIMIENTO DE TIERRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	solera	1	14,00	7,50	0,50	52,50
	zapatas	6	2,00	2,00	2,00	48,00
						100,50
04.10.02	CIMENTOS Y ESTRUCTURA					
PENC1016	m² Encachado en caja para base de solera. Encachado en caja para base de solera de 20 cm de espesor, mediante relleno y extendido en tongadas de espesor no superior a 20 cm de gravas procedentes de cantera caliza de 40/80 mm; y posterior compactación mediante equipo manual con bandeja vibrante, sobre la explanada homogénea y nivelada.					
	Grava	1	14,00	7,50	0,50	52,50
						52,50
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
	zapatas	6	2,00	2,00	0,10	2,40
	zuncho perimetral	3	14,00	0,80	0,10	3,36

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	7,50	0,80	0,10	1,20
						6,96
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	zapatas	6	2,00	2,00	2,00	48,00
	zuncho perimetral	3	14,00	0,80	0,50	16,80
		2	7,50	0,80	0,50	6,00
	solera	1	14,00	7,50	0,20	21,00
	pilares	6	0,30	0,30	2,70	1,46
	vigas	2	14,00	0,30	0,30	2,52
		2	7,50	0,30	0,30	1,35
						97,13
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	zapatas	24	2,00		2,00	96,00
	zuncho perimetral	6	14,00		0,50	42,00
		4	7,50		0,50	15,00
	solera	2	14,00		0,20	5,60
		2		7,50	0,20	3,00
						161,60
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	pilares	24	0,30		2,70	19,44
	vigas	2	14,00	0,30		8,40
		4	14,00		0,30	16,80
		4		0,30	0,30	0,36
		2	7,50	0,30		4,50
		4	7,50		0,30	9,00
		4		0,30	0,30	0,36

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						58,86
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.					
	vigas	2	14,00	0,30	2,70	22,68
		2	7,50	0,30	2,70	12,15
						34,83
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	soleras	1	97,13	92,75		9.008,81
	15% solapes, etc	0,15	9.008,81			1.351,32
						10.360,13
04.10.03	ARQUITECTURA					
04.10.03.01	FACHADAS Y CUBIERTAS					
PFORJ2555	m² Forjado viguetas prefabricadas 25+5 cm. Forjado 25 + 5 cm. Formado por doble vigueta autorresistente de hormigón pretensado, separadas entre sí 60 cm, entrevigado de bloque de hormigón y capa de compresión de 5 cm., de hormigón HA 25/B/20/XC2, de Central, incluso armadura (4,50 Kg/m2), terminado (carga total 1.000 Kg/m2).					
		1	14,00	7,50		105,00
						105,00
PTABPAL1	m² Formación de tabique palomero Formación de cubierta inclinada realizada con formación de pendientes mediante tabiquillos palomeros de ladrillo hueco doble, tablero de rasillón cerámico, capa de mortero de cemento de 2 cm de espesor, incluso p.p. de piezas especiales y medios auxiliares.					
		1	14,00	7,50		105,00
						105,00
PCUBTEJ	m² Cubierta de teja cerámica curva de 40x19 cm Cubierta de teja cerámica curva de 40x19 cm, incluso preparación de la superficie, mortero de agarre, medios auxiliares, y p.p. de piezas especiales, según normativa vigente.					
		1	14,00	7,50		105,00
						105,00
PFABLAD1P	m² Fábrica de ladrillo cara vista 24x11,5x6,8 cm, 1 pie de esp. Fábrica de ladrillo cara vista 24x11,5x6,8 cm, de 1 pie de espesor, recibido con mortero de cemento CEM II/B-P 32,5 N y arena tipo M-5, para revestir en alzados, conforme a norma UNE-EN 998-1 y/o según normativa vigente y medida deduciendo huecos superiores a 1 m2.					
	fachada	2	14,00		2,75	77,00
		2		7,50	2,75	41,25
	puertas	-1	2,60		2,60	-6,76

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		-1	2,00		2,10	-4,20
		-1	1,00		2,10	-2,10
	ventanas	-9	1,00		1,20	-10,80
		-2	0,50		1,20	-1,20
						93,19
PIEGR0810	m² Chapado de piedra granítica irregular de 8/10 cm de espesor Chapado de piedra granítica irregular de 8/10 cm de espesor recibido con mortero de cemento y arena de río 1/4 rejuntado y limpieza, según normativa vigente.					
	fachada	2	14,00		0,55	15,40
		2		7,50	0,55	8,25
						23,65
PFABLAD05P	m² Fábrica de ladrillo perforado 24x11,5x7 cm, 1/2 pie de esp. Fábrica de ladrillo perforado 24x11,5x7 cm, de 1/2 pie de espesor, recibido con mortero de cemento CEM II/B-P 32,5 N y arena tipo M-5, para revestir en alzados, conforme a norma UNE-EN 998-1 y/o según normativa vigente y medida deduciendo huecos superiores a 1 m2.					
	tabiquería interior	1	14,00		2,75	38,50
		1	2,70		2,75	7,43
		1				1,00
		3		2,65	2,75	21,86
		2				2,00
		2		3,20	2,75	17,60
	puertas	-5	0,80		2,10	-8,40
						79,99
PENFPARV	m² Enfoscado maestreado en paramentos verticales Enfoscado maestreado en paramentos verticales con mortero M-350 de cemento CEM-I/32,5, incluso pañeado, acabado fratasado y medios auxiliares para su aplicación según normativa vigente.					
	almacen	2	7,60		2,75	41,80
		2	3,55		2,75	19,53
						61,33
PGUARNNEG	m² Guarnecido yeso negro verticales Guarnecido con yeso negro en paramentos verticales de 12 mm. de espesor, formación de rincones guarnecido de huecos y remates con pavimento, i/p.p. de guardavivos de chapa galvanizada y colocación de andamios (hasta 3m de altura), medido deduciendo huecos superiores a 2 m2.					
	techo	1	14,00	7,50		105,00
	laboratorio	2	3,10		2,75	17,05
		2		2,65	2,75	14,58
	oficina	2	4,05		2,75	22,28
		2		3,20	2,75	17,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	sala de control	2	8,05		2,75	44,28
		2		3,20	2,75	17,60
	distribuidor	2		3,20	2,75	17,60
		2	2,70		2,75	14,85
						270,84
PENLYESV	m² Enlucido de yeso en paramentos verticales pasta de yeso Y-25-F					
Enlucido de yeso en paramentos verticales con pasta de yeso Y-25 F, incluso limpieza, humedecido y medios auxiliares para su aplicación.						
	techo	1	14,00	7,50		105,00
	laboratorio	2	3,10		2,75	17,05
		2		2,65	2,75	14,58
	oficina	2	4,05		2,75	22,28
		2		3,20	2,75	17,60
	sala de control	2	8,05		2,75	44,28
		2		3,20	2,75	17,60
	distribuidor	2		3,20	2,75	17,60
		2	2,70		2,75	14,85
						270,84
PPINTPLASHV	m² Pintura plástica en paramentos horizontales y verticales					
Pintura plástica en paramentos horizontales y verticales, dos manos de color, incluso preparación de base y medios auxiliares para su aplicación.						
	techo	1	14,00	7,50		105,00
	almacen	2	7,60		2,75	41,80
		2	3,55		2,75	19,53
	laboratorio	2	3,10		2,75	17,05
		2		2,65	2,75	14,58
	oficina	2	4,05		2,75	22,28
		2		3,20	2,75	17,60
	sala de control	2	8,05		2,75	44,28
		2		3,20	2,75	17,60
	distribuidor	2		3,20	2,75	17,60
		2	2,70		2,75	14,85
						332,17

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PAZ1042	m² Alicatado con azulejo blanco 15x15 cm. Alicatado con azulejo blanco 15x15 cm de primera calidad, recibido con mortero (M-350), de cemento CEM-I/32,5, incluso rejuntado, limpieza, p.p. de piezas especiales, lechada de cemento blanco y medios auxiliares para su ejecución.					
	Baño	2	2,45		2,75	13,48
		4		2,50	2,75	27,50
						40,98
PPAVUSOIND	m² Pavimento para uso industrial Pavimento para uso industrial incluyendo: limpieza, fresado o chorreado superficial del pavimento base, impregnación, sellado y recubrimiento, con aplicación de resinas sintéticas mezcladas con arena de cuarzo, materiales, mano de obra, elementos y medios auxiliares necesarios, totalmente acabado.					
	almacen	1	7,60	3,55		26,98
	laboratorio	1	3,10	2,65		8,22
						35,20
PPAVBALTEGM	m² Pavimento con baldosas de terrazo grano medio de 40x40 cm. Pavimento con baldosas de terrazo grano medio de 40x40 cm pulido en obra, color a elegir tomado con mortero (M-250) de cemento CEM-I/32,5, incluso nivelado de arena y mortero, corte de piezas, enlechado con pasta de cemento, pulido y limpieza.					
	Baño	1	2,45	2,50		6,13
	oficina	1	4,05	3,20		12,96
	sala de control	1	8,05	3,20		25,76
	distribuidor	1	2,70	3,20		8,64
						53,49
PCAN1022	m Canalón de acero galvanizado Canalón de acero galvanizado, de desarrollo 250 mm, para recogida de aguas, formado por piezas preformadas, fijadas con soportes colocados cada 50 cm, con una pendiente mínima del 0,5%. Incluso soportes, esquinas, tapas, remates finales, piezas de conexión a bajantes y piezas especiales.					
		2	14,00			28,00
						28,00
PBPVC110	m Bajante PVC Ø 110 mm. Bajante con tubería de PVC de 110 mm de diámetro, incluso p.p. de piezas especiales, elementos de fijación y medios auxiliares para su ejecución, según normativa vigente.					
		2	3,10			6,20
						6,20
PEP1024	ud Arqueta de registro 50x50x60 1/2 tapa horm. Arqueta de registro de dimensiones interiores 50x50x60 cm, realizada con fábrica de ladrillo perforado tosco de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón HM-20/P/40/I de 20 cm de espesor, enfoscada y bruñida interiormente, con cerco y tapa de hormigón prefabricada, totalmente terminada, incluso p.p. de medios auxiliares.					
		2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PMANG110	m Manguetón de PVC flexible de 110 mm en conexión a bajantes Manguetón de PVC flexible de 110 mm en conexión a bajantes. Totalmente terminado.	2	50,00			100,00
						100,00
04.10.03.02	CARPINTERÍA					
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.					
	puertas	1	2,60		2,60	6,76
		1	2,00		2,10	4,20
						10,96
PALP1026	m Alfeizar de piedra artificial, de color blanco, de 30x5 cm. Alfeizar de piedra artificial, de color blanco, de 30x5 cm, recibido con mortero M-250 de cemento CEM-I/32,5 ó BLL 22,5 con goterón, incluso pulido y abricatado.					
	ventanas	9	1,00			9,00
		2	0,50			1,00
						10,00
PDOBACRAIS	m² Doble acristalamiento aislante 4/6/4 Doble acristalamiento aislante formado por dos lunas incoloras de 4 mm y cámara de aire deshidratado de 6 mm con perfil separador de aluminio y doble sellado perimetral, fijación sobre carpintería e incluso cortes de vidrio y colocación de junquillos, según normativa vigente.					
	ventanas	9	1,00		1,20	10,80
		2	0,50		1,20	1,20
						12,00
PCARG3	m Cargadero huecos luz= 3 m Cargadero para huecos de hasta 3 m de luz formado por viguetas prefabricadas de hormigón armado de 20 cm de canto, incluso recibido y colocación totalmente terminado.					
	ventanas	9	1,00			9,00
		2	0,50			1,00
	puerta	1	1,00			1,00
		5	0,80			4,00
						15,00
PCARMATAL	m² Carpintería metálica de aluminio anodizado mate, practicable. Carpintería metálica de aluminio anodizado mate, en ventanas o puertas practicables, para acristalar, compuesta por cerco, hojas y herrajes de colgar y seguridad, recibido en fábrica, instalada sobre precerco de aluminio, sellado de juntas y limpieza, pintura. Totalmente instalada. p.p. de medios auxiliares. s/NTE-FCL-3.					
	ventanas	9	1,00		1,20	10,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	0,50		1,20	1,20
						12,00
PCAPIN1046	m² Carpintería de madera en interiores para barnizar en puertas					
	Carpintería de madera en interiores para barnizar en puertas, incluso herrajes de colgar y seguridad, recibido en fábrica. Totalmente terminada.					
	puerta	1	1,00		2,10	2,10
		5	0,80		2,10	8,40
						10,50
04.10.04	INSTALACIONES					
04.10.04.01	SANEAMIENTO					
PINSTDES	ud Instalación de desagüe					
	Instalación de desagüe en los distintos aparatos sanitarios, hasta su unión con las bajantes, en PVC, totalmente terminada.					
		1				1,00
						1,00
04.10.04.02	FONTANERIA					
PINSTRGA	ud Instalación de red general de agua					
	Instalación de red general de agua fría y caliente a los diversos aparatos sanitarios, totalmente terminada.					
		1				1,00
						1,00
04.10.04.03	ELECTRICIDAD E ILUMINACIÓN					
PELEILU	ud Electricidad e iluminación					
	Instalación de electricidad e iluminación, totalmente terminada.					
						1,00
04.10.04.04	CLIMATIZACIÓN Y VENTILACIÓN					
PINSAIREAC	ud Instalación de aire acondicionado					
	Instalación de aire acondicionado en edificio de control, totalmente terminado.					
		1				1,00
						1,00
PINSTCAL	ud Instalación de calefacción					
	Instalación de calefacción en edificio de control, totalmente terminado.					
		1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.10.04.05	CONTRAINCENDIOS					
PSÑLPOL	ud Señal poliestireno 297x297mm.Fotolum. Señalización de equipos contra incendios fotoluminiscente, de riesgo diverso, advertencia de peligro, prohibición, evacuación y salvamento, en poliestireno de 1,5 mm fotoluminiscente, de dimensiones 297x297 mm, s. CTE.	7				7,00
						7,00
PEXTPOLV6	ud Extintor polvo ABC 6 kg.Pr.Inc Extintor de polvo químico ABC polivalente antibrasa, de eficacia 34A/183B, de 6 kg. de agente extintor, con soporte, manómetro comprobable y manguera con difusor, según Norma UNE, certificado AENOR, s. CTE.	1				1,00
						1,00
PEXTCO25	ud Extintor CO2 5 kg. Extintor de nieve carbónica CO2, de eficacia 89B, de 5 kg. de agente extintor, construido en acero, con soporte y manguera con difusor, según Norma UNE. Equipo con certificación AENOR, s. CTE.	2				2,00
						2,00
04.10.04.06	TELECOMUNICACIONES					
PTELECTT01	ud Toma de teléfono. Toma de teléfono en Edificio de Control bajo tubo aislante empotrado en la pared, incluso p.p. de cajas, mecanismo y guía, totalmente terminado.	6				6,00
						6,00
PTELEM01	ud Terminal telefónico Terminal de teléfono analógico.	6				6,00
						6,00
PACOMTEF	ud Acometida telefonía Acometida de Telefonía.	1				1,00
						1,00
PPORTAUT	ud Portero automático de 1 llamada. Portero automático con placa de calle de una llamada, para comunicación entre entrada y Edificio de Control, con p.p. de canalización, cableado, alimentador y accesorios necesarios, totalmente instalado.	1				1,00
		1				1,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.10.05	MOBILIARIO					
PLAVPED7055	ud Lavabo pedestal de 70x55 cm de porcelana vitrif. color blanco Lavabo pedestal de 70x55 cm de porcelana vitrificada color blanco, incluso grifería e instalación.	1				1,00
						1,00
PDUC7070	ud Ducha completa de 70x70 cm de porcelana vitrificada color blanco Ducha completa de 70x70 cm de porcelana vitrificada color blanco, incluso grifería e instalación.	1				1,00
						1,00
PIND504040	ud Inodoro de 50x40x40 cm de porcelana vitrificada color blanco Inodoro de 50x40x40 cm de porcelana vitrificada color blanco, con depósito de descarga bajo, incluso mecanismo, asiento e instalación.	1				1,00
						1,00
PU08070070	ud Bote sifónico cilíndrico de 110 mm de diámetro, de P.V.C. Bote sifónico cilíndrico de 110 mm de diámetro, de P.V.C., incluso conexión e instalación.	2				2,00
						2,00
PACCEBA	ud Conjunto accesorios baño Conjunto accesorios baño, compuesto de portarrollos, jabonera, toallero y agarradera en color, incluso instalación.	1				1,00
						1,00
PMOBILTE	ud Termo eléctrico 200 l. Termo eléctrico de 200 l., i/lámpara de control, termómetro, termostato exterior regulable de 35° a 60°, válvula de seguridad instalado con llaves de corte y latiguillos, sin incluir conexión eléctrica.	1				1,00
						1,00
PSILDESP	ud Silla despacho Silla giratoria con asiento y respaldo contrachapado con poliuretano de gran elasticidad. Soporte de asiento y respaldo en acero, revestimiento en polvo epoxi. Tapicería en flor de piel de vacuno, teñida, tratada y pigmentada. Con piel de cabra teñida en profundidad, con superficie natural.	5				5,00
						5,00
PMESADESP	ud Mesa despacho Mesa escritorio para despacho de medidas 150x75x74 cm formado por tablero de abedul, marco de contrachapado y patas/frente de abedul macizo. Consta de balda extraíble para teclado y cajón con tres huecos. Totalmente instalado.	4				4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PMESATALL	ud Mesa taller 715 x 205 Mesa taller 715 x 205.	3				3,00
						3,00
PPERCH	ud Perchero Perchero.	4				4,00
						4,00
PPAPELE	ud Papelera Papelera.	4				4,00
						4,00
PMOBTQA	ud Taquilla para ropa Taquilla para ropa de 0.50 x 0.50 x 1.80 metálicas.	2				2,00
						2,00
04.10.06 URBANIZACIÓN						
PENC1016	m ² Encachado en caja para base de solera. Encachado en caja para base de solera de 20 cm de espesor, mediante relleno y extendido en tongadas de espesor no superior a 20 cm de gravas procedentes de cantera caliza de 40/80 mm; y posterior compactación mediante equipo manual con bandeja vibrante, sobre la explanada homogénea y nivelada.					
	acera	2	14,00	1,00	0,15	4,20
		2	7,50	1,00	0,15	2,25
						6,45
P4HG-002B	m ³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	acera	2	14,00	1,00	0,15	4,20
		2	7,50	1,00	0,15	2,25
						6,45
P5PAV1A	m ² Pav. solado acerado baldosa 20x20+10 HM20 Solado de baldosas de hidráulicas de 20 x 20 gris o color (a criterio de la Dirección Facultativa), colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	acera	2	14,00	1,00		28,00
		2	7,50	1,00		15,00
						43,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5BORD3	m Bordo prefabricado hormigón bicapa 9-10x20 Bordo de hormigón bicapa, achaflanado, de 9-10x20 cm. colocado sobre solera de hormigón HM-15/P/40, de 10 cm. de espesor, i/excavación necesaria, rejuntado y limpieza.					
	acera	2	14,00			28,00
		2	7,50			15,00
						43,00
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.					
	Planimetría plataforma	1	1.092,39			1.092,39
	A deducir edificio	-1	105,00			-105,00
						987,39
04.11	CERRAMIENTOS					
P5CERRAMPU	m Cerramiento tipo-2 Valla de D/T metálica, con pp puerta acceso Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino,incluyendo parte proporcional de puerta de acceso.					
	Perímetro de presa y terraza	1	4.310,00			4.310,00
						4.310,00
04.12	INSTALACIONES ELECTRICAS					
04.12.01	LINEA ELECTRICA DE MEDIA TENSIÓN					
P5ELECMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm². de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	ACOMETIDA	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	REPOSICION	9				9,00
	ACOMETIDA	4				4,00
	A dedir inicio y fin de lñinea con trafo	-2				-2,00
	Añadir postes flojos de apoyo	2				2,00
						13,00
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	ACOMETIDA	1				1,00
						1,00
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.					
	ACOMETIDA	3	260,00	1,10		858,00
	Asume 10% sobre long. por catenaria					
						858,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ARQPREF2.A2	ud Arqueta BT prefabricada inst. elect. A2 (145X90)con tapa FD					
	Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, tronco-piramidal, tipo A-2, de 145x90 cm de medidas interiores y 117x62 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapas de fundición dúctil, de 72x62x6,5 cm, para arqueta de conexión eléctrica tipo A-2, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.					
	ACOMETIDA	1				1,00
						1,00
04.12.02	LÍNEAS DE BT					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado					
	Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	EC	400				400,00
	TA	40				40,00
						440,00
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2					
	Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	Varios conex	1	5,00			5,00
						5,00
P5ELEM2X4TT	m Manguera eléctrica 2 x 4 + TT4 mm2					
	Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	EC	200				200,00
						200,00
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	T.A	1	280,00			280,00
						280,00
P5ELEM3X2.5T2	m Manguera eléctrica 3 x 2.5 + TT 2.5mm2 Cu Apantallado					
	Manguera eléctrica apantallada de 3 x 2.5 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	TA	1	220,00			220,00
	EC	1	120,00			120,00
						340,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEM3X4TT2	m Manguera eléctrica 3 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
T.A.		60				60,00
						60,00
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
T.A.		400				400,00
						400,00
P5ELEM4X25T2	m Manguera eléctrica 4 x 25 + TT 25mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
T.A.		1	50,00			50,00
						50,00
P5ELEM4X50T2	m Manguera eléctrica 4 x 50 + TT 50 mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 50 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
T.A.		1	150,00			150,00
						150,00
P5ELEM1X16TT	m Manguera eléctrica 1 x 16 mm2 Cu Manguera eléctrica de 1 x 16 mm2, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
T.A.		1	1.000,00			1.000,00
						1.000,00
P5ELEM1X35TT	m Manguera eléctrica 1 x 35 mm2 Cu Manguera eléctrica de 1 x 35 mm2 , aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
		2	1.000,00			2.000,00
		1	100,00			100,00
						2.100,00
P5ELEM1X70-2	m Manguera eléctrica 1 x 70 mm2 Cu Apantallado Manguera eléctrica apantallada de 1 x 70 mm2, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
T.A.		1	50,00			50,00
						50,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEM1X95-2	m Manguera eléctrica 1 x 95 mm2 Cu Apantallado Manguera eléctrica apantallada de 1 x 95 mm2, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.					
	TOMA ARQUETAS	60				60,00
						60,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.					
	TOMA DE ARQUETAS	4				4,00
	EDIFICIO DE CONTROL	2				2,00
						6,00
04.12.03	TRANSFORMACIÓN Y GENERACION					
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifau-na - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
	CT 50 KVA	1	1,00			1,00
						1,00
P5LEARQ1X1TF	ud Arqueta estanca 1.0x1.0x1.5+ tapa función recogida de ace Arqueta prefabricada estanca para recogida de aceites de dimensiones 1,0x1,0m y altura de hasta 1.5m, tapa de fundición 600x600 mm, cerco y precerco, conectada a conductor de recogida, incluidos pasamuros y tuberías de conexión. Unidad totalmente colocada.					
	TA	2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEGEN125	ud Generador eléctrico 125kVA supersilencioso+cuadro elec+conmutado <p>Generador eléctrico silencioso móvil de 125kVA/96kW según especificaciones técnicas definidas en el PPTP, incluido cuadro eléctrico, control y automatización. Motor: Motor diesel 4 tiempos Refrigerado por agua; Arranque eléctrico 24V; Radiador con ventilador soplante; Filtro decantador (nivel no visible); Regulación electrónica; o Bulbos de ATA; Bulbos de BPA; Filtro de aire en seco; Protecciones de partes calientes; Protecciones de partes móviles;; Sensor de nivel agua radiador Alternador: Autoexcitado y autorregulado; Protección IP23; Aislamiento clase H; Sistema Eléctrico; Cuadro eléctrico de control y potencia, con aparatos de medida y central de control ; Protección magnetotérmica tetrapola; Protección diferencial regulable (tiempo y sensibilidad) y con protección magnetotérmica; Cargador de batería (incluido en grupos con cuadro de versión automática); Resistencia de caldeo (de serie en grupos con cuadro de versión automática); Alternador de carga de baterías con toma de tierra; Batería/s de arranque instaladas (incluye/n cables y soporte); Instalación eléctrica de toma de tierra, con conexión prevista para pica de tierra ; Desconector de batería/s; Conmutador: Armario IP55; Central; Parada de emergencia; Módulo de medida; Llave para conmutación manual; Conmutador motorizado; Conexión a tierra; Zócalo para armarios >800A</p> <p>Cuadro Automático AS5 CEM 7 o similar y cuadro de conmutación con central CC2 o similar con contactores</p> <p>Cuadros - Reloj programador: Informa a la central de la fecha y hora actual. Permite la programación semanal de: - Arranques programados - Bloqueos programados - Test de motor y mantenimientos programados - Ampliación del histórico de errores en + 100 - Contadores de energía (día, mes, año)</p> <p>Cuadros - Teleseñal: Placa que dispone de comunicación CAN y 12 relés. - Relés: 4 de contacto conmutado y 8 de contacto simple - Permite activar elementos de señalización remotos - Permite la programación de los relés en función de las diferentes variables.</p> <p>Otros elementos: Chasis Acero ; Kit de extracción de aceite del cárter; Versatilidad para el montaje de chasis de gran capacidad con depósito metálico; Amortiguadores antivibratorios; Tanque de combustible integrado en el chasis; Aforador de nivel de combustible; Pulsador parada de emergencia; Carrocería fabricada con chapa de alta calidad; Alta resistencia mecánica; o Bajo nivel de emisiones sonoras; Insonorización a base de lana de roca volcánica de alta densidad;; Acabado superficial a base de polvo de poliéster epoxídico (ensayo de niebla salina superior a 1000h); Total acceso a mantenimientos (agua, aceite y filtros sin desmontar capot); Gancho de izado reforzado para elevación con grúa; Chasis estanco (hace función de doble pared retención líquidos); Tapón drenaje depósito; Tapón drenaje chasis; Chasis predispuesto para instalación de kit móvil; Silencioso residencial de acero de -35db(A); Válvula de 3 vías para trasiego de combustible (disponible con conexiones de 1/2" y de 3/8"); Bomba de trasiego de combustible Unidad totalmente instalada y probada</p>					
T.A.		1				1,00
						1,00
P5ELECBATC36	ud Bateria de condensadores (36 KVAR) <p>Módulo metálico para corrección automática del factor de potencia 36 KVAR Compuesta de: condensadores sobredimensionados en tensión a 440 V, base fusibles y fusibles, regulador electrónico, contactores e interruptor general, Condensador CLZ , Contactores con bloque de preinserción y resistencia de descarga rápida, Protección en cabecera por fusibles con alto, poder de corte (APR). Serie NH-00, regulador de energía reactiva serie computer m con indicación digital y salidas de relé; Interruptor manual en cabecera de batería; Interruptor automático en cabecera de batería; Interruptor automático + Protección diferencial en cabecera de batería; Unidad de ventilación forzada + termostato; Placa de policarbonato contra contactos directos; Autotransformador 400/230 V. Totalmente instalada en armario metálico.</p>					
T.A.		1				1,00
						1,00
P5ELETRAF13	ud Cuadro de alarmas y señalización de defectos del centro de trans <p>Cuadro de alarmas y señalización de defectos del centros de transformación formado por armario metálico en chapa de acero. Conteniendo: 8 relés auxiliares. 1 fuente de alimentación normal-socorro 230/48 Vcc. con acumuladores Ni-Cd de 21 Ah, intensidad nominal 5 A. Automáticos de protección, bornas canaletas y pequeño material de montaje.</p>					
TA		1				1,00
						1,00
P5ELETRAF5A	ud Conjunto material de protección y señalización transformador <p>Conjunto de material de protección y señalización transformador. Normalizado.</p>					
		1	1,00			1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multi-función, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.					
TA		1	1,00			1,00
						1,00
P5ELETRAF11	ud Puesta en servicio del telecontrol de LMT Puesta en servicio del telecontrol, incluyendo: - Integración de la instalación en cada uno de los sistemas de concesionario eléctrico implicados en el proceso de todas las funcionalidades del Telecontrol, Control local y Automatismos del Centro de Seccionamiento - Configuración, parametrización y puesta en servicio de Terminal Remoto de Telecontrol, equipos de c/c., Relés de detección de Paso de Falta y demás elementos de la instalación - Generación de configuraciones, telecarga y comprobaciones de cada una de las bases de datos: históricas, cronológicas, de alarmas, de eventos y de medidas analógicas en el Terminal Remoto de Telecontrol, en el C.S. así como en las unidades centrales					
TA		1				1,00
						1,00
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.					
TA		1	1,00			1,00
						1,00
P5ELETRAF12	ud Verificación de trabajos instalación de transformadores Verificación de trabajos, incluyendo: - Comprobación de la instalación, en lo que al telemando se refiere, de acuerdo al proyecto y documentación técnica aprobados - Supervisión del correcto conexionado de T/is y/o detectores de Paso de FALTA, Presencia de Tensión, etc en celdas de MT - Comprobación del esquema unifilar y rótulos para el telemando - Recepción de la Documentación de Adaptación al Telemando					
TA		1	1,00			1,00
						1,00
P5ELETRAF4D	ud Puesta a tierra del Centro de Transformación Redes de puesta a tierra de protección general y servicio para el neutro, en centro de transformación, de acuerdo con lo indicado en la MIE-RAT-13, y normas de Cía Suministradora, formada la primera de ellas por cable de cobre desnudo de 50 mm2. de sección y la segunda por cable de cobre aislado, tipo RVde 0,6/1 kV, y 50 mm2 de sección y picas de tierra de acero cobrizado de 2 m.de longitud y 14 mm. de diámetro. Incluso material de conexión y fijación.					
T.A		1	1,00			1,00
						1,00
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
TA		1	1,00			1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
TA		1	1,00			1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1,00
PELESAI	ud SAI 10 KVA					
	SAI 10 KVA.					
	EC	1	1,00			1,00
						1,00
04.12.04 CUADROS						
P5ELECAS01B	ud Equipamiento auxiliar caseta					
	Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.					
	TA	1	1,00			1,00
						1,00
P1MT04F	m³ Construcción cama de arena en tuberías					
	Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,10	1,93
						1,93
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Base	1	4,00	6,00	0,40	9,60
						9,60
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Base	1	4,00	6,00	0,40	9,60
		-1	3,30	5,20	0,40	-6,86
						2,74
P4HG-003A	m³ Hormigón HA-25/B/20/XC2					
	Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Base	1	3,50	5,50	0,20	3,85
						3,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#8/20	2	3,50	5,50	4,10	157,85
						157,85
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm ² (20 N/mm ²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.					
	Caseta	2	7,00			14,00
		2	5,00			10,00
						24,00
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.					
	Caseta	2	7,00			14,00
		2	3,00			6,00
						20,00
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm ² ., 1 bloque de bornas de 2,5 mm ² . y 1 bloque de bornas de 25 mm ² . para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm ² . para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm ² . para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
		1				1,00
						1,00
P5ELECGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.					
	TA	1	1,00			1,00
						1,00
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II					
	TUDELA	1	5,00			5,00
						5,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PSELECGBT40	ud CGBT Arqueta de tomas Tudela					
	Suministro y montaje de módulo de alimentación, control y protección de Arqueta de Tomas en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
TA		1	1,00			1,00
						1,00
PSELECGBT41	ud CGBT AUX					
	Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.					
EC		1	1,00			1,00
ALUM.EXT		1	1,00			1,00
GALERIA		1	1,00			1,00
AUSCULTACION		1	1,00			1,00
						4,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.					
Válvulas motorizadas		16				16,00
Pulsador general de corte		5				5,00
						21,00
04.12.05	ALUMBRADO					
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+Ip68					
	Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbamiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de polipcarbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
TA		12				12,00
						12,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.					
	AT	58				58,00
	EC	24				24,00
	GA Y CC	25				25,00
						107,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescen-te. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad total-mente operativa.					
	TA	4				4,00
	EC	6				6,00
	GA Y CC	5				5,00
						15,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.					
	TA	2				2,00
	EC	1				1,00
						3,00
P5ELECFA06	ud Columna 8m + brazo 200w led Ud. báculo de 8 m. de altura con luminaria cerrada con lámpara 200 w. LED compuesta de: báculo troncocónico cons-truida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; luminaria con reflector de aluminio tra-tado contra la corrosión, con equipo eléctrico incorporado, cierre de policarbonato; acoplamiento a poste en fundición de aluminio inyectado, IP-65; i/ lámpara . portalámparas, anclaje a dado de hormigón , puesta a tierra, replanteo, mon-taje, pequeño material y conexionado, replanteo, montaje, cableado de unión , tubo de unión,incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra d compuesto por placa de 500x500x2 mm y/o pi-ca 200/14.3 , con unión de cable a siguiente báculo de 10m de cable desnudo de 16 mm2, y uniones de 35 mm2 a bá-culo según normativa vigente y planos de detalle y conexionado a red de alumbrado, , cableado interior 4x6mm2 +TT, conexionado a tendido eléctrico, operaciones de excavacion y rellenos. Unidad totalmente instalada y probada, con emisión de certificado de luminosidad.					
	CORONACION	1	40,00			40,00
						40,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELECGB1	ud Centro de mando alumbrado público+protecciones+TT+tramitac. Centro de mando de alumbrado público, hasta 6 salidas, de dimensiones 1.25x1.25x0.3m según detalle de planos, incluidas pletinas de acometida entre separadores de cobre, bases portafus, interruptor de corte 4p hasta 125 A, contador electrónico con mirilla, bornas de salida de módulo de medida de 16 mm2, Prensaestopas, automático general de 4 polos caja molde a 25 KA, intensidad ajustable hasta 100 A, Diferencial mando, automático protección enchufe 2x10A, Automático protección célula reloj, Reloj astronómico programable, célula fotoeléctrica para accionamiento automático, Tomas de corriente 2P+T 16A conectada a tierra, Bornas de reparto 95 mm2, Base portafusibles, automáticos 4 polos para protección salidas, Relés diferenciales, conmutador salidas, contactor salidas 4 polos, Cables de conexión, Diversas bornas de salida, entrada, mando, ..., Cajas modulares de medida independiente, de mando y protección IP55, cierre triple acción, Puertas con toma tierra, armario de chapa de acero 3 mm galvanizado caliente IK-10, rejillas, incluida obra civil, cimentación y toma tierra con placa cobre 500x500x2. Todo según planos de detalle. Unidad Totalmente ejecutada y operativa, incluida tramitación de conexionado, pago de tasas y proyecto de industria para tramitación de alumbrado.					
	CORONACION	1	1,00			1,00
						1,00
04.12.06	ACOMETIDA Y LEGALIZACIÓN ARQUETA DE TOMAS					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas, ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.					
	TA	1	1,00			1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.					
	Varios pruebas sin línea y conexionados	1	100,00	5,00		500,00
						500,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado, incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexión, y operaciones necesarias de retirada. Unidad completa					
	Varios conexionados	1	5,00			5,00
						5,00
P5ELEC10003	ud Operación de conexionado y desconexión a trafo Operación de conexionado y desconexión de LMT.					
	TA	1	1,00			1,00
						1,00
P5ELEC1MATUD	ud Conex LMTS+refuerzos+adapt.línea Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Balsa de Mostrakas					
	ACOMETIDA	1				1,00
	REPOSICION	1				1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma					
	Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.					
	TA	1	1,00			1,00
	EC	1	1,00			1,00
						2,00
P5ELECMT	ud Legalización inst eléct.LAT+OCA					
	Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.					
	ACOMETIDA	1				1,00
	REPOSICIÓN	1				1,00
						2,00
P5ELEBTALUMB	ud Legalización de alumbrado público+OCA's					
	Unidad de legalización de alumbrado público en el conjunto de la actuación , incluyendo línea de baja tensión, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización.					
	CORONACION	1	1,00			1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE					
	Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.					
	TA	1	1,00			1,00
	ED	1	1,00			1,00
						2,00
04.12.07	CANALIZACIONES					
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)					
	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.					
	ACOMETIDA	1	50,00			50,00
						50,00
P5ELE110X4H	m Can. horm. PVC 110 mm x4 (calzadas) 0.4x1.0m (Zanja tipo-8B)					
	Canalización hormigonada de 4x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada					
	TA-ED	1	500,00			500,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						500,00
P35RALUM02	m Canaliz alumbrado conducto Ø90 mm+tendido línea elec.4x6mm2+TT Canalización PVC corrugado de 90 mm. de diámetro en cualquier tipo de terreno, Acerados y/o pavimentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexionados múltiples. Unidad totalmente terminada.					
	CORONACION	1	1.000,00			1.000,00
						1.000,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	TA	1	30,00			30,00
	EC	1	30,00			30,00
						60,00
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	TA	1	50,00			50,00
						50,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.					
	TA	8	5,00			40,00
						40,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	TA	1	100,00			100,00
						100,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.					
	TA	1	50,00			50,00
						50,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.					
	TA	60	5,00			300,00
	EC	20	5,00			100,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						400,00
P5ELECROZA	m Roza en ladrillo macizo, bloque hormigón					
	Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.					
	TA	40				40,00
	EC	20				20,00
						60,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD					
	Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.					
	ACOMETIDA TA	4				4,00
	GE	1				1,00
	ACOMETIDA EC	10				10,00
						15,00
P5ARQLD4	ud Arqueta de registro 60x60x100 1/2 tapa FD					
	Arqueta de registro de dimensiones interiores 60x60x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 60x60 normalizada D-400. Unidad totalmente terminada.					
	CORONACION	1	40,00			40,00
						40,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD					
	Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.					
	TA	4				4,00
						4,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95					
	Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 225 x 175 x 95mm estanca					
	TA	58				58,00
	EC	20				20,00
						78,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.12.08	TOMA TIERRA					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.					
	TA	1				1,00
	EC	1				1,00
						2,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.					
	TA	1	6,00			6,00
	EC	1	6,00			6,00
						12,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
	TA	1	6,00			6,00
	EC	1	6,00			6,00
						12,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
	TA	1	6,00			6,00
	EC	1	6,00			6,00
						12,00
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.					
	TA	8				8,00
	EC	2				2,00
						10,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.					
	TA	1	1,00			1,00
	EC	1	1,00			1,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.					
TA		1	180,00			180,00
EC		1	120,00			120,00
						300,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					
TA		10				10,00
EC		10				10,00
						20,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
TA		2				2,00
EC		2				2,00
						4,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					
TA		1				1,00
EC		1				1,00
						2,00
04.12.09	MECANISMOS					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
EC		6				6,00
TA		2				2,00
						8,00
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
TA		2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	TA	1				1,00
						1,00
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.					
	EC	2				2,00
						2,00
P5ELEC08	ud Base de enchufe 16A monofásica Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.					
	TA	6				6,00
	EC	12				12,00
						18,00
P5ELEC09	ud Base de enchufe trifásica 16A Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.					
	TA	2				2,00
	EC	4				4,00
						6,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	TA	1	6,00			6,00
	EC	1	12,00			12,00
						18,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.					
	EC	4				4,00
	TA	2				2,00
						6,00
04.13	SERVICIOS AFECTADOS					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.13.01	REPOSICIÓN DE LINEAS ELÉCTRICAS					
P5ELECMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment					
	Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.					
		9				9,00
						9,00
P5ELECMT3	m Conductor Aluminio Acero LA-56					
	Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.					
		1	3.656,00			3.656,00
						3.656,00
04.14	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (BT)					
04.14.01	MEDIDAS PROTECTORAS, CORRECTORAS (BT)					
04.14.01.01	ATMÓSFERA (BT)					
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora					
	Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.					
	Total obra meses secos 6/12	0,5	36,00			18,00
						18,00
04.14.01.02	SUELO (BT)					
P-101AMB-MP03	m Jalonamiento de protección malla					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
	trazado de las conducciones 10%	0,1	4.500,00	2,00		900,00
						900,00
P-101AMB-MP09	m Jalonamiento de protección cinta					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
	trazado de las conducciones 25%	1	4.200,00	2,00		8.400,00
						8.400,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.14.01.03	HIDROLOGIA (BT)					
P-101AMB-MP05	m Barrera de retención sedimentos					
	Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.					
	Canal de descarga	5	10,00	2,00		100,00
	Zona de obras	4	10,00	4,00		160,00
						260,00
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones					
	Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.					
	Una por cada zona de instalaciones	12				12,00
						12,00
04.14.01.04	FAUNA Y FLORA (BT)					
P-101AMB-MP03	m Jalonamiento de protección malla					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
		1	1.000,00	2,00		2.000,00
						2.000,00
P-101AMB-MP09	m Jalonamiento de protección cinta					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
		1	2.000,00	2,00		4.000,00
						4.000,00
04.14.02	SEGUIMIENTO ARQUEOLÓGICO (BT)					
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones					
	Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.					
	Informe inicial	1				1,00
						1,00
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz.					
	Informe arqueológico previo incluidas tramitaciones y tasas.					
	un informe previo	1				1,00
						1,00
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe					
	Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual					
	Plazo obra	36				36,00
						36,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.14.03	PROGRAMA VIGILANCIA AMBIENTAL (BT)					
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación PVA y PGR	1				1,00
						1,00
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento. Meses de duracion obra	36				36,00
	Duración obra+ demoliciones y remates					36,00
P-104AMBVA03A	ud Informe especializado de flora Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina. 1 al principio de obra	1				1,00
						1,00
P-104AMBVA04A	ud Informe especializado de fauna Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe. 1 antes de inicio de obra	1				1,00
						1,00
P-104AMBVA06	ud Informe de prevención acústica Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio. Unidad completa.	1				1,00
						1,00
04.14.04	INTEGRACIÓN PAISAJÍSTICA (BT)					
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales. Según planimetría	1	222.321,39			222.321,39
						222.321,39
PTU-023	m³ Extendido de tierra veg. proc excav/acopio 50 cm(medio) balsas Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado en balsas. Según medición en préstamos	1	197.964,16			197.964,16
	Según medición en presa	1	69.035,21			69.035,21

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						266.999,37
P-102AMBPL001	m² Hidrosiembra incluso rastrillado y tapado					
Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.						
Taludes Balsa Tudela		1	52.686,62			52.686,62
						52.686,62
P-102AMB-PL06	Pie Apeo árboles ø >20-<=30 cm densidad <=750 pies/ha c/mat (R.E.A.)					
Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y densidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la intensidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, incluido canon de vertido, herramientas y medios auxiliares.						
s/med aux						
T13BIS-BT		1	300,00	0,05	15,00	
						15,00
P-102AMBPL08	mes Mantenimiento de plantaciones, riego y reposición extraordinaria					
Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de marras, realización de podas de realce necesarias y otras operaciones de mantenimiento. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande realizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, incluyendo la escarda y mezcla con el sustrato de malas hierbas, herramientas y medios auxiliares.						
Duración Subtramo		36			36,00	
						36,00
P-102AMBPL03B	ud Plantación de Pinus halepensis de 1,0-1,5 m en contenedor					
Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso apertura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación.						
Tratamiento 5		5.032			5.032,00	
						5.032,00
P-102AMBPRY	ud Proyecto de restauración ambiental Balsa Tudela					
Proyecto de restauración ambiental en la zona de extracción de gravas de la Balsa de Tudela, con medidas específicas para dar continuidad al enclave forestal de las laderas repobladas en el emplazamiento de la Balsa; otras medidas de revegetación específicas para la conservación de la fauna del Área de Importancia para la Conservación de la Avifauna Esteparia del Entorno del Pulguer y medidas adicionales para el cumplimiento de los requisitos establecidos en el Área de Especial Protección por Conectividad Territorial del Plan de Ordenación Territorial de Navarra (POT-5); incluida la implantación de medidas adicionales propuestas por el Gobierno de Navarra.						
		1			1,00	
						1,00
P-102AMBPL34E	ud Plantación de Rosa canina 20-30 cm. CONT.					
Rosa canina de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,6x0,6x0,6 m., incluso apertura del mismo a mano, abonado, formación de alcorque y primer riego.						
Tratamiento 4		1.365			1.365,00	
						1.365,00
P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m en contenedor					
Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.						
Tratamiento 5C		1	1.023,00			1.023,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						1.023,00
P-102AMBPL17I	ud Plantación de Rubus ulmifolius 0,3-0.5m en contenedor					
	Plantación de Rubus ulmifolius extensa de 0,3-0,50m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 4	2.184				2.184,00
						2.184,00
P-102AMBPL39	ud Plantación de Salix alba de 1,0-1,5 m en cepellón					
	Plantación de Salix alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x0,6 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto					
	Tratamiento 4	187				187,00
						187,00
P-102AMBPL18	ud Plantación de Salix atrocinerea de 0,50-0,75 m en contenedor					
	Ud. Suministro y plantación de Salix atrocinerea (Sarga negra) de 0,50 a 0,75 m. de altura, suministrado en contenedor, y plantación en hoyo de 0,4 x 0,4 x 0,4 m., incluso apertura manual del mismo, abonado, formación de alcorque y primer riego.					
	Tratamiento 4	245				245,00
						245,00
P-102AMBPL36	ud Plantación de Salvia officinalis 20-30cm. CONT.					
	Salvia officinalis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, formación de alcorque y primer riego.					
	Tratamiento 5C	1	1.023,00			1.023,00
						1.023,00
P-102AMBPL37	ud Plantación de Thymus vulgaris de 0,2-0,4 m en envase forestal					
	Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso apertura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 5C	1	1.023,00			1.023,00
						1.023,00
P-102AMBPL01	ud Plantación de Genista scorpius 0.3-0.5m en contenedor					
	Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.					
	Tratamiento 5C	1	1.023,00			1.023,00
						1.023,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
04.15	GESTIÓN DE RESIDUOS (BT)					
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos					
	Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un enchado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.					
	Balsa de Tudela	1				1,00
						1,00
PGESRES180D	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (BT)					
	Carga, transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.	1				1,00
						1,00
PGESRES150D	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (BT)					
	Carga, transporte y deposición de residuos tipo II de naturaleza pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.	1				1,00
						1,00
PGESRES200D	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (BT)					
	Carga, transporte y deposición de residuos tipo II de naturaleza pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.	1				1,00
						1,00
04.16	SEGURIDAD Y SALUD					
PSEGSAL.04	ud Seguridad y Salud.Balsa de Tudela					
	Seguridad y salud según estudio de seguridad del proyecto en la Balsa de Tudela (según valoración realizada en el Anejo nº20 del proyecto).					
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05	BALSA DE MOSTRAKAS					
05.01	BALSA					
05.01.01	EXCAVACIONES Y DESMONTES					
05.01.01.01	DESBROCES					
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea)					
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
	Planimetrando	1	260,35			260,35
						260,35
PTU-020	m³ Desbroce y excavación de tierra vegetal en balsa					
	Desbroce y excavación de tierra vegetal de espesor medio de 50 cm, en balsa de Tudela y balsa de Mostrakas incluso carga, transporte a cualquier distancia a acopio intermedio no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa.	1	35.309,89		0,50	17.654,95
						17.654,95
05.01.02.02	MOVIMIENTO DE TIERRAS					
PTU-006	m³ Excavación de terreno no clasificado en explanaciones					
	Excavación de terreno no clasificado en explanaciones con medios mecánicos y taqueos puntuales incluso, refino de taludes y fondo de excavación, carga y transporte a vertedero, acopio o lugar de uso, incluso cánon de vertido, mantenimiento y restauración del vertedero.					
	Según medición auxiliar	1	127.778,40			127.778,40
	A deducir cuneta de guarda	-1	3.190,90			-3.190,90
						124.587,50
PTU-009	m² Excavación en refino de cimientto de espaldones de balsa					
	Excavación en refino de fondos de excavación en terciaro alterado en cimiento de presa con medios mecánicos y taqueos puntuales,con carga y transporte a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero.					
	Planimetrando fondo de balsa	1	13.738,20			13.738,20
						13.738,20
PTU-024	m² Refino y regularización de excavación en taludes					
	Regularización y refino de la superficie de excavación en taludes de balsa incluyendo tratamiento y relleno con mortero de diaclasas de espesor inferior a 3 cm, según P.C.T con carga y transporte de productos sobrantes a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero.					
	Talud en desmonte	1	430,00	16,50		7.095,00
						7.095,00
PTU-025	m³ Suplemento por transporte de sobrantes a vertedero					
	Excavación en balsa	1	124.587,50			124.587,50
	A deducir relleno de dique	-1	68.215,50			-68.215,50
						56.372,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.01.02	RELLENO DE CUERPO DE Balsa					
PMO-001	m³ Material "todo-uno" en dique procedente de excavaciones Material "todo-uno" en dique y rellenos procedente de excavaciones efectuadas en el vaso de la balsa o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones. Según medición auxiliar en dique	1	66.687,70			66.687,70
	Excavación en vaso	1	1.527,80			1.527,80
						68.215,50
PMO-002	m³ Material predominantemente arcillo-limoso Material predominantemente arcillo-limoso procedente de la excavación efectuadas en el vaso de la balsa o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones. Fondo de balsa	1	13.738,20		0,50	6.869,10
	Taludes	1	691,32	16,50	0,50	5.703,39
	A deducir zona en desmonte	-1	430,00	16,50	0,50	-3.547,50
	En coronación	1	752,94	5,00	0,50	1.882,35
						10.907,34
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada. A deducir zona en desmonte	1	430,00	16,50	0,15	1.064,25
						1.064,25
PTU-019	m³ Escollera procedente de préstamo 500 kg balsas Escollera colocada de 500 kg procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto en el entorno de la balsa de Tudela y de la balsa de Mostrakas, colocada en cualquier tipo de paramento, incluso suministro, transporte, medido sobre perfil teórico, según planos. Según medición auxiliar	1	393,30			393,30
						393,30
05.01.03	CORONACIÓN DE Balsa					
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada. Dado de hormigón	2	741,95		0,50	741,95
						741,95
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada. Anclaje barrera	1	741,95	0,50	0,50	185,49
	A deducir canalización	-2	741,95	0,01		-14,84

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						170,65
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	1	752,94	0,83		624,94
						624,94
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial, incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas. Unidad totalmente terminada.	1	752,94	5,00		3.764,70
						3.764,70
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	1	355,45			355,45
						355,45
P5ELE110PVC	m Tubo PVC 110 mm liso adosado o embebido Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D= 110 mm, e=3,2 mm. embebido en hormigón o adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	2	741,95			1.483,90
						1.483,90
PBARR-06	ud Barrera tipo New Jersey Barrera de seguridad rígida tipo New Jersey prefabricada de hormigón, de 2,00x0,80x0,60 m.	1	742,00		0,50	371,00
						371,00
05.01.04	IMPERMEABILIZACIÓN					
P1MT08PE-001	m² Lámina PEAD de 1,5 mm. de espesor, con uniones por termofusión Lámina de PEAD de 1,5 mm. de espesor, tipo GSE o equivalente, con las uniones por termofusión con doble cordón de soldadura, incluso parte proporcional de pérdidas por solapes y uniones a las obras de fábrica y pasos de tuberías, realizadas con pletinas de acero inoxidable y bridas y contrabridas de acero galvanizado, incluso juntas de neopreno, anclajes y virolas de acero inoxidable, uniones de sellado con masilla de poliuretano monocompente, tipo SIKa FLEX 11 FC de SIKa o equivalente y todos los materiales para su instalación, completamente instalada y probada, según la normativa vigente.	1	13.738,20			13.738,20
	fondo de balsa	1	18,00	691,32		12.443,76
	taludes	1	36,55	5,00		182,75
	Doble bajo acceso a interior					
						26.364,71

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4BORD-001	m Bordillo bicapa de hormigón prefabricado 17x36x100 cm Bordillo bicapa de hormigón prefabricado de dimensiones 17x36x100 cm., colocado en fondo de balsa. Anclaje de fondo de la lámina	1	645,40			645,40
						645,40
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.					
	fondo de balsa	1	13.738,20			13.738,20
	taludes	1	18,00	691,32		12.443,76
						26.181,96
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.					
	Losa sobre lámina	1	36,55	5,00	0,20	36,55
						36,55
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
		2	36,55		0,20	14,62
		2	5,00		0,20	2,00
						16,62
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Cuantía 35	1	36,55		35,00	1.279,25
						1.279,25
05.01.05	DRENAJE INTERIOR					
05.01.05.01	CONDUCCIONES DE DRENAJE					
PTUDREB160	m Tubería PVC 160 ranurada Tubo dren de PVC corrugado poroso, D= 160 mm, puesta en zanja, instalada, transporte, montaje. Unidad totalmente instalada y terminada. Sector 1 y sector 2					
	Talud izquierdo	5	17,50			87,50
	Pie talud	1	88,00			88,00
	Talud Derecho	5	17,50			87,50

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Pie talud	1	96,00			96,00
	Fondo Izquierda	1	47,00			47,00
		1	90,00			90,00
	Fondo derecha	1	54,00			54,00
		1	90,00			90,00
	Sector 3 y sector 4					
	Talud izquierdo	3	17,50			52,50
	Pie talud	1	110,00			110,00
	Talud Derecho	3	17,50			52,50
	Pie talud	1	98,00			98,00
	Fondo Izquierda	1	64,00			64,00
		1	105,00			105,00
	Fondo derecha	1	83,00			83,00
		1	105,00			105,00
	Sector 5 y sector 6					
	Talud izquierdo	4	17,50			70,00
	Pie talud	1	128,00			128,00
	Talud Derecho	4	17,50			70,00
	Pie talud	1	110,00			110,00
	Fondo Izquierda	1	62,00			62,00
		1	110,00			110,00
	Fondo derecha	1	97,00			97,00
		1	110,00			110,00
						2.067,00
PTUB160PVC	m Tubería de PVC D=160 SN-8					
Tubería de PVC diámetro Nominal 160 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad total-mente instalada						
Sector 1. margen izquierda						
	Recogida talud	1	18,00			18,00
	Colector solera	1	214,00			214,00
	Colector talud	1	214,00			214,00
Sector 2. margen derecha						
	Recogida talud	1	22,00			22,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Colector solera	1	214,00			214,00
	Colector talud	1	214,00			214,00
	Sector 3. margen izquierda					
	Recogida talud	1	20,00			20,00
	Colector solera	1	104,00			104,00
	Colector talud	1	110,00			110,00
	Sector 4. margen derecha					
	Recogida talud	1	32,00			32,00
	Colector solera	1	104,00			104,00
	Colector talud	1	110,00			110,00
	Sector 5. margen izquierda					
	Recogida talud	1	19,00			19,00
	Sector 6. margen derecha					
	Recogida talud	1	29,00			29,00
	Bajo dique					
						1.424,00

P1MTO3X

m³ Excavación en zanja mediante pequeña retro o zanjadora

Excavación en zanja de profundidad menor de 1 m y anchura no superior a 0,70 m, mediante retro de neumáticos con cazo pequeño o zanjadora en terreno blando, incluso acopios intermedios para posterior uso y/o transporte a vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido. Unidad totalmente terminada medido sobre perfil teórico.

Sector 1

Talud izquierdo	5	17,50	0,50	0,60	26,25
Talud Derecho	5	17,50	0,50	0,60	26,25
Fondo Izquierda	1	47,00	0,50	0,60	14,10
Fondo derecha	1	54,00	0,50	0,60	16,20

Sector 2

Talud izquierdo	3	17,50	0,50	0,60	15,75
Talud Derecho	3	17,50	0,50	0,60	15,75
Fondo Izquierda	1	64,00	0,50	0,60	19,20
Fondo derecha	1	83,00	0,50	0,60	24,90

Sector 3

Talud izquierdo	4	17,50	0,50	0,60	21,00
Talud Derecho	4	17,50	0,50	0,60	21,00
Fondo Izquierda	1	62,00	5,00	0,60	186,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Fondo derecha	1	97,00	0,50	0,60	29,10
	Sector 1. margen izquierda					
	Pie talud	1	88,00	0,50	0,30	13,20
	Fondo	1	90,00	0,30	0,60	16,20
	Recogida talud	1	18,00	0,50	0,60	5,40
	Sector 1. margen derecha					
	Pie talud	1	96,00	0,50	0,30	14,40
	Fondo	1	96,00	0,30	0,60	17,28
	Recogida talud	1	22,00	0,50	0,60	6,60
	Sector 2. margen izquierda					
	Pie talud	1	110,00	0,50	0,30	16,50
	Recogida talud	1	20,00	0,50	0,60	6,00
	Sector 2. margen derecha					
	Pie talud	1	98,00	0,50	0,30	14,70
	Recogida talud	1	32,00	0,50	0,60	9,60
	Fondo conjunto	1	105,00	1,34	0,60	84,42
	Sector 3. margen izquierda					
	Pie talud	1	128,00	0,50	0,30	19,20
	Recogida talud	1	19,00	0,50	0,60	5,70
	Sector 3. margen derecha					
	Pie talud	1	110,00	0,50	0,30	16,50
	Recogida talud	1	29,00	0,50	0,60	8,70
	Fondo conjunto	1	110,00	2,06	0,60	135,96
						805,86

P1MT08GTX-002 m² Geotextil Geotesant-295gr/m2

Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujección provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.

Sector 1

Talud izquierdo	5	17,50		1,70	148,75
Talud Derecho	5	17,50		1,70	148,75
Fondo Izquierda	1	47,00		1,70	79,90
Fondo derecha	1	54,00		1,70	91,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Sector 2					
	Talud izquierdo	3	17,50		1,70	89,25
	Talud Derecho	3	17,50		1,70	89,25
	Fondo Izquierda	1	64,00		1,70	108,80
	Fondo derecha	1	83,00		1,70	141,10
	Sector 3					
	Talud izquierdo	4	17,50		1,70	119,00
	Talud Derecho	4	17,50		1,70	119,00
	Fondo Izquierda	1	62,00		1,70	105,40
	Fondo derecha	1	97,00		1,70	164,90
	Sector 1. margen izquierda					
	Pie talud	1	88,00		1,10	96,80
	Fondo	1	90,00		1,50	135,00
	Recogida talud	1	18,00		1,70	30,60
	Sector 1. margen derecha					
	Pie talud	1	96,00		1,10	105,60
	Fondo	1	96,00		1,50	144,00
	Recogida talud	1	22,00		1,70	37,40
	Sector 2. margen izquierda					
	Pie talud	1	110,00		1,10	121,00
	Recogida talud	1	20,00		1,70	34,00
	Sector 2. margen derecha					
	Pie talud	1	98,00		1,10	107,80
	Recogida talud	1	32,00		1,70	54,40
	Fondo conjunto	2	105,00		1,56	327,60
		1	105,00		0,62	65,10
	Sector 3. margen izquierda					
	Pie talud	1	128,00		1,10	140,80
	Recogida talud	1	19,00		1,70	32,30
	Sector 3. margen derecha					
	Pie talud	1	110,00		1,10	121,00
	Recogida talud	1	29,00		1,70	49,30

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Fondo conjunto	2	110,00		1,56	343,20
		1	110,00		1,34	147,40
						3.499,20
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15					
	Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.					
	s/med.aux	1	662,87			662,87
						662,87
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales					
	Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Sector 2					
	Dado de hormigón	1	105,00	0,62	0,30	19,53
	A deducir tuberías	4	105,00		0,02	8,40
	Sector 3					
	Dado de hormigón	1	110,00	1,34	0,30	44,22
	A deducir tuberías	8	110,00		0,02	17,60
						89,75
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	Sector 2					
	Dado de hormigón	2	105,00		0,30	63,00
	Sector 3					
	Dado de hormigón	2	110,00		0,30	66,00
						129,00
05.01.05.02 ARQUETAS Y DESAGÜES						
PTUB160PVC	m Tubería de PVC D=160 SN-8					
	Tubería de PVC diámetro Nominal 160 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada					
		12	40,00			480,00
						480,00
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2					
	Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0.30m) entre paños y mermas. Unidad totalmente terminada.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		2	40,00		0,60	48,00
		2	40,00	2,06		164,80
						212,80
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1	40,00	2,06	0,60	49,44
	A deducir tuberías	-12	40,00		0,02	-9,60
	Arqueta de desagüe	1	15,00		0,72	10,80
	A deducir tubería 315	-1	15,00		0,08	-1,20
						49,44
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	2	40,00		0,60	48,00
	Arqueta	2	2,60		3,85	20,02
		2	2,64		3,85	20,33
						88,35
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	2	2,00		3,50	14,00
		2	2,06		3,50	14,42
						28,42
P4HG-001A	m³ Hormigón HM-12.5/B/20/X0 Hormigón en masa HM-12.5/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación, p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	1	2,60	2,64		6,86
						6,86
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	1	2,60	2,64	0,35	2,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	Cajeros	2	2,60	0,30	3,50	5,46
		2	2,06	0,30	3,50	4,33
						12,19
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Según medición auxiliar	1	961,46			961,46
						961,46
P4TUB315PVC	m Tubería PVC D=315 mm SN-8					
	Tubería de PVC diámetro Nominal 315 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.					
	Desagüe a barranco	1	15,00			15,00
						15,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
		1	40,00	2,06	0,60	49,44
	Arqueta exterior	1	4,92	2,60	3,85	49,25
	En desagüe a barranco	1	15,00		4,08	61,20
						159,89
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN					
	Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Volumen de excavación	1	159,92			159,92
	conducciones desde balsa	-1	40,00	2,06	0,60	-49,44
	Arqueta de desagüe	-1	2,64	2,60	3,85	-26,43
	A deducir dado de hormigón	-1	15,00		0,72	-10,80
						73,25
P1MTTU003	m² Geodrén PEAD 200 gr/m2					
	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.					
	Arqueta	2	2,60		3,85	20,02
		2	2,64		3,85	20,33

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A deducir tuberías	-12	0,02			-0,24
		-1	0,08			-0,08
						40,03
P4LOSA003	m² Losa prefabricada con entrada de hombre					
	Losas prefabricadas de hormigón en tapas de grandes arquetas con entrada de hombre practicable dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contra-cerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.					
	Losa	1	2,79	2,75		7,67
						7,67
P41LAG004	ud Entrada de hombre con chapa lagrimada de 1,00x100					
	Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.					
		1				1,00
						1,00
P41ESC1	m Escalera vertical telescópica acero inox. tipo barco AISI-316L					
	Escalera de seguridad y protección telescópica de acero inoxidable extensible en tramos de 50 cm. anchura 60 cm, longitud 5.0 m, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Unidad totalmente terminada.					
	Entradas de hombre	1			3,50	3,50
						3,50
05.01.06	DRENAJE EXTERIOR					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Según medición auxiliar	1	4.333,17			4.333,17
						4.333,17
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V					
	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.					
	Pie de dique en lado sur de la balsa	1	415,00			415,00
						415,00
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3					
	Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.					
	Base	1	493,78		0,73	360,46
						360,46

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	2	493,78		1,13	1.115,94
						1.115,94
P4ETT-002	kg Acero B-500-S					
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Redondos 10 cada 0,20					
	Longitudinal	16	493,78		0,64	5.056,31
	Transversales	2.470	3,26		0,64	5.153,41
						10.209,72
05.02	CONDUCCIÓN DE ENTRADA Y SALIDA					
05.02.01	ARQUETA EN ALMENARA					
05.02.01.01	MOVIMIENTO DE TIERRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	11,35	19,75	11,50	2.577,87
						2.577,87
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN					
	Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Excavacion	1	2.577,87			2.577,87
	Elemento	-1	6,25	4,60	11,50	-330,63
						2.247,24

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.02.01.02	OBRA DE FÁBRICA					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.					
		1	6,45	4,80	0,10	3,10
						3,10
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.					
	solera	1	6,25	4,60	0,60	17,25
	muros	1	6,25	0,50	8,30	25,94
		2	4,10	1,00	10,80	88,56
		1	2,50	0,50	3,50	4,38
		1	1,00	0,50	3,50	1,75
		1	0,85	0,60	10,80	5,51
		1	1,24	0,50	10,80	6,70
						150,09
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.					
	solera	2	6,25		0,60	7,50
		2		4,60	0,60	5,52
						13,02
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.					
	muros	2	6,25		8,30	103,75
		4	4,10		10,80	177,12
		2	2,50		3,50	17,50
		2	1,00		3,50	7,00
		2		0,60	10,80	12,96
		2	1,24		10,80	26,78
		2				2,00
		2		0,50	10,80	10,80

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						357,91
P4ETT-002	kg Acero B-500-S	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.				
	s/med aux	1	21.152,26			21.152,26
						21.152,26
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.				
	Unión solera muro	1	6,25			6,25
		2	4,60			9,20
		1				1,00
		1	2,50			2,50
		1	1,00			1,00
						19,95
P1MTTU003	m² Geodrán PEAD 200 gr/m2	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.				
	Muros	1	6,25	8,30		51,88
		2	4,10	10,80		88,56
		1	2,50	3,50		8,75
		1	1,00	3,50		3,50
						152,69
05.02.01.03	ELEMENTOS HIDROMECÁNICOS					
PCOMO006	ud Compuerta mural 2750x3100	Compuerta mural 2750x3100, para 10 mca y diseño unidireccional de accionamiento eléctrico, incluyendo actuador, deslizaderas, sellado en cuatro lados, husillo ascendente, capeuza de plástico, totalmente montada en obra.				
		2				2,00
						2,00
PCOMO010	m Embebidos metálicos en 1ª y 2ª fase	Embebidos metálicos en primera y segunda fase de hormigonado, en ranuras de elementos hidromecánicos, totalmente colocados.				
	horizontales	2	4,10			8,20
	verticales	4	10,80			43,20
						51,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.02.01.04 ELEMENTOS ACCESORIOS						
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6					
	Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.					
		1	21,65			21,65
						21,65
05.02.02 CONDUCCIÓN DE LLENADO VACIADO						
05.02.02.01 MOVIMIENTO DE TIERRAS						
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea)					
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.					
		1	33,00		4,73	156,09
						156,09
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc.					
	Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.					
		1	33,00		4,73	156,09
						156,09
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Según medición aux	1	23.453,90			23.453,90
		1	33,00		17,94	592,02
						24.045,92
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN					
	Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	Zanja tipo 2	1	10,00	17,82		178,20
						178,20
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert					
	Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Zanja tipo 1	1	300,00	4,88		1.464,00
	Zanja tipo 2	1	40,48	19,47		788,15

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2.252,15
P1MT04A	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN	Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.				
	Excavación	1	24.045,95			24.045,95
	a deducir hormigón	-1	2.252,15			-2.252,15
	a deducir rellenos localizado con suelos proc. exc 150 mm 95%PN	-1	178,20			-178,20
	a deducir tuberías	-1	3.450,48			-3.450,48
	a deducir asiento camino	-1	1.747,30			-1.747,30
						16.417,82
05.02.02.02 CONDUCCIONES						
P1T2500.20.0A	m Tubería acero helic. L275, Ø2500 esp. 20.0	Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.500 mm (nominal) y espesor mínimo de 20,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada				
		2	340,48			680,96
						680,96
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR	Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.				
	PiezasTransiciones	4	5,00	7.850,00	0,02	3.140,00
						3.140,00
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC	M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.				
		2	340,48			680,96
						680,96
05.02.03 ARQUETA EN BALSA						
05.02.03.01 MOVIMIENTO DE TIERRAS						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.				
		1		88,10	6,10	537,41
						537,41

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1		359,35		359,35
						359,35
05.02.03.02	OBRA DE FÁBRICA					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	1		8,40	3,50	29,40
						29,40
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.					
	Solera	1	8,34	3,50	0,50	14,60
	Alzados	2	8,34	0,50	5,55	46,29
		2	2,50	0,50	5,55	13,88
		-1	0,50	0,50	0,50	-0,13
		-2	2,60	0,50	2,60	-6,76
						67,88
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	2	8,34		6,05	100,91
		2	3,50		6,05	42,35
	A deducir	-2	2,50		2,50	-12,50
	A deducir	-1	0,40		0,40	-0,16
						130,60
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	2	7,34		5,55	81,47
		2	2,50		5,55	27,75

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						109,22
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	Zona salida tubos	2	0,05	8,34	0,60	0,50
						0,50
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	Según medición auxiliar	1	5.543,68			5.543,68
						5.543,68
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.					
		1	8,40	3,50	5,45	160,23
						160,23
PMOLAM010	m Anclaje de lámina PEAD a obra de fábrica Anclaje de lámina impermeable PEAD a obra de fábrica, incluyendo dado de hormigón en masa, perfiles hidroexpansivos, pletinas metálicas y pequeño material adicional, totalmente terminada					
		2	8,34			16,68
		2	3,50			7,00
						23,68
05.02.03.03	ELEMENTOS ACCESORIOS					
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.					
		20				20,00
						20,00
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífuga y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grúa de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa. Perfiles UPN200, IPN 200, UPN100, pletinas...					
	S/med. aux	1	3.343,85			3.343,85
						3.343,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41TRAM_001A	m ² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilaría acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	1	1,29	1,04		1,34
						1,34
P41TRAM_001A	m ² Reja formada por pletinas metálicas Reja formada por pletinas metálicas.	1	7,34	2,50		18,35
	A deducir entrada de hombre	-1	1,29	1,04		-1,34
						17,01
05.03	DESAGÜE DE FONDO					
05.03.01	CONDUCCIÓN					
05.03.01.01	MOVIMIENTO DE TIERRAS					
P1MT01A	m ² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	1	95,00		4,73	449,35
						449,35
P1MT02A	m ² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	1	95,00		4,73	449,35
						449,35
P1MT03B1	m ³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. Según med.aux	1	747,60			747,60
						747,60
P1MT04F	m ³ Construcción cama de arena en tuberías Cama de arena silíceo para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1	95,00		0,48	45,60
						45,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
		1	95,00		1,70	161,50
	A deducir cama de arena	-1	95,00		0,48	-45,60
	A deducir tubería	-1	95,00		0,13	-12,35
						103,55
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
		1			747,60	747,60
	A deducir zona de tubería	-1	95,00		1,70	-161,50
						586,10
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.					
		1	95,00		4,73	449,35
						449,35
05.03.01.02	CONDUCCIÓN					
P1T0400.4B	m Tubería de acero heli. L335 Ø400 esp 4,0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.					
	Desde arqueta en balsa	1	95,25			95,25
						95,25
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.					
	Kg calderería (pieza transición)	7.850	2,00	0,02	1,44	452,16
						452,16
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.					
	Anclaje en codo	1		3,49	0,90	3,14

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	A deducir tubería	-1	2,25		0,13	-0,29
						2,85
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.				
	En dado de anclaje	2	1,25		0,90	2,25
						2,25
P4CINT400	m Encintado anticorrosivo DN400 mm	Encintado para recubrimiento de protección anticorrosiva de tubería de DN400mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.				
	En dado de anclaje	1	2,25			2,25
						2,25
P4ETT-002	kg Acero B-500-S	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.				
	En dado de anclaje. Por cuantía	1	40,00		61,06	2.442,40
						2.442,40
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC	M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.				
	Desde arqueta en balsa	1	95,25			95,25
						95,25
05.03.02 ARQUETA DE VÁLVULAS						
05.03.02.01 MOVIMIENTO DE TIERRAS						
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.				
		1	8,97	7,97	3,60	257,37
						257,37
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN	Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de selección, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.				
	Excavacion	1	257,37			257,37
		-1	5,80	4,80	3,60	-100,22

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						157,15
05.03.02.02	OBRA DE FÁBRICA					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales					
Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.						
		1	5,80	4,80		27,84
						27,84
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3					
Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.						
solera		1	5,80	4,80	0,50	13,92
muros		2	5,80	0,40	4,00	18,56
		2	4,00	0,40	4,00	12,80
						45,28
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.						
		2	5,80		3,50	40,60
		1	4,80		3,50	16,80
A deducir tubería		-1	0,13			-0,13
						57,27
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.						
		2	5,00	4,00		40,00
		5	4,00	4,00		80,00
		2	5,80	1,00		11,60
		1	4,80	1,00		4,80
A deducir tubería		-2	0,13			-0,26
A deducir ventana de lamas		-8	1,00	0,25		-2,00
Marcos		16	1,00	0,40		6,40
		16		0,40	0,25	1,60
						142,14

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. Según medición auxiliar	1	4.096,60			4.096,60
						4.096,60
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	2	5,80		3,50	40,60
		1	4,80		3,50	16,80
	A deducir tubería	-1	0,13			-0,13
						57,27
05.03.02.03	CONDUCCIÓN Y VÁLVULERÍA					
P1T400.6.E	m Tubería acero helic. L275, Ø400 esp 6 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1	5,40			5,40
						5,40
P6CD.400.16	ud Carrete desmontaje DN 400 PN16 Carrete de desmontaje de acero de 400 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1				1,00
						1,00
P6VC400.16	ud Válvula compuerta ø400 mm, 16 atm Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 400 mm, instalada.	1				1,00
						1,00
PVHB400	ud Válvula Howell-Bunger DN 400 mm Suministro y montaje de válvula Howell-Bunger de 400 mm de diámetro, con carrete deflector de chorro incorporado a la válvula, construida en acero inoxidable, con accionamiento por cilindros oleohidráulicos, con indicador de posición electrónico digital con lectura en pupitre de mando.. Unidad totalmente instalada y probada	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P6VC.150.16	ud Válvula compuerta ø 150 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada. En by-pass	2				2,00
						2,00
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada. Apoyo abrazadera	1	0,40	0,70	0,50	0,14
						0,14
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlite que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada. Apoyo abrazadera	2	0,40		0,50	0,40
		2		0,70	0,50	0,70
						1,10
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal. Apoyo abrazadera	1	0,14	40,00		5,60
						5,60
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada. Abrazadera (0,005x7850) By-pass (0,003x7850)	1	39,250			39,250
		1	23,550			23,550
						62,80
P4CINT400	m Encintado anticorrosivo DN400 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN400mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	1	0,40			0,40
						0,40

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.03.02.04 CUBIERTA METÁLICA						
P41ETT-001	kg Acero laminado S-275JR + pintura epoxy+pintura ignífuga					
	Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm ² , unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífuga y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.					
	UPN 120	3	5,80	13,30		231,42
	IPN180	2	4,80	21,90		210,24
	IPN 300	2	5,80	54,20		628,72
		2	4,80	54,20		520,32
	15% anclajes, etc	0,15	1.590,70			238,61
						1.829,31
P41LAG001	m² Chapa lagrimada 4/6					
	Chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.					
		1	6,20	5,20		32,24
						32,24
P41LAG002	ud Entrada de hombre con chapa lagrimada de 0,80x0,80					
	Entrada de hombre de 0,80x0,80 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.					
		1				1,00
						1,00
05.03.02.05 ELEMENTOS ACCESORIOS						
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro					
	Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.					
		8	1,00	0,25		2,00
						2,00
P41ESC2	m Escalera vertical fija acero inox-tipo barco AISI 316L					
	Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaída y elementos extensibles. Unidad totalmente terminada.					
		1	4,00			4,00
						4,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	1	1,50			1,50
						1,50
05.03.03	CUENCO DEFLECTOR					
05.03.03.01	MOVIMIENTO DE TIERRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1	6,27	6,75	3,50	148,13
						148,13
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	Excavacion	1	148,13		148,13
	elemento	-1	3,10	3,55	2,50	-27,51
						120,62
05.03.03.02	OBRA DE FÁBRICA					
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	1	3,10	3,55	0,10	1,10
						1,10
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	solera	1	3,10	3,55	4,40
	muros	2	1,55	0,40	2,00	2,48
		2	2,00	0,30	1,65	1,98
		1	2,50	0,30	1,33	1,00
		-1	2,50	0,30	0,40	-0,30
	salida	1	2,50	0,60	0,40	0,60

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	aleta	2	1,25	0,30	0,85	0,64
	losa	1	2,50	0,70	0,30	0,53
						11,33
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS					
Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.						
	solera	2	3,10		0,40	2,48
		2		3,55	0,40	2,84
						5,32
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS					
Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.						
	muros	4	1,55		2,00	12,40
		4	2,00		1,65	13,20
		2	2,50		1,33	6,65
		-2	2,50		0,40	-2,00
	salida	2	2,50		0,40	2,00
	aleta	4	1,25		0,85	4,25
	losa	1	2,50	0,70	0,30	0,53
		2				2,00
		2	2,50		0,30	1,50
		2		0,70	0,30	0,42
						40,95
P4CIMBRA	m³ Aparente cimbra					
Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.						
	losa	1	2,50	0,70	1,33	2,33
						2,33
P4ETT-002	kg Acero B-500-S					
Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.						
	s/med aux	1	2.067,33			2.067,33

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						2.067,33
P1MTTU003	m² Geodrén PEAD 200 gr/m2					
	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.					
	solera	2	3,10		0,40	2,48
		2		3,55	0,40	2,84
						5,32
05.03.04	CANAL DE DESCARGA					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero					
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	Según medición auxiliar	1	1.094,80			1.094,80
						1.094,80
P1MT08ESC150H	m³ Escollera 50-150 Kg hormigonada con HM20					
	scollera de peso mínimo 50-150 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
		1	186,82	1,65		308,25
						308,25
05.04	AUSCULTACIÓN E INSTRUMENTACIÓN					
05.04.01	SENSORES Y EQUIPOS					
PGQIN0A25	ud Equipo para medida del nivel del embalse en las balsas					
	Equipo para medida del nivel del embalse en las balsas, consistente en una balanza o telelimnómetro de muy alta precisión, con toma de presión hidrostática mediante sensor de cuarzo, con la electrónica de indicación de cota contenida en caja estanca de metal ligero, con puerta acristalada. Con indicador digital de 6 cifras para la cota, rango hasta 60 m., precisión 0,015 % del rango, alimentación eléctrica por línea independiente de 220 Vac., y protección de sobretensiones; salida eléctrica en código opcional (automatizable) desde emisor digital. completamente instalada y conectada a una toma de presión hidroestática situada por debajo de la cota mínima a medir, en un lugar protegido, sin incluir la obra civil de ejecución de la toma hidroestática pero incluyendo los tubos de inoxidable y válvula de corte para conexión al sensor y la alimentación eléctrica del equipo.					
		1				1,00
						1,00
PGQIN0A22	ud Base para nivelación de precisión con apoyo semiesférico para la					
	Base para nivelación de precisión con apoyo semiesférico para la mira, contenida en arqueta cilíndrica de acero inoxidable con tapa roscada, completamente colocada empotrada en huecos preparados al efecto por la coronación y bermas de la presa, incluyendo la pequeña obra civil accesoria y la fijación al cuerpo de presa, terminada.					
		15				15,00
						15,00
PGQIN0A24	ud Aforador de filtraciones compuesto por un vertedero triangular o					
	Aforador de filtraciones compuesto por un vertedero triangular o rectangular de pared delgada, de acero inoxidable, preparado para instalar en canaletas de recogida del agua de filtraciones en galerías y/o aguas abajo de la presa, fabricado a medida de la canaleta (hasta 400 x 400 mm), incluyendo reglilla graduada para lectura, de 200 mm. de rango, con 1 mm de apreciación, de acero inoxidable sobre placa de metacrilato, completamente instalado en canaletas, sin incluir la obra civil necesaria para recogida del agua en cada punto ni protecciones de los equipos.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
PGQIN0A20	ud Base fija para estacionamiento del taquímetro de precisión Base fija para estacionamiento del taquímetro de precisión en las lecturas topográficas, fabricada en acero inoxidable, con sistema de centraje, placa base y tapa de protección antivandalismo, completamente instalada, empotrada sobre pilar cilíndrico de hormigón armado y zapata anclada al terreno, con las dimensiones adecuadas para estacionar el equipo de lectura, incluyendo todos los materiales y la ejecución de la obra civil de construcción de zapata y pilar, terminado.	3				3,00
						3,00
PGQIN0A27	ud Sensor para medida automática del nivel de agua en la canaleta Sensor para medida automática del nivel de agua en la canaleta junto a un aforador totalizador de filtraciones, del tipo ultrasonidos, con electrónica de tratamiento de la señal y display indicador de nivel, alimentación a 24 Vcc, rango hasta 5 m, protección IP-68, precisión 0,2% del rango, resolución 1 mm, salida 4-20 mA, protección de interferencias, completamente instalado y calibrado, incluyendo el soporte de fijación de acero galvanizado y el sistema de alimentación eléctrica desde algún cuadro cercano.	1				1,00
						1,00
05.04.02 SISTEMA AUTOMATIZADO DE ADQUISICIÓN DE DATOS						
PGQIN0A29	m Tubo metálico de acero galvanizado, para canalización de cables Tubo metálico de acero galvanizado, para canalización de cables, métrica 50, instalado por zanja o en paramento y otras zonas expuestas de la presa, incluyendo elementos de sujeción y obra civil de zanjas o arquetas.	1	450,00			450,00
						450,00
PGQIN0A31	ud Estación Automática de Adquisición y registro de datos Estación Automática de Adquisición y registro de datos de los equipos de instrumentación, instalada en caseta junto a la presa y compuesta por: microprocesador, reloj, memorias RAM y ROM, teclado y display, fuente, convertidor A/D, interface serie, armario con protección IP-55 y puerta acristalada, frontal serigrafiado con teclado y display, 8 placas acondicionadoras de señal de los sensores y protecciones. Completamente instalada incluyendo conexionado de cables.	1				1,00
						1,00
PGQIN0A33	ud Convertidor optoelectrico y caja de empalmes específica para con Convertidor optoelectrico y caja de empalmes específica para conexión del cable de fibra óptica y paso a RS-485, instalada junto a la última Estación de Adquisición y junto al ordenador en las oficinas, incluyendo conexionado de cables.	1				1,00
						1,00
PGQIN0A34	m Cable de fibra óptica para comunicaciones Cable de fibra óptica para comunicaciones desde la última Estación automática hasta el ordenador de las oficinas de la presa, colocado en la zona exterior en el interior de tubos de protección en zanja y con arquetas intermedias, incluso obra civil.	1	450,00			450,00
						450,00
PGQIN0A35	ud Estación Central para el control del Sistema Automático de Adqui Estación Central para el control del Sistema Automático de Adquisición de datos de auscultación de las balsas de Tudela y Mostrakas, compuesta por: ordenador con disco duro, CDROM, teclado y ratón, tarjetas gráfica y de sonido, modem telefónico, monitor color 15" TFT, impresora color de inyección de tinta, licencias sistema operativo y Office. Todo instalado y comprobado en oficinas de la presa, incluyendo pruebas de comunicaciones.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
		1				1,00
						1,00
PGQIN0A36	ud Equipo SAI con autonomía de 10 minutos para protección de los eq Equipo SAI con autonomía de 10 minutos para protección de los equipos informáticos ante descargas y sobretensiones.	1				1,00
						1,00
PGQIN0A41	ud Suministro de la partida de repuestos de las placas Suministro de la partida de repuestos de las placas acondicionadoras para las Estaciones de Adquisición, incluyendo: 1 tarjeta de microprocesador; 1 tarjeta de comunicaciones; 1 tarjeta de alimentación; 2 tarjetas de cuerda vibrante; 1 tarjeta de entradas 4-20 mA.	1				1,00
						1,00
PGQIN0A43	ud Ampliación del Programa de presas con los módulos de aplicaciones gráficas Ampliación del Programa de presas con los módulos de aplicaciones gráficas con dibujos de la presa y sensores y el módulo de generación de informes numéricos y gráficos con los valores de auscultación recogidos, todo instalado y comprobado en el ordenador de la presa.	1				1,00
						1,00
PGQIN0A44	ud Configuración de Estaciones Automáticas y personalización del programa de presas Configuración de Estaciones Automáticas y personalización del programa de presas para los sensores y equipos de la balsa de Tudela, incluyendo la creación de bases de datos y de gráficos con sensores.	1				1,00
						1,00
PGQIN0A45M	ud Configuración de Estaciones Automáticas y personalización del pr Calibración y puesta en marcha del sistema automatizado de control instalado en la presa: un técnico especialista en instrumentación y un técnico informático para la comprobación de comunicaciones y primeras lecturas de los equipos, incluyendo horas de viaje, costes de estancia y horas de trabajo.	1				1,00
						1,00
PGQIN0A46	ud Elaboración de la Documentación Final de Instalación Elaboración de la Documentación Final de Instalación tras la realización del montaje, que incluye los esquemas de localización definitiva de todos los equipos, esquemas de conexionado a cajas de centralización y a las Estaciones Automáticas, hojas de calibración, impresos de toma de datos, condiciones y procedimientos de lectura y fórmulas de conversión a unidades de ingeniería, manuales de programas, fichas técnicas y toda la información necesaria para la gestión del sistema de auscultación. Se entregarán tres ejemplares encuadernados y en soporte informático.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.05	ACCESOS					
05.05.01	MOVIMIENTO DE TIERRRAS					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico. Según med.aux					
	Eje 1. Acceso coronación	1	889,80			889,80
	Eje 2. Acceso arqueta desagüe	1	656,20			656,20
						1.546,00
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil. Según med.aux					
	Eje 1. Acceso coronación	1	153,60			153,60
						153,60
05.05.02	FIRMES					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. Según med.aux					
	Eje 1. Acceso coronación	1	647,90			647,90
	Eje 2. Acceso arqueta desagüe	1	101,50			101,50
						749,40
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial, incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas. Unidad totalmente terminada.					
	Eje 1. Acceso coronación	1	368,50	5,00		1.842,50
	Eje 2. Acceso arqueta desagüe	1	57,87	5,00		289,35
						2.131,85

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.05.03	DRENAJE LONGITUDINAL Y TRANSVERSAL					
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.					
	zanja drenaje	3	8,00	4,95		118,80
						118,80
P4TUB120HA135	m Tubería hormigón armado junta elastomérica 135 Ø1200 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.200 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
		1	11,00			11,00
						11,00
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
		3	7,00	1,00	0,20	4,20
						4,20
P1MT04A	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	relleno zanja drenaje	1	66,04			66,04
						66,04
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada. Acceso a balsa					
	Margen izquierda	1	326,00			326,00
	Acceso a DF					
	Margen izquierda	1	47,00			47,00
	Margen derecha	1	39,00			39,00
						412,00
P3BADEN001	ud Badén de hormigón en camino Badén de hormigón en camino de 5 m de anchura y de longitud total 10 m, con 4 m de longitud en el plano más bajo y rampas de 3 m, con una altura de 30 cm. Unidad completamente terminada.					
		2				2,00
						2,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.					
	ODT	1	8,00			8,00
						8,00
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.					
	ODT	1	8,00	2,88		23,04
	A deducir tubería	1	8,00	0,50		4,00
						27,04
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.					
	ODT	1	8,00	5,67		45,36
						45,36
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.					
		1	3,00	3,00	1,00	9,00
						9,00
PEMB800	ud Embocadura de hormigón prefabricado con aletas de DN 800 Embocadura de hormigón prefabricado con aletas de DN 800.					
	ODT	1	2,00			2,00
						2,00
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.					
	#12@20	1	41,00	4,35	0,89	158,73
	#12@20	1	8,00	7,85	0,89	55,89
						214,62

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.06	INSTALACION ELECTRICA					
05.06.01	LINEAS DE BT					
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	1	40,00			40,00
						40,00
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	1	60,00			60,00
						60,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc. DESAGUE FONDO	1				1,00
						1,00
05.06.02	TRANSFORMACION Y GENERACION					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1				1,00
						1,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1				1,00
						1,00
05.06.03	CUADROS					
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R					
	Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.					
	DF	1				1,00
						1,00
P5ELEGBT1A	ud Modulo acometida+aparamenta					
	Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Dedicadamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1				1,00
						1,00
P5ELEGDS1	ud Descargador de sobretensiones tipo I+II					
	Descargador de sobretensiones tipo I+II	1				1,00
						1,00
P5ELEGBT41	ud CGBT AUX					
	Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1				1,00
						1,00
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia					
	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.06.04	ALUMBRADO					
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+Ip68 Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de poliparbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4				4,00
						4,00
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cabelado necesario para la instalación. Unidad totalmente operativa.	1				1,00
						1,00
P5ELEI400LED	ud Luminaria LEDs de 1x400 W IP67 estanca Proyector industrial les de 85 W cpn un flujo lumínico de 10500 Lm, con lámpara, totalmente instalado,incluso lámpara p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Antideflagrante. Unidad totalmente instalada.	1				1,00
						1,00
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1				1,00
						1,00
P5ELEI400WX2	ud Columna de 12 m + dos proyectores 400 W LED Columna tronco-cónica de las siguientes características: Longitud: 12 metros Brazo en T para soportación de 2 proyectores. Material: Acero galvanizado Proyectores: 2 Uds Luminaria: Philips Tempo 3 MWF 330. Lámpara: 400W LED. incluida Completamente instalada, incluida obra civil (excavación, rellenos y cimentación)	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.06.05	ACOMETIDA Y LEGALIZACION					
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1				1,00
						1,00
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	100				100,00
						100,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexión, y operaciones necesarias de retirada. Unidad completa	5				5,00
						5,00
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1				1,00
						1,00
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1				1,00
						1,00
05.06.06	CANALIZACIONES					
P35RALUM02	m Canaliz alumbrado conducto Ø90 mm+tendido línea elec.4x6mm2+TT Canalización PVC corrugado de 90 mm. de diámetro en cualquier tipo de terreno, Acerados y/o pavimentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexionados multiples. Unidad totalmente terminada.	1	40,00			40,00
						40,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	1	10,00			10,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						10,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	1	40,00			40,00
						40,00
P5ELECROZA	m Roza en ladrillo macizo, bloque hormigón Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.	1	20,00			20,00
						20,00
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	1				1,00
						1,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	2				2,00
						2,00
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	4				4,00
						4,00
05.06.07	TOMA DE TIERRA					
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	DF	1			1,00
						1,00
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	DF	1	3,00		3,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
						3,00
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.					
		4				4,00
						4,00
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.					
		1	4,00			4,00
						4,00
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.					
	DF	2				2,00
						2,00
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.					
	DF	1				1,00
						1,00
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.					
	MOS	1	40,00			40,00
						40,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.					
	MOST	10				10,00
						10,00
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.					
	DF	2				2,00
						2,00
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.					

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
	DF	1				1,00
						1,00
05.06.08	MECANISMOS					
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	2				2,00
						2,00
P5ELEC08	ud Base de enchufe 16A monofásica Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.	2				2,00
						2,00
P5ELEC09	ud Base de enchufe trifásica 16A Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.	1				1,00
						1,00
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	2				2,00
						2,00
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1				1,00
						1,00
05.07	URBANIZACIÓN Y CERRAMIENTOS					
05.07.01	URBANIZACIÓN GENERAL					
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. En desagüe de fondo	1	19,80	15,80	0,30	93,85
						93,85
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.	1	19,80	15,80		312,84
						312,84

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PASEÑACC	ud Señalización de accesos y advertencias de seguridad Señalización de accesos y advertencias de seguridad, etc.					1,00
05.07.02 CERRAMIENTOS						
P5CERRAMPU	m Cerramiento tipo-2 Valla de D/T metálica, con pp puerta acceso Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, incluyendo parte proporcional de puerta de acceso. Balsa y desagüe de fondo	1	1.028,78			1.028,78
						1.028,78
05.08 SERVICIOS AFECTADOS						
P1MT08BASEZA2	m² Escarificado camino +30%Zahorra artificial 95%PM Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada. Camino de servicio	1	520,00		5,00	2.600,00
						2.600,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada. camino afectado	1	520,00	5,00	0,30	780,00
						780,00
P6SÑL-002A	ud Señal triangular normal L=90 cm. Nivel1 Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.	1				1,00
						1,00
05.09 GESTIÓN DE RESIDUOS						
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un encachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón. Balsa de Mostrakas	1				1,00
						1,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
PGESRES180E	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (BM)					
	Carga, transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Mostrakas.					
		1				1,00
						1,00
PGESRES150E	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (BM)					
	Carga, transporte y deposición de residuos tipo II de naturaleza pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Mostrakas.					
		1				1,00
						1,00
PGESRES200E	ud Carga, transporte y depos. de Res. peligrosos (BM)					
	Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos, así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en la Balsa de Mostrakas.					
		1				1,00
						1,00
05.10	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (BM)					
05.10.01	MEDIDAS PROTECTORAS, CORRECTORAS (BM)					
05.10.01.01	ATMÓSFERA (BM)					
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora					
	Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.					
	Total obra meses secos 6/12	0,5	24,00			12,00
						12,00
05.10.01.02	SUELO (BM)					
P-101AMB-MP03	m Jalonamiento de protección malla					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
	trazado de las conducciones 10%	0,1	2.200,00	2,00		440,00
						440,00
P-101AMB-MP09	m Jalonamiento de protección cinta					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
	trazado de las conducciones 25%	1	1.950,00	2,00		3.900,00
						3.900,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.10.01.03	HIDROLOGIA (BM)					
P-101AMB-MP05	m Barrera de retención sedimentos					
	Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.					
	Canal de descarga	2	10,00	2,00		40,00
	Zona de obras	2	10,00	4,00		80,00
						120,00
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones					
	Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.					
	Una por cada zona de instalaciones	12				12,00
						12,00
05.10.01.04	FAUNA Y FLORA (BM)					
P-101AMB-MP03	m Jalonamiento de protección malla					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.					
		1	900,00	2,00		1.800,00
						1.800,00
P-101AMB-MP09	m Jalonamiento de protección cinta					
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.					
		1	850,00	2,00		1.700,00
						1.700,00
05.10.02	SEGUIMIENTO ARQUEOLÓGICO (BM)					
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones					
	Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.					
	Informe inicial	1				1,00
						1,00
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz.					
	Informe arqueológico previo incluidas tramitaciones y tasas.					
	un informe previo	1				1,00
						1,00
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe					
	Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual					
	Plazo obra	24				24,00
						24,00

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
05.10.03	PROGRAMA VIGILANCIA AMBIENTAL (BM)					
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación PVA y PGR	1				1,00
						1,00
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento. Meses de duracion obra	24				24,00
	Duración obra+ demoliciones y remates					24,00
P-104AMBVA03A	ud Informe especializado de flora Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina. 1 al principio de obra	1				1,00
						1,00
P-104AMBVA04A	ud Informe especializado de fauna Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe. 1 antes de inicio de obra	1				1,00
						1,00
P-104AMBVA06	ud Informe de prevención acústica Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio. Unidad completa.	1				1,00
						1,00
05.10.04	INTEGRACIÓN PAISAJÍSTICA (BM)					
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales. Según planimetría	1	35.309,90			35.309,90
						35.309,90
PTU-023	m³ Extendido de tierra veg. proc excav/acopio 50 cm(medio) balsas Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado en balsas.	2	13.733,82			27.467,64
						27.467,64

MEDICIONES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	UDS	LONGITUD	ANCHURA	ALTURA	CANTIDAD
P-102AMBPL001	m ² Hidrosiembra incluso rastrillado y tapado Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.					
	Taludes Balsa de Mostrakas	1	7.842,25			7.842,25
						7.842,25
05.11	SEGURIDAD Y SALUD					
PSEGSAL.05	ud Seguridad y Salud.Balsa de Mostrakas y conducción de conexión Seguridad y Salud.Balsa de Mostrakas y conducción de conexión (según valoración realizada en el Anejo nº20 del proyecto).					
						1,00

CUADRO DE PRECIOS N°1

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	PRECIO EN LETRA	IMPORTE (€)
001	P-101AMB-MP01	mes	Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.		2.488,07
				DOS MIL CUATROCIENTOS OCHENTA Y OCHO EUROS CON SIETE CÉNTIMOS	
002	P-101AMB-MP03	m	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.		1,74
				UN EUROS CON SETENTA Y CUATRO CÉNTIMOS	
003	P-101AMB-MP05	m	Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.		5,54
				CINCO EUROS CON CINCUENTA Y CUATRO CÉNTIMOS	
004	P-101AMB-MP06	ud	Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.		806,83
				OCHOCIENTOS SEIS EUROS CON OCHENTA Y TRES CÉNTIMOS	
005	P-101AMB-MP09	m	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.		0,52
				CERO EUROS CON CINCUENTA Y DOS CÉNTIMOS	
006	P-101AMB-MP10	ud	Protector de fauna: Instalación de vallas plásticas y elementos necesarios.		13,08
				TRECE EUROS CON OCHO CÉNTIMOS	
007	P-102AMB-PL01	m²	Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.		0,12
				CERO EUROS CON DOCE CÉNTIMOS	
008	P-102AMB-PL06	Pie	Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y densidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la intensidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, incluido canon de vertido, herramientas y medios auxiliares.		150,73

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CIENTO CINCUENTA EUROS CON SETENTA Y TRES CÉNTIMOS	
009	P-102AMBPL001	m ² Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.		1,64
			UN EUROS CON SESENTA Y CUATRO CÉNTIMOS	
010	P-102AMBPL002	ud Plantación de Juniperus phoenicea 0,1-0,2m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		1,70
			UN EUROS CON SETENTA CÉNTIMOS	
011	P-102AMBPL003	ud Plantación de Artemisia herba-alba 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		2,37
			DOS EUROS CON TREINTA Y SIETE CÉNTIMOS	
012	P-102AMBPL004	ud Plantación de Juniperus oxycedrus 0,1-0,2m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		1,81
			UN EUROS CON OCHENTA Y UN CÉNTIMOS	
013	P-102AMBPL01	ud Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		1,49
			UN EUROS CON CUARENTA Y NUEVE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
014	P-102AMBPL02	ud Plantación de Suaeda vera 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		1,63
			UN EUROS CON SESENTA Y TRES CÉNTIMOS	
015	P-102AMBPL03B	ud Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso apertura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación.		9,33
			NUEVE EUROS CON TREINTA Y TRES CÉNTIMOS	
016	P-102AMBPL04	ud Plantación de Salsola vermiculata 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		1,67
			UN EUROS CON SESENTA Y SIETE CÉNTIMOS	
017	P-102AMBPL05	ud Plantación de Santolina chamaecyparissus 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		1,45
			UN EUROS CON CUARENTA Y CINCO CÉNTIMOS	
018	P-102AMBPL06	ud Plantación de Ononis fruticosa 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		2,17
			DOS EUROS CON DIECISIETE CÉNTIMOS	
019	P-102AMBPL07	ud Plantación de Linum suffruticosum 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		2,47

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			DOS EUROS CON CUARENTA Y SIETE CÉNTIMOS	
020	P-102AMBPL08	mes Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de marras, realización de podas de realce necesarias y otras operaciones de mantenimiento. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande realizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, incluyendo la escarda y mezcla con el sustrato de malas hierbas, herramientas y medios auxiliares.		928,33
			NOVECIENTOS VEINTIOCHO EUROS CON TREINTA Y TRES CÉNTIMOS	
021	P-102AMBPL09	ud Plantación de Stipa parviflora 0,1-0,25m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		1,52
			UN EUROS CON CINCUENTA Y DOS CÉNTIMOS	
022	P-102AMBPL10	ud Plantación de Rhamnus alaternus 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		1,59
			UN EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	
023	P-102AMBPL12B	m² Formación de pasto por siembra de una mezcla de especies gramíneas y leguminosas, a determinar por la Dirección de Obra, incluso la limpieza del terreno, laboreo con dos pases de motocultor cruzados y abonado de fondo, rastrillado y retirada de todo material de tamaño superior a 2 cm., distribución de la semilla.		0,19
			CERO EUROS CON DIECINUEVE CÉNTIMOS	
024	P-102AMBPL17I	ud Plantación de Rubus ulmifolius extensa de 0,3-0,50m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		1,60
			UN EUROS CON SESENTA CÉNTIMOS	
025	P-102AMBPL18	ud Ud. Suministro y plantación de Salix atrocinerea (Sarga negra) de 0,50 a 0,75 m. de altura, suministrado en contenedor, y plantación en hoyo de 0,4 x 0,4 x 0,4 m., incluso apertura manual del mismo, abonado, formación de alcorque y primer riego.		2,45

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			DOS EUROS CON CUARENTA Y CINCO CÉNTIMOS	
026	P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		2,22
			DOS EUROS CON VEINTIDOS CÉNTIMOS	
027	P-102AMBPL31A	ud Quercus ilex de 1,8-2,0m alt. de perímetro de tronco, suministrado en cepellón y plantación en hoyo de 1x1x1 m., incluso apertura del mismo con los medios indicados, abonado, formación de alcorque, tutor y primer riego.		19,63
			DIECINUEVE EUROS CON SESENTA Y TRES CÉNTIMOS	
028	P-102AMBPL34E	ud Rosa canina de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,6x0,6x0,6 m., incluso apertura del mismo a mano, abonado, formación de alcorque y primer riego.		2,46
			DOS EUROS CON CUARENTA Y SEIS CÉNTIMOS	
029	P-102AMBPL36	ud Salvia officinalis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, formación de alcorque y primer riego.		2,64
			DOS EUROS CON SESENTA Y CUATRO CÉNTIMOS	
030	P-102AMBPL37	ud Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso apertura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		2,04
			DOS EUROS CON CUATRO CÉNTIMOS	
031	P-102AMBPL38B	ud Plantación de Crataegus monogyna 0,6-0,8 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.		4,12

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CUATRO EUROS CON DOCE CÉNTIMOS	
032	P-102AMBPL39	ud Plantación de Salix alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x6,0 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto		6,60
			SEIS EUROS CON SESENTA CÉNTIMOS	
033	P-102AMBPL39B	ud Populus alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x6,0 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto.		6,60
			SEIS EUROS CON SESENTA CÉNTIMOS	
034	P-102AMBPL40	ud Entutorado de árbol con 1 tutor vertical de rollizo de pino torneado, de 3 m de longitud y 8 cm de diámetro con punta en un extremo y baquetón en el otro, tanalizado en autoclave, hincado en el fondo del hoyo de plantación, retacado con la tierra de plantación, y sujeción del tronco con cincha textil no degradable, de 3-4 cm de anchura y tornillos galvanizados.		4,56
			CUATRO EUROS CON CINCUENTA Y SEIS CÉNTIMOS	
035	P-102AMBPRY	ud Proyecto de restauración ambiental en la zona de extracción de gravas de la Balsa de Tudela, con medidas específicas para dar continuidad al enclave forestal de las laderas repobladas en el emplazamiento de la Balsa; otras medidas de revegetación específicas para la conservación de la fauna del Área de Importancia para la Conservación de la Avifauna Esteparia del Entorno del Pulguer y medidas adicionales para el cumplimiento de los requisitos establecidos en el Área de Especial Protección por Conectividad Territorial del Plan de Ordenación Territorial de Navarra (POT-5); incluida la implantación de medidas adicionales propuestas por el Gobierno de Navarra.		95.400,00
			NOVENTA Y CINCO MIL CUATROCIENTOS EUROS	
036	P-103AMBAR-03	km² Prospección arqueológica intensiva de cobertura total en una superficie afectada de 1Km2, incluyendo excavaciones, sondeos arqueológicos, medios humanos, maquinaria, material auxiliar necesario, análisis documental, proyecto de actuación arqueológica y trabajo de campo. Unidad completa		6.023,60
			SEIS MIL VEINTITRES EUROS CON SESENTA CÉNTIMOS	
037	P-103AMBAR00A	ud Informe arqueológico previo incluidas tramitaciones y tasas.		1.856,27
			MIL OCHOCIENTOS CINCUENTA Y SEIS EUROS CON VEINTISIETE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	PRECIO EN LETRA	IMPORTE (€)
038	P-103AMBAR01A	ud	Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.		3.193,57
				TRES MIL CIENTO NOVENTA Y TRES EUROS CON CINCUENTA Y SIETE CÉNTIMOS	
039	P-103AMBAR02A	mes	Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluye generación de informe de seguimiento mensual		2.404,67
				DOS MIL CUATROCIENTOS CUATRO EUROS CON SESENTA Y SIETE CÉNTIMOS	
040	P-103AMBAR02B	día	Día de control y seguimiento arqueológico de carácter intensivo realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluida maquinaria de desbroce y excavación, medios auxiliares necesarios y presencia permanente de técnicos, generación de informe de seguimiento		626,29
				SEISCIENTOS VEINTISEIS EUROS CON VEINTINUEVE CÉNTIMOS	
041	P-104AMBVA00A	ud	Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación		975,28
				NOVECIENTOS SETENTA Y CINCO EUROS CON VEINTIOCHO CÉNTIMOS	
042	P-104AMBVA01A	mes	Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento.		1.879,04
				MIL OCHOCIENTOS SETENTA Y NUEVE EUROS CON CUATRO CÉNTIMOS	
043	P-104AMBVA02A	mes	Medida de niveles de ruido en zona de obra. Desarrollada la medición a lo largo de una jornada laboral, con toma de datos en diversos puntos de la obra, y elaboración de informes periódicos posteriores por especialista cualificado, incluidos materiales y elementos auxiliares. Unidad totalmente terminada.		616,11
				SEISCIENTOS DIECISEIS EUROS CON ONCE CÉNTIMOS	
044	P-104AMBVA03A	ud	Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina.		3.965,50
				TRES MIL NOVECIENTOS SESENTA Y CINCO EUROS CON CINCUENTA CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
045	P-104AMBVA04A	ud Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe.		2.882,01
			DOS MIL OCHOCIENTOS OCHENTA Y DOS EUROS CON UN CÉNTIMOS	
046	P-104AMBVA05	ud Informe y analítica de muestras de agua en puntos de cruce singulares. unidad totalmente ejecutada.		295,13
			DOSCIENTOS NOVENTA Y CINCO EUROS CON TRECE CÉNTIMOS	
047	P-104AMBVA06	ud Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio. Unidad completa.		2.009,53
			DOS MIL NUEVE EUROS CON CINCUENTA Y TRES CÉNTIMOS	
048	P1BRID1100.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas		3.295,23
			TRES MIL DOSCIENTOS NOVENTA Y CINCO EUROS CON VEINTITRES CÉNTIMOS	
049	P1BRID1300.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas		4.016,63
			CUATRO MIL DIECISEIS EUROS CON SESENTA Y TRES CÉNTIMOS	
050	P1BRID1500.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.		4.970,63

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CUATRO MIL NOVECIENTOS SETENTA EUROS CON SESENTA Y TRES CÉNTIMOS	
051	P1BRID900.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 900 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.		2.400,64
			DOS MIL CUATROCIENTOS EUROS CON SESENTA Y CUATRO CÉNTIMOS	
052	P1BRIDA150.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN150 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.		96,38
			NOVENTA Y SEIS EUROS CON TREINTA Y OCHO CÉNTIMOS	
053	P1BRIDA200.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 200 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.		122,78
			CIENTO VEINTIDOS EUROS CON SETENTA Y OCHO CÉNTIMOS	
054	P1BRIDA250.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 250 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.		164,29
			CIENTO SESENTA Y CUATRO EUROS CON VEINTINUEVE CÉNTIMOS	
055	P1BRIDA500.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 500 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.		578,27

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			QUINIENTOS SETENTA Y OCHO EUROS CON VEINTISIETE CÉNTIMOS	
056	P1BRIDA700.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 700 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.		1.341,07
			MIL TRESCIENTOS CUARENTA Y UN EUROS CON SIETE CÉNTIMOS	
057	P1BRIDA800.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.		1.741,23
			MIL SETECIENTOS CUARENTA Y UN EUROS CON VEINTITRES CÉNTIMOS	
058	P1MT01A	m² Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.		0,21
			CERO EUROS CON VEINTIUN CÉNTIMOS	
059	P1MT01B	m² Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.		1,25
			UN EUROS CON VEINTICINCO CÉNTIMOS	
060	P1MT02A	m² Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.		0,37

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CERO EUROS CON TREINTA Y SIETE CÉNTIMOS	
061	P1MT02B	m ² Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.		0,40
			CERO EUROS CON CUARENTA CÉNTIMOS	
062	P1MT03A1	m ³ Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ...) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.		4,24
			CUATRO EUROS CON VEINTICUATRO CÉNTIMOS	
063	P1MT03B1	m ³ Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.		2,77
			DOS EUROS CON SETENTA Y SIETE CÉNTIMOS	
064	P1MT03C1	m ³ Excavación localizada en recinto confinado de tablas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.		12,72
			DOCE EUROS CON SETENTA Y DOS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
065	P1MT03H	m³ Excavación localizada de escollera de cualquier tonelaje con carga, transporte a acopio o acopios intermedios para posterior uso, sucesivas fases de carga, transporte y colocación de escollera careada. Unidad totalmente terminada excavada y posteriormente colocada con reutilización de material.		18,03
			DIECIOCHO EUROS CON TRES CÉNTIMOS	
066	P1MT03I	m² Entibación cuajada en zanjas , pozos o cimentaciones con paneles metálicos blindados o monocodal a cualquier profundidad, incluso desentibado y medios auxiliares. Unidad totalmente terminada incluyendo p.p. de sobresaliente del terreno natural de 0.25m como rodapié de seguridad.		10,76
			DIEZ EUROS CON SETENTA Y SEIS CÉNTIMOS	
067	P1MT04A	m³ Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.		6,58
			SEIS EUROS CON CINCUENTA Y OCHO CÉNTIMOS	
068	P1MT04A2	m³ Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.		3,89
			TRES EUROS CON OCHENTA Y NUEVE CÉNTIMOS	
069	P1MT04B	m³ Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.		2,16
			DOS EUROS CON DIECISEIS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
070	P1MT04D	m³ Relleno localizado de material filtrante (grava 40-80) procedente de préstamo, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.		11,77
ONCE EUROS CON SETENTA Y SIETE CÉNTIMOS				
071	P1MT04E	m³ Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.		14,68
CATORCE EUROS CON SESENTA Y OCHO CÉNTIMOS				
072	P1MT04F	m³ Cama de arena silícea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.		16,29
DIECISEIS EUROS CON VEINTINUEVE CÉNTIMOS				
073	P1MT04G	m³ Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.		4,97
CUATRO EUROS CON NOVENTA Y SIETE CÉNTIMOS				
074	P1MT05C	m³ Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.		1,78
UN EUROS CON SETENTA Y OCHO CÉNTIMOS				

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
075	P1MT06A	m³ Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	CINCUENTA Y DOS EUROS CON OCHENTA Y CUATRO CÉNTIMOS	52,84
076	P1MT06B	m³ Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	TREINTA Y CUATRO EUROS CON VEINTICINCO CÉNTIMOS	34,25
077	P1MT06C	m² Demolición de pavimento hidráulico de hormigón, base de hormigón o acerado hasta 40 cm de espesor, con corte de junta con hilo diamante o radial, retirada de bordillos y elementos lineales, i retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	SIETE EUROS CON CUARENTA Y TRES CÉNTIMOS	7,43
078	P1MT06D	m³ Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa	DIECISEIS EUROS CON CUARENTA Y OCHO CÉNTIMOS	16,48
079	P1MT06E	m Corte de hormigón con disco e hilo de diamante, corte de armaduras con disco espesor 20 cm, retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Unidad completa.	CINCO EUROS CON OCHENTA Y CINCO CÉNTIMOS	5,85
080	P1MT06F	m³ Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	CIENT EUROS CON OCHENTA Y UN CÉNTIMOS	100,81

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
081	P1MT06K	m ² Demolición de muro bloque o ladrillo hormigón con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.		6,42
SEIS EUROS CON CUARENTA Y DOS CÉNTIMOS				
082	P1MT06L	m ² Demolición o Desmontado de muros y soleras de escollera hormigonada o mampostería con recuperación de parte de las piezas desmontadas para su posterior colocación, con retirada de escombros sobrantes, carga y transporte a vertedero o planta de reciclaje.		25,72
VEINTICINCO EUROS CON SETENTA Y DOS CÉNTIMOS				
083	P1MT08BASEZA1	m ³ Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.		20,14
VEINTE EUROS CON CATORCE CÉNTIMOS				
084	P1MT08BASEZA2	m ² Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.		2,79
DOS EUROS CON SETENTA Y NUEVE CÉNTIMOS				
085	P1MT08ESC150	m ³ Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.		22,61
VEINTIDOS EUROS CON SESENTA Y UN CÉNTIMOS				

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
086	P1MT08ESC150H	m³ scollera de peso mínimo 50-150 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.		33,02
TREINTA Y TRES EUROS CON DOS CÉNTIMOS				
087	P1MT08ESC200	m³ Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.		29,11
VEINTINUEVE EUROS CON ONCE CÉNTIMOS				
088	P1MT08ESC500	m³ Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.		38,68
TREINTA Y OCHO EUROS CON SESENTA Y OCHO CÉNTIMOS				
089	P1MT08ESC500H	m³ Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.		47,53
CUARENTA Y SIETE EUROS CON CINCUENTA Y TRES CÉNTIMOS				
090	P1MT08GTX-002	m² Suministro y colocación de geotextil no tejido Geotésan NT-30 o similar, de 295 g/m², a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.		1,89
UN EUROS CON OCHENTA Y NUEVE CÉNTIMOS				

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
091	P1MT08GTX-003	m ² Suministro y colocación de geomalla de refuerzo DLT Grid en taludes incluso enrejado con alambre galvanizado de Ø 2,00 mm y malla hexagonal 8x10-16 anclado al terreno con barras corrugadas de acero B 500 S, para protección de taludes, medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 1.5m) entre paños y mermas. Unidad totalmente terminada.		6,14
			SEIS EUROS CON CATORCE CÉNTIMOS	
092	P1MT08PE-001	m ² Lámina de PEAD de 1,5 mm. de espesor, tipo GSE o equivalente ,con las uniones por termofusión con doble cordón de soldadura, incluso parte proporcional de pérdidas por solapes y uniones a las obras de fábrica y pasos de tuberías, realizadas con pletinas de acero inoxidable y bridas y contrabridas de acero galvanizado, incluso juntas de neopreno, anclajes y virolas de acero inoxidable, uniones de sellado con masilla de poliuretano monocomponente, tipo SIKa FLEX 11 FC de SIKa o equivalente y todos los materiales para su instalación, completamente instalada y probada, según la normativa vigente.		9,16
			NUEVE EUROS CON DIECISEIS CÉNTIMOS	
093	P1MT09	m ² Tablestacado recuperable o perdido de cualquier profundidad mediante paneles ESTANCOS con cámara de chapa de acero en cajón, tablestacas de chapa y codales extensibles metálicos, celosía y perfiles de arrioestre, incluido desplazamiento de equipo a obra, trabajos preparatorios de plataforma, operaciones de hincado y vibrado, reperforaciones necesarias, estructura soporte, puntales-cercha y perfiles de arrioestre, anclajes de sostenimiento de 50 tn y 20 m de longitud en diferentes fases según anejo de cálculo, inyecciones, barras y tendones, perfilera metálica de sostenimiento (hasta 3 escalones de anclajes) y acodalamiento para cualquier profundidad, operaciones de retirada y medios auxiliares. Unidad totalmente ejecutada.		84,30
			OCHENTA Y CUATRO EUROS CON TREINTA CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
094	P1MT15-200B	<p>m Micropilote DN200 mm con vaina metálica de acero S275 JR 155,8mm de diámetro y 8mm de espesor lechada de cemento CEM I 42,5N y HA30, con una relación agua/cemento de 0,4 dosificada en peso, vertida por el interior de la armadura mediante sistema de inyección única global (IU)., reperforando sobre pantalla de mortero, ejecutado con entubación perdida o recuperable, para cualquier profundidad, Incluido:</p> <ul style="list-style-type: none"> -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Muros guía de hormigón armado de 0,70x0,50 mts. y posterior demolición del mismo con transporte a vertedero de los restos, evacuación a vertedero de la excavación. -Pérdidas de lechada y, mortero y hormigón. -Demolición de protuberancias, descabezado de pilotes y p.p. preparación de conexión viga de atado. -Partida de transporte y montaje inicial y medios auxiliares. -Partida para transporte y montaje inicial de grúa auxiliar. -Partida de espesamiento de lodos finales con transporte a vertedero. -Perforación o reperforación de pilotes incluyendo el consumo de lodos. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. -Transporte de sobrantes a vertedero autorizado, incluso canon de vertido, limpieza y operaciones de demoliación. -Puntales y perfil risotra <p>Unidad totalmente terminada medida linealmente sobre eje por la profundidad realmente ejecutada.</p>	NOVENTA Y SIETE EUROS CON SESENTA Y TRES CÉNTIMOS	97,63
095	P1MT15-250M	<p>m Pilote de 250 mm de diámetro, barrenado mecánico con empleo de entubación recuperable y lodos tixotrópicos, fabricado "in situ" de mortero M-250 SR, conforme a norma UNE 36068 y/o según normativa vigente, puesto en obra según EHE vigente, incluso parte proporcional de excavación, transporte, instalación, montaje y desmontaje de equipos, recuperación de la entubación, protección de la cabeza del pilote, descabezado de pilote hasta cara inferior de viga de atado y retirada de sobrantes, ejecución, control de calidad, suministro y colocación de tubos sónicos, informes, ensayos asociados y documentación. Totalmente terminado.</p>	CINCUENTA Y SEIS EUROS CON NOVENTA Y CUATRO CÉNTIMOS	56,94

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
096	P1MTGB001	m³ Muro o fábrica de gaviones metálicos realizados con malla de triple torsión de acero galvanizado reforzado de DN 2,4 mm o superior, incluso anclajes. Totalmente colocado.	CINCUENTA Y SIETE EUROS CON TREINTA Y SIETE CÉNTIMOS	57,37
097	P1MTMR001	m ml de fajinada formada por estacas de pino de 1 m de longitud y 8 cm de diámetro, hincados en el suelo 50 cm, entre los que se entrelazan una fajina construida con ramas, hasta formar una pantalla de 50 cm de altura, construida para reducir la escorrentía superficial. Incluso herramientas y medios auxiliares.	VEINTITRES EUROS CON SETENTA Y TRES CÉNTIMOS	23,73
098	P1MTO3X	m³ Excavación en zanja de profundidad menor de 1 m y anchura no superior a 0,70 m, mediante retro de neumáticos con cazo pequeño o zanjadora en terreno blando, incluso acopios intermedios para posterior uso y/o transporte a vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido. Unidad totalmente terminada medido sobre perfil teórico.	CUATRO EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	4,59
099	P1MTTU003	m² Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m², para paramentos enterrados de obras de fábrica, totalmente instalada.	OCHO EUROS CON OCHENTA Y UN CÉNTIMOS	8,81
100	P1T0400.4B	m Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con mangatermorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	CIENTO DIECIOCHO EUROS CON NOVENTA Y TRES CÉNTIMOS	118,93

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
101	P1T0500.8.0B	m Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	CIENTO TREINTA Y SIETE EUROS CON NOVENTA Y CINCO CÉNTIMOS	137,95
102	P1T0800.12.5B	m Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	TRESCIENTOS CUARENTA Y CUATRO EUROS CON CUARENTA Y SIETE CÉNTIMOS	344,47
103	P1T0800.6.4A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	CIENTO SETENTA Y TRES EUROS CON SETENTA Y DOS CÉNTIMOS	173,72

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
104	P1T1300.10.0A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.321 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	CUATROCIENTOS SESENTA Y TRES EUROS CON OCHENTA Y SIETE CÉNTIMOS	463,87
105	P1T1300.8.0A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.321 mm y espesor mínimo de 8,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	TRESCIENTOS SETENTA Y UN EUROS CON DIEZ CÉNTIMOS	371,10
106	P1T1500.10.5A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 10.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	QUINIENTOS CINCUENTA Y NUEVE EUROS CON SETENTA Y NUEVE CÉNTIMOS	559,79

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
107	P1T1500.16.0A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 16 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	OCHOCIENTOS CINCUENTA Y DOS EUROS CON NOVENTA Y OCHO CÉNTIMOS	852,98
108	P1T1500.9.5A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 9,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	QUINIENTOS SEIS EUROS CON CUARENTA Y OCHO CÉNTIMOS	506,48
109	P1T1600.10.0A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	QUINIENTOS SESENTA Y SIETE EUROS CON CUARENTA Y TRES CÉNTIMOS	567,43

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
110	P1T1600.12.5A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	SETECIENTOS NUEVE EUROS CON VEINTISEIS CÉNTIMOS	709,26
111	P1T1600.16.0A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	NOVECIENTOS SIETE EUROS CON OCHENTA Y SIETE CÉNTIMOS	907,87
112	P1T1800.11.5A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	SETECIENTOS TREINTA EUROS CON CINCUENTA Y DOS CÉNTIMOS	730,52

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
113	P1T1800.11.5B	m Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	SEISCIENTOS NOVENTA Y OCHO EUROS CON SETENTA Y SEIS CÉNTIMOS	698,76
114	P1T1800.12.5A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	SETECIENTOS NOVENTA Y CUATRO EUROS CON CINCO CÉNTIMOS	794,05
115	P1T1800.12.5B	m Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	OCHOCIENTOS SEIS EUROS CON ONCE CÉNTIMOS	806,11

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
116	P1T1800.13.0B	m Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 13,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	OCHOCIENTOS TREINTA Y OCHO EUROS CON TREINTA Y OCHO CÉNTIMOS	838,38
117	P1T1800.14.0A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	OCHOCIENTOS OCHENTA Y NUEVE EUROS CON TREINTA Y CUATRO CÉNTIMOS	889,34
118	P1T1800.14.0B	m Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	NOVECIENTOS DOS EUROS CON OCHENTA Y CUATRO CÉNTIMOS	902,84

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
119	P1T1800.15.0A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	NOVECIENTOS CINCUENTA Y DOS EUROS CON OCHENTA Y SIETE CÉNTIMOS	952,87
120	P1T1800.18.0A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 18,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	MIL CIENTO CUARENTA Y TRES EUROS CON CUARENTA CÉNTIMOS	1.143,40
121	P1T1900.13.0A	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.930 mm y espesor mínimo de 13,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	OCHOCIENTOS SESENTA Y NUEVE EUROS CON TREINTA Y OCHO CÉNTIMOS	869,38
122	P1T200	m Suministro e instalación de tubería de acero de calidad ST 37.0 según DIN-1629 y ASTM-A 53, de diámetro nominal DN 219.1 mm y espesor mínimo de 6,3 mm, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.		49,09

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CUARENTA Y NUEVE EUROS CON NUEVE CÉNTIMOS	
123	P1T2000.14.0A	m Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.		982,72
			NOVECIENTOS OCHENTA Y DOS EUROS CON SETENTA Y DOS CÉNTIMOS	
124	P1T2000.14.0B	m Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada Unidad medida en planta.		997,66
			NOVECIENTOS NOVENTA Y SIETE EUROS CON SESENTA Y SEIS CÉNTIMOS	
125	P1T2000.15.0A	m Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.		1.052,94
			MIL CINCUENTA Y DOS EUROS CON NOVENTA Y CUATRO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
126	P1T2000.15.0B	m Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada Unidad medida en planta.	MIL SESENTA Y OCHO EUROS CON NOVENTA Y CUATRO CÉNTIMOS	1.068,94
127	P1T2232.20.E	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2232 mm y espesor mínimo de 16,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	MIL CIENTO DIECINUEVE EUROS CON SETENTA Y OCHO CÉNTIMOS	1.119,78
128	P1T2500.20.0A	m Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.500 mm (nominal) y espesor mínimo de 20,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada	MIL SETECIENTOS VEINTISEIS EUROS CON TRECE CÉNTIMOS	1.726,13
129	P1T300	m Suministro e instalación de tubería de acero calidad ST 37.0 según DIN-1629 y ASTM- A-53 de diámetro nominal DN 308 y espesor mínimo de 4 mm. medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.		57,46

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CINCUENTA Y SIETE EUROS CON CUARENTA Y SEIS CÉNTIMOS	
130	P1T400.6.E	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.		121,94
			CIENTO VEINTIUN EUROS CON NOVENTA Y CUATRO CÉNTIMOS	
131	P1T600.6.E	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 600 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.		146,96
			CIENTO CUARENTA Y SEIS EUROS CON NOVENTA Y SEIS CÉNTIMOS	
132	P1T762.6.E	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 762 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.		154,70
			CIENTO CINCUENTA Y CUATRO EUROS CON SETENTA CÉNTIMOS	
133	P2CAT001	ud Rectificador 70V-35A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		11.563,64

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			ONCE MIL QUINIENTOS SESENTA Y TRES EUROS CON SESENTA Y CUATRO CÉNTIMOS	
134	P2CAT002	ud Rectificador 70V-25A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		7.169,46
			SIETE MIL CIENTO SESENTA Y NUEVE EUROS CON CUARENTA Y SEIS CÉNTIMOS	
135	P2CAT004	ud Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		769,00
			SETECIENTOS SESENTA Y NUEVE EUROS	
136	P2CAT005	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		39,32
			TREINTA Y NUEVE EUROS CON TREINTA Y DOS CÉNTIMOS	
137	P2CAT006	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		37,00
			TREINTA Y SIETE EUROS	
138	P2CAT007	m Cable anódico tipo RV-K de sección 1x25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		8,51
			OCHO EUROS CON CINCUENTA Y UN CÉNTIMOS	
139	P2CAT008	Kg Coque petróleo calcinado		2,67
			DOS EUROS CON SESENTA Y SIETE CÉNTIMOS	
140	P2CAT009	m Manguera perforada		7,07
			SIETE EUROS CON SIETE CÉNTIMOS	
141	P2CAT010	ud Arqueta riego ide protección catódica incluidos p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		716,14
			SETECIENTOS DIECISEIS EUROS CON CATORCE CÉNTIMOS	
142	P2CAT011	ud Caja de conexionado 12 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		693,24
			SEISCIENTOS NOVENTA Y TRES EUROS CON VEINTICUATRO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
143	P2CAT012	ud Caja de conexionado 10 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	QUINIENTOS SETENTA Y SIETE EUROS CON CUARENTA Y NUEVE CÉNTIMOS	577,49
144	P2CAT013	ud Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0.6/1 KV 1 x 6 mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	DOSCIENTOS VEINTISEIS EUROS CON CUARENTA Y DOS CÉNTIMOS	226,42
145	P2CAT014	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 (cantidad estimada) y Handy cap, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CIENTO TREINTA Y UN EUROS CON DOS CÉNTIMOS	131,02
146	P2CAT015	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	DOSCIENTOS SETENTA Y SIETE EUROS CON TREINTA CÉNTIMOS	277,30
147	P2CAT016A	ud Obra civil, montaje y conexionado EPC, y material en línea de TPs y TPEs en todo el conjunto del subtramo OT-T12. Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento.	DOCE MIL SETECIENTOS VEINTE EUROS	12.720,00
148	P2CAT016B	ud Obra civil, montaje y conexionado EPC, y material en línea de TPs y TPEs en todo el conjunto del subtramo 12-DC. Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento.	CINCO MIL TRESCIENTOS EUROS	5.300,00
149	P2CAT016C	ud Obra civil, montaje y conexionado EPC, y material en línea de TPs y TPEs en todo el conjunto del subtramo (DC-T14/15 Y DC-T21) Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento.	SIETE MIL NOVECIENTOS CINCUENTA EUROS	7.950,00
150	P2CAT017	ud Caja toma de potencial de policarbonato con prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	SESENTA Y NUEVE EUROS CON TREINTA Y DOS CÉNTIMOS	69,32

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
151	P2CAT018	ud Caja toma de potencial TPE (200 X 200) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CUATROCIENTOS TREINTA Y OCHO EUROS CON OCHENTA Y CUATRO CÉNTIMOS	438,84
152	P2CAT019	ud Caja toma de potencial TPE (320 x 320) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	SETECIENTOS OCHENTA Y SEIS EUROS CON DIEZ CÉNTIMOS	786,10
153	P2CAT020	ud UDCA en caja TPE con poste de acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	MIL QUINIENTOS VEINTISEIS EUROS CON CUARENTA CÉNTIMOS	1.526,40
154	P2CAT021	ud Vía de chispas en caja TPE con poste de acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	OCHOCIENTOS VEINTE EUROS CON CUARENTA Y CUATRO CÉNTIMOS	820,44
155	P2CAT022	ud Electrodo probeta estándar, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CIENTO TREINTA Y SEIS EUROS CON CUARENTA Y CINCO CÉNTIMOS	136,45
156	P2CAT023	ud Electrodo probeta alterna, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CIENTO CUARENTA Y SIETE EUROS CON CINCUENTA Y CINCO CÉNTIMOS	147,55
157	P2CAT024	ud Electrodo probeta alterna ENAGÁS, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CUATROCIENTOS TREINTA Y OCHO EUROS CON OCHENTA Y CUATRO CÉNTIMOS	438,84
158	P2CAT025	ud Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados con mezcla activadora y 5 m de cable (Protección catódica provisional), incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CIENTO CUATRO EUROS CON CINCO CÉNTIMOS	104,05

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
159	P2CAT026	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable RV 0.6/1 KV 1 x 6 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	SESENTA Y DOS EUROS CON TREINTA Y TRES CÉNTIMOS	62,33
160	P2CAT027	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable RV 0.6/1 KV 1 x 25 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	DOSCIENTOS SIETE EUROS CON TREINTA Y CUATRO CÉNTIMOS	207,34
161	P2CAT028	ud Cable acero galvanizado 12 mm, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	SIETE EUROS CON SESENTA Y TRES CÉNTIMOS	7,63
162	P2CAT029	ud Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	ONCE EUROS CON CUARENTA Y CINCO CÉNTIMOS	11,45
163	P2CAT030	ud Picas de zinc 1000 mm ensacada, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CIENTO OCHENTA Y CUATRO EUROS CON CUARENTA Y CUATRO CÉNTIMOS	184,44
164	P2CAT031	ud Vías de chispas con cable y pletina para conexión, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CUATROCIENTOS CINCUENTA Y SEIS EUROS CON SESENTA Y CINCO CÉNTIMOS	456,65
165	P2CAT032	ud Junta aislante embridada DN 2200 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CUATRO MIL QUINIENTOS SESENTA Y DOS EUROS CON SESENTA Y SEIS CÉNTIMOS	4.562,66
166	P2CAT033	ud Junta aislante embridada DN 2000 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CUATRO MIL CIENTO CUARENTA Y CUATRO EUROS CON DIECIOCHO CÉNTIMOS	4.144,18

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
167	P2CAT034	ud Junta aislante embridada DN 1900 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	TRES MIL SETECIENTOS CINCUENTA Y CUATRO EUROS CON NOVENTA Y CUATRO CÉNTIMOS	3.754,94
168	P2CAT035A	ud Junta aislante embridada DN 1800 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	TRES MIL SEISCIENTOS TREINTA Y SIETE EUROS CON NOVENTA Y DOS CÉNTIMOS	3.637,92
169	P2CAT035B	ud Junta aislante embridada DN 1800 mm PN25, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	CUATRO MIL CUATROCIENTOS CUARENTA Y SEIS EUROS CON NOVENTA Y UN CÉNTIMOS	4.446,91
170	P2CAT036	ud Junta aislante embridada DN 1600 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	TRES MIL CIENTO UN EUROS CON CATORCE CÉNTIMOS	3.101,14
171	P2CAT037	ud Junta aislante embridada DN 1500 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	DOS MIL SETECIENTOS TREINTA Y TRES EUROS CON CINCUENTA Y TRES CÉNTIMOS	2.733,53
172	P2CAT038	ud Junta aislante embridada DN 1300 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	DOS MIL CUATROCIENTOS VEINTIOCHO EUROS CON VEINTICINCO CÉNTIMOS	2.428,25
173	P2CAT039	ud Junta aislante embridada DN 1100 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	DOS MIL TRECE EUROS CON CINCUENTA Y OCHO CÉNTIMOS	2.013,58
174	P2CAT041	ud Junta aislante embridada DN 800mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	MIL DOSCIENTOS OCHENTA Y CINCO EUROS CON NOVENTA Y NUEVE CÉNTIMOS	1.285,99
175	P2CAT042	ud Junta aislante embridada DN 800mm PN25, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		1.653,60

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			MIL SEISCIENTOS CINCUENTA Y TRES EUROS CON SESENTA CÉNTIMOS	
176	P2CAT043	ud Junta aislante embridada DN 700mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexiona- do, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		1.126,99
			MIL CIENTO VEINTISEIS EUROS CON NOVENTA Y NUEVE CÉNTIMOS	
177	P2CAT044	ud Junta aislante embridada DN 500mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexiona- do, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		849,70
			OCHOCIENTOS CUARENTA Y NUEVE EUROS CON SETENTA CÉNTIMOS	
178	P2CAT045	ud Junta aislante embridada DN 300mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexiona- do, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		573,67
			QUINIENTOS SETENTA Y TRES EUROS CON SESENTA Y SIETE CÉNTIMOS	
179	P2CAT046	ud Junta aislante monoblock DN 1800 PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexiona- do, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		46.866,84
			CUARENTA Y SEIS MIL OCHOCIENTOS SESENTA Y SEIS EUROS CON OCHENTA Y CUATRO CÉNTIMOS	
180	P2CAT047	ud Junta aislante monoblock DN 1600 PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexiona- do, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.		39.373,49
			TREINTA Y NUEVE MIL TRESCIENTOS SETENTA Y TRES EUROS CON CUARENTA Y NUEVE CÉNTIMOS	
181	P35RALUM02	m Canalización PVC corrugado de 90 mm. de diáme- tro en cualquier tipo de terreno, acerados y/o pavi- mentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para poste- rior uso o carga, transporte a vertedero, cama de are- na de 30 cm, relleno con suelo seleccionado proce- dentes de prestamos o de la excavación compacta- dos al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indi- cador de instalación de PVC, cables de acero pa- sa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexionados multiples. Unidad to- talmente terminada.		24,84
			VEINTICUATRO EUROS CON OCHENTA Y CUATRO CÉNTIMOS	
182	P3ACA001	m Formación de acanaladura con pendiente uniforme longitudinal mediante empleo d eenncofrado emtálico perdido con una anchura de 20 cm y una altura de 10 cm, totalmente finalizada.		29,99

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			VEINTINUEVE EUROS CON NOVENTA Y NUEVE CÉNTIMOS	
183	P3BADEN001	ud Badén de hormigón en camino de 5 m de anchura y de longitud total 10 m, con 4 m de longitud en el plano más bajo y rampas de 3 m, con una altura de 30 cm. Unidad completamente terminada.		1.519,37
			MIL QUINIENTOS DIECINUEVE EUROS CON TREINTA Y SIETE CÉNTIMOS	
184	P3CUN-001	m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.		4,11
			CUATRO EUROS CON ONCE CÉNTIMOS	
185	P3CUN-002	m Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.		6,22
			SEIS EUROS CON VEINTIDOS CÉNTIMOS	
186	P3CUN-003	m Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.		14,41
			CATORCE EUROS CON CUARENTA Y UN CÉNTIMOS	
187	P3CUN-004	m Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.		21,35

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			VEINTIUN EUROS CON TREINTA Y CINCO CÉNTIMOS	
188	P3DREN110PVC	m Tubo dren de PVC corrugado poroso, D= 110 mm, e=3,2 mm incluso p.p. excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 0,40 cm. de ancho por 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.		5,66
			CINCO EUROS CON SESENTA Y SEIS CÉNTIMOS	
189	P3DREN160PVC	m Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.		9,54
			NUEVE EUROS CON CINCUENTA Y CUATRO CÉNTIMOS	
190	P3EDIF.010A	m² Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.		77,91
			SETENTA Y SIETE EUROS CON NOVENTA Y UN CÉNTIMOS	
191	P3EDIF004A	m² Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.		98,65
			NOVENTA Y OCHO EUROS CON SESENTA Y	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CINCO CÉNTIMOS	
192	P3EDIF012B	m ² Fábrica de bloques de hormigón Mod. Split de medidas 40x20x20 cm., color, ejecutado a dos caras vistas, i/relleno de hormigón H-200/20 y armadura en zona según normativa y recibido con mortero de cemento y arena de río M 5 según UNE-EN 998-2, i/p.p. de piezas especiales, roturas, nivelados, aplomados, llaqueados y limpieza todo ello según CTE/DB-SE-F.Unidad totalmente terminada		41,79
			CUARENTA Y UN EUROS CON SETENTA Y NUEVE CÉNTIMOS	
193	P3LAM1	m ² Drenaje de muros con lámina nodular con marcado CE de polietileno virgen con geotextil incorporado y doble nódulo de 12 mm. de altura nod, capacidad de drenaje 1,2 l / s y resistencia a compresión de 90 kn/m2. Delta Drain o similar, p.p. de fijación al soporte con taco espiga de polipropileno, a razón de 3 uds / m2 y sellado de solapes de anchura de 10 cm. con banda autoadhesiva a dos caras de caucho butilo Delta Fix, incluso impermeabilización del paramento de hormigón con dos manos de emulsión bituminosa modificada 0.7kg/m2 , según CTE/DB-HS 1. Unidad totalmente terminada, incluso remate de conexión a dren.		12,53
			DOCE EUROS CON CINCUENTA Y TRES CÉNTIMOS	
194	P3SCDN300	m Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizadora de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5 , incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.		48,13
			CUARENTA Y OCHO EUROS CON TRECE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
195	P3SCDN500	m Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	SESENTA Y TRES EUROS CON VEINTISIETE CÉNTIMOS	63,27
196	P3SUM2	ud Sumidero en losa o calzada para desagües de 40x60cm. y 70 cms. de profundidad, sobre solera de hormigón HM-20 N/mm2., realizada con ladrillo macizo de 1/2 pie de espesor, enfoscada interiormente y arqueta prefabricada a criterio de la Dirección Facultativa, con salida para tubo de diámetro 160 mm. situada su arista inferior a 20 cms. del fondo del sumidero, incluso rejilla de fundición de 400x600x30 mm. sobre cerco de angular . recibido a la fábrica de ladrillo o a la arqueta prefabricada, conexionado a red de colectores de pluviales. Unidad totalmente terminada incluyendo clapeta	DOSCIENTOS SESENTA Y UN EUROS CON CINCUENTA Y CUATRO CÉNTIMOS	261,54
197	P41BARAND01	m Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	CUARENTA Y NUEVE EUROS CON NUEVE CÉNTIMOS	49,09
198	P41BARAND03	m Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.	CUARENTA Y CUATRO EUROS CON CUARENTA Y SIETE CÉNTIMOS	44,47

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
199	P41BARAND05	m Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por perfilera metálica y tubos metálicos 42,2x6 mm, montada en plataforma de trames o elementos metálicos por soldadura, incluso parte proporcional de soldaduras, totalmente colocada y terminada.		38,11
			TREINTA Y OCHO EUROS CON ONCE CÉNTIMOS	
200	P41CADENA III	m Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.		41,67
			CUARENTA Y UN EUROS CON SESENTA Y SIETE CÉNTIMOS	
201	P41ESC0	m Escalera de acero inoxidable AIS-316 de dimensiones especificadas en planos. totalmente instalada, incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Unidad totalmente terminada.		152,48
			CIENTO CINCUENTA Y DOS EUROS CON CUARENTA Y OCHO CÉNTIMOS	
202	P41ESC1	m Escalera de seguridad y protección telescópica de acero inoxidable extensible en tramos de 50 cm. anchura 60 cm, longitud 5.0 m, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Unidad totalmente terminada.		182,62
			CIENTO OCHENTA Y DOS EUROS CON SESENTA Y DOS CÉNTIMOS	
203	P41ESC2	m Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaída y elementos extensibles. Unidad totalmente terminada.		183,55
			CIENTO OCHENTA Y TRES EUROS CON CINCUENTA Y CINCO CÉNTIMOS	
204	P41ESC3	m Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y soldado, pernos de anclaje y piezas auxiliares, totalmente colocada.		111,07
			CIENTO ONCE EUROS CON SIETE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
205	P41ESC4	<p>m Suministro e instalación de escalera inclinada de PRFV, de 1000 mm de ancho y peldaños antideslizantes cada 230 mm, incluyendo pasamanos, montantes, rodapié y listones intermedios, estructura de soporte y resto de elementos. Las piezas de PRFV se fabricarán mediante pultrusión, con resina ISOFTÁLICA en espacios sin agresión química y con VINILESTER en espacios confinados con agresión química, con las siguientes características:</p> <ul style="list-style-type: none"> - Resistencia UV 5 en la escala de grises conforme a norma UNE-EN ISO 4892-parte 2 y/o según normativa vigente - Resistencia al fuego M-1 (ASTM-E84) - Resistencia al humo F-1 (ASTM-E84) - Pigmentación mediante resina tintada <p>incluso p.p. de elementos de sujeción en acero inoxidable austenítico AISI 316.</p>	<p>TRESCIENTOS DOCE EUROS CON CUARENTA Y CUATRO CÉNTIMOS</p>	312,44
206	P41ESC5	<p>m Suministro e instalación de escalera de PRFV con aros de protección anticaída, de 500 mm de ancho y peldaños antideslizantes cada 250 mm, fabricada mediante pultrusión, con resina ISOFTÁLICA en espacios sin agresión química y con VINILESTER en espacios confinados con agresión química, con las siguientes características:</p> <ul style="list-style-type: none"> - Resistencia UV 5 en la escala de grises conforme a norma UNE-EN ISO 4892-parte 2 y/o según normativa vigente - Resistencia al fuego M-1 (ASTM-E84) - Resistencia al humo F-1 (ASTM-E84) - Pigmentación mediante resina tintada <p>Incluso p.p. de elementos de sujeción en acero inoxidable austenítico AISI 316.</p>	<p>CIENTO CUARENTA Y TRES EUROS CON CINCUENTA Y CINCO CÉNTIMOS</p>	143,55
207	P41ETT-001	<p>kg Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm², unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.</p>	<p>DOS EUROS CON SIETE CÉNTIMOS</p>	2,07

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
208	P41ETT-001C	kg Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.		2,98
			DOS EUROS CON NOVENTA Y OCHO CÉNTIMOS	
209	P41LAG001	m² Chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.		82,26
			OCHENTA Y DOS EUROS CON VEINTISEIS CÉNTIMOS	
210	P41LAG002	ud Entrada de hombre de 0,80x0,80 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.		106,53
			CIENTO SEIS EUROS CON CINCUENTA Y TRES CÉNTIMOS	
211	P41LAG004	ud Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.		135,15
			CIENTO TREINTA Y CINCO EUROS CON QUINCE CÉNTIMOS	
212	P41LV001	ud Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje, incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.		1.993,93
			MIL NOVECIENTOS NOVENTA Y TRES EUROS CON NOVENTA Y TRES CÉNTIMOS	
213	P41MRE002	m² Aplicación de resina epoxy en obras de fábrica. Unidad completa incluidas operaciones de tratamiento y limpieza.		11,03
			ONCE EUROS CON TRES CÉNTIMOS	
214	P41TRAM_001A	m² Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.		119,36

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CIENTO DIECINUEVE EUROS CON TREINTA Y SEIS CÉNTIMOS	
215	P41TRAM_003	m² Celosía metálica tipo Trames de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m² en cualquier superficie (>5m²), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.		151,16
			CIENTO CINCUENTA Y UN EUROS CON DIECISEIS CÉNTIMOS	
216	P4BORD-001	m Bordillo bicapa de hormigón prefabricado de dimensiones 17x36x100 cm., colocado en fondo de balsa.		10,62
			DIEZ EUROS CON SESENTA Y DOS CÉNTIMOS	
217	P4CIMBRA	m³ Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m² y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.		23,03
			VEINTITRES EUROS CON TRES CÉNTIMOS	
218	P4CINT1300	m Encintado para recubrimiento de protección anticorrosiva de tubería de DN1300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.		547,06
			QUINIENTOS CUARENTA Y SIETE EUROS CON SEIS CÉNTIMOS	
219	P4CINT1500	m Encintado para recubrimiento de protección anticorrosiva de tubería de DN1500mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.		626,16
			SEISCIENTOS VEINTISEIS EUROS CON DIECISEIS CÉNTIMOS	
220	P4CINT1600	m Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.		667,60
			SEISCIENTOS SESENTA Y SIETE EUROS CON SESENTA CÉNTIMOS	
221	P4CINT1800	m Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.		744,18
			SETECIENTOS CUARENTA Y CUATRO EUROS CON DIECIOCHO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
222	P4CINT1900	m Encintado para recubrimiento de protección anticorrosiva de tubería de DN1900mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	SETECIENTOS OCHENTA Y TRES EUROS CON ONCE CÉNTIMOS	783,11
223	P4CINT2000	m Encintado para recubrimiento de protección anticorrosiva de tubería de DN200mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	OCHOCIENTOS VEINTITRES EUROS CON VEINTIOCHO CÉNTIMOS	823,28
224	P4CINT300	m Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	CIENTO CUARENTA Y SIETE EUROS CON SETENTA Y NUEVE CÉNTIMOS	147,79
225	P4CINT400	m Encintado para recubrimiento de protección anticorrosiva de tubería de DN400mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	CIENTO NOVENTA Y UN EUROS CON SETENTA Y TRES CÉNTIMOS	191,73
226	P4ETT-002	kg Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre rondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	UN EUROS CON TREINTA Y CINCO CÉNTIMOS	1,35
227	P4ETT-004A-E2	m² Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujetiones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlate que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.		26,85

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			VEINTISEIS EUROS CON OCHENTA Y CINCO CÉNTIMOS	
228	P4ETT-004C-E2	m² Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.		30,49
			TREINTA EUROS CON CUARENTA Y NUEVE CÉNTIMOS	
229	P4ETT-004E-E1	m² Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.		16,26
			DIECISEIS EUROS CON VEINTISEIS CÉNTIMOS	
230	P4GUN.20	m² Hormigón proyectado gunitado HMP-35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.		56,49
			CINCUENTA Y SEIS EUROS CON CUARENTA Y NUEVE CÉNTIMOS	
231	P4HG-001A	m³ Hormigón en masa HM-12.5/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación, p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.		43,42
			CUARENTA Y TRES EUROS CON CUARENTA Y DOS CÉNTIMOS	
232	P4HG-002A	m³ Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.		49,22
			CUARENTA Y NUEVE EUROS CON VEINTIDOS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
233	P4HG-002B	m³ Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.		59,75
			CINCUENTA Y NUEVE EUROS CON SETENTA Y CINCO CÉNTIMOS	
234	P4HG-002C	m³ Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.		61,53
			SESENTA Y UN EUROS CON CINCUENTA Y TRES CÉNTIMOS	
235	P4HG-002F	m³ Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.		33,10
			TREINTA Y TRES EUROS CON DIEZ CÉNTIMOS	
236	P4HG-003A	m³ Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.		62,64
			SESENTA Y DOS EUROS CON SESENTA Y CUATRO CÉNTIMOS	
237	P4HG-004A	m³ Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.		76,95
			SETENTA Y SEIS EUROS CON NOVENTA Y CINCO CÉNTIMOS	
238	P4HG-004A2H	m³ Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.		80,88

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			OCHENTA EUROS CON OCHENTA Y OCHO CÉNTIMOS	
239	P4HG-004A2V	m³ Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.		91,99
			NOVENTA Y UN EUROS CON NOVENTA Y NUEVE CÉNTIMOS	
240	P4HG-004AHV	m³ Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.		78,03
			SETENTA Y OCHO EUROS CON TRES CÉNTIMOS	
241	P4HG-005A3H_E	m³ Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.		90,51
			NOVENTA EUROS CON CINCUENTA Y UN CÉNTIMOS	
242	P4IMPASF	m² Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.		2,24
			DOS EUROS CON VEINTICUATRO CÉNTIMOS	
243	P4JTACOMB200B	m Juntas horizontales o inclinadas, en canal conformadas por cordón de polisulfuro y posterior lámina de PVC 200 combiflex o similar con aplicación de epoxy de adherencia. Unidad totalmente terminada incluidos cortes en hormigón, solapes y soldaduras de unión.		14,06
			CATORCE EUROS CON SEIS CÉNTIMOS	
244	P4JTAHIDROF	m Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.		7,25
			SIETE EUROS CON VEINTICINCO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
245	P4JTAHIDROF2	m Junta de estanqueidad en unión arquetas prefabricadas a hormigón de base ejecutado in situ, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.		4,53
			CUATRO EUROS CON CINCUENTA Y TRES CÉNTIMOS	
246	P4JTAPVC150	m Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.		4,42
			CUATRO EUROS CON CUARENTA Y DOS CÉNTIMOS	
247	P4JTAPVC200	m Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.		5,26
			CINCO EUROS CON VEINTISEIS CÉNTIMOS	
248	P4JTAPVC300	m Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.		6,15
			SEIS EUROS CON QUINCE CÉNTIMOS	
249	P4JTAPVC400	m Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.		15,74
			QUINCE EUROS CON SETENTA Y CUATRO CÉNTIMOS	
250	P4JTAPVC400B	m Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.		15,74
			QUINCE EUROS CON SETENTA Y CUATRO CÉNTIMOS	
251	P4JTUMO001	m Suministro y colocaci³n de tuberøa de acero al carbono API 5L/ASTM/A106 de de 300 mm de dißmetro interior, totalmente colocada.		53,69
			CINCUENTA Y TRES EUROS CON SESENTA Y NUEVE CÉNTIMOS	
252	P4LOSA003	m² Losas prefabricadas de hormigón en tapas de grandes arquetas con entrada de hombre practicable dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.		100,76
			CIEN EUROS CON SETENTA Y SEIS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
253	P4LOSA1	m² Losas prefabricadas de hormigón en tapas de arquetas dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.		90,16
			NOVENTA EUROS CON DIECISEIS CÉNTIMOS	
254	P4LOSA2	m² Losas prefabricadas de hormigón en tapas de arquetas para tránsito de tráfico pesado, cuantía mínima 190 kg/m3 homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.		153,76
			CIENTO CINCUENTA Y TRES EUROS CON SETENTA Y SEIS CÉNTIMOS	
255	P4M2.0X1.0	m Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.0x1.0 m, conforme a norma UNE-EN 14844+A2:2012incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.		586,16
			QUINIENTOS OCHENTA Y SEIS EUROS CON DIECISEIS CÉNTIMOS	
256	P4M2.5X2.0	m Suministro y colocación de marco prefabricado visible de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.5x2.0 m, conforme a norma UNE-EN 14844+A2:2012incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.		845,86
			OCHOCIENTOS CUARENTA Y CINCO EUROS CON OCHENTA Y SEIS CÉNTIMOS	
257	P4M3.0X1.5	m Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 3.0x1.5 m, conforme a norma UNE-EN 14844+A2:2012incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.		835,26
			OCHOCIENTOS TREINTA Y CINCO EUROS CON VEINTISEIS CÉNTIMOS	
258	P4MOR-001_E	m³ Formación de capa de mortero de nivelación.		26,54
			VEINTISEIS EUROS CON CINCUENTA Y CUATRO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
259	P4NEOP2	m² Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.		61,75
			SESENTA Y UN EUROS CON SETENTA Y CINCO CÉNTIMOS	
260	P4PANT1.0A1	m² Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o reperforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amorturada con suministro y colocación del hormigón y exceso por pérdidas. -Homigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreescavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.		245,82
			DOSCIENTOS CUARENTA Y CINCO EUROS CON OCHENTA Y DOS CÉNTIMOS	
261	P4PATE01	ud Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.		4,88
			CUATRO EUROS CON OCHENTA Y OCHO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
262	P4PCAT01	ud Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.		1.548,24
			MIL QUINIENTOS CUARENTA Y OCHO EUROS CON VEINTICUATRO CÉNTIMOS	
263	P4PERN12	ud Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.		5,27
			CINCO EUROS CON VEINTISIETE CÉNTIMOS	
264	P4PERN16	ud Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.		8,07
			OCHO EUROS CON SIETE CÉNTIMOS	
265	P4PERN20	ud Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.		9,47
			NUEVE EUROS CON CUARENTA Y SIETE CÉNTIMOS	
266	P4PERN32	ud Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.		16,15
			DIECISEIS EUROS CON QUINCE CÉNTIMOS	
267	P4RSACEQ01	m Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembrada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluídas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.		45,86
			CUARENTA Y CINCO EUROS CON OCHENTA Y SEIS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
268	P4RSGPE160	m Localización, desmontaje programado, y reposición de tubería de gas DN160 mm PE,SDR11 arquetas y valvulería asociada, incluyendo operaciones de localización mediante calas y/o sistemas de microgravimetría con técnico cualificado, programación de corte y rotura con empresa de servicios, gestión y pago de canon y tasas requeridas, demolición, carga y retirada de conducciones, arquetas y elementos asociados, transporte a vertedero autorizado, pago de canon de vertido, reposición de servicio mediante retranqueo, con excavación en zanja de ancho especificado en planos mínimo 0.8m, con base de apoyo de cama de arena de 15 cm, relleno con arena hasta 30 cm sobre clave de tubería, posterior relleno localizado con suelo seleccionado procedente de préstamo tamaño máximo 100 mm, relleno con zahorra artificial hasta sección de pavimento, lámina PVC señalizadora de servicio normalizada, losa de protección en pavimentos de 0.15m de espesor con al menos 1.20m de ancho, conexiones de elementos, juntas especiales, p.p. de arquetas normalizadas con tapa de fundición C-400, según detalle definido en planos con base y anclaje de hormigón en caso de valvulerías, arquetas en cambios de dirección, conexiones y puntos de ubicación de valvulería. Unidad totalmente ejecutada.		89,17
			OCHENTA Y NUEVE EUROS CON DIECISIETE CÉNTIMOS	
269	P4RSGPE200	m Localización, desmontaje programado, y reposición de tubería de gas DN200 mm PE,SDR11 arquetas y valvulería asociada, incluyendo operaciones de localización mediante calas y/o sistemas de microgravimetría con técnico cualificado, programación de corte y rotura con empresa de servicios, gestión y pago de canon y tasas requeridas, demolición, carga y retirada de conducciones, arquetas y elementos asociados, transporte a vertedero autorizado, pago de canon de vertido, reposición de servicio mediante retranqueo, con excavación en zanja de ancho especificado en planos mínimo 0.8m, con base de apoyo de cama de arena de 15 cm, relleno con arena hasta 30 cm sobre clave de tubería, posterior relleno localizado con suelo seleccionado procedente de préstamo tamaño máximo 100 mm, relleno con zahorra artificial hasta sección de pavimento, lámina PVC señalizadora de servicio normalizada, losa de HM20 de protección en pavimentos de 0.15m de espesor con al menos 1.20m de ancho, vainas de tubería en cruzamientos, conexiones de elementos, juntas especiales, p.p. de arquetas normalizadas con tapa de fundición C-400, según detalle definido en planos con base y anclaje de hormigón en caso de valvulerías, arquetas en cambios de dirección, conexiones y puntos de ubicación de valvulería. Unidad totalmente ejecutada.		93,99

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			NOVENTA Y TRES EUROS CON NOVENTA Y NUEVE CÉNTIMOS	
270	P4RSS1A	m Localización, demolición, desmontaje programado y retirada de tubería de riego de varios diámetros menores a 200 mm, incluyendo arquetas y desmontaje de válvulas, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.		3,41
			TRES EUROS CON CUARENTA Y UN CÉNTIMOS	
271	P4RSS1B	m Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN ≤1000mm, incluyendo operaciones asociadas a la demolición, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.		13,39
			TRECE EUROS CON TREINTA Y TRES CÉNTIMOS	
272	P4RSS1C	m Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento/riego y/o saneamiento/ pluviales de DN >1000mm, incluyendo operaciones asociadas a la demolición, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.		18,39
			DIECIOCHO EUROS CON TREINTA Y NUEVE CÉNTIMOS	
273	P4RSS5A	ud Cegado de arqueta o punto de entronque para anulación de tramo de colector existente mediante macizo de hormigón 1.5m3 HL-150 p.p. de tapes, excavaciones, demoliciones asociadas y reposición total de superficie, carga y transporte a vertedero de escombros, canon de vertido. Unidad completa.		143,49
			CIENTO CUARENTA Y TRES EUROS CON CUARENTA Y NUEVE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
274	P4RSS5B	ud Cegado de arqueta o punto de entronque para anulación de tramo de colector existente mediante brida ciega de dimensión igual a colector p.p. de tapes, excavaciones, rellenos y reposición total de superficie, carga y transporte a vertedero de escombros, canon de vertido. Unidad completa.	DOSCIENTOS CINCUENTA Y SIETE EUROS CON SETENTA Y SEIS CÉNTIMOS	257,76
275	P4RSSFIBC1	m Demolición y gestión de residuos de conducciones de fibrocemento de DN<1200mm, desmontaje manual por personal especializado y medios auxiliares necesarios, paletizado, flejado y etiquetado a pie de obra, carga, transporte y gestión de residuos a cargo de empresa registrada R.E.R.A., incluso redacción de plan de trabajo y unidad de descontaminación, carga y transporte a vertedero, canon de vertido, tratamiento si procede de aspiración con filtros adecuados y pulverización con líquido encapsulante adecuado, según mediciones exigidas por ley, transporte autorizado, desplazamiento de equipos de desamiantado con esclusas de descontaminación en los compartimentos que sean necesarios, equipos de protección EPI's P3, coordinado con el al Plan de Seguridad y Salud. Unidad completa incluso colocación de bridas ciegas en T.	CINCUENTA Y TRES EUROS CON OCHENTA Y TRES CÉNTIMOS	53,83
276	P4RSV0A	ud Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	DOSCIENTOS SESENTA Y NUEVE EUROS CON UN CÉNTIMO	269,01
277	P4RSV1A	ud Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	NOVECIENTOS SETENTA Y SIETE EUROS CON VEINTIUN CÉNTIMOS	977,21

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
278	P4RSV1B	ud Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ..), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.		3.828,30
			TRES MIL OCHOCIENTOS VEINTIOCHO EUROS CON TREINTA CÉNTIMOS	
279	P4RSV1C	ud Sostenimiento y protección de poste de línea telefónica y/o eléctrica aérea de BT, mediante puntales, arriostres y resto de elementos, durante la ejecución de la obra. Unidad totalmente terminada		265,49
			DOSCIENTOS SESENTA Y CINCO EUROS CON CUARENTA Y NUEVE CÉNTIMOS	
280	P4RSV1D	m Demolición y retirada de conductos y cableados de instalaciones eléctricas incluidas, iluminación, telefonía y/o comunicaciones subterráneas, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.		5,38
			CINCO EUROS CON TREINTA Y OCHO CÉNTIMOS	
281	P4RSV2	ud Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.		1.225,40
			MIL DOSCIENTOS VEINTICINCO EUROS CON CUARENTA CÉNTIMOS	
282	P4RSV2B	ud Corte programa del servicio de GAS en conducciones de distribución.		1.203,69
			MIL DOSCIENTOS TRES EUROS CON SESENTA Y NUEVE CÉNTIMOS	
283	P4RSV2D	m Demolición y retirada de tuberías de hormigón en masa, salvacunetas y conducciones, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.		4,88

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CUATRO EUROS CON OCHENTA Y OCHO CÉNTIMOS	
284	P4TAPA60D400	ud Tapa de registro de fundición estanca acerojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN) de la marca EJ modelo TP800 o similar. Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, perfiels, ladrillos,... unidad de obra totalmente instalada y ejecutada.		118,05
			CIENTO DIECIOCHO EUROS CON CINCO CÉNTIMOS	
285	P4TAPA60D400A	ud Tapa de registro de fundición estanca y acerojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN) . Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, cerco,... unidad de obra totalmente instalada y ejecutada.		162,40
			CIENTO SESENTA Y DOS EUROS CON CUARENTA CÉNTIMOS	
286	P4TAPALG01	m² Tapa ciega modular extraible antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa laminada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.		110,88
			CIENTO DIEZ EUROS CON OCHENTA Y OCHO CÉNTIMOS	
287	P4TUB100HA135	m Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		122,70
			CIENTO VEINTIDOS EUROS CON SETENTA CÉNTIMOS	
288	P4TUB120HA135	m Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.200 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		162,56
			CIENTO SESENTA Y DOS EUROS CON CINCUENTA Y SEIS CÉNTIMOS	
289	P4TUB315PVC	m Tubería de PVC diámetro Nominal 315 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.		31,98

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			TREINTA Y UN EUROS CON NOVENTA Y OCHO CÉNTIMOS	
290	P4TUB500PVC	m Tubería de PVC diámetro Nominal 500 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.		45,35
			CUARENTA Y CINCO EUROS CON TREINTA Y CINCO CÉNTIMOS	
291	P4TUB80HA135	m Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		87,55
			OCHENTA Y SIETE EUROS CON CINCUENTA Y CINCO CÉNTIMOS	
292	P5ARQLD1A	ud Arqueta de ladrillo 1 pie enfoscado interior mortero hidrófugo de diámetro interior 1.20 m, con cono reductor 1200/600 para alturas de hasta 2.5m, tapa de fundición DN 600 mm D-400, marco y contracerco, pates polipropileno alma de acero cada 20 cm, y base de apoyo HA25 y armado #8/10, con 0.4m de espesor mínimo y 10 cm de hormigón de limpieza, p.p. de excavación asociada, y rellenos con suelos seleccionados. Unidad totalmente terminada.		752,02
			SETECIENTOS CINCUENTA Y DOS EUROS CON DOS CÉNTIMOS	
293	P5ARQLD2	ud Arqueta de registro de dimensiones interiores 80x80x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 80x80 normalizada D-400. Unidad totalmente terminada.		266,22
			DOSCIENTOS SESENTA Y SEIS EUROS CON VEINTIDOS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
294	P5ARQLD4	ud Arqueta de registro de dimensiones interiores 60x60x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 60x60 normalizada D-400. Unidad totalmente terminada.	DOSCIENTOS TRECE EUROS CON NOVENTA Y SIETE CÉNTIMOS	213,97
295	P5ARQLD6	ud Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	OCHENTA Y SIETE EUROS CON CUARENTA Y NUEVE CÉNTIMOS	87,49
296	P5ARQP-1.2A	ud UD de Arqueta prefabricada, altura variable hasta 3.0m de tipo pozo de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltos en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base. Unidad totalmente terminada.	OCHOCIENTOS CUARENTA EUROS CON CUARENTA Y OCHO CÉNTIMOS	840,48

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
297	P5ARQP-1.2B	<p>ud UD de pozo de resalto de altura variable hasta 3,5m de de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltos en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base.</p> <p>Unidad totalmente terminada.</p>		1.116,15
			MIL CIENTO DIECISEIS EUROS CON QUINCE CÉNTIMOS	
298	P5ARQP-1.5A	<p>ud UD de Arqueta prefabricada de diámetro 1.5 m y altura 1.5m para desagües tipo D formada por anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, con pates de polipropileno montados, incluida excavación localizada y rellenos necesarios. Unidad totalmente terminada.</p>		202,40
			DOSCIENTOS DOS EUROS CON CUARENTA CÉNTIMOS	
299	P5ARQP-1A	<p>ud UD de Arqueta prefabricada, altura variable hasta 2.5m de tipo pozo de 1000mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas mediante juntas de goma, incluyendo módulo cónico superior, tubo de resalto de PVC DN 315mm, macizado hormigonado HM-20, recibido con mortero de cemento, cerco y tapa de fundición DN600 para tráfico pesado 40Tn, pates y resto de elementos asociados, incluida excavación y rellenos necesarios.</p> <p>Unidad totalmente terminada.</p>		726,69

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			SETECIENTOS VEINTISEIS EUROS CON SESENTA Y NUEVE CÉNTIMOS	
300	P5ARQPREF1	ud Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de de 1,5-2,5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , pieza tapa con apertura DN600 mm, huecos preformados para conexión de tuberías de diámetro múltiple apoyada sobre fondo de caja excavado y compactado, ejecución de 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionada y/o cribado. Unidad totalmente colocada.		754,16
			SETECIENTOS CINCUENTA Y CUATRO EUROS CON DIECISEIS CÉNTIMOS	
301	P5ARQPREF1.0E	ud Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.		281,22
			DOSCIENTOS OCHENTA Y UN EUROS CON VEINTIDOS CÉNTIMOS	
302	P5ARQPREF1.0R	ud Arqueta tipo 2P comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1x1x1.5 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.0x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.		375,80
			TRESCIENTOS SETENTA Y CINCO EUROS CON OCHENTA CÉNTIMOS	
303	P5ARQPREF1.5R	ud Arqueta tipo 2B comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1.50x1.0x1.20 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.5x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.		280,40
			DOSCIENTOS OCHENTA EUROS CON CUARENTA CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
304	P5ARQPREF2.0E	ud Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.		414,18
			CUATROCIENTOS CATORCE EUROS CON DIECIOCHO CÉNTIMOS	
305	P5ARQPREF2.A1	ud Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.		264,89
			DOSCIENTOS SESENTA Y CUATRO EUROS CON OCHENTA Y NUEVE CÉNTIMOS	
306	P5ARQPREF2.A2	ud Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-2, de 145x90 cm de medidas interiores y 117x62 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapas de fundición dúctil, de 72x62x6,5 cm, para arqueta de conexión eléctrica tipo A-2, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.		343,73
			TRESCIENTOS CUARENTA Y TRES EUROS CON SETENTA Y TRES CÉNTIMOS	
307	P5ARQR001	ud Arqueta riego incluida compuerta y p.p. medios auxiliares, 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.		979,13

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			NOVECIENTOS SETENTA Y NUEVE EUROS CON TRECE CÉNTIMOS	
308	P5ARQpref1.0	ud Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de hasta 1.5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , apoyada sobre fondo de caja excavado y compactado con 0.2m de hormigón en masa HM-20, incluida tapa superior armada, tapa de acero galvanizado en caliente de 3 mm estriada, cerco y precerco, rejillas de ventilación, unión entre módulos de cordón impermeabilizante de polisulfuro, agujeros para entrada de tuberías de dimensiones especificadas, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.		512,84
			QUINIENTOS DOCE EUROS CON OCHENTA Y CUATRO CÉNTIMOS	
309	P5BANDA250	m M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.		0,32
			CERO EUROS CON TREINTA Y DOS CÉNTIMOS	
310	P5BORD1	m Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.		16,91
			DIECISEIS EUROS CON NOVENTA Y UN CÉNTIMOS	
311	P5BORD2	m Bordillo de granito gris (similar al existente en caso de reposición) de dimensiones 15x25x120 cms., asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.		34,26
			TREINTA Y CUATRO EUROS CON VEINTISEIS CÉNTIMOS	
312	P5BORD3	m Bordillo de hormigón bicapa, achaflanado, de 9-10x20 cm. colocado sobre solera de hormigón HM-15/P/40, de 10 cm. de espesor, i/excavación necesaria, rejuntado y limpieza.		12,93
			DOCE EUROS CON NOVENTA Y TRES CÉNTIMOS	
313	P5CERRAM0A	m Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar , existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos.		4,83

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CUATRO EUROS CON OCHENTA Y TRES CÉNTIMOS	
314	P5CERRAM0D	m Reposición de muro bancal de espesor medio 0,5 m , altura variable hasta 1,5 m y longitud 4 m. incluyen- do retirada de muro existente, acopio y posterior re- construcción mediante aporte de mampuestos, ri- pios, perfectamente alineado, aplomado, con excava- ción y preparación de la superficie de asiento (20 cm de HM-20), completamente terminado. incluyendo las operaciones de acopio,recolocación de la piedra original y/o reposición de otra de características simi- lares a la original.		68,42
			SESENTA Y OCHO EUROS CON CUARENTA Y DOS CÉNTIMOS	
315	P5CERRAM1	m Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bas- tidores tubulares de acero S-275J de 1ª calidad galva- nizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones defini- da en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diá- metro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos loca- lizados Unidad totalmente anclada y terminada. (inclu- ye hormigonados y zapatas)		96,52
			NOVENTA Y SEIS EUROS CON CINCUENTA Y DOS CÉNTIMOS	
316	P5CERRAM2	m Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por in- mersión de 48 mm de diámetro, p.p. de postes de es- quina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espi- no, sin incluir puerta de acceso.		28,97
			VEINTIOCHO EUROS CON NOVENTA Y SIETE CÉNTIMOS	
317	P5CERRAM4	m Cerramiento ganadero a base de postes de hormi- gón de 17x12x170 cm y 1,40 m o metálicos sobre el terreno a 7 m separación media, empotrados y ancla- dos en el terreno 30 cm y guarnecido con un malla 100x8x15 mm y dos hiladas superiores de alambre, doble hilo 13x15, tensado en tramos de 50 m, y con dos riostras cada 100 m. Unidad completamente terminada.		7,87

SIETE EUROS CON OCHENTA Y SIETE CÉNTIMOS

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
318	P5CERRAMPU	m Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, incluyendo parte proporcional de puerta de acceso.		28,97
			VEINTIOCHO EUROS CON NOVENTA Y SIETE CÉNTIMOS	
319	P5COM12F	m Suministro e instalación de cable de 12 fibras ópticas en Mono-modo 9/125, con aislamiento PEAP, bajo canalización de tritubo según especificaciones , incluso parte proporcional de empalmes, fusionado y conectorización, probado y certificado.		2,47
			DOS EUROS CON CUARENTA Y SIETE CÉNTIMOS	
320	P5COM62F	m Suministro e instalación de cable de 64 fibras ópticas en Mono-modo 9/125, con aislamiento PEAP, bajo canalización de tritubo según especificaciones , incluso parte proporcional de empalmes, fusionado y conectorización, probado y certificado.		6,23
			SEIS EUROS CON VEINTITRES CÉNTIMOS	
321	P5COMCAJA64F	ud Suministro e instalación de cajas de empalme estanca para 64 fibras ópticas de tipo monomodo, ejecutados por fusión, con p/p de verificación de tipo ODTR.		103,46
			CIENTO TRES EUROS CON CUARENTA Y SEIS CÉNTIMOS	
322	P5COMCBL001A	m Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.		3,53
			TRES EUROS CON CINCUENTA Y TRES CÉNTIMOS	
323	P5COMCBL001B	m Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.		4,44
			CUATRO EUROS CON CUARENTA Y CUATRO CÉNTIMOS	
324	P5COMCBL001C	m Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.		11,25
			ONCE EUROS CON VEINTICINCO CÉNTIMOS	
325	P5COMCBL001D	m Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.		11,54

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			ONCE EUROS CON CINCUENTA Y CUATRO CÉNTIMOS	
326	P5COMCBL004	m Cable comunicaciones RS232. Unidad totalmente instalada.		5,85
			CINCO EUROS CON OCHENTA Y CINCO CÉNTIMOS	
327	P5COMCBL005	m Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.		5,91
			CINCO EUROS CON NOVENTA Y UN CÉNTIMOS	
328	P5COMCBL006	m Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.		7,48
			SIETE EUROS CON CUARENTA Y OCHO CÉNTIMOS	
329	P5COMCBL007	m Cable comunicaciones RS45 .Unidad totalmente instalada.		4,96
			CUATRO EUROS CON NOVENTA Y SEIS CÉNTIMOS	
330	P5COMLATFO	ud Suministro e instalación de latiguillos de fibra óptica multimodo con conectores FC-FC, de una longitud de 1,50 m.		8,78
			OCHO EUROS CON SETENTA Y OCHO CÉNTIMOS	
331	P5COMREP64F	ud Suministro e instalación de repartidor de 64 fibras ópticas para un total de 64 adaptadores de tipo FC-FC y sus correspondientes 64 pig-tail de monomodos, todos fusionados y comprobados con equipo ODTR.		997,11
			NOVECIENTOS NOVENTA Y SIETE EUROS CON ONCE CÉNTIMOS	
332	P5ELE10	ud Caja IP67 con pulsador, arranque, parada y emergencia múltiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.		101,69
			CIENTO UN EUROS CON SESENTA Y NUEVE CÉNTIMOS	
333	P5ELE110PVC	m Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D= 110 mm, e=3,2 mm. embebido en hormigón o adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.		5,66
			CINCO EUROS CON SESENTA Y SEIS CÉNTIMOS	
334	P5ELE110X2	m Canalización de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.		17,89

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			DIECISIETE EUROS CON OCHENTA Y NUEVE CÉNTIMOS	
335	P5ELE110X2H	m Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acera- dos y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccio- nado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, inclu- so cinta indicador de instalación eléctrica de PVC, ca- bles de acero pasa-guía y corchetes. Unidad totalmen- te instalada y terminada.		45,45
			CUARENTA Y CINCO EUROS CON CUARENTA Y CINCO CÉNTIMOS	
336	P5ELE110X4H	m Canalización hormigonada de 4x110mm PVC normali- zado instalación, en cualquier tipo de terreno, acera- dos y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccio- nado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, inclu- so cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente ins- talada y terminada		49,50
			CUARENTA Y NUEVE EUROS CON CINCUENTA CÉNTIMOS	
337	P5ELE125PVC	m Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D=125 mm, e=3,2 mm. adosado techo y pa- redes mediante pletinas y abrazaderas de acero inoxi- dable cada metro, incluso perforaciones y atados nece- sarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.		5,48
			CINCO EUROS CON CUARENTA Y OCHO CÉNTIMOS	
338	P5ELE160PVC	m Canalización de tubo de PVC liso D= 160 mm normali- zado para instalación eléctrica, adosado techo y pare- des mediante pletinas y abrazaderas de acero inoxida- ble cada metro, incluso perforaciones y atados neces-arios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.		6,30
			SEIS EUROS CON TREINTA CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
339	P5ELE160X2HT1	m Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.		55,53
			CINCUENTA Y CINCO EUROS CON CINCUENTA Y TRES CÉNTIMOS	
340	P5ELE160X4H	m Canalización hormigonada de 4x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x1.0m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada		79,81
			SETENTA Y NUEVE EUROS CON OCHENTA Y UN CÉNTIMOS	
341	P5ELE160X4HT2	m Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada		68,11

SESENTA Y OCHO EUROS CON ONCE CÉNTIMOS

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
342	P5ELE200X2H1	m Canalización de línea de media tensión hormigonada en terrenos rústicos y/o ajardinados conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 100-130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.		56,94
			CINCUENTA Y SEIS EUROS CON NOVENTA Y CUATRO CÉNTIMOS	
343	P5ELE200X2H2	m Canalización de línea de media tensión hormigonada bajo Acerados y Pavimentos conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.		60,92
			SESENTA EUROS CON NOVENTA Y DOS CÉNTIMOS	
344	P5ELE200X2HT2	m Canalización de línea de media tensión hormigonada en terrenos rústicos conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.		63,81
			SESENTA Y TRES EUROS CON OCHENTA Y UN CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
345	P5ELE20GALV	m Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.		5,36
			CINCO EUROS CON TREINTA Y SEIS CÉNTIMOS	
346	P5ELE20PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.		1,35
			UN EUROS CON TREINTA Y CINCO CÉNTIMOS	
347	P5ELE25GALV	m Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.		5,78
			CINCO EUROS CON SETENTA Y OCHO CÉNTIMOS	
348	P5ELE25PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.		1,62
			UN EUROS CON SESENTA Y DOS CÉNTIMOS	
349	P5ELE32GALV	m Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.		6,68
			SEIS EUROS CON SESENTA Y OCHO CÉNTIMOS	
350	P5ELE32PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.		1,62
			UN EUROS CON SESENTA Y DOS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
351	P5ELE40PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=40 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada		1,80
			UN EUROS CON OCHENTA CÉNTIMOS	
352	P5ELE50PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada		1,93
			UN EUROS CON NOVENTA Y TRES CÉNTIMOS	
353	P5ELE75PVC	m Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.		3,94
			TRES EUROS CON NOVENTA Y CUATRO CÉNTIMOS	
354	P5ELEARQ1X1TF	ud Arqueta prefabricada estanca para recogida de aceites de dimensiones 1,0x1,0m y altura de hasta 1.5m, tapa de fundición 600x600 mm, cerco y precerco, conectada a conductor de recogida, incluidos pasamuros y tuberías de conexión. Unidad totalmente colocada.		979,09
			NOVECIENTOS SETENTA Y NUEVE EUROS CON NUEVE CÉNTIMOS	
355	P5ELEBAND1	m Bandeja de PVC de dimensiones 300x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.		27,81
			VEINTISIETE EUROS CON OCHENTA Y UN CÉNTIMOS	
356	P5ELEBAND2	m Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.		18,35
			DIECIOCHO EUROS CON TREINTA Y CINCO	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
CÉNTIMOS				
357	P5ELEBAND3	m Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.		8,87
OCHO EUROS CON OCHENTA Y SIETE CÉNTIMOS				
358	P5ELEBT	ud Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.		3.495,74
TRES MIL CUATROCIENTOS NOVENTA Y CINCO EUROS CON SETENTA Y CUATRO CÉNTIMOS				
359	P5ELEBTALUMB	ud Unidad de legalización de alumbrado público en el conjunto de la actuación , incluyendo línea de baja tensión, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización.		495,90
CUATROCIENTOS NOVENTA Y CINCO EUROS CON NOVENTA CÉNTIMOS				
360	P5ELEC01	ud Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.		7,52
SIETE EUROS CON CINCUENTA Y DOS CÉNTIMOS				
361	P5ELEC02	ud Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.		13,14
TRECE EUROS CON CATORCE CÉNTIMOS				
362	P5ELEC03	ud Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.		7,52
SIETE EUROS CON CINCUENTA Y DOS CÉNTIMOS				
363	P5ELEC05	ud Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.		10,29
DIEZ EUROS CON VEINTINUEVE CÉNTIMOS				
364	P5ELEC08	ud Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.		24,54
VEINTICUATRO EUROS CON CINCUENTA Y CUATRO CÉNTIMOS				
365	P5ELEC09	ud Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.		72,04
SETENTA Y DOS EUROS CON CUATRO CÉNTIMOS				
366	P5ELEC10001	I Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.		1,05
UN EUROS CON CINCO CÉNTIMOS				

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
367	P5ELEC10002	día Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	SETECIENTOS TRECE EUROS CON SETENTA Y UN CÉNTIMOS	713,71
368	P5ELEC10003	ud Operación de conexionado y desconexiónado de LMT.	TRESCIENTOS SESENTA Y CINCO EUROS CON SESENTA Y DOS CÉNTIMOS	365,62
369	P5ELECAJA3	ud Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	VEINTE EUROS CON VEINTICINCO CÉNTIMOS	20,25
370	P5ELECAJA4	ud Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	TREINTA EUROS CON OCHENTA Y SEIS CÉNTIMOS	30,86
371	P5ELECAJA5	ud Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	TREINTA Y UN EUROS CON NOVENTA CÉNTIMOS	31,90
372	P5ELECAS01	ud Caseta prefabricada de hormigón armado de dimensión interior de 1.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	MIL CUATROCIENTOS TREINTA Y CUATRO EUROS CON VEINTITRES CÉNTIMOS	1.434,23
373	P5ELECAS01A	ud Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	SIETE MIL QUINIENTOS DIECINUEVE EUROS CON CUARENTA CÉNTIMOS	7.519,40
374	P5ELECAS01B	ud Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	SETECIENTOS CUARENTA Y UN EUROS CON	741,26

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			VEINTISEIS CÉNTIMOS	
375	P5ELECAS02	ud Caseta prefabricada de hormigón armado de dimensión interior de 4.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.		3.469,43
			TRES MIL CUATROCIENTOS SESENTA Y NUEVE EUROS CON CUARENTA Y TRES CÉNTIMOS	
376	P5ELECASTRAFO	ud Caseta prefabricada normalizada para transformador hasta 160 KVA , con compartimento para celdas, puertas de paso y acceso, lamas de ventilación , ventilaciónn forzada, cubiertas y resto de elementos conformados. Unidad totalmente instalada.		3.272,12
			TRES MIL DOSCIENTOS SETENTA Y DOS EUROS CON DOCE CÉNTIMOS	
377	P5ELECBATC36	ud Módulo metálico para corrección automática del factor de potencia 36 KVAR Compuesta de: condensadores sobredimensionados en tensión a 440 V, base fusibles y fusibles, regulador electrónico, contactores e interruptor general, Condensador CLZ , Contactores con bloque de preinserción y resistencia de descarga rápida, Protección en cabecera por fusibles con alto, poder de corte (APR). Serie NH-00, regulador de energía reactiva serie computer m con indicación digital y salidas de relé; Interruptor manual en cabecera de batería; Interruptor automático en cabecera de batería; Interruptor automático + Protección diferencial en cabecera de batería; Unidad de ventilación forzada + termostato; Placa de policarbonato contra contactos directos; Autotransformador 400/230 V. Totalmente instalada en armario metálico.		1.503,90
			MIL QUINIENTOS TRES EUROS CON NOVENTA CÉNTIMOS	
378	P5ELECCGB1	ud Centro de mando de alumbrado público, hasta 6 salidas, de dimensiones1.25x1.25x0.3m según detalle de planos, incluidas pletinas de acometida entre separadores de cobre, bases portafus, interruptor de corte 4p hasta 125 A, contador electrónico con mirilla, bornas de salida de módulo de medida de 16 mm2, Prensaestopas, automático gebneral de 4 polos caja molde a 25 KA, intensidad ajustable hasta 100 A, Diferencial mando, automático protección enchufe 2x10A, Automático protección célula reloj, Reloj astronómico programable, célula fotoeléctrica para accionamiento automático, Tomas de corriente 2P+T 16A conectada a tierra, Bornas de reparto 95 mm2, Base portafusibles, automáticos 4 polos para protección salidas, Relés diferenciales, conmutador salidas, contactor salidas 4 polos, Clemas de conexión, Diversas bornas de salida, entrada, mando, ..., Cajas modulares de medida independiente, de mando y protección IP55, cierre triple acción, Puertas con toma tierra, armario de chapa de acero 3 mm galvanizado caliente IK-10, rejillas , incluida obra civil, cimentación y toma tierra con placa cobre 500x500x2. Todo según planos de detalle. Unidad Totalmente ejecutada y operativa, incluida tramitación de conexionado, pago de tasas y proyecto de industria para tramitación de alumbrado.		1.120,90
			MIL CIENTO VEINTE EUROS CON NOVENTA	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CÉNTIMOS	
379	P5ELECDS1	ud Descargador de sobretensiones tipo I+II		360,50
			TRESCIENTOS SESENTA EUROS CON CINCUENTA CÉNTIMOS	
380	P5ELECFA02A	ud Ud. Desmontaje y desconexión de línea, traslado a acopio y posterior montaje de nuevo en su lugar de ubicación una vez concluidas las obras de columnas de alumbrado público de altura de báculo H<=8.0m, con nueva construcción de pedestales de apoyo de dimensiones especificadas en planos, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición, instalación de toma tierra de cada báculo y conexionado a red de alumbrado. Incluye la sustitución y reposición de lámpara LED, así como partes perdidas, pernos y resto de elementos, operaciones de excavación y rellenos. Totalmente instalada, incluidas operaciones de desconexión y posterior conexionado		444,29
			CUATROCIENTOS CUARENTA Y CUATRO EUROS CON VEINTINUEVE CÉNTIMOS	
381	P5ELECFA06	ud Ud. báculo de 8 m. de altura con luminaria cerrada con lámpara 200 w. LED compuesta de: báculo troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; luminaria con reflector de aluminio tratado contra la corrosión, con equipo eléctrico incorporado, cierre de policarbonato; acoplamiento a poste en fundición de aluminio inyectado, IP-65; i/ lámpara . portalámparas, anclaje a dado de hormigón, puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión, tubo de unión, incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra compuesto por placa de 500x500x2 mm y/o pica 200/14.3, con unión de cable a siguiente báculo de 10m de cable desnudo de 16 mm ² , y uniones de 35 mm ² a báculo según normativa vigente y planos de detalle y conexionado a red de alumbrado, cableado interior 4x6mm ² +TT, conexionado a tendido eléctrico, operaciones de excavación y rellenos. Unidad totalmente instalada y probada, con emisión de certificado de luminosidad.		1.389,91

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			MIL TRESCIENTOS OCHENTA Y NUEVE EUROS CON NOVENTA Y UN CÉNTIMOS	
382	P5ELECGBT11	ud Suministro y montaje de módulo de alimentación, control y protección de Toma-11 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.		10.132,99
			DIEZ MIL CIENTO TREINTA Y DOS EUROS CON NOVENTA Y NUEVE CÉNTIMOS	
383	P5ELECGBT12	ud Suministro y montaje de módulo de alimentación, control y protección de Toma-12 en cabina/s de 2,0x0.8X0.6m normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.		10.195,82

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			DIEZ MIL CIENTO NOVENTA Y CINCO EUROS CON OCHENTA Y DOS CÉNTIMOS	
384	P5ELECGBT13	<p>ud Suministro y montaje de módulo de alimentación, control y protección de Toma-13 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>		10.195,82
			DIEZ MIL CIENTO NOVENTA Y CINCO EUROS CON OCHENTA Y DOS CÉNTIMOS	
385	P5ELECGBT13B	<p>ud Suministro y montaje de módulo de alimentación, control y protección de Toma-13b en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>		8.155,00

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			OCHO MIL CIENTO CINCUENTA Y CINCO EUROS	
386	P5ELECGBT14	<p>ud Suministro y montaje de módulo de alimentación, control y protección de Toma-14/15 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>		8.491,34
			OCHO MIL CUATROCIENTOS NOVENTA Y UN EUROS CON TREINTA Y CUATRO CÉNTIMOS	
387	P5ELECGBT16	<p>ud Suministro y montaje de módulo de alimentación, control y protección de Toma-14/15 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>		8.491,34

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			OCHO MIL CUATROCIENTOS NOVENTA Y UN EUROS CON TREINTA Y CUATRO CÉNTIMOS	
388	P5ELECGBT17	<p>ud Suministro y montaje de módulo de alimentación, control y protección de Toma-17 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>		10.132,99
			DIEZ MIL CIENTO TREINTA Y DOS EUROS CON NOVENTA Y NUEVE CÉNTIMOS	
389	P5ELECGBT18	<p>ud Suministro y montaje de módulo de alimentación, control y protección de Toma-18 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>		8.491,34

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			OCHO MIL CUATROCIENTOS NOVENTA Y UN EUROS CON TREINTA Y CUATRO CÉNTIMOS	
390	P5ELECGBT19	ud Suministro y montaje de módulo de alimentación, control y protección de Toma-19 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.		8.491,34
			OCHO MIL CUATROCIENTOS NOVENTA Y UN EUROS CON TREINTA Y CUATRO CÉNTIMOS	
391	P5ELECGBT1A	ud Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.		4.932,77
			CUATRO MIL NOVECIENTOS TREINTA Y DOS EUROS CON SETENTA Y SIETE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
392	P5ELECGBT20	<p>ud Suministro y montaje de módulo de alimentación, control y protección de Toma-20 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD,</p> <p>Pulsanería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>	OCHO MIL CUATROCIENTOS NOVENTA Y UN EUROS CON TREINTA Y CUATRO CÉNTIMOS	8.491,34
393	P5ELECGBT21	<p>ud Suministro y montaje de módulo de alimentación, control y protección de Toma-21 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD,</p> <p>Pulsanería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>	OCHO MIL CUATROCIENTOS NOVENTA Y UN	8.491,34

OCHO MIL CUATROCIENTOS NOVENTA Y UN

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			EUROS CON TREINTA Y CUATRO CÉNTIMOS	
394	P5ELECGBTDC	ud Suministro y montaje de módulo de alimentación, control y protección de Derivación Corella en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.		10.195,82
			DIEZ MIL CIENTO NOVENTA Y CINCO EUROS CON OCHENTA Y DOS CÉNTIMOS	
395	P5ELECGBTEPC2	ud Suministro y montaje de módulo de alimentación, control y protección de EPC-02 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.		7.814,67

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			SIETE MIL OCHOCIENTOS CATORCE EUROS CON SESENTA Y SIETE CÉNTIMOS	
396	P5ELECGEN125	<p>ud Generador eléctrico silencioso móvil de 125kVA/96kW según especificaciones técnicas definidas en el PPTP, incluido cuadro eléctrico, control y automatización.</p> <p>Motor: Motor diesel 4 tiempos Refrigerado por agua; Arranque eléctrico 24V; Radiador con ventilador so- plante; Filtro decantador (nivel no visible); Regulación electrónica; o Bulbos de ATA; Bulbos de BPA; Filtro de aire en seco; Protecciones de partes calientes; Pro- tecciones de partes móviles;; Sensor de nivel agua radiador</p> <p>Alternador: Autoexcitado y autorregulado; Protección IP23; Aislamiento clase H; Sistema Eléctrico; Cuadro eléctrico de control y potencia, con aparatos de medi- da y central de control ; Protección magnetotérmica te- trapola; Protección diferencial regulable (tiempo y sen- sibilidad) y con protección magnetotérmica; Carga- dor de batería (incluido en grupos con cuadro de ver- sión automática); Resistencia de caldeo (de serie en grupos con cuadro de versión automática); Alternador de carga de baterías con toma de tierra; Batería/s de arranque instaladas (incluye/n cables y soporte); Insta- lación eléctrica de toma de tierra, con conexión previs- ta para pica de tierra ; Desconector de batería/s;</p> <p>Conmutador: Armario IP55; Central; Parada de emergencia; Módulo de medida; Llave para con- mutación manual; Conmutador motorizado; Cone- xión a tierra; Zócalo para armarios >800A</p> <p>Cuadro Automático AS5 CEM 7 o similar y cuadro de conmutación con central CC2 o similar con contacto- res</p> <p>Cuadros - Reloj programador: Informa a la central de la fecha y hora actual. Permite la programación sema- nal de: - Arranques programados - Bloqueos programa- dos - Test de motor y mantenimientos programados - Ampliación del histórico de errores en + 100 - Contado- res de energía (día, mes, año)</p> <p>Cuadros - Teleseñal: Placa que dispone de comunica- ción CAN y 12 relés. - Relés: 4 de contacto conmuta- do y 8 de contacto simple - Permite activar elementos de señalización remotos - Permite la programación de los relés en función de las diferentes variables.</p> <p>Otros elementos: Chasis Acero ; Kit de extracción de aceite del cárter; Versatilidad para el montaje de cha- sis de gran capacidad con depósito metálico; Amorti- guadores antivibratorios; Tanque de combustible inte- grado en el chasis; Aforador de nivel de combustible; Pulsador parada de emergencia; Carrocería fabricada con chapa de alta calidad; Alta resistencia mecánica; o Bajo nivel de emisiones sonoras; Insonorización a ba- se de lana de roca volcánica de alta densidad;; Aca- bado superficial a base de polvo de poliéster epoxídico (ensayo de niebla salina superior a 1000h); Total acce- so a mantenimientos (agua, aceite y filtros sin desmon- tar capot); Gancho de izado reforzado para elevación con grúa; Chasis estanco (hace función de doble pared retención líquidos); Tapón drenaje depósito; Tapón dre- naje chasis; Chasis predispuesto para instalación de kit móvil; Silencioso residencial de acero de -35db(A); Vál- vula de 3 vías para trasiego de combustible (disponible con conexiones de 1/2" y de 3/8"); Bomba de trasiego de combustible</p> <p>Unidad totalmente instalada y probada</p>		15.877,32
			QUINCE MIL OCHOCIENTOS SETENTA Y SIETE EUROS CON TREINTA Y DOS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
397	P5ELECGMED	ud Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troqueado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexionado.		467,80
			CUATROCIENTOS SESENTA Y SIETE EUROS CON OCHENTA CÉNTIMOS	
398	P5ELECING01	ud Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.		4.648,90
			CUATRO MIL SEISCIENTOS CUARENTA Y OCHO EUROS CON NOVENTA CÉNTIMOS	
399	P5ELECLM1DC	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Derivación de Corella.		12.799,50
			DOCE MIL SETECIENTOS NOVENTA Y NUEVE EUROS CON CINCUENTA CÉNTIMOS	
400	P5ELECLM1EP02	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en EPC01.		10.361,50
			DIEZ MIL TRESCIENTOS SESENTA Y UN EUROS CON CINCUENTA CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
401	P5ELECLM1T12	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora Toma-12.	DIECISEIS MIL TRESCIENTOS VEINTIDOS EUROS CON CUARENTA Y UN CÉNTIMOS	16.322,41
402	P5ELECLM1T13	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-13	SIETE MIL SEISCIENTOS ONCE EUROS CON CUARENTA Y CUATRO CÉNTIMOS	7.611,44
403	P5ELECLM1T13B	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma 13b.	DIECINUEVE MIL DOSCIENTOS TREINTA Y CINCO EUROS CON OCHENTA Y DOS CÉNTIMOS	19.235,82
404	P5ELECLM1T16	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-16.	VEINTIDOS MIL NOVECIENTOS NOVENTA Y SEIS EUROS CON CUARENTA Y CUATRO CÉNTIMOS	22.996,44

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
405	P5ELECLM1T20	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-20	DIECIOCHO MIL QUINIENTOS OCHENTA Y NUEVE EUROS CON SETENTA Y CINCO CÉNTIMOS	18.589,75
406	P5ELECLM1T21	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-21.	CATORCE MIL NOVECIENTOS NOVENTA Y TRES EUROS CON SETENTA CÉNTIMOS	14.993,70
407	P5ELECLMT2	ud Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifaua Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.		4.165,13

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CUATRO MIL CIENTO SESENTA Y CINCO EUROS CON TRECE CÉNTIMOS	
408	P5ELECLMT2B	<p>ud Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por:</p> <ul style="list-style-type: none"> -Suministro y montaje de centro de transformación intertemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materia auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. <p>Unidad totalmente instalada.</p>		8.687,38

OCHO MIL SEISCIENTOS OCHENTA Y SIETE
EUROS CON TREINTA Y OCHO CÉNTIMOS

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
409	P5ELECLMT2C	<p>ud Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por:</p> <ul style="list-style-type: none"> -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. <p>Unidad totalmente instalada.</p>	SEIS MIL CINCUENTA Y DOS EUROS CON SESENTA Y OCHO CÉNTIMOS	6.052,68
410	P5ELECLMT3	<p>m Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado.</p> <p>Unidad totalmente terminada, colocada y probada.</p>	OCHO EUROS CON VEINTITRES CÉNTIMOS	8,23
411	P5ELECMT	<p>ud Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.</p>	TRES MIL CUARENTA Y CUATRO EUROS CON VEINTE CÉNTIMOS	3.044,20

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
412	P5ELECROZA	m Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.		7,64
			SIETE EUROS CON SESENTA Y CUATRO CÉNTIMOS	
413	P5ELECT1	ud Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.		144,43
			CIENTO CUARENTA Y CUATRO EUROS CON CUARENTA Y TRES CÉNTIMOS	
414	P5ELECT3	ud Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.		199,02
			CIENTO NOVENTA Y NUEVE EUROS CON DOS CÉNTIMOS	
415	P5ELECTT0	ud Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.		97,16
			NOVENTA Y SIETE EUROS CON DIECISEIS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
416	P5ELEF001	<p>ud Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 %</p> <p>Datos eléctricos de CA</p> <ul style="list-style-type: none"> - Modelo de inversor: IQ 7A A 230 V CA - Potencia máxima de salida 366 VA - Máx. potencia de salida continua 349 VA - Rango/Tensión nom. (LN) 219 264 V - Máx. corriente de salida continua 1,52 A - Máx. unidades por circuito derivado de 20 A (LN) <p>10</p> <ul style="list-style-type: none"> - Eficiencia ponderada 10 96,5 % - Frecuencia nominal 50 Hz - Rango de frecuencia ampliado 45-55 Hz - Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA <p>18 mA</p> <ul style="list-style-type: none"> - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA <p>18 mA</p> <ul style="list-style-type: none"> - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo <p>Datos de alimentación de CC</p> <ul style="list-style-type: none"> - Potencia nominal 11 (Pnom) 400 W - Tol. de potencia +5/0 % - Eficiencia del módulo 21,5 % - Coef. temp. (Potencia) -0,29 %/°C <p>Datos mecánicos</p> <ul style="list-style-type: none"> - Células solares 66 células monocristalinas Maxeon Generación 5 - Cristal frontal - Cristal templado antirreflejos de gran transmisividad - Clasificación ambiental Microinversor con clasificación para exteriores - IP67 - (UL: NEMA tipo 6) - Marco Anodizado negro de clase 1 <p>Caja de conexiones: IP65.</p> <p>Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión .</p> <p>Unidad totalmente instalada y operativa</p>	<p>SETECIENTOS TREINTA Y CUATRO EUROS CON CINCUENTA Y OCHO CÉNTIMOS</p>	734,58
417	P5ELEF002	<p>ud Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp.</p> <p>Unidad totalmente instalada y operativa</p>	<p>MIL CIENTO DIECINUEVE EUROS CON TREINTA Y SEIS CÉNTIMOS</p>	1.119,36

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
418	P5ELEF003	<p>ud Baterías de gel 200PZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora.</p> <p>Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento.</p> <p>Unidad totalmente instalada y probada.</p>		9.094,80
			NUEVE MIL NOVENTA Y CUATRO EUROS CON OCHENTA CÉNTIMOS	
419	P5ELEF004	<p>ud Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo electrógeno).</p> <p>Cumplirá:</p> <ul style="list-style-type: none"> - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretensión en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. <p>Características técnicas</p> <ul style="list-style-type: none"> - Entrada DC <ul style="list-style-type: none"> o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) <ul style="list-style-type: none"> o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal: 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. <p>Unidad totalmente instalada y probada.</p>		3.031,60
			TRES MIL TREINTA Y UN EUROS CON SESENTA CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
420	P5ELEF005	ud Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobrecalentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.	TRESCIENTOS CUARENTA Y NUEVE EUROS CON OCHENTA CÉNTIMOS	349,80
421	P5ELEF006	ud Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.	TRESCIENTOS TREINTA Y OCHO EUROS CON CATORCE CÉNTIMOS	338,14
422	P5ELEI200WEXT	ud Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	TRESCIENTOS TREINTA Y OCHO EUROS CON VEINTISIETE CÉNTIMOS	338,27
423	P5ELEI400LED	ud Proyector industrial les de 85 W cpn un flujo lumínico de 10500 Lm, con lámpara, totalmente instalado, incluso lámpara p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Antideflagrante. Unidad totalmente instalada.	SEISCIENTOS OCHENTA Y NUEVE EUROS CON	689,78

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			SETENTA Y OCHO CÉNTIMOS	
424	P5ELEI400WX2	ud Columna tronco-cónica de las siguientes características: Longitud: 12 metros Brazo en T para soportación de 2 proyectores. Material: Acero galvanizado Proyectores: 2 Uds Luminaria: Philips Tempo 3 MWF 330. Lámpara: 400W LED. incluida Completamente instalada, incluida obra civil (excavación, rellenos y cimentación)		1.788,87
			MIL SETECIENTOS OCHENTA Y OCHO EUROS CON OCHENTA Y SIETE CÉNTIMOS	
425	P5ELEIL1X60LE	ud Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de polipcarbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexiónado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.		199,70
			CIENTO NOVENTA Y NUEVE EUROS CON SETENTA CÉNTIMOS	
426	P5ELEIL1X61LE	ud Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexiónado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.		180,71
			CIENTO OCHENTA EUROS CON SETENTA Y UN CÉNTIMOS	
427	P5ELEILEMERG	ud Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o polipcarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.		65,09

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			SESENTA Y CINCO EUROS CON NUEVE CÉNTIMOS	
428	P5ELEM01	ud Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.		676,28
			SEISCIENTOS SETENTA Y SEIS EUROS CON VEINTIOCHO CÉNTIMOS	
429	P5ELEM1X150	m Cable 18/30 KV aislado en polietileno reticulado, tipo HEPRZ1 1x150 mm2 CU+H16 instalado bajo tubos, según memoria y pliegos. Totalmente montado.		27,30
			VEINTISIETE EUROS CON TREINTA CÉNTIMOS	
430	P5ELEM1X150A	m Manguera eléctrica HEPRZ1 1x150 mm2 A1+H16, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		16,98
			DIECISEIS EUROS CON NOVENTA Y OCHO CÉNTIMOS	
431	P5ELEM1X16TT	m Manguera eléctrica de 1 x 16 mm2, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		7,30
			SIETE EUROS CON TREINTA CÉNTIMOS	
432	P5ELEM1X25TT	m Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		9,46
			NUEVE EUROS CON CUARENTA Y SEIS CÉNTIMOS	
433	P5ELEM1X35TT	m Manguera eléctrica de 1 x 35 mm2 , aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		8,50
			OCHO EUROS CON CINCUENTA CÉNTIMOS	
434	P5ELEM1X50TT	m Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		14,03
			CATORCE EUROS CON TRES CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
435	P5ELEM1X70-2	m Manguera eléctrica apantallada de 1 x 70 mm ² , aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	CATORCE EUROS CON OCHENTA Y CUATRO CÉNTIMOS	14,84
436	P5ELEM1X95-2	m Manguera eléctrica apantallada de 1 x 95 mm ² , aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	DIECINUEVE EUROS CON OCHENTA Y CINCO CÉNTIMOS	19,85
437	P5ELEM1X95A	m Manguera eléctrica HEPRZ1 1x95mm ² A1+H16 flexible completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	DOCE EUROS CON OCHENTA Y NUEVE CÉNTIMOS	12,89
438	P5ELEM2X1.5T2	m Manguera eléctrica apantallada de 2 x 1.5 mm ² más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	SEIS EUROS CON VEINTISEIS CÉNTIMOS	6,26
439	P5ELEM2X2.5T2	m Manguera eléctrica apantallada de 2 x 2.5 mm ² más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	SEIS EUROS CON SETENTA Y OCHO CÉNTIMOS	6,78
440	P5ELEM2X2.5TT	m Manguera eléctrica de 2 x 2.5 mm ² más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	CINCO EUROS CON OCHENTA Y NUEVE CÉNTIMOS	5,89

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
441	P5ELEM2X4T2	m Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		7,17
SIETE EUROS CON DIECISIETE CÉNTIMOS				
442	P5ELEM2X4TT	m Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		6,11
SEIS EUROS CON ONCE CÉNTIMOS				
443	P5ELEM2X6T2	m Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		8,25
OCHO EUROS CON VEINTICINCO CÉNTIMOS				
444	P5ELEM3X1.5TT	m Manguera eléctrica de 3 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		5,84
CINCO EUROS CON OCHENTA Y CUATRO CÉNTIMOS				
445	P5ELEM3X2.5T2	m Manguera eléctrica apantallada de 3 x 2.5 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		6,93
SEIS EUROS CON NOVENTA Y TRES CÉNTIMOS				
446	P5ELEM3X4TT2	m Manguera eléctrica apantallada de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		7,02
SIETE EUROS CON DOS CÉNTIMOS				

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
447	P5ELEM3X6TT	m Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		6,05
			SEIS EUROS CON CINCO CÉNTIMOS	
448	P5ELEM4X10T2	m Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		11,30
			ONCE EUROS CON TREINTA CÉNTIMOS	
449	P5ELEM4X16T2	m Manguera eléctrica apantallada de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		14,42
			CATORCE EUROS CON CUARENTA Y DOS CÉNTIMOS	
450	P5ELEM4X16TT	m Manguera eléctrica de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		12,53
			DOCE EUROS CON CINCUENTA Y TRES CÉNTIMOS	
451	P5ELEM4X2.5T2	m Manguera eléctrica apantallada de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		7,58
			SIETE EUROS CON CINCUENTA Y OCHO CÉNTIMOS	
452	P5ELEM4X2.5TT	m Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.		6,59
			SEIS EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
453	P5ELEM4X25T2	m Manguera eléctrica apantallada de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	DIECISIETE EUROS CON NOVENTA Y OCHO CÉNTIMOS	17,98
454	P5ELEM4X25TT	m Manguera eléctrica de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	QUINCE EUROS CON SESENTA Y DOS CÉNTIMOS	15,62
455	P5ELEM4X50T2	m Manguera eléctrica apantallada de 4 x 50 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	CUARENTA Y UN EUROS CON CUARENTA Y SEIS CÉNTIMOS	41,46
456	P5ELEM4X6T2	m Manguera eléctrica apantallada de 4 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	ONCE EUROS CON CUARENTA Y SEIS CÉNTIMOS	11,46
457	P5ELEM4X6TT	m Manguera eléctrica de 4 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	NUEVE EUROS CON NOVENTA Y CINCO CÉNTIMOS	9,95
458	P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	MIL CUATROCIENTOS NOVENTA Y DOS EUROS	1.492,41

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CON CUARENTA Y UN CÉNTIMOS	
459	P5ELETRAF11	ud Puesta en servicio del telecontrol, incluyendo: <ul style="list-style-type: none">- Integración de la instalación en cada uno de los sistemas de concesionario eléctrico implicados en el proceso de todas las funcionalidades del Telecontrol, Control local y Automatismos del Centro de Seccionamiento- Configuración, parametrización y puesta en servicio de Terminal Remoto de Telecontrol, equipos de c/c., Relés de detección de Paso de Falta y demás elementos de la instalación- Generación de configuraciones, telecarga y comprobaciones de cada una de las bases de datos: históricas, cronológicas, de alarmas, de eventos y de medidas analógicas en el Terminal Remoto de Telecontrol, en el C.S. así como en las unidades centrales		4.197,60
			CUATRO MIL CIENTO NOVENTA Y SIETE EUROS CON SESENTA CÉNTIMOS	
460	P5ELETRAF12	ud Verificación de trabajos, incluyendo: <ul style="list-style-type: none">- Comprobación de la instalación, en lo que al telemando se refiere, de acuerdo al proyecto y documentación técnica aprobados- Supervisión del correcto conexionado de T/is y/o detectores de Paso de FALTA, Presencia de Tensión, etc en celdas de MT- Comprobación del esquema unifilar y rótulos para el telemando- Recepción de la Documentación de Adaptación al Telemando		331,53
			TRESCIENTOS TREINTA Y UN EUROS CON CINCUENTA Y TRES CÉNTIMOS	
461	P5ELETRAF13	ud Cuadro de alarmas y señalización de defectos del centros de transformación formado por armario metálico en chapa de acero. Conteniendo: 8 relés auxiliares. 1 fuente de alimentación normal-socorro 230/48 Vcc. con acumuladores Ni-Cd de 21 Ah, intensidad nominal 5 A. Automáticos de protección, bornas canalatas y pequeño material de montaje.		2.411,12
			DOS MIL CUATROCIENTOS ONCE EUROS CON DOCE CÉNTIMOS	
462	P5ELETRAF25	ud Transformador trifásico reductor de tensión (MT/BT) construido de acuerdo con UNE-EN 60076, dieléctrico éster natural biodegradable, de 50 kVA de potencia, tensión asignada 24 kV, tensión primario 20 kV, tensión de salida de 420 V entre fases en vacío o de 230/420 V entre fases en vacío, frecuencia 50 Hz, grupo de conexión Dyn 11, regulación en el primario + 2,5%, + 5%, + 7,5%, + 10%, protección propia del transformador con termómetro, para instalación interior o exterior, cuba de aletas, refrigeración natural (ONAN), conmutador de regulación maniobrable sin tensión, pasatapas MT de porcelana, pasabarras BT de porcelana, 2 terminales de tierra, dispositivo de vaciado y toma de muestras, dispositivo de llenado, placa de características y placa de seguridad e instrucciones de servicio, colocado.		2.297,89
			DOS MIL DOSCIENTOS NOVENTA Y SIETE EUROS CON OCHENTA Y NUEVE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
463	P5ELETRAF4D	ud Redes de puesta a tierra de protección general y servicio para el neutro, en centro de transformación, de acuerdo con lo indicado en la MIE-RAT-13, y normas de Cía Suministradora, formada la primera de ellas por cable de cobre desnudo de 50 mm2. de sección y la segunda por cable de cobre aislado, tipo RVde 0,6/1 kV, y 50 mm2 de sección y picas de tierra de acero cobrizado de 2 m.de longitud y 14 mm. de diámetro. Incluso material de conexión y fijación.		1.194,27
			MIL CIENTO NOVENTA Y CUATRO EUROS CON VEINTISIETE CÉNTIMOS	
464	P5ELETRAF4E	ud Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.		1.148,32
			MIL CIENTO CUARENTA Y OCHO EUROS CON TREINTA Y DOS CÉNTIMOS	
465	P5ELETRAF5A	ud Conjunto de material de protección y señalización transformador. Normalizado.		130,03
			CIENTO TREINTA EUROS CON TRES CÉNTIMOS	
466	P5ELETRAF5C	ud Equipamiento auxiliar para centro de transformación prefabricado comprendiendo los siguientes elementos: - 1 Red interior de tierras. - 4 Puntos de luz LED 53 W cada uno IP-55. - 2 Toma de corriente 16 Amp. - 1 Aparato autónomo de emergencia portátil equipado con interruptor. - 1 Conjunto de circuitos para alimentación a los anteriores equipos, ejecución superficie bajo tubo PVC. - 1 Par de guantes aislantes alojados en cofret. - 1 Banqueta aislante. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.		741,26
			SETECIENTOS CUARENTA Y UN EUROS CON VEINTISEIS CÉNTIMOS	
467	P5ELETRAF5E	ud Conjunto de accesorios de seguridad y maniobra constituido por una banqueta aislante, un extintor de eficacia 89B, guantes aislantes, pértiga aislante y armario de primeros auxilios, según Instrucciones Técnicas Complementarias del Reglamento sobre Condiciones Técnicas y Garantías de Seguridad en Centrales Eléctricas, Subestaciones y Centros de Transformación. B.O.E. 25-10-84, colocado.		430,58
			CUATROCIENTOS TREINTA EUROS CON CINCUENTA Y OCHO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
468	P5ELETRAF6	ud Celda de entrada/salida formada por módulo metálico tipo CGM-24 o similar de dimensiones aproximadas 1800mm de alto x 370mm de ancho x 850mm de tipo modular, envolvente de chapa de acero galvanizado, corte y aislamiento íntegro en SF6, intensidad nominal de 400 A/16 kA, con interruptor-seccionador rotativo tripolar de 3 posiciones (conectado, seccionado y puesta a tierra) con mando manual, captadores capacitivos para la detección de tensión y sistema de alarma sonora de puesta a tierra, colocada.		2.723,11
			DOS MIL SETECIENTOS VEINTITRES EUROS CON ONCE CÉNTIMOS	
469	P5ELETRAF7	ud Celda metálica de protección de transformador tipo CGM24 -CMP-F o similar ensayado contra una eventual inmersión, de dimensiones 1800 x 480 x 850mm de corte y aislamiento íntegro en SF6, de acuerdo a UNE CEI RU6407, instalada, conteniendo : 1 interruptor rotativo trifásico de tensión nominal 24 KV e In 400A y capacidad de cierre sobre cortocircuito 40KA, 3 portafusibles para cartuchos de 24 KV 3 cartuchos de fusibles de 24KV 1 seccionador de puesta a tierra, 1 relé de protección de transformador autoalimentado 51/50n 3 captadores toroidales de intensidad para protección de fase 3 captadores capacitivos de presencia de tensión 1 Ud embarrado para 400A 1 Ud Pletina de cobre 30 x 3mm 1 Ud Accesorios y pequeño material Unidad totalmente instalada		2.040,89
			DOS MIL CUARENTA EUROS CON OCHENTA Y NUEVE CÉNTIMOS	
470	P5ELETRAF7B	ud Celda metálica de protección general con interruptor automático, 24 kV o 20 KV, 400 A, lcc 16 kA, aislamiento en SF6, con interruptor automático en SF6 de 24 kV, 400 A, poder de corte 16 kA, con captadores de intensidad, relé de protección contra sobreintensidades de fase y homopolares, mando manual.		5.433,20
			CINCO MIL CUATROCIENTOS TREINTA Y TRES EUROS CON VEINTE CÉNTIMOS	
471	P5ELETRAF8	ud Celda de medida formada por módulo metálico CGM-24 de dimensiones 1800 x 800 x 1025 de fondo, conteniendo en su interior debidamente montado y conexionado : 3 transformadores de intensidad relación X/5A, tensión nominal 24KV, potencia de precisión 15VA, clase 0.5, 3 transformadores X/110V, Vn 24KV, potencia de precisión 50VA en clase 0.5. Acometida y salida con cable en seco, malla de protección quitamiedos abisagrada, carros extraíbles para el equipo de medida.		6.211,14
			SEIS MIL DOSCIENTOS ONCE EUROS CON CATORCE CÉNTIMOS	
472	P5ELETRAF9	ud Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalada y aprobado.		899,51
			OCHOCIENTOS NOVENTA Y NUEVE EUROS CON CINCUENTA Y UN CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
473	P5ELETT10	ud Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.		69,95
			SESENTA Y NUEVE EUROS CON NOVENTA Y CINCO CÉNTIMOS	
474	P5ELETT2	ud Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.		98,29
			NOVENTA Y OCHO EUROS CON VEINTINUEVE CÉNTIMOS	
475	P5ELETT4A	m Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.		7,88
			SIETE EUROS CON OCHENTA Y OCHO CÉNTIMOS	
476	P5ELETT5A	m Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada		7,08
			SIETE EUROS CON OCHO CÉNTIMOS	
477	P5ELETT5B	m Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.		10,99
			DIEZ EUROS CON NOVENTA Y NUEVE CÉNTIMOS	
478	P5ELETT7	ud Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.		12,58
			DOCE EUROS CON CINCUENTA Y OCHO CÉNTIMOS	
479	P5ELETT8	ud Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.		232,13
			DOSCIENTOS TREINTA Y DOS EUROS CON TRECE CÉNTIMOS	
480	P5ELETT9	ud Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.		258,71
			DOSCIENTOS CINCUENTA Y OCHO EUROS CON SETENTA Y UN CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
481	P5ELEZ110X6H	m Canalización hormigonada de 4x110mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada.	CINCUENTA Y TRES EUROS CON CINCUENTA Y CINCO CÉNTIMOS	53,55
482	P5ELEZ160X2H	m Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	SETENTA Y CUATRO EUROS CON CUARENTA Y NUEVE CÉNTIMOS	74,49
483	P5MBDTS1	m² Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.	TRES EUROS CON SESENTA Y CINCO CÉNTIMOS	3,65
484	P5MBS12.5	m² Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.		6,51

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			SEIS EUROS CON CINCUENTA Y UN CÉNTIMOS	
485	P5MBS20.7	m² Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.		6,87
			SEIS EUROS CON OCHENTA Y SIETE CÉNTIMOS	
486	P5PANT01	ud Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.		11.719,12
			ONCE MIL SETECIENTOS DIECINUEVE EUROS CON DOCE CÉNTIMOS	
487	P5PANT02	ud Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.		3.324,51
			TRES MIL TRESCIENTOS VEINTICUATRO EUROS CON CINCUENTA Y UN CÉNTIMOS	
488	P5PANT03	ud Desmontaje final de pantallas y transporte a punto de origen. Unidad completa.		11.719,12
			ONCE MIL SETECIENTOS DIECINUEVE EUROS CON DOCE CÉNTIMOS	
489	P5PAV1A	m² Solado de baldosas de hidráulicas de 20 x 20 gris o color (a criterio de la Dirección Facultativa), colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.		29,57
			VEINTINUEVE EUROS CON CINCUENTA Y SIETE CÉNTIMOS	
490	P5PAV1B	m² Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.		30,06

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			TREINTA EUROS CON SEIS CÉNTIMOS	
491	P5PAV1C	m ² Solado de baldosas de hidráulicas de dimensión múltiple gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso biselados, rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20 y 15 cm de zahorra artificial, unidad totalmente terminada.		33,62
			TREINTA Y TRES EUROS CON SESENTA Y DOS CÉNTIMOS	
492	P5PAVFRES	m ² cmMetro cuadrado por centímetro de espesor, de fresado de pavimento asfáltico con máquina fresadora o levantapavimentos, incluso precorte previo y carga de productos y limpieza, así como trabajos preparatorios para extendido de MB, incluido transporte a vertedero autorizado y canon de vertido.		0,71
			CERO EUROS CON SETENTA Y UN CÉNTIMOS	
493	P5PAVHF36	m ² Pavimento de hormigón hf-4,0/p/20/iic+e de 20 cm de espesor mínimo. incluso extendido, encofrado de borde, regleado, vibrado, fratasado o pulido a máquina, corte de junta sellada y curado con producto filmógeno. Pasantes en juntas de dilatación y armadura de piel 5/20-20.		19,01
			DIECINUEVE EUROS CON UN CÉNTIMOS	
494	P5PAVHM20B	m ² Pavimento de hormigón HM-20 de 15 cm de espesor mínimo en acerados ruleteado con terminación estética, extendido, encofrado de borde, regleado, vibrado, fratasado a máquina, corte de junta sellada y curado con producto filmógeno. preparación de base de apoyo y aportación de 15 cm de zahorra artificial compactada al 95% del PN . Unidad totalmente terminada.		23,68
			VEINTITRES EUROS CON SESENTA Y OCHO CÉNTIMOS	
495	P5PUERTA1A	ud Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.		160,67

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CIENTO SESENTA EUROS CON SESENTA Y SIETE CÉNTIMOS	
496	P5PUERTA1B	ud Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.		638,04
			SEISCIENTOS TREINTA Y OCHO EUROS CON CUATRO CÉNTIMOS	
497	P6CD.1000.16	ud Carrete telescópico autoportante, PN 16 atm, DN 1.000 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		3.025,67
			TRES MIL VEINTICINCO EUROS CON SESENTA Y SIETE CÉNTIMOS	
498	P6CD.1000.25	ud Carrete telescópico autoportante, PN 25 atm, DN 1.000 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		6.732,81
			SEIS MIL SETECIENTOS TREINTA Y DOS EUROS CON OCHENTA Y UN CÉNTIMOS	
499	P6CD.1100.16	ud Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		3.385,65
			TRES MIL TRESCIENTOS OCHENTA Y CINCO EUROS CON SESENTA Y CINCO CÉNTIMOS	
500	P6CD.1300.16	ud Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		4.193,90
			CUATRO MIL CIENTO NOVENTA Y TRES EUROS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
CON NOVENTA CÉNTIMOS				
501	P6CD.150.16	ud Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.		156,55
CIENTO CINCUENTA Y SEIS EUROS CON CINCUENTA Y CINCO CÉNTIMOS				
502	P6CD.150.25	ud Carrete de desmontaje de diametro 150 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.		241,57
DOSCIENTOS CUARENTA Y UN EUROS CON CINCUENTA Y SIETE CÉNTIMOS				
503	P6CD.1500.16	ud Carrete telescópico autoportante, PN 16 atm, DN 1.500 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		4.794,39
CUATRO MIL SETECIENTOS NOVENTA Y CUATRO EUROS CON TREINTA Y NUEVE CÉNTIMOS				
504	P6CD.1600.16	ud Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		5.121,93
CINCO MIL CIENTO VEINTIUN EUROS CON NOVENTA Y TRES CÉNTIMOS				
505	P6CD.1800.16	ud Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		5.842,52
CINCO MIL OCHOCIENTOS CUARENTA Y DOS EUROS CON CINCUENTA Y DOS CÉNTIMOS				

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
506	P6CD.1800.25	ud Carrete telescópico autoportante, PN 25 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	ONCE MIL TRESCIENTOS NOVENTA Y UN EUROS CON CINCUENTA Y SEIS CÉNTIMOS	11.391,56
507	P6CD.1900.25	ud Carrete telescópico autoportante, PN 25 atm, DN 1.900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	DOCE MIL SEISCIENTOS CUARENTA Y SEIS EUROS CON VEINTIUN CÉNTIMOS	12.646,21
508	P6CD.200.16	ud Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	CIENTO OCHENTA Y OCHO EUROS CON TREINTA CÉNTIMOS	188,30
509	P6CD.200.25	ud Carrete de desmontaje de diametro 200 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	DOSCIENTOS NOVENTA Y TRES EUROS CON CINCUENTA Y UN CÉNTIMOS	293,51
510	P6CD.2200.16	ud Carrete telescópico autoportante, PN 25 atm, DN2.200 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	SEIS MIL NOVECIENTOS NOVENTA Y UN EUROS CON NUEVE CÉNTIMOS	6.991,09

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
511	P6CD.250.16	ud Carrete de desmontaje de diametro 250 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	DOSCIENTOS OCHO EUROS CON OCHENTA Y SEIS CÉNTIMOS	208,86
512	P6CD.250.25	ud Carrete de desmontaje de diametro 250 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	TRESCIENTOS VEINTICINCO EUROS CON TREINTA Y UN CÉNTIMOS	325,31
513	P6CD.300.16	ud Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	DOSCIENTOS OCHENTA Y SIETE EUROS CON CATORCE CÉNTIMOS	287,14
514	P6CD.300.25	ud Carrete de desmontaje de diametro 300 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	TRESCIENTOS CUARENTA Y TRES EUROS CON TREINTA Y TRES CÉNTIMOS	343,33
515	P6CD.400.16	ud Carrete de desmontaje de acero de 400 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	CUATROCIENTOS DIECISEIS EUROS CON TREINTA CÉNTIMOS	416,30

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
516	P6CD.500.16	ud Carrete de desmontaje de acero de 500 mm de diámetro PN16, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.		456,33
			CUATROCIENTOS CINCUENTA Y SEIS EUROS CON TREINTA Y TRES CÉNTIMOS	
517	P6CD.500.25	ud Carrete de desmontaje de acero de 500 mm de diámetro PN25, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.		807,61
			OCHOCIENTOS SIETE EUROS CON SESENTA Y UN CÉNTIMOS	
518	P6CD.700.16	ud Carrete de desmontaje de diámetro 700 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.		1.051,41
			MIL CINCUENTA Y UN EUROS CON CUARENTA Y UN CÉNTIMOS	
519	P6CD.800.16	ud Carrete telescópico autoportante, PN 16 atm, DN 800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		1.846,53
			MIL OCHOCIENTOS CUARENTA Y SEIS EUROS CON CINCUENTA Y TRES CÉNTIMOS	
520	P6CD.800.25	ud Carrete telescópico autoportante, PN 25 atm, DN 800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		5.667,83
			CINCO MIL SEISCIENTOS SESENTA Y SIETE EUROS CON OCHENTA Y TRES CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
521	P6CD900.16	ud Carrete telescópico autoportante, PN 16 atm, DN 900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.		2.383,95
			DOS MIL TRESCIENTOS OCHENTA Y TRES EUROS CON NOVENTA Y CINCO CÉNTIMOS	
522	P6COMPBU_E	ud Compuerta Bureau con las siguientes características. Accionamiento: HIDRAULICO Cuerpo: S275JR + 304 Obturador: S275JR+304+BRONCE Cierre: INOX-BRONCE Brida: PN 10 Anchura: 1700 Altura: 2200 : Presión trabajo real: 95 mca Presión diseño: 95 mca Presión prueba cuerpo: 142,5 mca Presión prueba cierre: 104,5 mca La compuerta incluye lo siguiente: - By-pass DN 150 compuesto por 2 válvulas de compuerta. - Sistema de aireación DN 300 compuesto por 2 válvulas de compuertas + 2 válvulas de ventosa. - Grupo hidráulico (1 para 2 compuertas BU). - Panel de control (1 para 2 compuertas BU). - Repuestos recomendados. Totalmente colocada.		330.854,89
			TRESCIENTOS TREINTA MIL OCHOCIENTOS CINCUENTA Y CUATRO EUROS CON OCHENTA Y NUEVE CÉNTIMOS	
523	P6CR.100.25	ud Conexión rápida de desagües DN 100.		77,66
			SETENTA Y SIETE EUROS CON SESENTA Y SEIS CÉNTIMOS	
524	P6CUN-09_E	m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0.3 m a 0.5, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.		3,03
			TRES EUROS CON TRES CÉNTIMOS	
525	P6DT001	ud Reposición y mantenimiento señalítica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.		3.815,36
			TRES MIL OCHOCIENTOS QUINCE EUROS CON TREINTA Y SEIS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
526	P6FG.250.16	ud Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.		3.503,59
			TRES MIL QUINIENTOS TRES EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	
527	P6FG.400.16	ud Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.		8.554,76
			OCHO MIL QUINIENTOS CINCUENTA Y CUATRO EUROS CON SETENTA Y SEIS CÉNTIMOS	
528	P6HINC.T01	m³ Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).		79,21
			SETENTA Y NUEVE EUROS CON VEINTIUN CÉNTIMOS	
529	P6HINC.T02	m³ Resina de silicatos inyectada en el terreno para consolidación en túneles e impermeabilización i/ rechazo.		1.008,75
			MIL OCHO EUROS CON SETENTA Y CINCO CÉNTIMOS	
530	P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada		18,53
			DIECIOCHO EUROS CON CINCUENTA Y TRES CÉNTIMOS	
531	P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.		18,49
			DIECIOCHO EUROS CON CUARENTA Y NUEVE CÉNTIMOS	
532	P6HINCA03A	ud Equipo de auscultación de seguimiento de túnel carretera de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.		12.184,91
			DOCE MIL CIENTO OCHENTA Y CUATRO EUROS CON NOVENTA Y UN CÉNTIMOS	
533	P6HINCA03B	ud Equipo de auscultación de seguimiento de túnel bajo río de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.		4.977,93
			CUATRO MIL NOVECIENTOS SETENTA Y SIETE EUROS CON NOVENTA Y TRES CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
534	P6HINCA03C	ud Equipo de auscultación de seguimiento de túnel del cerro de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes. Todo conforme Plan de Auscultación y requerimientos de Organismo.	CINCO MIL CUATROCIENTOS VEINTISIETE EUROS CON CUARENTA Y UN CÉNTIMOS	5.427,41
535	P6HINCA04	ud Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes. Todo conforme Plan de Auscultación y requerimientos de Organismo.	CUATRO MIL OCHOCIENTOS VEINTIUN EUROS CON NOVENTA Y OCHO CÉNTIMOS	4.821,98
536	P6HINCA05	ud Equipo de vigilancia FFCC de ADIF, incluido pago de tasas.	DOCE MIL CUATROCIENTOS CINCUENTA Y CINCO EUROS	12.455,00
537	P6HINCA2000A1	ud Implantación y transporte de equipo perforador de escudo cerrado, para hincas de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.	CUARENTA MIL DOSCIENTOS OCHENTA EUROS	40.280,00
538	P6HINCA2000A2	ud Retirada completa de obra y transporte a punto de origen de proveedor de equipo perforador de escudo cerrado, para hincas de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.	CUARENTA MIL DOSCIENTOS OCHENTA EUROS	40.280,00
539	P6HINCA2000A3	ud Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hincas, mano de obra para descarga, montaje y puesta a punto.	DIECISEIS MIL NOVECIENTOS SESENTA EUROS	16.960,00
540	P6HINCA2000B	m Tubería hincada de DN 2.000 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.		2.333,34

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			DOS MIL TRESCIENTOS TREINTA Y TRES EUROS CON TREINTA Y CUATRO CÉNTIMOS	
541	P6HINCA2000B1	ud Implantación y transporte de equipo perforador de escudo abierto, para hincas de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.		4.028,00
			CUATRO MIL VEINTIOCHO EUROS	
542	P6HINCA2000B2	ud Retirada completa de obra y transporte de equipo perforador de escudo abierto, para hincas de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.		4.028,00
			CUATRO MIL VEINTIOCHO EUROS	
543	P6HINCA2000B3	ud Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hincas, mano de obra para descarga, montaje y puesta a punto.		2.650,00
			DOS MIL SEISCIENTOS CINCUENTA EUROS	
544	P6HINCA2500A	m Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.		4.183,69
			CUATRO MIL CIENTO OCHENTA Y TRES EUROS CON SESENTA Y NUEVE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
545	P6HINCA2500B	m Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenar el gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.		2.703,81
			DOS MIL SETECIENTOS TRES EUROS CON OCHENTA Y UN CÉNTIMOS	
546	P6HINCATUB01	m Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hincas de DN 2.000 y 2.500 mm recta o curva, mediante instalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.		90,10
			NOVENTA EUROS CON DIEZ CÉNTIMOS	
547	P6MAN01	ud Suministro, instalación y puesta en servicio de manómetro en baño de glicerina, escala 0-6 y 0-10 kg/cm2, sistema de medida Bourdon, diámetro 100 mm 1/2" montado y probado.		70,08
			SETENTA EUROS CON OCHO CÉNTIMOS	
548	P6PM100INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 100mm de diámetro.		97,07
			NOVENTA Y SIETE EUROS CON SIETE CÉNTIMOS	
549	P6PM150INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 150mm de diámetro.		175,86
			CIENTO SETENTA Y CINCO EUROS CON OCHENTA Y SEIS CÉNTIMOS	
550	P6PM250INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 250 mm de diámetro.		217,13
			DOSCIENTOS DIECISIETE EUROS CON TRECE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
551	P6PM300INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	DOSCIENTOS CINCUENTA Y TRES EUROS CON TRES CÉNTIMOS	253,03
552	P6PM400INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 400mm de diámetro.	TRESCIENTOS SEIS EUROS CON CUARENTA Y CUATRO CÉNTIMOS	306,44
553	P6PM500INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 500mm de diámetro.	CUATROCIENTOS VEINTE EUROS CON VEINTICINCO CÉNTIMOS	420,25
554	P6PRES01	ud Suministro, instalación y puesta en servicio de Transductor de presión con salida analógica, alimentación eléctrica a 24Vcc, con técnica de 2 ó 4 hilos, con precisión mejor del 0,1%, IP 67, indicación digital de medida en frontal del equipo, señal de salida 4-20 mA, totalmente instalado y probado.	TRESCIENTOS OCHENTA Y CINCO EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	385,59
555	P6Q1100.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.100 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	SIETE MIL CUATROCIENTOS CUARENTA Y UN EUROS CON OCHENTA Y SEIS CÉNTIMOS	7.441,86
556	P6Q1300.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	ONCE MIL CUATROCIENTOS CUARENTA Y TRES EUROS CON NUEVE CÉNTIMOS	11.443,09

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
557	P6Q1600.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.600 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio	DIECISEIS MIL DOSCIENTOS TREINTA Y SIETE EUROS CON VEINTINUEVE CÉNTIMOS	16.237,29
558	P6Q300.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	TRES MIL QUINIENTOS SESENTA Y UN EUROS CON DIECISIETE CÉNTIMOS	3.561,17
559	P6Q500.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 500 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	CUATRO MIL CUATROCIENTOS NOVENTA Y UN EUROS CON TREINTA Y OCHO CÉNTIMOS	4.491,38
560	P6Q700.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 700 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	CINCO MIL SESENTA Y UN EUROS CON TREINTA CÉNTIMOS	5.061,30

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
561	P6Q800.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 800 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	CINCO MIL CIENTO OCHENTA EUROS CON CINCUENTA Y TRES CÉNTIMOS	5.180,53
562	P6Q800.25	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 800 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 25, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	CINCO MIL SETECIENTOS OCHENTA Y NUEVE EUROS CON SETENTA Y CINCO CÉNTIMOS	5.789,75
563	P6Q900.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 900 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	SEIS MIL CIENTO SESENTA Y TRES EUROS CON QUINCE CÉNTIMOS	6.163,15
564	P6RSBIONDA1	m Levantado y desmontaje de barrera de seguridad existente, incluida retirada de perfiles, anclajes y macizos, con acopio y posterior reposición completa.	DIECIOCHO EUROS CON OCHENTA Y CUATRO CÉNTIMOS	18,84
565	P6SENS01	ud Suministro, instalación y puesta en servicio de sensor de humedad e inundación, alimentación eléctrica a 24Vcc, incluso 15 m de tubo PVC y cable de conexión, totalmente instalado y probado.	TRESCIENTOS NOVENTA EUROS CON VEINTISEIS CÉNTIMOS	390,26

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
566	P6SÑL-001	ud Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.		64,56
			SESENTA Y CUATRO EUROS CON CINCUENTA Y SEIS CÉNTIMOS	
567	P6SÑL-002	ud Señal circular de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.		118,86
			CIENTO DIECIOCHO EUROS CON OCHENTA Y SEIS CÉNTIMOS	
568	P6SÑL-002A	ud Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.		92,53
			NOVENTA Y DOS EUROS CON CINCUENTA Y TRES CÉNTIMOS	
569	P6SÑL-003B	ud Señal cuadrada de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.		92,56
			NOVENTA Y DOS EUROS CON CINCUENTA Y SEIS CÉNTIMOS	
570	P6SÑL-004	ud Señal octogonal de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.		119,59
			CIENTO DIECINUEVE EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	
571	P6SÑL-010	m² Suministro y colocación de panel de lamas de aluminio extrusionado reflexivo, incluso postes de sustentación en perfil laminado y galvanizado, de dimensiones adecuadas a la superficie del cartel, placa de anclaje y cimentación de hormigón ligeramente armado, totalmente colocado.		367,06
			TRESCIENTOS SESENTA Y SIETE EUROS CON SEIS CÉNTIMOS	
572	P6SÑL-020	m Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada.		125,35
			CIENTO VEINTICINCO EUROS CON TREINTA Y CINCO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
573	P6SÑL-030	ud Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	33,52	
			TREINTA Y TRES EUROS CON CINCUENTA Y DOS CÉNTIMOS	
574	P6SÑL-031	ud Suministro y colocación de panel direccional provisional reflectante TB5 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	30,55	
			TREINTA EUROS CON CINCUENTA Y CINCO CÉNTIMOS	
575	P6SÑL-040	ud Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	27,16	
			VEINTISIETE EUROS CON DIECISEIS CÉNTIMOS	
576	P6SÑL-050	ud Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ...) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	29,28	
			VEINTINUEVE EUROS CON VEINTIOCHO CÉNTIMOS	
577	P6SÑL-060	ud Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	45,18	
			CUARENTA Y CINCO EUROS CON DIECIOCHO CÉNTIMOS	
578	P6SÑL-080	ud Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.	6,06	
			SEIS EUROS CON SEIS CÉNTIMOS	
579	P6SÑL-090	ud Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.	10,73	
			DIEZ EUROS CON SETENTA Y TRES CÉNTIMOS	
580	P6SÑL-092	ud Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.	14,97	
			CATORCE EUROS CON NOVENTA Y SIETE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
581	P6SÑL-100	m Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco lastrable, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico	VEINTINUEVE EUROS CON NOVENTA Y CINCO CÉNTIMOS	29,95
582	P6SÑL-102	m Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.	CINCUENTA Y SIETE EUROS CON CUARENTA Y CUATRO CÉNTIMOS	57,44
583	P6SÑL-110	ud Semáforo portátil con mutado. Desvíos de obra	SETECIENTOS CUARENTA Y UN EUROS CON DIECISIETE CÉNTIMOS	741,17
584	P6SÑL-PINT10	m Ml. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	UN EUROS CON DIECINUEVE CÉNTIMOS	1,19
585	P6SÑL-PINT10B	m Ml. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	CERO EUROS CON SESENTA Y SEIS CÉNTIMOS	0,66
586	P6SÑL-PINT10C	m Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final	UN EUROS CON CINCUENTA Y SIETE CÉNTIMOS	1,57
587	P6SÑL-PINT15	m Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	UN EUROS CON CUARENTA Y SEIS CÉNTIMOS	1,46
588	P6SÑL-PINTS	m² Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.	DIEZ EUROS CON VEINTISEIS CÉNTIMOS	10,26

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
589	P6TUBPE090.16	m Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 90 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.		7,34
SIETE EUROS CON TREINTA Y CUATRO CÉNTIMOS				
590	P6TUBPE110.16	m Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 110 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.		10,07
DIEZ EUROS CON SIETE CÉNTIMOS				
591	P6TUBPE160.16	m Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.		19,35
DIECINUEVE EUROS CON TREINTA Y CINCO CÉNTIMOS				
592	P6VALV1	ud Válvulas de tipo bola de 1", piezas T y conexiones, totalmente instalado y probado.		45,00
CUARENTA Y CINCO EUROS				
593	P6VC.080.16	ud Válvula de compuerta enterrada con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo bridas y tornillería; presión de trabajo hasta 16 atm, para diámetro de 80 mm, instalada.Especificaciones s/ PPTP.		96,43
NOVENTA Y SEIS EUROS CON CUARENTA Y TRES CÉNTIMOS				
594	P6VC.100.16	ud Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 100 mm, instalada.		189,51
CIENTO OCHENTA Y NUEVE EUROS CON CINCUENTA Y UN CÉNTIMOS				
595	P6VC.150.16	ud Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada.		338,98

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			TRESCIENTOS TREINTA Y OCHO EUROS CON NOVENTA Y OCHO CÉNTIMOS	
596	P6VC.200.16	ud Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 200 mm, instalada.		660,87
			SEISCIENTOS SESENTA EUROS CON OCHENTA Y SIETE CÉNTIMOS	
597	P6VC300.16	ud Válvula de compuerta con lenteja de asiento elástico, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 300 mm instalada.		858,24
			OCHOCIENTOS CINCUENTA Y OCHO EUROS CON VEINTICUATRO CÉNTIMOS	
598	P6VC400.16	ud Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 400 mm, instalada.		934,54
			NOVECIENTOS TREINTA Y CUATRO EUROS CON CINCUENTA Y CUATRO CÉNTIMOS	
599	P6VD.150.25	ud Válvula dilatadora y compensadora de goma de DN 150 PN25. Unidad totalmente instalada.		267,92
			DOSCIENTOS SESENTA Y SIETE EUROS CON NOVENTA Y DOS CÉNTIMOS	
600	P6VD.200.25	ud Válvula dilatadora y compensadora de goma de DN 200 PN25. Unidad totalmente instalada.		320,92
			TRESCIENTOS VEINTE EUROS CON NOVENTA Y DOS CÉNTIMOS	
601	P6VD.250.25	ud Válvula dilatadora y compensadora de goma de DN 250 PN25. Unidad totalmente instalada.		448,12
			CUATROCIENTOS CUARENTA Y OCHO EUROS CON DOCE CÉNTIMOS	
602	P6VD.300.25	ud Válvula dilatadora y compensadora de goma de DN 300 PN25. Unidad totalmente instalada.		564,72
			QUINIENTOS SESENTA Y CUATRO EUROS CON SETENTA Y DOS CÉNTIMOS	
603	P6VD.500.25	ud Compensador de dilatación de goma de DN 300 PN25 embridado en extremos. Unidad totalmente instalada.		829,72
			OCHOCIENTOS VEINTINUEVE EUROS CON SETENTA Y DOS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
604	P6VENT.025.16	ud Suministro e instalación de ventosa trifuncional, DN 25 mm PN16 con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	CIENTO OCHENTA Y SIETE EUROS CON OCHENTA Y DOS CÉNTIMOS	187,82
605	P6VENT.050.16	ud Suministro e instalación de ventosa trifuncional, DN 50 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	DOSCIENTOS VEINTINUEVE EUROS CON SETENTA Y UN CÉNTIMOS	229,71
606	P6VENT.080.16	ud Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	TRESCIENTOS NOVENTA Y SIETE EUROS CON TREINTA Y NUEVE CÉNTIMOS	397,39
607	P6VENT.150.16	ud Suministro e instalación de ventosa trifuncional, DN 150 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	MIL SETENTA Y UN EUROS CON NOVENTA Y CINCO CÉNTIMOS	1.071,95
608	P6VENT.200.16	ud Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.		3.199,43

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			TRES MIL CIENTO NOVENTA Y NUEVE EUROS CON CUARENTA Y TRES CÉNTIMOS	
609	P6VENT.200.25	ud Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.		3.601,10
			TRES MIL SEISCIENTOS UN EUROS CON DIEZ CÉNTIMOS	
610	P6VENT.250.16	ud Suministro e instalación de ventosa trifuncional, DN 250 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.		4.684,49
			CUATRO MIL SEISCIENTOS OCHENTA Y CUATRO EUROS CON CUARENTA Y NUEVE CÉNTIMOS	
611	P6VM.1000.16M	ud Válvula de mariposa, DN 1000 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.		27.583,55
			VEINTISIETE MIL QUINIENTOS OCHENTA Y TRES EUROS CON CINCUENTA Y CINCO CÉNTIMOS	
612	P6VM.1000.25M	ud Válvula de mariposa, DN 1000 mm, PN 25, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.		35.662,87
			TREINTA Y CINCO MIL SEISCIENTOS SESENTA Y DOS EUROS CON OCHENTA Y SIETE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
613	P6VM.1100.16M	ud Válvula de mariposa, DN 1100 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	TREINTA Y UN MIL SEISCIENTOS VEINTITRES EUROS CON VEINTIUN CÉNTIMOS	31.623,21
614	P6VM.1300.16M	ud Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	TREINTA Y NUEVE MIL NOVECIENTOS VEINTE EUROS CON OCHENTA Y NUEVE CÉNTIMOS	39.920,89
615	P6VM.1500.16M	ud Válvula de mariposa, DN 1500 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	CUARENTA Y OCHO MIL DOSCIENTOS DIECIOCHO EUROS CON CINCUENTA Y SIETE CÉNTIMOS	48.218,57
616	P6VM.1600.16M	ud Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	CINCUENTA Y DOS MIL SEISCIENTOS NOVENTA Y CUATRO EUROS CON NOVENTA Y CINCO CÉNTIMOS	52.694,95
617	P6VM.1800.16M	ud Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	SESENTA Y DOS MIL CUATROCIENTOS CINCUENTA Y CINCO EUROS CON SESENTA Y CINCO CÉNTIMOS	62.455,65

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
618	P6VM.1800.25M	ud Válvula de mariposa, DN 1800 mm, PN 25, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	SETENTA Y OCHO MIL VEINTICUATRO EUROS CON SETENTA Y UN CÉNTIMOS	78.024,71
619	P6VM.1900.16M	ud Válvula de mariposa, DN 1900 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	SESENTA Y SIETE MIL SEISCIENTOS OCHO EUROS CON NOVENTA Y CUATRO CÉNTIMOS	67.608,94
620	P6VM.200.16	ud Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	SETECIENTOS DOCE EUROS CON NOVENTA Y DOS CÉNTIMOS	712,92
621	P6VM.200.25	ud Válvula de mariposa, DN 200 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	NOVECIENTOS CINCUENTA Y SIETE EUROS CON TREINTA Y DOS CÉNTIMOS	957,32
622	P6VM.2200.16M	ud Válvula de mariposa, DN 2200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	OCHENTA MIL CUATROCIENTOS CUATRO EUROS CON OCHENTA Y CUATRO CÉNTIMOS	80.404,84
623	P6VM.250.16	ud Válvula de mariposa, DN 250 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.		868,80

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			OCHOCIENTOS SESENTA Y OCHO EUROS CON OCHENTA CÉNTIMOS	
624	P6VM.250.25	ud Válvula de mariposa, DN 250 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.		1.114,79
			MIL CIENTO CATORCE EUROS CON SETENTA Y NUEVE CÉNTIMOS	
625	P6VM.300.16	ud Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.		1.341,59
			MIL TRESCIENTOS CUARENTA Y UN EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	
626	P6VM.300.25	ud Válvula de mariposa, DN 300 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.		1.804,30
			MIL OCHOCIENTOS CUATRO EUROS CON TREINTA CÉNTIMOS	
627	P6VM.500.25	ud Válvula de mariposa, DN 500 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.		3.308,68
			TRES MIL TRESCIENTOS OCHO EUROS CON SESENTA Y OCHO CÉNTIMOS	
628	P6VM.700.16M	ud Válvula de mariposa, DN 700 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.		11.272,06
			ONCE MIL DOSCIENTOS SETENTA Y DOS EUROS CON SEIS CÉNTIMOS	
629	P6VM.900.16M	ud Válvula de mariposa, DN 900 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.		15.792,11

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			QUINCE MIL SETECIENTOS NOVENTA Y DOS EUROS CON ONCE CÉNTIMOS	
630	P6VO.200.25	ud Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.		7.057,71
			SIETE MIL CINCUENTA Y SIETE EUROS CON SETENTA Y UN CÉNTIMOS	
631	P6VO.250.25	ud Válvula de regulación de globo, de paso recto de 250 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.		9.132,13
			NUEVE MIL CIENTO TREINTA Y DOS EUROS CON TRECE CÉNTIMOS	
632	P6VO.300.25	ud Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.		13.496,06
			TRECE MIL CUATROCIENTOS NOVENTA Y SEIS EUROS CON SEIS CÉNTIMOS	
633	P6VO.500.25	ud Válvula de regulación de globo, de paso recto de 500 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.		35.116,97
			TREINTA Y CINCO MIL CIENTO DIECISEIS EUROS CON NOVENTA Y SIETE CÉNTIMOS	
634	P6VP.250.25	ud Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.		13.910,46
			TRECE MIL NOVECIENTOS DIEZ EUROS CON CUARENTA Y SEIS CÉNTIMOS	
635	P6VP.400.25	ud Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.		26.725,82
			VEINTISEIS MIL SETECIENTOS VEINTICINCO EUROS CON OCHENTA Y DOS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
636	P6VREG750	ud Válvula de control de operación hidráulica (no eléctrica) y accionada por diafragma modelo WW-30"-M5L-753-66-55-18-G-C-16-EV-NN-JU o similar, DN750 (30") PN16, limitadora de caudal dinámica con doble solenoide de circuito de 3 vías (sin pérdida de carga adicional a la válvula (no orificio calibrado) especialmente diseñada para limitar un caudal dinámica, independientemente de las variaciones de la presión de entrada con solenoide extra para cambio a circuito hidráulico mantenedor de presión y control de nivel de balsa por piloto de altitud. Incluso actuador	CIENTO TREINTA Y UN MIL CIENTO NOVENTA Y CINCO EUROS CON TREINTA Y SIETE CÉNTIMOS	131.195,37
637	P71COMSAHI1	ud Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.	CUATROCIENTOS OCHENTA Y CUATRO EUROS CON SETENTA Y OCHO CÉNTIMOS	484,78
638	P71COMSAHI2	ud Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y bypass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación: 1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min 1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para bypass manual del SAI 1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos 1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI 1.00 Protección Magnetotérmica II 10A 6kA. Protección foma de enchufe e instrumentación 4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación. Totalmente instalado, conexionado y funcionando. Unidad totalmente instalada	MIL SETECIENTOS NOVENTA EUROS CON CINCUENTA CÉNTIMOS	1.790,50
639	P73COMFORMA	ud Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la ·1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.	MIL OCHOCIENTOS VEINTINUEVE EUROS CON NOVENTA Y SEIS CÉNTIMOS	1.829,96

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
640	P73COMPUESTA1	ud Control de Calidad de señales y Pruebas Funcionales de la instalación del tramo CN-T12 incluyendo: <ul style="list-style-type: none">- Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico.- Verificación de señales entre campo y PLC.- Redacción y cumplimentación de protocolo de pruebas.- Verificación de señales en CPC.- Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra.- Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra.- En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	TRES MIL CUARENTA Y NUEVE EUROS CON NOVENTA Y CUATRO CÉNTIMOS	3.049,94
641	P73COMPUESTA2	ud Control de Calidad de señales y Pruebas Funcionales de la instalación del tramo T12-DC, incluyendo: <ul style="list-style-type: none">- Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico.- Verificación de señales entre campo y PLC.- Redacción y cumplimentación de protocolo de pruebas.- Verificación de señales en CPC.- Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra.- Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra.- En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	CUATRO MIL DOSCIENTOS SESENTA Y NUEVE EUROS CON NOVENTA Y UN CÉNTIMOS	4.269,91

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
642	P73COMPUESTA3	ud Control de Calidad de señales y Pruebas Funcionales de la instalación de la Balsa Tudela incluyendo: <ul style="list-style-type: none"> - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	CUATRO MIL OCHOCIENTOS SETENTA Y NUEVE EUROS CON NOVENTA CÉNTIMOS	4.879,90
643	P73COMSCADA1	ud Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	SEIS MIL SEISCIENTOS CUARENTA EUROS CON DIECINUEVE CÉNTIMOS	6.640,19
644	P73COMSCADA2	ud Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	SEIS MIL SEISCIENTOS CUARENTA EUROS CON DIECINUEVE CÉNTIMOS	6.640,19
645	P73COMSCADA3	ud Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	SEIS MIL SEISCIENTOS CUARENTA EUROS CON DIECINUEVE CÉNTIMOS	6.640,19
646	P73COMSCADA3E	ud Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	OCHO MIL DOSCIENTOS TREINTA Y UN EUROS CON CUARENTA Y SEIS CÉNTIMOS	8.231,46

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
647	P7COMARM01	ud Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de autómatas y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de caldeo y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc..., incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexcionados y probados.		3.286,67
			TRES MIL DOSCIENTOS OCHENTA Y SEIS EUROS CON SESENTA Y SIETE CÉNTIMOS	
648	P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antiroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.		14,87
			CATORCE EUROS CON OCHENTA Y SIETE CÉNTIMOS	
649	P7COMCABL1B	m Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua, elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antirroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro. Según EN 60794. Incluidas cajas de empalme para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.		13,26
			TRECE EUROS CON VEINTISEIS CÉNTIMOS	
650	P7COMCABL2	m Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (Rj45), tendido y conectorizado. Unidad totalmente instalada.		3,34
			TRES EUROS CON TREINTA Y CUATRO CÉNTIMOS	
651	P7COMCCTV1	Ud Hardware para gestión y control de CCTV en centro de control compuesto por : Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 píxeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.		800,66
			OCHOCIENTOS EUROS CON SESENTA Y SEIS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
652	P7COMCCTV12	ud Ud. báculo de 8 m. de altura troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; anclaje a dado de hormigón , puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión , tubo de unión, incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3 , operaciones de excavación y rellenos.		741,92
			SETECIENTOS CUARENTA Y UN EUROS CON NOVENTA Y DOS CÉNTIMOS	
653	P7COMCCTV2	ud Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player,"Site builder",e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCADA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.		4.629,50
			CUATRO MIL SEISCIENTOS VEINTINUEVE EUROS CON CINCUENTA CÉNTIMOS	
654	P7COMCCTV3	ud Servicios de instalación , configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores).		791,24
			SETECIENTOS NOVENTA Y UN EUROS CON VEINTICUATRO CÉNTIMOS	
655	P7COMCCTV4	ud Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8TeraBytes. Unidad totalmente instalada y probada.		2.982,72
			DOS MIL NOVECIENTOS OCHENTA Y DOS EUROS CON SETENTA Y DOS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
656	P7COMCCTV5	ud Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcasas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenes de máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Vídeo, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0 Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad: Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.		727,59
			SETECIENTOS VEINTISIETE EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	
657	P7COMCCTV6	m Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2 , repetidor de señal cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexionado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.		8,11
			OCHO EUROS CON ONCE CÉNTIMOS	
658	P7COMCCTV8	ud Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias.		787,10
			SETECIENTOS OCHENTA Y SIETE EUROS CON DIEZ CÉNTIMOS	
659	P7COMCCTV9	ud Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30. Switch gestionable para la red de video y seguridad de diversos elementos.		574,07
			QUINIENTOS SETENTA Y CUATRO EUROS CON SIETE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
660	P7COMNODO1	ud Ud Suministro e instalación equipo de comunicaciones bidireccional compuesto de alimentación autónoma de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y modem de comunicaciones, armario IP65, armario mural de 19", 12 U y 600 mm de profundidad. , RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C), 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°C A 80°C contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica), electrificación cuadro (magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.	TRES MIL OCHOCIENTOS DOCE EUROS CON SETENTA Y SEIS CÉNTIMOS	3.812,76
661	P7COMNODO2	ud Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio modem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.	DOS MIL OCHOCIENTOS SETENTA Y SIETE EUROS CON QUINCE CÉNTIMOS	2.877,15
662	P7COMP001	ud Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.	CIENTO CUARENTA Y DOS EUROS CON OCHENTA Y CUATRO CÉNTIMOS	142,84

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
663	P7COMP002	ud Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); dobles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.	TRESCIENTOS CINCUENTA Y NUEVE EUROS CON VEINTICUATRO CÉNTIMOS	359,24
664	P7COMP003	ud Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.	DOSCIENTOS OCHENTA Y TRES EUROS CON NOVENTA Y SIETE CÉNTIMOS	283,97
665	P7COMP004	ud Suministro e instalación de CPU para autómatas programables con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 61131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.	CUATRO MIL QUINIENTOS OCHENTA Y DOS EUROS CON VEINTE CÉNTIMOS	4.582,20
666	P7COMP005	ud Suministro de bastidor para autómatas de 10 slots, tipo 1756-A10 de Allen Bradley o similar.	TRESCIENTOS CUARENTA Y NUEVE EUROS CON QUINCE CÉNTIMOS	349,15
667	P7COMP006	ud Suministro e instalación de fuente de alimentación para autómatas programables para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar	TRESCIENTOS CUARENTA Y SEIS EUROS CON VEINTIUN CÉNTIMOS	346,21
668	P7COMP011	ud Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autómatas formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según referencias (V8 INPUT PLC V8/FLK14/IN - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	SEISCIENTOS TREINTA Y CUATRO EUROS CON TREINTA Y CUATRO CÉNTIMOS	634,34

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
669	P7COMP012	ud Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, según referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	SETECIENTOS DIEZ EUROS CON SETENTA Y SEIS CÉNTIMOS	710,76
670	P7COMP013	ud Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC-FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	QUINIENTOS EUROS CON CUATRO CÉNTIMOS	500,04
671	P7COMP014	ud Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC-FLK14/EZ-DR/300/KONFEK (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	CUATROCIENTOS SESENTA Y NUEVE EUROS CON CUARENTA Y SIETE CÉNTIMOS	469,47
672	P7COMP015	ud Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.	MIL TRESCIENTOS VEINTISIETE EUROS CON TREINTA Y SIETE CÉNTIMOS	1.327,37
673	P7COMP016	ud Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.	MIL SETECIENTOS SETENTA Y CUATRO EUROS CON OCHENTA Y DOS CÉNTIMOS	1.774,82
674	P7COMP017	ud Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.	MIL OCHOCIENTOS SESENTA Y NUEVE EUROS CON SESENTA Y OCHO CÉNTIMOS	1.869,68

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
675	P7COMP018	ud Suministro y montaje de pasarela de comunicaciones POWERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexiada.	SEISCIENTOS UN EUROS CON TREINTA Y UN CÉNTIMOS	601,31
676	P7COMP022	ud Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.	CIENTO CUARENTA Y NUEVE EUROS CON SEIS CÉNTIMOS	149,06
677	P7COMPLC01	ud PLC centralizador de todos los sistemas (Ed:64 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje	TRES MIL CIENTO CINCUENTA Y UN EUROS CON VEINTISEIS CÉNTIMOS	3.151,26
678	P7COMPLC01EP	ud PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.	DIECISEIS MIL QUINIENTOS SEIS EUROS CON CINCUENTA Y UN CÉNTIMOS	16.506,51
679	P7COMPLC02	ud PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje	CUATRO MIL SETECIENTOS OCHENTA Y SIETE EUROS CON CINCUENTA CÉNTIMOS	4.787,50
680	P7COMPLC1B	ud Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión.		2.723,65

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			DOS MIL SETECIENTOS VEINTITRES EUROS CON SESENTA Y CINCO CÉNTIMOS	
681	P7COMPLC1C	ud Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado numérico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instalación y conexión de unidad; Configuración Remota, Pruebas y Puesta en Servicio.		432,03
			CUATROCIENTOS TREINTA Y DOS EUROS CON TRES CÉNTIMOS	
682	P7COMPLCT12	ud PLC centralizador de todos los sistemas (ED:96 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómatas, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.		4.465,68
			CUATRO MIL CUATROCIENTOS SESENTA Y CINCO EUROS CON SESENTA Y OCHO CÉNTIMOS	
683	P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100Base-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.		2.387,34
			DOS MIL TRESCIENTOS OCHENTA Y SIETE EUROS CON TREINTA Y CUATRO CÉNTIMOS	
684	P7COMSEG1	ud Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS , incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expensor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.		3.477,60
			TRES MIL CUATROCIENTOS SETENTA Y SIETE EUROS CON SESENTA CÉNTIMOS	
685	P7GQIN0A39	ud Ampliación del Programa de presas con los módulos de aplicaciones gráficas con dibujos de la presa y sensores y el módulo de generación de informes numéricos y gráficos con los valores de auscultación recogidos, todo instalado y comprobado en el ordenador de la presa.		3.604,21
			TRES MIL SEISCIENTOS CUATRO EUROS CON VEINTIUN CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
686	P7ING001	ud Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	CUATRO MIL DOSCIENTOS CUARENTA Y TRES EUROS CON TREINTA Y NUEVE CÉNTIMOS	4.243,39
687	P7ING002	ud Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	SIETE MIL CUATROCIENTOS VEINTICINCO EUROS CON NOVENTA Y CUATRO CÉNTIMOS	7.425,94
688	P7ING003	ud Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	NUEVE MIL QUINIENTOS CUARENTA Y SIETE EUROS CON SESENTA Y TRES CÉNTIMOS	9.547,63
689	P7ING003EP1	ud Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	DIEZ MIL SEISCIENTOS OCHO EUROS CON CUARENTA Y OCHO CÉNTIMOS	10.608,48

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
690	P90VAR4	ud Difusión y comunicación de las obras del tramo consistente en : a)-Emisión de 2 anuncios en periódico de gran tirada, b)-2 anuncios publicitarios en medio de radiodifusión , c)-edición de 200 folletos explicativos tipo tríptico de alta calidad, d)-desarrollo de WEB informativa y de seguimiento de las obras con el volcado informativo del avance de obra, estado f)-Reportaje fotográfico de evolución de obra g)-CD video divulgativo h)-Presentación y actos varios i)-Monolito actuación	VEINTIOCHO MIL NOVECIENTOS CINCUENTA Y NUEVE EUROS CON VEINTE CÉNTIMOS	28.959,20
691	P9VAR1	ud Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	DOS MIL SETECIENTOS SESENTA Y SIETE EUROS CON CUARENTA Y CINCO CÉNTIMOS	2.767,45
692	PACCAR-01_E	kg Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.	CUATRO EUROS CON NOVENTA CÉNTIMOS	4,90
693	PACCEBA	ud Conjunto accesorios baño, compuesto de portarrolos, jabonera, toallero y agarradera en color, incluso instalación.	CIENTO SETENTA Y TRES EUROS CON DIECISEIS CÉNTIMOS	173,16
694	PACOMTEF	ud Acometida de Telefonía.	QUINIENTOS SESENTA Y UN EUROS CON OCHENTA Y DOS CÉNTIMOS	561,82
695	PALP1026	m Alfeizar de piedra artificial, de color blanco, de 30x5 cm, recibido con mortero M-250 de cemento CEM-I/32,5 ó BLL 22,5 con goterón, incluso pulido y abrillantado.	VEINTINUEVE EUROS CON DIECISEIS CÉNTIMOS	29,16
696	PAPANT04	m Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.		106,73

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
697	PASEÑACC	ud Señalización de accesos y advertencias de seguridad, etc.	CIENTO SEIS EUROS CON SETENTA Y TRES CÉNTIMOS	4.478,29
698	PAZ1042	m² Alicatado con azulejo blanco 15x15 cm de primera calidad, recibido con mortero (M-350), de cemento CEM-I/32,5, incluso rejuntado, limpieza, p.p. de piezas especiales, lechada de cemento blanco y medios auxiliares para su ejecución.	CUATRO MIL CUATROCIENTOS SETENTA Y OCHO EUROS CON VEINTINUEVE CÉNTIMOS	36,49
699	PBARR-06	ud Barrera de seguridad rígida tipo New Jersey prefabricada de hormigón, de 2,00x0,80x0,60 m.	TREINTA Y SEIS EUROS CON CUARENTA Y NUEVE CÉNTIMOS	134,34
700	PBATU001	m³ Relleno localizado de material filtrante (grava 20-40) procedente de cantera, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	CIENTO TREINTA Y CUATRO EUROS CON TREINTA Y CUATRO CÉNTIMOS	11,77
701	PBATU003	m² Repaso y compactado de explanada ejecutada, con medios mecánicos y compactación del 95 % PM. Incluye material de refino en caso de ser necesario.	ONCE EUROS CON SETENTA Y SIETE CÉNTIMOS	1,56
702	PBOY01	m Barrera protectora de boyas y cuerdas en zona de aliviadero	UN EUROS CON CINCUENTA Y SEIS CÉNTIMOS	22,22
703	PBPVC110	m Bajante con tubería de PVC de 110 mm de diámetro, incluso p.p. de piezas especiales, elementos de fijación y medios auxiliares para su ejecución, según normativa vigente.	VEINTIDOS EUROS CON VEINTIDOS CÉNTIMOS	12,86
			DOCE EUROS CON OCHENTA Y SEIS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
704	PCAN1022	m Canalón de acero galvanizado, de desarrollo 250 mm, para recogida de aguas, formado por piezas pre-formadas, fijadas con soportes colocados cada 50 cm, con una pendiente mínima del 0,5%. Incluso soportes, esquinas, tapas, remates finales, piezas de conexión a bajantes y piezas especiales.		31,44
			TREINTA Y UN EUROS CON CUARENTA Y CUATRO CÉNTIMOS	
705	PCANDRE	m Canaleta para recogida de agua en galería.		15,19
			QUINCE EUROS CON DIECINUEVE CÉNTIMOS	
706	PCAPIN1046	m² Carpintería de madera en interiores para barnizar en puertas, incluso herrajes de colgar y seguridad, recibido en fábrica. Totalmente terminada.		139,38
			CIENTO TREINTA Y NUEVE EUROS CON TREINTA Y OCHO CÉNTIMOS	
707	PCAPMET	m² Carpintería metálica con perfiles de acero conformado en frío, en ventanas o puertas abatibles, ejecutada con perfiles de tubo hueco de acero laminado en frío, esmaltados al horno, de 1,5 mm ó 2 mm de espesor, junquillos de 30x15 mm, con bulones a presión, perfil vierteaguas, herrajes de colgar y seguridad, patillas para anclaje i/corte, preparación y soldadura de perfiles en taller, ajuste y montaje en obra, i/ vidrio, recibido en obra.		240,72
			DOSCIENTOS CUARENTA EUROS CON SETENTA Y DOS CÉNTIMOS	
708	PCARG3	m Cargadero para huecos de hasta 3 m de luz formado por viguetas prefabricadas de hormigón armado de 20 cm de canto, incluso recibido y colocación totalmente terminado.		17,59
			DIECISIETE EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	
709	PCARMATAL	m² Carpintería metálica de aluminio anodizado mate, en ventanas o puertas practicables, para acristalar, compuesta por cerco, hojas y herrajes de colgar y seguridad, recibido en fábrica, instalada sobre precerco de aluminio, sellado de juntas y limpieza, pintura. Totalmente instalada. p.p. de medios auxiliares. s/NTE-FCL-3.		422,00
			CUATROCIENTOS VEINTIDOS EUROS	
710	PCOMO001	ud Compuerta mural 2250x2600, para 10 mca y diseño unidireccional de accionamiento eléctrico, incluyendo actuador, deslizaderas, sellado en cuatro lados, husillo ascendente, caperuza de plástico, totalmente montada en obra.		47.771,79
			CUARENTA Y SIETE MIL SETECIENTOS SETENTA Y UN EUROS CON SETENTA Y NUEVE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
711	PCOMO002	ud Compuerta mural 350x400, para 10 mca y diseño unidireccional de accionamiento manual, incluyendo deslizaderas, sellado en cuatro lados, husillo ascendente, caperuza de plástico, totalmente montada en obra, instalado y probado.		1.526,24
			MIL QUINIENTOS VEINTISEIS EUROS CON VEINTICUATRO CÉNTIMOS	
712	PCOMO006	ud Compuerta mural 2750x3100, para 10 mca y diseño unidireccional de accionamiento eléctrico, incluyendo actuador, deslizaderas, sellado en cuatro lados, husillo ascendente, caperuza de plástico, totalmente montada en obra.		72.842,97
			SETENTA Y DOS MIL OCHOCIENTOS CUARENTA Y DOS EUROS CON NOVENTA Y SIETE CÉNTIMOS	
713	PCOMO010	m Embebidos metálicos en primera y segunda fase de hormigonado, en ranuras de elementos hidromecánicos, totalmente colocados.		181,68
			CIENTO OCHENTA Y UN EUROS CON SESENTA Y OCHO CÉNTIMOS	
714	PCOMO010A	m Embebidos metálicos en primera y segunda fase de hormigonado de obra de Picarana, en ranuras de elementos hidromecánicos, totalmente colocados.		181,68
			CIENTO OCHENTA Y UN EUROS CON SESENTA Y OCHO CÉNTIMOS	
715	PCUBPLAPOL	m² Suministro y montaje de placas translúcidas planas de policarbonato, con una pendiente mayor del 10%, PC Celular "ONDULINE" o similar, de 10 mm de espesor, con una transmisión de luminosidad del 90%, fijadas mecánicamente a cualquier tipo de correa estructural (no incluida en este precio). Incluso p/p de elementos de fijación, accesorios, juntas, remates perimetrales y otras piezas de remate para la resolución de puntos singulares.		36,18
			TREINTA Y SEIS EUROS CON DIECIOCHO CÉNTIMOS	
716	PCUBSAND	m² Cubierta formada por panel de chapa de acero en perfil comercial, prelacada de 0,6 mm con núcleo de espuma de poliuretano de 40 kg/m3 con un espesor total de 30 mm sobre correas metálicas, i/p.p. de solapes, instalado, incluso medios auxiliares y elementos de seguridad, según normativa vigente.		80,41
			OCHENTA EUROS CON CUARENTA Y UN CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
717	PCUBTEJ	m² Cubierta de teja cerámica curva de 40x19 cm, incluso preparación de la superficie, mortero de agarre, medios auxiliares, y p.p. de piezas especiales, según normativa vigente.		46,61
			CUARENTA Y SEIS EUROS CON SESENTA Y UN CÉNTIMOS	
718	PDOBACRAIS	m² Doble acristalamiento aislante formado por dos lunas incolores de 4 mm y cámara de aire deshidratado de 6 mm con perfil separador de aluminio y doble sellado perimetral, fijación sobre carpintería e incluso cortes de vidrio y colocación de junquillos, según normativa vigente.		20,57
			VEINTE EUROS CON CINCUENTA Y SIETE CÉNTIMOS	
719	PDUC7070	ud Ducha completa de 70x70 cm de porcelana vitrificada color blanco, incluso grifería e instalación.		219,14
			DOSCIENTOS DIECINUEVE EUROS CON CATORCE CÉNTIMOS	
720	PELEILU	ud Instalación de electricidad e iluminación, totalmente terminada.		10.070,00
			DIEZ MIL SETENTA EUROS	
721	PELESAI	ud SAI 10 KVA.		3.537,22
			TRES MIL QUINIENTOS TREINTA Y SIETE EUROS CON VEINTIDOS CÉNTIMOS	
722	PEMB800	ud Embocadura de hormigón prefabricado con aletas de DN 800.		816,45
			OCHOCIENTOS DIECISEIS EUROS CON CUARENTA Y CINCO CÉNTIMOS	
723	PENC1016	m² Encachado en caja para base de solera de 20 cm de espesor, mediante relleno y extendido en tongadas de espesor no superior a 20 cm de gravas procedentes de cantera caliza de 40/80 mm; y posterior compactación mediante equipo manual con bandeja vibrante, sobre la explanada homogénea y nivelada.		9,23
			NUEVE EUROS CON VEINTITRES CÉNTIMOS	
724	PENFPARV	m² Enfoscado maestreado en paramentos verticales con mortero M-350 de cemento CEM-I/32,5, incluso pañeado, acabado fratasado y medios auxiliares para su aplicación según normativa vigente.		26,30
			VEINTISEIS EUROS CON TREINTA CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
725	PENLYESV	m² Enlucido de yeso en paramentos verticales con pasta de yeso Y-25 F, incluso limpieza, humedecido y medios auxiliares para su aplicación.		4,71
			CUATRO EUROS CON SETENTA Y UN CÉNTIMOS	
726	PENSLU001	ud Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de profundidad, incluidas obturaciones y apoyo técnico.		249,21
			DOSCIENTOS CUARENTA Y NUEVE EUROS CON VEINTIUN CÉNTIMOS	
727	PEP1017	m² Fábrica de bloque hueco de hormigón estriado a cara vista, color blanco, dimensiones 40x20x20 cm, recibida con mortero M-250 de cemento BL 22,5 incluso rejuntado, limpieza de paños y piezas especiales, según normativa vigente.		47,91
			CUARENTA Y SIETE EUROS CON NOVENTA Y UN CÉNTIMOS	
728	PEP1020	m Trasdoso de chapa mediante chapa plegada de acero, con acabado galvanizado, de 0,8 mm de espesor, colocado con fijaciones mecánicas. Incluso junta de estanqueidad.		17,78
			DIECISIETE EUROS CON SETENTA Y OCHO CÉNTIMOS	
729	PEP1021	m Suministro y colocación de albardilla metálica para cubrición de muros, de chapa plegada de acero galvanizado, con goterón, espesor 0,8 mm, sobre una capa de regularización de mortero de cemento, industrial, con aditivo hidrófugo, M-5, de 4 cm de espesor, creando una pendiente suficiente para evacuar el agua, sobre la que se aplica el adhesivo bituminoso de aplicación en frío para chapas metálicas, que sirve de base al perfil de chapa de acero y sellado de las juntas entre piezas y, en su caso, de las uniones con los muros con adhesivo especial para metales. Incluso p/p de replanteo, cortes y limpieza final. Incluye: Preparación de la superficie de apoyo. Preparación de la base y de los medios de fijación. Ejecución de la base de apoyo de mortero. Replanteo de las piezas. Aplicación del adhesivo. Colocación y fijación de las piezas metálicas niveladas y aplomadas. Sellado de juntas y limpieza. Criterio de medición de proyecto: Longitud medida a ejes, según documentación gráfica de Proyecto. Criterio de medición de obra: Se medirá, a ejes, la longitud realmente ejecutada según especificaciones de Proyecto.		26,01
			VEINTISEIS EUROS CON UN CÉNTIMOS	
730	PEP1024	ud Arqueta de registro de dimensiones interiores 50x50x60 cm, realizada con fábrica de ladrillo perforado tosco de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón HM-20/P/40/I de 20 cm de espesor, enfoscada y bruñida interiormente, con cerco y tapa de hormigón prefabricada, totalmente terminada, incluso p.p. de medios auxiliares.		112,54

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
731	PEXTCO25	ud Extintor de nieve carbónica CO2, de eficacia 89B, de 5 kg. de agente extintor, construido en acero, con soporte y manguera con difusor, según Norma UNE. Equipo con certificación AENOR, s. CTE.	CIENTO DOCE EUROS CON CINCUENTA Y CUATRO CÉNTIMOS	152,82
732	PEXTPOLV6	ud Extintor de polvo químico ABC polivalente antibrasa, de eficacia 34A/183B, de 6 kg. de agente extintor, con soporte, manómetro comprobable y manguera con difusor, según Norma UNE, certificado AENOR, s. CTE.	CIENTO CINCUENTA Y DOS EUROS CON OCHENTA Y DOS CÉNTIMOS	68,82
733	PFABLAD05P	m² Fábrica de ladrillo perforado 24x11,5x7 cm, de 1/2 pie de espesor, recibido con mortero de cemento CEM II/B-P 32,5 N y arena tipo M-5, para revestir en alzados, conforme a norma UNE-EN 998-1 y/o según normativa vigente y medida deduciendo huecos superiores a 1 m2.	SESENTA Y OCHO EUROS CON OCHENTA Y DOS CÉNTIMOS	32,48
734	PFABLAD1P	m² Fábrica de ladrillo cara vista 24x11,5x6,8 cm, de 1 pie de espesor, recibido con mortero de cemento CEM II/B-P 32,5 N y arena tipo M-5, para revestir en alzados, conforme a norma UNE-EN 998-1 y/o según normativa vigente y medida deduciendo huecos superiores a 1 m2.	TREINTA Y DOS EUROS CON CUARENTA Y OCHO CÉNTIMOS	101,64
735	PFILTMO001	ud Filtro de cadenas, adecuado para el tamizado de agua, para un caudal aproximado de 3.350 l/s, con luz de malla 1,5 mm de accionamiento eléctrico, totalmente instalado y probado.	CIENTO UN EUROS CON SESENTA Y CUATRO CÉNTIMOS	64.744,40
736	PFILTMO002	ud Conjunto automatismo para el filtro de cadena, incluyendo armariode maniobre, detector de pérdida de carga y motobomba para agua de lavado, totalmente instalado.	SESENTA Y CUATRO MIL SETECIENTOS CUARENTA Y CUATRO EUROS CON CUARENTA CÉNTIMOS	8.607,52

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			OCHO MIL SEISCIENTOS SIETE EUROS CON CINCUENTA Y DOS CÉNTIMOS	
737	PFORJ2555	m² Forjado 25 + 5 cm. Formado por doble vigueta auto-resistente de hormigón pretensado, separadas entre sí 60 cm, entrevigado de bloque de hormigón y capa de compresión de 5 cm., de hormigón HA 25/B/20/XC2, de Central, incluso armadura (4,50 Kg/m2), terminado (carga total 1.000 Kg/m2).		70,90
			SETENTA EUROS CON NOVENTA CÉNTIMOS	
738	PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un encachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.		2.506,13
			DOS MIL QUINIENTOS SEIS EUROS CON TRECE CÉNTIMOS	
739	PGESRES150A	ud Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.		28.102,19
			VEINTIOCHO MIL CIENTO DOS EUROS CON DIECINUEVE CÉNTIMOS	
740	PGESRES150B	ud Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC		29.755,26
			VEINTINUEVE MIL SETECIENTOS CINCUENTA Y CINCO EUROS CON VEINTISEIS CÉNTIMOS	
741	PGESRES150C	ud Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15		21.489,91
			VEINTIUN MIL CUATROCIENTOS OCHENTA Y	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			NUEVE EUROS CON NOVENTA Y UN CÉNTIMOS	
742	PGESRES150D	ud Carga, transporte y deposición de residuos tipo II de naturaleza pétreo, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.		23.969,52
			VEINTITRES MIL NOVECIENTOS SESENTA Y NUEVE EUROS CON CINCUENTA Y DOS CÉNTIMOS	
743	PGESRES150E	ud Carga, transporte y deposición de residuos tipo II de naturaleza pétreo, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Mostrakas.		23.969,52
			VEINTITRES MIL NOVECIENTOS SESENTA Y NUEVE EUROS CON CINCUENTA Y DOS CÉNTIMOS	
744	PGESRES180A	ud Carga , transporte y deposición de residuos tipo II de naturaleza no pétreo, incluida selección, carga , transporte, descarga y canon de gestión en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.		19.836,84
			DIECINUEVE MIL OCHOCIENTOS TREINTA Y SEIS EUROS CON OCHENTA Y CUATRO CÉNTIMOS	
745	PGESRES180B	ud Carga , transporte y deposición de residuos tipo II de naturaleza no pétreo, incluida selección, carga , transporte, descarga y canon de gestión en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC.		21.489,91
			VEINTIUN MIL CUATROCIENTOS OCHENTA Y NUEVE EUROS CON NOVENTA Y UN CÉNTIMOS	
746	PGESRES180C	ud Carga , transporte y deposición de residuos tipo II de naturaleza no pétreo, incluida selección, carga , transporte, descarga y canon de gestión en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15.		14.877,63
			CATORCE MIL OCHOCIENTOS SETENTA Y SIETE EUROS CON SESENTA Y TRES CÉNTIMOS	
747	PGESRES180D	ud Carga, transporte y deposición de residuos tipo II de naturaleza no pétreo, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.		20.663,38
			VEINTE MIL SEISCIENTOS SESENTA Y TRES EUROS CON TREINTA Y OCHO CÉNTIMOS	
748	PGESRES180E	ud Carga, transporte y deposición de residuos tipo II de naturaleza no pétreo, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Mostrakas.		16.530,70
			DIECISEIS MIL QUINIENTOS TREINTA EUROS CON SETENTA CÉNTIMOS	
749	PGESRES200A	ud Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido o en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.		12.312,64

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			DOCE MIL TRESCIENTOS DOCE EUROS CON SESENTA Y CUATRO CÉNTIMOS	
750	PGESRES200B	ud Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC.		13.796,64
			TRECE MIL SETECIENTOS NOVENTA Y SEIS EUROS CON SESENTA Y CUATRO CÉNTIMOS	
751	PGESRES200C	ud Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15.		11.570,64
			ONCE MIL QUINIENTOS SETENTA EUROS CON SESENTA Y CUATRO CÉNTIMOS	
752	PGESRES200D	ud Carga, transporte y deposición de residuos tipo II de naturaleza pétreo, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.		13.796,64
			TRECE MIL SETECIENTOS NOVENTA Y SEIS EUROS CON SESENTA Y CUATRO CÉNTIMOS	
753	PGESRES200E	ud Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos, así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en la Balsa de Mostrakas.		10.828,64
			DIEZ MIL OCHOCIENTOS VEINTIOCHO EUROS CON SESENTA Y CUATRO CÉNTIMOS	
754	PGF21M911	m Barrera con tubo de acero galvanizado, de 130 mm de diámetro y 2 mm de espesor, incluido fijación a dado de hormigón con placa y tornillos, cualquier material auxiliar así como totalmente colocada en recta o curva de cualquier radio, incluido soldaduras necesarias, todo según planos.		51,21
			CINCUENTA Y UN EUROS CON VEINTIUN CÉNTIMOS	
755	PGQIN0A01	ud Piezómetro de cuerda vibrante para control de presiones intersticiales en el cimiento y cuerpo de presa, con rango de 0-10 Kg/cm", precisión 0,1% del rango y sensibilidad 0,025 % del rango , completamente instalado, incluido embalaje, transporte, carga y descarga, material de montaje, incluso obra civil, sin cableado de señal.		595,01
			QUINIENTOS NOVENTA Y CINCO EUROS CON UN CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
756	PGQIN0A02	ud Célula de presión total de cuerda vibrante para control de presiones totales en el núcleo y contactos con el cimiento, de rango entre 0 y 17,5 Kg/cm2 y precisión 0,1% del rango, con salida eléctrica para las lecturas, completamente instalada, incluido embalaje, transporte, carga y descarga, además del pequeño material necesario para el montaje, incluso obra civil, sin cableado de señal.	SEISCIENTOS TRECE EUROS CON SETENTA Y NUEVE CÉNTIMOS	613,79
757	PGQIN0A03	m Cable de 2 conductores x 1 mm2, apantallado y con malla de acero, con recubrimiento de protección en PVC, conectado a cada sensor con señal eléctrica y colocado por la presa hasta las cajas de centralización, incluso zanjas, instalado y comprobado.	TRES EUROS CON TRES CÉNTIMOS	3,03
758	PGQIN0A04	ud Empalme de resina, tipo SCOTCH o similar, para la unión de cables en el interior del terreno asegurando la continuidad de la señal, colocado y comprobado.	VEINTE EUROS CON CUARENTA Y SEIS CÉNTIMOS	20,46
759	PGQIN0A05	ud Punto de centralización y lectura manual para los sensores con señal eléctrica (piezómetros y células de cuerda vibrante) instalados en la presa, colocado en el interior de un armario de poliéster prensado con protección IP-55, frontal serigrafiado con identificación de cada sensor y conmutador o interruptores para selección del sensor a leer, incluyendo tarjetas de conexionado, canaletas, bornas y material de montaje, completamente colocado en casetas incluyendo conexionado de cables	CINCUENTA Y CUATRO EUROS CON NOVENTA Y OCHO CÉNTIMOS	54,98
760	PGQIN0A06	ud Suministro del equipo portátil de lectura para sensores de cuerda vibrante, con frecuencia seleccionable, display digital de 5 dígitos, alojado en caja resistente de material plástico, baterías recargables con cargador incorporado, indicador de carga de batería, una resolución de 0,1 microsegundo e incluyendo cable de conexión y de carga y manual de utilización.	MIL SETECIENTOS VEINTIDOS EUROS CON CINCUENTA CÉNTIMOS	1.722,50
761	PGQIN0A07	ud Célula hidráulica para el control de asientos en el interior del terreno, fabricada en PVC y con tubos interiores metálicos, completamente instalada en cuerpo de presa, incluyendo encofrado, hormigonado, zanjas y tubos.	CIENTO SIETE EUROS CON DIECIOCHO CÉNTIMOS	107,18
762	PGQIN0A08	m Tubo triple para conexión de células hidráulicas y paneles de lectura, recubierto de polietileno para protección ante roturas, completamente colocado en zanjas por el cuerpo de presa, incluso la ejecución de éstas y tubos de protección.	CINCO EUROS CON NOVENTA Y OCHO CÉNTIMOS	5,98

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
763	PGQIN0A09	ud Juego de racores metálicos de empalme para longitudes largas del tubo triple de las células, de 12x10, 8x6 y 6x4, de latón y con anillo de apriete, colocado.		7,81
			SIETE EUROS CON OCHENTA Y UN CÉNTIMOS	
764	PGQIN0A10	ud Panel de lectura para un punto de conexión de célula hidráulica, fabricado en metacrilato negro, de 1,5 m. de longitud, con escala graduada de lectura, serigrafiada, con 1 mm. de apreciación, incluyendo soportes y piezas de conexión de los tubos, completamente instalado en casetas al efecto incluyendo conexionado de tubos y la obra civil de casetas.		417,64
			CUATROCIENTOS DIECISIETE EUROS CON SESENTA Y CUATRO CÉNTIMOS	
765	PGQIN0A11	ud Suministro de equipo de desaireación para las células hidráulicas de una caseta (uno por caseta), incluyendo bomba de presión de accionamiento manual.		708,79
			SETECIENTOS OCHO EUROS CON SETENTA Y NUEVE CÉNTIMOS	
766	PGQIN0A20	ud Base fija para estacionamiento del taquímetro de precisión en las lecturas topográficas, fabricada en acero inoxidable, con sistema de centraje, placa base y tapa de protección antivandalismo, completamente instalada, empotrada sobre pilar cilíndrico de hormigón armado y zapata anclada al terreno, con las dimensiones adecuadas para estacionar el equipo de lectura, incluyendo todos los materiales y la ejecución de la obra civil de construcción de zapata y pilar, terminado.		796,88
			SETECIENTOS NOVENTA Y SEIS EUROS CON OCHENTA Y OCHO CÉNTIMOS	
767	PGQIN0A22	ud Base para nivelación de precisión con apoyo semiesférico para la mira, contenida en arqueta cilíndrica de acero inoxidable con tapa roscada, completamente colocada empotrada en huecos preparados al efecto por la coronación y bermas de la presa, incluyendo la pequeña obra civil accesoria y la fijación al cuerpo de presa, terminada.		162,79
			CIENTO SESENTA Y DOS EUROS CON SETENTA Y NUEVE CÉNTIMOS	
768	PGQIN0A23	ud Señal de referencia fija para cerrar los itinerarios de nivelación, consistente en un clavo de acero inoxidable con apoyo semiesférico en cabeza para la mira, completamente colocado empotrado en roca firme del terreno natural de los estribos de la presa o en un dado de hormigón preparado al efecto, instalado incluyendo la pequeña obra civil accesoria y materiales.		116,04
			CIENTO DIECISEIS EUROS CON CUATRO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
769	PGQIN0A24	ud Aforador de filtraciones compuesto por un vertedero triangular o rectangular de pared delgada, de acero inoxidable, preparado para instalar en canaletas de recogida del agua de filtraciones en galerías y/o aguas abajo de la presa, fabricado a medida de la canaleta (hasta 400 x 400 mm), incluyendo regilla graduada para lectura, de 200 mm. de rango, con 1 mm de apreciación, de acero inoxidable sobre placa de metacrilato, completamente instalado en canaletas, sin incluir la obra civil necesaria para recogida del agua en cada punto ni protecciones de los equipos.	TRESCIENTOS EUROS CON CINCUENTA Y UN CÉNTIMOS	300,51
770	PGQIN0A25	ud Equipo para medida del nivel del embalse en las balsas, consistente en una balanza o telelimnómetro de muy alta precisión, con toma de presión hidrostática mediante sensor de cuarzo, con la electrónica de indicación de cota contenida en caja estanca de metal ligero, con puerta acristalada. Con indicador digital de 6 cifras para la cota, rango hasta 60 m., precisión 0,015 % del rango, alimentación eléctrica por línea independiente de 220 Vac., y protección de sobretensiones; salida eléctrica en código opcional (automatizable) desde emisor digital. completamente instalada y conectada a una toma de presión hidroestática situada por debajo de la cota mínima a medir, en un lugar protegido, sin incluir la obra civil de ejecución de la toma hidroestática pero incluyendo los tubos de inoxidable y válvula de corte para conexión al sensor y la alimentación eléctrica del equipo.	VEINTIUN MIL OCHOCIENTOS CUARENTA Y OCHO EUROS CON SESENTA Y SIETE CÉNTIMOS	21.848,67
771	PGQIN0A26	ud Estación Meteorológica con sistema automático de adquisición de datos, incluyendo los siguientes sensores: pluviómetro de balancin, termómetro de ambiente, anemómetro y veleta, barómetro, higrómetro con protector de radiación solar y evaporímetro con tanque de acero inoxidable o fibra de vidrio, homologado, y sensor de medida del nivel, con torreta metálica de 6 m y soportes metálicos fabricados a medida para cada uno de los equipos y sensores, además de la Estación automática con memoria para registro de datos, display y teclado de configuración, en caja con protección de intemperie a fijar sobre soporte, con programas de adquisición de datos y puerto RS-232 para conexión a ordenador, módulo de alimentación eléctrica con baterías para autonomía de una semana y cargador para conexión a red o panel fotovoltaico (no incluidos), además del cableado de conexión entre sensores y Estación, todo completamente instalado y comprobado, sin incluir obra civil de vallado y acondicionamiento del recinto.	SIETE MIL DOSCIENTOS TREINTA Y NUEVE EUROS CON CUATRO CÉNTIMOS	7.239,04

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
772	PGQIN0A27	ud Sensor para medida automática del nivel de agua en la canaleta junto a un aforador totalizador de filtraciones, del tipo ultrasonidos, con electrónica de tratamiento de la señal y display indicador de nivel, alimentación a 24 Vcc, rango hasta 5 m, protección IP-68, precisión 0,2% del rango, resolución 1 mm, salida 4-20 mA, protección de interferencias, completamente instalado y calibrado, incluyendo el soporte de fijación de acero galvanizado y el sistema de alimentación eléctrica desde algún cuadro cercano.		853,11
			OCHOCIENTOS CINCUENTA Y TRES EUROS CON ONCE CÉNTIMOS	
773	PGQIN0A28	m Cable multihilo de 11 pares trenzados y calibre 0,91 mm., para llevar la señal entre cajas de centralización de los piezómetros y células, el equipo de nivel del embalse y los aforadores hasta las Estaciones automáticas de Adquisición de datos, de tipo telefónico EAPSP, con pantalla de acero y recubrimiento de protección, incluso zanjas, arquetas, sin tubos metálicos de protección.		3,63
			TRES EUROS CON SESENTA Y TRES CÉNTIMOS	
774	PGQIN0A29	m Tubo metálico de acero galvanizado, para canalización de cables, métrica 50, instalado por zanja o en paramento y otras zonas expuestas de la presa, incluyendo elementos de sujeción y obra civil de zanjas o arquetas.		8,59
			OCHO EUROS CON CINCUENTA Y NUEVE CÉNTIMOS	
775	PGQIN0A30	m Tubo de material plástico reforzado, para canalización de cables, métrica 63, instalado por zanja o en paramento y otras zonas de la presa, incluyendo elementos de sujeción y obra civil de zanjas o arquetas.		4,48
			CUATRO EUROS CON CUARENTA Y OCHO CÉNTIMOS	
776	PGQIN0A31	ud Estación Automática de Adquisición y registro de datos de los equipos de instrumentación, instalada en caseta junto a la presa y compuesta por: microprocesador, reloj, memorias RAM y ROM, teclado y display, fuente, conversor A/D, interface serie, armario con protección IP-55 y puerta acristalada, frontal serigrafiado con teclado y display, 8 placas acondicionadoras de señal de los sensores y protecciones. Completamente instalada incluyendo conexionado de cables.		9.373,74
			NUEVE MIL TRESCIENTOS SETENTA Y TRES EUROS CON SETENTA Y CUATRO CÉNTIMOS	
777	PGQIN0A32	m Cable de comunicaciones de seis conductores (3x2x0,64) tipo FEAP, aislamiento del conductor en polietileno, cableado por pares, pantalla de aluminio, cubierta de polietileno y baja capacidad, para conexión entre las Estaciones de Adquisición, colocado y comprobado, incluso obra civil.		19,78
			DIECINUEVE EUROS CON SETENTA Y OCHO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
778	PGQIN0A33	ud Convertidor optoeléctrico y caja de empalmes específica para conexión del cable de fibra óptica y paso a RS-485, instalada junto a la última Estación de Adquisición y junto al ordenador en las oficinas, incluyendo conexionado de cables.	MIL DOSCIENTOS EUROS CON SESENTA CÉNTIMOS	1.200,60
779	PGQIN0A34	m Cable de fibra óptica para comunicaciones desde la última Estación automática hasta el ordenador de las oficinas de la presa, colocado en la zona exterior en el interior de tubos de protección en zanja y con arquetas intermedias, incluso obra civil.	SIETE EUROS CON DIEZ CÉNTIMOS	7,10
780	PGQIN0A35	ud Estación Central para el control del Sistema Automático de Adquisición de datos de auscultación de las balsas de Tudela y Mostrakas, compuesta por: ordenador con disco duro, CDROM, teclado y ratón, tarjetas gráfica y de sonido, modem telefónico, monitor color 15" TFT, impresora color de inyección de tinta, licencias sistema operativo y Office. Todo instalado y comprobado en oficinas de la presa, incluyendo pruebas de comunicaciones.	CUATRO MIL CUARENTA Y CINCO EUROS CON SESENTA Y DOS CÉNTIMOS	4.045,62
781	PGQIN0A36	ud Equipo SAI con autonomía de 10 minutos para protección de los equipos informáticos ante descargas y sobretensiones.	MIL DOCE EUROS CON SESENTA CÉNTIMOS	1.012,60
782	PGQIN0A37	m Cable tipo RFV 06/1 KV, de 3 x 1,5 mm2 para alimentación eléctrica de las Estaciones Automáticas de adquisición y de los aforadores de ultrasonidos, convertidores, equipos informáticos y otros equipos que lo requieran, instalado por la presa, incluso obra civil.	DOS EUROS CON VEINTICUATRO CÉNTIMOS	2,24
783	PGQIN0A38	ud Caja para derivación de la línea de alimentación eléctrica de los equipos de auscultación, protección IP-55, tapa practicable, instalada y comprobada incluyendo bornas, prensaestopas y conexionado de cables.	VEINTINUEVE EUROS CON TREINTA Y SIETE CÉNTIMOS	29,37
784	PGQIN0A39	ud Equipo para protección ante descargas y sobretensiones de la línea de alimentación específica de los equipos de auscultación, tomada de alguno de los cuadros eléctricos de la presa, compuesto por descargadores de sobretensiones con el rango adecuado, fuente de alimentación, fusibles y magnetotérmico, con diferencial rearmable, todo ello colocado en el interior de un armario de poliéster reforzado con fibra de vidrio, con grado de protección IP-66, enchufe frontal y puerta practicable, todo instalado y puesto a tierra en lugar protegido.	MIL VEINTINUEVE EUROS CON TREINTA Y DOS CÉNTIMOS	1.029,32

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CÉNTIMOS	
785	PGQIN0A40	ud Toma de tierra de 4 electrodos, instalada junto a las oficinas de la presa para proteger los equipos informáticos de la Estación Central, incluyendo cuatro picas de tierra de 2 m. de longitud, de acero cobreizado y diámetro 14,6 mm. con grapas de unión al cable de tierra, 30 m de cable de cobre desnudo de 35 mm2 de sección, caja de registro para la centralización de tierras, instalada y dotada de puente comprobador y una arqueta para registro y comprobación de la toma de tierra, prefabricada y con tapa en poliéster reforzado con fibra de vidrio, todo instalado y comprobado junto a las oficinas de la presa.		405,69
			CUATROCIENTOS CINCO EUROS CON SESENTA Y NUEVE CÉNTIMOS	
786	PGQIN0A41	ud Suministro de la partida de repuestos de las placas acondicionadoras para las Estaciones de Adquisición, incluyendo: 1 tarjeta de microprocesador; 1 tarjeta de comunicaciones; 1 tarjeta de alimentación; 2 tarjetas de cuerda vibrante; 1 tarjeta de entradas 4-20 mA.		1.394,96
			MIL TRESCIENTOS NOVENTA Y CUATRO EUROS CON NOVENTA Y SEIS CÉNTIMOS	
787	PGQIN0A42	ud Módulo de programa desarrollado para el control de auscultación de presas, diseñado para la adquisición, registro, tratamiento y presentación de los valores obtenidos con los sensores, además de gestionar las comunicaciones con las estaciones automáticas. Desarrollado en entorno Windows y completamente instalado en un ordenador compatible de las oficinas de la presa, incluyendo licencia de uso.		4.645,79
			CUATRO MIL SEISCIENTOS CUARENTA Y CINCO EUROS CON SETENTA Y NUEVE CÉNTIMOS	
788	PGQIN0A43	ud Ampliación del Programa de presas con los módulos de aplicaciones gráficas con dibujos de la presa y sensores y el módulo de generación de informes numéricos y gráficos con los valores de auscultación recogidos, todo instalado y comprobado en el ordenador de la presa.		3.604,21
			TRES MIL SEISCIENTOS CUATRO EUROS CON VEINTIUN CÉNTIMOS	
789	PGQIN0A44	ud Configuración de Estaciones Automáticas y personalización del programa de presas para los sensores y equipos de la balsa de Tudela, incluyendo la creación de bases de datos y de gráficos con sensores.		9.611,23
			NUEVE MIL SEISCIENTOS ONCE EUROS CON VEINTITRES CÉNTIMOS	
790	PGQIN0A45	ud Calibración y puesta en marcha del sistema automatizado de control instalado en la presa: un técnico especialista en instrumentación y un técnico informático para la comprobación de comunicaciones y primeras lecturas de los equipos, incluyendo horas de viaje, costes de estancia y horas de trabajo.		3.781,66
			TRES MIL SETECIENTOS OCHENTA Y UN EUROS CON SESENTA Y SEIS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
791	PGQIN0A45M	ud Calibración y puesta en marcha del sistema automatizado de control instalado en la presa: un técnico especialista en instrumentación y un técnico informático para la comprobación de comunicaciones y primeras lecturas de los equipos, incluyendo horas de viaje, costes de estancia y horas de trabajo.		3.781,66
			TRES MIL SETECIENTOS OCHENTA Y UN EUROS CON SESENTA Y SEIS CÉNTIMOS	
792	PGQIN0A46	ud Elaboración de la Documentación Final de Instalación tras la realización del montaje, que incluye los esquemas de localización definitiva de todos los equipos, esquemas de conexionado a cajas de centralización y a las Estaciones Automáticas, hojas de calibración, impresos de toma de datos, condiciones y procedimientos de lectura y fórmulas de conversión a unidades de ingeniería, manuales de programas, fichas técnicas y toda la información necesaria para la gestión del sistema de auscultación. Se entregarán tres ejemplares encuadrados y en soporte informático.		10.072,29
			DIEZ MIL SETENTA Y DOS EUROS CON VEINTINUEVE CÉNTIMOS	
793	PGQIN0A47	ud Ternas de base de elongómetro en juntas en obras de fábrica, totalmente instaladas.		279,14
			DOSCIENTOS SETENTA Y NUEVE EUROS CON CATORCE CÉNTIMOS	
794	PGQIN0A48	ud Elongómetro digital con rango de medida de 27 mm, con precisión de +/- 1 centésima de mm, incluso base de calibración y maletín de protección y transporte.		344,61
			TRESCIENTOS CUARENTA Y CUATRO EUROS CON SESENTA Y UN CÉNTIMOS	
795	PGRAV512	m³ Gravilla de 5-12 mm de tamaño para la conformación del relleno de trasdós, incluido transporte y relleno.		32,60
			TREINTA Y DOS EUROS CON SESENTA CÉNTIMOS	
796	PGUARNNEG	m² Guarnecido con yeso negro en paramentos verticales de 12 mm. de espesor, formación de rincones guarnecido de huecos y remates con pavimento, i/p.p. de guardavivos de chapa galvanizada y colocación de andamios (hasta 3m de altura), medido deduciendo huecos superiores a 2 m2.		8,37
			OCHO EUROS CON TREINTA Y SIETE CÉNTIMOS	
797	PHA351031	m³ Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.		102,92
			CIENTO DOS EUROS CON NOVENTA Y DOS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
798	PIEGR0810	m ² Chapado de piedra granítica irregular de 8/10 cm de espesor recibido con mortero de cemento y arena de río 1/4 rejuntado y limpieza, según normativa vigente.		109,49
			CIENTO NUEVE EUROS CON CUARENTA Y NUEVE CÉNTIMOS	
799	PIMPEXT3	m ² Impermeabilización exterior de la cámara de compuertas mediante mortero elástico. Incluye los siguientes trabajos: - Preparación del soporte mediante medios manuales o mecánicos: limpieza de la superficie con agua a presión con el fin de eliminar la suciedad, restos de desencofrantes, etc. para conseguir una correcta adherencia. - Suministro y aplicación de mortero elástico Masterseal 6100 FX, o SIMILAR en el exterior de la cámara con una dotación aproximada de 3 kg/m ² y 3,0-3,5 mm de espesor medio. La aplicación se realizará de forma manual o proyectada en dos capas y sobre el soporte húmedo y limpio. Una vez aplicadas las dos capas formará una membrana superficial adherida al soporte que impide totalmente el paso del agua y de las humedades, en ambos sentidos, siendo un material que está homologado para agua potable y es compatible con hormigones y cemento Portland.		31,06
			TREINTA Y UN EUROS CON SEIS CÉNTIMOS	
800	PIND504040	ud Inodoro de 50x40x40 cm de porcelana vitrificada color blanco, con depósito de descarga bajo, incluso mecanismo, asiento e instalación.		235,01
			DOSCIENTOS TREINTA Y CINCO EUROS CON UN CÉNTIMO	
801	PINSAIREAC	ud Instalación de aire acondicionado en edificio de control, totalmente terminado.		3.182,97
			TRES MIL CIENTO OCHENTA Y DOS EUROS CON NOVENTA Y SIETE CÉNTIMOS	
802	PINSTCAL	ud Instalación de calefacción en edificio de control, totalmente terminado.		1.804,97
			MIL OCHOCIENTOS CUATRO EUROS CON NOVENTA Y SIETE CÉNTIMOS	
803	PINSTDES	ud Instalación de desagüe en los distintos aparatos sanitarios, hasta su unión con las bajantes, en PVC, totalmente terminada.		1.804,97
			MIL OCHOCIENTOS CUATRO EUROS CON NOVENTA Y SIETE CÉNTIMOS	
804	PINSTRGA	ud Instalación de red general de agua fría y caliente a los diversos aparatos sanitarios, totalmente terminada.		3.182,97
			TRES MIL CIENTO OCHENTA Y DOS EUROS CON NOVENTA Y SIETE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
805	PINY001	ud Estudio de optimización la mezcla de la inyección incluso ensayos previos de mezcla, propuesta de dosificación, parámetros GIN, incluso informe.		6.508,99
			SEIS MIL QUINIENTOS OCHO EUROS CON NOVENTA Y NUEVE CÉNTIMOS	
806	PINY002	ud Transporte, montaje y desmontaje de equipos de inyección.		7.950,00
			SIETE MIL NOVECIENTOS CINCUENTA EUROS	
807	PINY003	ud Desplazamiento del equipo de perforación entre puntos de emplazamiento.		127,20
			CIENTO VEINTISIETE EUROS CON VEINTE CÉNTIMOS	
808	PINY004	m Perforación de taladro a rotopercusión para inyección con cualquier inclinación entre 10 y 30 con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.		102,71
			CIENTO DOS EUROS CON SETENTA Y UN CÉNTIMOS	
809	PINY004-B	m Perforación de taladro a rotopercusión para inyección con cualquier inclinación entre 0º y 10º con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.		76,43
			SETENTA Y SEIS EUROS CON CUARENTA Y TRES CÉNTIMOS	
810	PINY005	ud Posicionamiento de cada obturador.		10,07
			DIEZ EUROS CON SIETE CÉNTIMOS	
811	PINY006	t Materia seca de inyección de cemento en lechada realmente inyectada con dosificación C/A entre 0,5 y 2 en función del as admisiones, incluso aditivo entre 50 y 75 kg, incluso instalación centralizada de inyección compuesta por silo báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.		516,29
			QUINIENTOS DIECISEIS EUROS CON VEINTINUEVE CÉNTIMOS	
812	PINY007	t Materia seca de inyección de microcemento A-12 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.		1.436,27
			MIL CUATROCIENTOS TREINTA Y SEIS EUROS CON VEINTISIETE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
813	PINY008	t Materia seca de inyección de microcemento A-6 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.		2.181,05
			DOS MIL CIENTO OCHENTA Y UN EUROS CON CINCO CÉNTIMOS	
814	PLAVPED7055	ud Lavabo pedestal de 70x55 cm de porcelana vitrificada color blanco, incluso grifería e instalación.		243,44
			DOSCIENTOS CUARENTA Y TRES EUROS CON CUARENTA Y CUATRO CÉNTIMOS	
815	PMANG110	m Manguetón de PVC flexible de 110 mm en conexión a bajantes. Totalmente terminado.		15,39
			QUINCE EUROS CON TREINTA Y NUEVE CÉNTIMOS	
816	PMESADESP	ud Mesa escritorio para despacho de medidas 150x75x74 cm formado por tablero de abedul, marco de contrachapado y patas/frente de abedul macizo. Consta de balda extraíble para teclado y cajón con tres huecos. Totalmente instalado.		170,41
			CIENTO SETENTA EUROS CON CUARENTA Y UN CÉNTIMOS	
817	PMESATALL	ud Mesa taller 715 x 205.		113,03
			CIENTO TRECE EUROS CON TRES CÉNTIMOS	
818	PMO-001	m³ Material "todo-uno" en dique y rellenos procedente de excavaciones efectuadas en el vaso de la balsa o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones.		4,69
			CUATRO EUROS CON SESENTA Y NUEVE CÉNTIMOS	
819	PMO-002	m³ Material predominantemente arcillo-limoso procedente de la excavación efectuadas en el vaso de la balsa o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones.		5,15
			CINCO EUROS CON QUINCE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
820	PMOBILTE	ud Termo eléctrico de 200 l., i/lámpara de control, termómetro, termostato exterior regulable de 35º a 60º, válvula de seguridad instalado con llaves de corte y latiguillos, sin incluir conexión eléctrica.	OCHOCIENTOS TREINTA Y CUATRO EUROS CON VEINTINUEVE CÉNTIMOS	834,29
821	PMOBTQA	ud Taquilla para ropa de 0.50 x 0.50 x 1.80 metálicas.	NOVENTA Y TRES EUROS CON SETENTA Y CUATRO CÉNTIMOS	93,74
822	PMOLAM010	m Anclaje de lámina impermeable PEAD a obra de fábrica, incluyendo dado de hormigón en masa, perfiles hidroexpansivos, pletinas metálicas y pequeño material adicional, totalmente terminada	CIENTO TREINTA Y DOS EUROS CON CATORCE CÉNTIMOS	132,14
823	PPAPELE	ud Papelera.	QUINCE EUROS CON NOVENTA CÉNTIMOS	15,90
824	PPAVBALTEGM	m² Pavimento con baldosas de terrazo grano medio de 40x40 cm pulido en obra, color a elegir tomado con mortero (M-250) de cemento CEM-I/32,5, incluso nivelado de arena y mortero, corte de piezas, enlechado con pasta de cemento, pulido y limpieza.	CUARENTA Y CINCO EUROS CON NOVENTA Y DOS CÉNTIMOS	45,92
825	PPAVUSOIND	m² Pavimento para uso industrial incluyendo: limpieza, fresado o chorreado superficial del pavimento base, impregnación, sellado y recubrimiento, con aplicación de resinas sintéticas mezcladas con arena de cuarzo, materiales, mano de obra, elementos y medios auxiliares necesarios, totalmente acabado.	CUARENTA Y CUATRO EUROS CON TREINTA Y OCHO CÉNTIMOS	44,38
826	PPERCH	ud Perchero.	TREINTA Y UN EUROS CON OCHENTA CÉNTIMOS	31,80
827	PPIL12.004	ud Pilona prefabricada de hormigón blanco, de sección cuadrada de 18 cm de lado y 80 cm de altura según planos, con los bordes en chaflán y rematada en punta, totalmente colocada.	TREINTA Y TRES EUROS CON SETENTA CÉNTIMOS	33,70

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
828	PPILP5060	m. Pilar prefabricado de hormigón armado, HA-35/B/16/XC4, de sección 50x60 cm., de altura máxima 15 m. , incluso p.p. de encofrado, desencofrado, vertido, vibrado, curado y armaduras, con ayuda de grúa telescópica sobre camión para montaje, aplo-mado, relleno del nudo de enlace con hormigón HA-35/B/16/XC4 para montaje y apeos necesarios, to-talmente terminado.		384,18
			TRESCIENTOS OCHENTA Y CUATRO EUROS CON DIECIOCHO CÉNTIMOS	
829	PPINTPLASHV	m² Pintura plástica en paramentos horizontales y vertica-les, dos manos de color, incluso preparación de base y medios auxiliares para su aplicación.		5,55
			CINCO EUROS CON CINCUENTA Y CINCO CÉNTIMOS	
830	PPOL2000.4VI	ud Polipasto con las siguientes características - Versión : carro eléctrico - Altura de elevación : 4 m - Voltaje: 400 V.50 Hz - Velocidad elevación : 4/1 m/min - Velocidad translación : 20/5 m/min - Potencia de elevación : 1,7 y 0,4 kw - Potencia del carro : 0,34 kw con variador - Incluye botonera a baja tensión suspendida del poli-pasto con 3 m de cable de mando y carro tomaco-rientes Totalmente colocado.		4.695,22
			CUATRO MIL SEISCIENTOS NOVENTA Y CINCO EUROS CON VEINTIDOS CÉNTIMOS	
831	PPORTAUT	ud Portero automático con placa de calle de una llama-da, para comunicación entre entrada y Edificio de Control, con p.p. de canalización, cableado, alimenta-dor y accesorios necesarios, totalmente instalado.		401,09
			CUATROCIENTOS UN EUROS CON NUEVE CÉNTIMOS	
832	PPUENGR2000	ud Puente grúa monocarril de 5.000 Kg y 14,05 m. de luz. Características detalladas en el documento de es-pecificaciones técnicas, Incluido fabricación, transpor-te a obra, montaje, conexionado y puesta en marcha.		19.399,00
			DIECINUEVE MIL TRESCIENTOS NOVENTA Y NUEVE EUROS	
833	PREJ001	m² Reja formada por pletinas metálicas.		138,85
			CIENTO TREINTA Y OCHO EUROS CON OCHENTA Y CINCO CÉNTIMOS	
834	PSEGSAL.01	ud Seguridad y salud en el Subtramo O.T. Pikara-na-T12, (según valoración realizada en el Anejo nº20 del proyecto).		662.406,89
			SEISCIENTOS SESENTA Y DOS MIL CUATROCIENTOS SEIS EUROS CON OCHENTA Y	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			NUEVE CÉNTIMOS	
835	PSEGSAL.02	ud Seguridad y salud en el Subtramo T12-D.C. (Derivación Corella),(según valoración realizada en el Anejo nº20 del proyecto).		571.780,74
			QUINIENTOS SETENTA Y UN MIL SETECIENTOS OCHENTA EUROS CON SETENTA Y CUATRO CÉNTIMOS	
836	PSEGSAL.03	ud Seguridad y salud en el Subtramo D.C.-T21 Y DC-T14/15 , (según valoración realizada en el Anejo nº20 del proyecto).		290.850,77
			DOSCIENTOS NOVENTA MIL OCHOCIENTOS CINCUENTA EUROS CON SETENTA Y SIETE CÉNTIMOS	
837	PSEGSAL.04	ud Seguridad y salud según estudio de seguridad del proyecto en la Balsa de Tudela (según valoración realizada en el Anejo nº20 del proyecto).		372.076,30
			TRESCIENTOS SETENTA Y DOS MIL SETENTA Y SEIS EUROS CON TREINTA CÉNTIMOS	
838	PSEGSAL.05	ud Seguridad y Salud.Balsa de Mostrakas y conducción de conexión (según valoración realizada en el Anejo nº20 del proyecto).		95.879,15
			NOVENTA Y CINCO MIL OCHOCIENTOS SETENTA Y NUEVE EUROS CON QUINCE CÉNTIMOS	
839	PSELECGBT40	ud Suministro y montaje de módulo de alimentación, control y protección de Arqueta de Tomas en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.		11.261,29
			ONCE MIL DOSCIENTOS SESENTA Y UN EUROS CON VEINTINUEVE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
840	PSELECGBT41	<p>ud Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD,</p> <p>Pulsanería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>		6.168,90
			SEIS MIL CIENTO SESENTA Y OCHO EUROS CON NOVENTA CÉNTIMOS	
841	PSELECLMATUD	<p>ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica.</p> <p>Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Balsa de Mostrakas</p>		19.235,82
			DIECINUEVE MIL DOSCIENTOS TREINTA Y CINCO EUROS CON OCHENTA Y DOS CÉNTIMOS	
842	PELLSEXTG	<p>m Sellado elástico exterior de las juntas de la galería mediante banda elastomérica. Incluye los siguientes trabajos:</p> <ul style="list-style-type: none"> - Preparación geométrica de la superficie portante de la junta mediante abujardado. Limpieza y saneo de ambos lados de la junta. - Aplicación de resina epoxi, Masterflex 3000 o similar adhesivo o similar. - Colocación en forma de omega invertida de la banda elastomérica Masterflex 3000 de alta resistencia de 20 cm de ancho o similar. - Aplicación de una segunda capa resina epoxi, Masterflex 3000 adhesivo o similar. - Una vez seca la resina se protegerá los lados de la junta mediante relleno de mortero de reparación Ema-co S 88 o similar hasta igualar en altura con la superficie de la bóveda. - Por último y como protección de la junta se colocará de forma longitudinal una geomalla Hate X P 50 de polietileno de alta resistencia y 50 cm de ancho o similar. 		140,65

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
843	PSILDESP	ud Silla giratoria con asiento y respaldo contrachapado con poliuretano de gran elasticidad. Soporte de asiento y respaldo en acero, revestimiento en polvo epoxi. Tapicería en flor de piel de vacuno, teñida, tratada y pigmentada. Con piel de cabra teñida en profundidad, con superficie natural.	CIENTO CUARENTA EUROS CON SESENTA Y CINCO CÉNTIMOS	165,00
844	PSÑLPOL	ud Señalización de equipos contra incendios fotoluminiscente, de riesgo diverso, advertencia de peligro, prohibición, evacuación y salvamento, en poliestireno de 1,5 mm fotoluminiscente, de dimensiones 297x297 mm, s. CTE.	CIENTO SESENTA Y CINCO EUROS	4,49
845	PTABPAL1	m² Formación de cubierta inclinada realizada con formación de pendientes mediante tabiquillos palomeros de ladrillo hueco doble, tablero de rasillón cerámico, capa de mortero de cemento de 2 cm de espesor, incluso p.p. de piezas especiales y medios auxiliares.	CUATRO EUROS CON CUARENTA Y NUEVE CÉNTIMOS	71,33
846	PTAP600_E	ud Tapa de fundición dúctil para acceso a canal de descarga del aliviadero de dimensiones 0,600 x 0,600 m incluyendo cerco, mano de obra y colocación.	SETENTA Y UN EUROS CON TREINTA Y TRES CÉNTIMOS	174,55
847	PTELECTT01	ud Toma de teléfono en Edificio de Control bajo tubo aislante empotrado en la pared, incluso p.p. de cajas, mecanismo y guía, totalmente terminado.	CIENTO SETENTA Y CUATRO EUROS CON CINCUENTA Y CINCO CÉNTIMOS	23,03
848	PTELEM01	ud Terminal de teléfono analógico.	VEINTITRES EUROS CON TRES CÉNTIMOS	58,04
849	PTOO300.10	m Tubería de PP masivo (Polipropileno Homopolímero), para aireación, de 300 mm de diámetro exterior, con junta colada, incluida la soportaría en acero inoxidable, uniones, juntas y codos. Totalmente instalada.	CINCUENTA Y OCHO EUROS CON CUATRO CÉNTIMOS	207,36
850	PTU-001	ud Terraplén de prueba para material del núcleo de balsa, de acuerdo con las especificaciones del pliego o, en su caso, del director de prueba, incluso ensayos previos y posteriores e informe con recomendaciones.	DOSCIENTOS SIETE EUROS CON TREINTA Y SEIS CÉNTIMOS	6.036,70

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			SEIS MIL TREINTA Y SEIS EUROS CON SETENTA CÉNTIMOS	
851	PTU-002	m ² Preparación de plataforma para realizar terraplén de prueba, según especificaciones del pliego, en su caso, directrices del Director de Obra, totalmente terminado.		9,76
			NUEVE EUROS CON SETENTA Y SEIS CÉNTIMOS	
852	PTU-003	ud Terraplén de prueba para material todo uno en espaldón de balsa, de acuerdo con las especificaciones del pliego o, en su caso, del director de prueba, incluso ensayos previos y posteriores e informe con recomendaciones.		5.155,67
			CINCO MIL CIENTO CINCUENTA Y CINCO EUROS CON SESENTA Y SIETE CÉNTIMOS	
853	PTU-004	m ³ Excavación de terreno no clasificado en cimientado de núcleo balsa, con medios mecánicos y taqueos puntuales, incluso refino, con carga y transporte a acopio intermedio o vertedero, incluso canon de vertido, mantenimiento y restauración de vertedero.		4,65
			CUATRO EUROS CON SESENTA Y CINCO CÉNTIMOS	
854	PTU-006	m ³ Excavación de terreno no clasificado en explanaciones con medios mecánicos y taqueos puntuales incluso, refino de taludes y fondo de excavación, carga y transporte a vertedero, acopio o lugar de uso, incluso canon de vertido, mantenimiento y restauración del vertedero.		4,04
			CUATRO EUROS CON CUATRO CÉNTIMOS	
855	PTU-008	m ² Regularización de la superficie de excavación en apoyo de cimientado de núcleo de balsa de Tudela incluyendo tratamiento y relleno con mortero de diaclasas de espesor inferior a 3 cm, según P.C.T con carga y transporte de productos sobrantes a vertedero o lugar de uso, incluso canon de vertido, mantenimiento y restauración de vertedero.		2,95
			DOS EUROS CON NOVENTA Y CINCO CÉNTIMOS	
856	PTU-009	m ² Excavación en refino de fondos de excavación en terciario alterado en cimientado de presa con medios mecánicos y taqueos puntuales, con carga y transporte a vertedero o lugar de uso, incluso canon de vertido, mantenimiento y restauración de vertedero.		0,73

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			CERO EUROS CON SETENTA Y TRES CÉNTIMOS	
857	PTU-010	m³ Material "limo-arcilloso" en núcleo de balsa, procedente de la excavación de los suelos aluviales de los fondos de valle del vaso del embalse o préstamos próximos, carga, transporte, extendido, humectado y compactado según prescripciones técnicas del pliego o según condiciones extraídas del terraplén de prueba, incluso acopios intermedios y trabajos en acopio.		3,48
			TRES EUROS CON CUARENTA Y OCHO CÉNTIMOS	
858	PTU-011	m³ Material "todouno" en espaldones procedente de excavaciones efectuadas en el vaso del embalse o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones o según puesta en obra deducida de los terraplenes de prueba.		4,47
			CUATRO EUROS CON CUARENTA Y SIETE CÉNTIMOS	
859	PTU-012	m³ Material tipo gravas en espaldones procedente de la terraza aluvial superior al embalse, incluida su excavación mediante medios mecánicos, incluso taqueos puntuales, selección y troceado, carga, transporte, extendido, humectado y compactado en las condiciones indicadas en el pliego, incluso acopios intermedios y trabajos en acopio.		4,34
			CUATRO EUROS CON TREINTA Y CUATRO CÉNTIMOS	
860	PTU-013	m³ Material procedente de la costra calcárea en espaldón de aguas abajo procedente de la terraza aluvial superior al embalse, incluida su excavación mediante medios mecánicos, incluso taqueos puntuales, selección y troceado, carga, transporte, extendido, humectado y compactado en las condiciones indicadas en el pliego, incluso acopios intermedios y trabajos en acopio.		3,84
			TRES EUROS CON OCHENTA Y CUATRO CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
861	PTU-014	m³ Material granular para filtro procedente de gravera o préstamos cercanos, incluye excavación y selección de la roca con resistencia a compresión simple superior a 15 Mpa, fabricación en planta de machaqueo y cribado hasta la obtención de la granulometría exigida en el Pliego, extendido y compactado junto a núcleo o en drenes horizontales de presa.		21,96
			VEINTIUN EUROS CON NOVENTA Y SEIS CÉNTIMOS	
862	PTU-015	m³ Material granular de transición procedente de préstamo de gravas en terraza superior del embalses, incluye carga, transporte, selección del material y resto de operaciones asociadas según prescripciones del pliego, extendido y compactado en espaldón de presa. Unidad totalmente terminada en balsa.		8,96
			OCHO EUROS CON NOVENTA Y SEIS CÉNTIMOS	
863	PTU-016	m³ Material granular para dren procedente de gravera o préstamos, incluye excavación y selección de la roca con resistencia a compresión simple superior a 15 Mpa, fabricación en planta de machaqueo y cribado hasta la obtención de la granulometría exigida en el Pliego, extendido y compactado junto a núcleo o en drenes horizontales de balsa.		20,06
			VEINTE EUROS CON SEIS CÉNTIMOS	
864	PTU-017	m³ Pedraplén en relleno de pie de balsa y espaldones procedente del vaso del embalse o préstamos próximos, incluida su excavación mediante voladura, selección y troceado, carga, transporte, extendido, humectación y compactación en tongadas de 0,80 m de espesor y granulometría según lo especificado en el Pliego.		29,96
			VEINTINUEVE EUROS CON NOVENTA Y SEIS CÉNTIMOS	
865	PTU-018	m³ Material grueso (rip-rap) para protección de espaldón procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto, vertida en cualquier tipo de paramento de balsa, incluso suministro, transporte, colocación y compactación, medido sobre perfil teórico, según planos.		31,94

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			TREINTA Y UN EUROS CON NOVENTA Y CUATRO CÉNTIMOS	
866	PTU-019	m³ Escollera colocada de 500 kg procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto en el entorno de la balsa de Tudela y de la balsa de Mostrakas, colocada en cualquier tipo de paramento, incluso suministro, transporte, medido sobre perfil teórico, según planos.		35,37
			TREINTA Y CINCO EUROS CON TREINTA Y SIETE CÉNTIMOS	
867	PTU-020	m³ Desbroce y excavación de tierra vegetal de espesor medio de 50 cm, en balsa de Tudela y balsa de Mostrakas incluso carga, transporte a cualquier distancia a acopio intermedio no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa.		1,90
			UN EUROS CON NOVENTA CÉNTIMOS	
868	PTU-021	m³ Material "todouno" en espaldones procedente de excavaciones efectuadas en el vaso del embalse o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones o según puesta en obra deducida de los terraplenes de prueba.		5,37
			CINCO EUROS CON TREINTA Y SIETE CÉNTIMOS	
869	PTU-022	m² Hormigon proyectado HM-35/B/20/X0, de 5 cm. de espesor reforzado con fibras de acero, con 700 j de energía de absorción, en tratamiento de desmonte, incluso aditivos y rechazo, puesto en obra		9,52
			NUEVE EUROS CON CINCUENTA Y DOS CÉNTIMOS	
870	PTU-023	m³ Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado en balsas.		0,56
			CERO EUROS CON CINCUENTA Y SEIS CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
871	PTU-024	m ² Regularización y refino de la superficie de excavación en taludes de balsa incluyendo tratamiento y relleno con mortero de diacclas de espesor inferior a 3 cm, según P.C.T con carga y transporte de productos sobrantes a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero.		2,64
			DOS EUROS CON SESENTA Y CUATRO CÉNTIMOS	
872	PTU-025	m ³		0,45
			CERO EUROS CON CUARENTA Y CINCO CÉNTIMOS	
873	PTUB160PVC	m Tubería de PVC diámetro Nominal 160 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada		17,25
			DIECISIETE EUROS CON VEINTICINCO CÉNTIMOS	
874	PTUB250PVC	m Tubería de PVC diámetro Nominal 250 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.		33,42
			TREINTA Y TRES EUROS CON CUARENTA Y DOS CÉNTIMOS	
875	PTUDREB160	m Tubo dren de PVC corrugado poroso, D= 160 mm, puesta en zanja, instalada, transporte, montaje. Unidad totalmente instalada y terminada.		8,40
			OCHO EUROS CON CUARENTA CÉNTIMOS	
876	PTUDREB250	m Tubo dren de PVC corrugado poroso, D= 250 mm, puesta en zanja, instalada, transporte, montaje. Unidad totalmente instalada y terminada.		12,92
			DOCE EUROS CON NOVENTA Y DOS CÉNTIMOS	
877	PU08070070	ud Bote sifónico cilíndrico de 110 mm de diámetro, de P.V.C., incluso conexión e instalación.		29,32
			VEINTINUEVE EUROS CON TREINTA Y DOS CÉNTIMOS	
878	PVHB400	ud Suministro y montaje de válvula Howell-Bunger de 400 mm de diámetro, con carrete deflector de chorro incorporado a la válvula, construida en acero inoxidable, con accionamiento por cilindros oleohidráulicos, con indicador de posición electrónico digital con lectura en pupitre de mando.. Unidad totalmente instalada y probada		39.382,54
			TREINTA Y NUEVE MIL TRESCIENTOS OCHENTA Y	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			DOS EUROS CON CINCUENTA Y CUATRO CÉNTIMOS	
879	PVHW600	ud Suministro y montaje de válvula Howell-Bunger de 600 mm de diámetro, con carrete deflector de chorro incorporado a la válvula, construida en acero inoxidable, con accionamiento por cilindros oleohidráulicos, con indicador de posición electrónico digital con lectura en pupitre de mando. Unidad totalmente instalada y probada.		57.051,93
			CINCUENTA Y SIETE MIL CINCUENTA Y UN EUROS CON NOVENTA Y TRES CÉNTIMOS	
880	PVIGJAC4040	m Viga jacena prefabricada de hormigón armado de sección 40x40 cm., con armadura s/ cálculo y con la sección necesaria en cada nudo para acoplamiento de piezas de la estructura, incluso parte proporcional de apoyo, montaje con autogrúa, totalmente instalado.		420,37
			CUATROCIENTOS VEINTE EUROS CON TREINTA Y SIETE CÉNTIMOS	
881	PVPREDEL136	m Viga prefabricada tipo Delta G136 T 2, colocada con ayuda de grúa automóvil para montaje y apeos necesarios. Según CODIGO ESTRUCTURAL y CTE.		320,87
			TRESCIENTOS VEINTE EUROS CON OCHENTA Y SIETE CÉNTIMOS	
882	PVPREDEL182	m Viga prefabricada tipo Delta G182 T 10, colocada con ayuda de grúa automóvil para montaje y apeos necesarios. Según CODIGO ESTRUCTURAL y CTE.		345,74
			TRESCIENTOS CUARENTA Y CINCO EUROS CON SETENTA Y CUATRO CÉNTIMOS	
883	PVPREFTVT25	m Viga prefabricada tubular correas tipo VT-25 en cubierta, incluso transporte y colocación.		86,25
			OCHENTA Y SEIS EUROS CON VEINTICINCO CÉNTIMOS	
884	PVPREHAH	m Viga prefabricada HA portacanal tipo H, para recogida de aguas en cubierta, incluso pp de transporte y colocación.		327,65
			TRESCIENTOS VEINTISIETE EUROS CON SESENTA Y CINCO CÉNTIMOS	
885	TUB.FD.1000A	m Tubería de fundición dúctil de diámetro nominal 1000 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN 545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.		607,33

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
			SEISCIENTOS SIETE EUROS CON TREINTA Y TRES CÉNTIMOS	
886	TUB.FD.100A	m Tubería de fundición dúctil de diámetro nominal 100 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.		22,79
			VEINTIDOS EUROS CON SETENTA Y NUEVE CÉNTIMOS	
887	TUB.FD.150A	m Tubería de fundición dúctil de diámetro nominal 150 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.		26,05
			VEINTISEIS EUROS CON CINCO CÉNTIMOS	
888	TUB.FD.200A	m Tubería de fundición dúctil de diámetro nominal 200 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.		35,96
			TREINTA Y CINCO EUROS CON NOVENTA Y SEIS CÉNTIMOS	
889	TUB.FD.250A	m Tubería de fundición dúctil de diámetro nominal 250 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.		66,97
			SESENTA Y SEIS EUROS CON NOVENTA Y SIETE CÉNTIMOS	

CUADRO DE PRECIOS 1

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	PRECIO EN LETRA	IMPORTE (€)
890	TUB.FD.300A	m Tubería de fundición dúctil de diámetro nominal 300 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.		70,71
SETENTA EUROS CON SETENTA Y UN CÉNTIMOS				
891	TUB.FD.500A	m Tubería de fundición dúctil de diámetro nominal 500 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.		148,72
CIENTO CUARENTA Y OCHO EUROS CON SETENTA Y DOS CÉNTIMOS				
892	TUB.FD.600A	m Tubería de fundición dúctil de diámetro nominal 600 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN 545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.		239,72
DOSCIENTOS TREINTA Y NUEVE EUROS CON SETENTA Y DOS CÉNTIMOS				

Zaragoza, marzo de 2022

El Ingeniero autor del Proyecto

Fdo.: D. Rafael Fernández-Ordóñez Cervera
Ingeniero de Caminos Canales y Puertos
Colegiado Nº 11.444

El Ingeniero autor del Proyecto

Fdo: D. Juan Ortas González
Ingeniero de Caminos, Canales y Puertos
Colegiado nº 10.726

Examinado y conforme.
El Director del proyecto

Fdo.: D. Jose María Serra Llena
Ingeniero de Caminos Canales y Puertos
Colegiado Nº 10.408

CUADRO DE PRECIOS N°2

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
001	P-101AMB-MP01	mes Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.	
		Mano de obra	127,44
		Maquinaria	2.219,80
		Suma la partida	2.347,24
		Costes indirectos 6%	140,83
		TOTAL PARTIDA.....	2.488,07
002	P-101AMB-MP03	m Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.	
		Mano de obra	0,42
		Resto de obra y materiales.....	1,22
		Suma la partida	1,64
		Costes indirectos 6%	0,10
		TOTAL PARTIDA.....	1,74
003	P-101AMB-MP05	m Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.	
		Mano de obra	2,81
		Maquinaria	0,06
		Resto de obra y materiales.....	2,36
		Suma la partida	5,23
		Costes indirectos 6%	0,31
		TOTAL PARTIDA.....	5,54
004	P-101AMB-MP06	ud Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.	
		Mano de obra	493,80
		Maquinaria	262,92
		Resto de obra y materiales.....	4,44
		Suma la partida	761,16
		Costes indirectos 6%	45,67
		TOTAL PARTIDA.....	806,83
005	P-101AMB-MP09	m Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.	
		Mano de obra	0,21
		Resto de obra y materiales.....	0,28
		Suma la partida	0,49
		Costes indirectos 6%	0,03
		TOTAL PARTIDA.....	0,52
006	P-101AMB-MP10	ud Protector de fauna: Instalación de vallas plásticas y elementos necesarios.	
		Mano de obra	10,62
		Resto de obra y materiales.....	1,72
		Suma la partida	12,34
		Costes indirectos 6%	0,74
		TOTAL PARTIDA.....	13,08
007	P-102AMB-PL01	m² Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.	
		Mano de obra	0,02
		Maquinaria	0,09
		Suma la partida	0,11
		Costes indirectos 6%	0,01

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				0,12
008	P-102AMB-PL06	Pie	Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y densidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la intensidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, incluido canon de vertido, herramientas y medios auxiliares.	
Mano de obra				128,07
Maquinaria				8,13
Resto de obra y materiales.....				6,00
Suma la partida				142,20
Costes indirectos 6%				8,53
TOTAL PARTIDA.....				150,73
009	P-102AMBPL001	m²	Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.	
Mano de obra				0,28
Maquinaria				0,84
Resto de obra y materiales.....				0,43
Suma la partida				1,55
Costes indirectos 6%				0,09
TOTAL PARTIDA.....				1,64
010	P-102AMBPL002	ud	Plantación de Juniperus phoenicea 0,1-0,2m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a minicavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
Mano de obra				0,57
Maquinaria				0,32
Resto de obra y materiales.....				0,71
Suma la partida				1,60
Costes indirectos 6%				0,10
TOTAL PARTIDA.....				1,70
011	P-102AMBPL003	ud	Plantación de Artemisia herba-alba 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a minicavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
Mano de obra				0,57
Maquinaria				0,32
Resto de obra y materiales.....				1,35
Suma la partida				2,24
Costes indirectos 6%				0,13
TOTAL PARTIDA.....				2,37
012	P-102AMBPL004	ud	Plantación de Juniperus oxycedrus 0,1-0,2m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a minicavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
Mano de obra				0,57
Maquinaria				0,32
Resto de obra y materiales.....				0,82
Suma la partida				1,71
Costes indirectos 6%				0,10
TOTAL PARTIDA.....				1,81

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
013	P-102AMBPL01	ud	Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
			Mano de obra	0,57
			Maquinaria	0,32
			Resto de obra y materiales.....	0,52
			Suma la partida	1,41
			Costes indirectos 6%	0,08
			TOTAL PARTIDA.....	1,49
014	P-102AMBPL02	ud	Plantación de Suaeda vera 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
			Mano de obra	0,57
			Maquinaria	0,32
			Resto de obra y materiales.....	0,65
			Suma la partida	1,54
			Costes indirectos 6%	0,09
			TOTAL PARTIDA.....	1,63
015	P-102AMBPL03B	ud	Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso apertura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación.	
			Mano de obra	0,46
			Maquinaria	0,78
			Resto de obra y materiales.....	7,56
			Suma la partida	8,80
			Costes indirectos 6%	0,53
			TOTAL PARTIDA.....	9,33
016	P-102AMBPL04	ud	Plantación de Salsola vermiculata 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
			Mano de obra	0,57
			Maquinaria	0,32
			Resto de obra y materiales.....	0,69
			Suma la partida	1,58
			Costes indirectos 6%	0,09
			TOTAL PARTIDA.....	1,67
017	P-102AMBPL05	ud	Plantación de Santolina chamaecyparissus 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
			Mano de obra	0,57
			Maquinaria	0,32
			Resto de obra y materiales.....	0,48
			Suma la partida	1,37
			Costes indirectos 6%	0,08
			TOTAL PARTIDA.....	1,45
018	P-102AMBPL06	ud	Plantación de Ononis fruticosa 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
			Mano de obra	0,57
			Maquinaria	0,32

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Resto de obra y materiales.....	1,16
		Suma la partida	2,05
		Costes indirectos 6%	0,12
		TOTAL PARTIDA.....	2,17
019	P-102AMBPL07	ud Plantación de Linum suffruticosum 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a minixcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
		Mano de obra	0,57
		Maquinaria	0,32
		Resto de obra y materiales.....	1,44
		Suma la partida	2,33
		Costes indirectos 6%	0,14
		TOTAL PARTIDA.....	2,47
020	P-102AMBPL08	mes Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de marras, realización de podas de realce necesarias y otras operaciones de mantenimiento. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande realizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, incluyendo la escarada y mezcla con el sustrato de malas hierbas, herramientas y medios auxiliares.	
		Mano de obra	254,88
		Maquinaria	585,40
		Resto de obra y materiales.....	35,50
		Suma la partida	875,78
		Costes indirectos 6%	52,55
		TOTAL PARTIDA.....	928,33
021	P-102AMBPL09	ud Plantación de Stipa parviflora 0,1-0,25m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a minixcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
		Mano de obra	0,57
		Maquinaria	0,32
		Resto de obra y materiales.....	0,54
		Suma la partida	1,43
		Costes indirectos 6%	0,09
		TOTAL PARTIDA.....	1,52
022	P-102AMBPL10	ud Plantación de Rhamnus alaternus 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a minixcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
		Mano de obra	0,57
		Maquinaria	0,32
		Resto de obra y materiales.....	0,61
		Suma la partida	1,50
		Costes indirectos 6%	0,09
		TOTAL PARTIDA.....	1,59
023	P-102AMBPL12B	m² Formación de pasto por siembra de una mezcla de especies gramíneas y leguminosas, a determinar por la Dirección de Obra, incluso la limpieza del terreno, laboreo con dos pases de motocultor cruzados y abonado de fondo, rastillado y retirada de todo material de tamaño superior a 2 cm., distribución de la semilla.	
		Mano de obra	0,11
		Maquinaria	0,03
		Resto de obra y materiales.....	0,04
		Suma la partida	0,18
		Costes indirectos 6%	0,01

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			0,19
024	P-102AMBPL171	ud Plantación de Rubus ulmifolius extensa de 0,3-0,50m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a minixcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
Mano de obra			0,57
Maquinaria			0,32
Resto de obra y materiales.....			0,62
Suma la partida			1,51
Costes indirectos 6%			0,09
TOTAL PARTIDA.....			1,60
025	P-102AMBPL18	ud Ud. Suministro y plantación de Salix atrocinerea (Sarga negra) de 0,50 a 0,75 m. de altura, suministrado en contenedor, y plantación en hoyo de 0,4 x 0,4 x 0,4 m., incluso apertura manual del mismo, abonado, formación de alcorque y primer riego.	
Mano de obra			0,46
Maquinaria			0,58
Resto de obra y materiales.....			1,27
Suma la partida			2,31
Costes indirectos 6%			0,14
TOTAL PARTIDA.....			2,45
026	P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a minixcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
Mano de obra			1,48
Maquinaria			0,30
Resto de obra y materiales.....			0,31
Suma la partida			2,09
Costes indirectos 6%			0,13
TOTAL PARTIDA.....			2,22
027	P-102AMBPL31A	ud Quercus ilex de 1,8-2,0m alt. de perímetro de tronco, suministrado en cepellón y plantación en hoyo de 1x1x1x m., incluso apertura del mismo con los medios indicados, abonado, formación de alcorque, tutor y primer riego.	
Mano de obra			7,82
Maquinaria			1,75
Resto de obra y materiales.....			8,95
Suma la partida			18,52
Costes indirectos 6%			1,11
TOTAL PARTIDA.....			19,63
028	P-102AMBPL34E	ud Rosa canina de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,6x0,6x0,6 m., incluso apertura del mismo a mano, abonado, formación de alcorque y primer riego.	
Mano de obra			1,56
Maquinaria			0,06
Resto de obra y materiales.....			0,70
Suma la partida			2,32
Costes indirectos 6%			0,14
TOTAL PARTIDA.....			2,46
029	P-102AMBPL36	ud Salvia officialis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, formación de alcorque y primer riego.	
Mano de obra			1,56
Maquinaria			0,06
Resto de obra y materiales.....			0,87

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Suma la partida	2,49
			Costes indirectos 6%	0,15
			TOTAL PARTIDA.....	2,64
030	P-102AMBPL37	ud	Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso apertura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
			Mano de obra	1,26
			Maquinaria	0,29
			Resto de obra y materiales.....	0,37
			Suma la partida	1,92
			Costes indirectos 6%	0,12
			TOTAL PARTIDA.....	2,04
031	P-102AMBPL38B	ud	Plantación de Crataegus monogyna 0,6-0,8 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	
			Mano de obra	2,55
			Maquinaria	0,45
			Resto de obra y materiales.....	0,89
			Suma la partida	3,89
			Costes indirectos 6%	0,23
			TOTAL PARTIDA.....	4,12
032	P-102AMBPL39	ud	Plantación de Salix alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x6,0 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto	
			Mano de obra	0,46
			Maquinaria	0,58
			Resto de obra y materiales.....	5,19
			Suma la partida	6,23
			Costes indirectos 6%	0,37
			TOTAL PARTIDA.....	6,60
033	P-102AMBPL39B	ud	Populus alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x6,0 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto.	
			Mano de obra	0,46
			Maquinaria	0,58
			Resto de obra y materiales.....	5,19
			Suma la partida	6,23
			Costes indirectos 6%	0,37
			TOTAL PARTIDA.....	6,60
034	P-102AMBPL40	ud	Entutorado de árbol con 1 tutor vertical de rollizo de pino torneado, de 3 m de longitud y 8 cm de diámetro con punta en un extremo y baquetón en el otro, tanalizado en autoclave, hincado en el fondo del hoyo de plantación, retacado con la tierra de plantación, y sujeción del tronco con cincha textil no degradable, de 3-4 cm de anchura y tornillos galvanizados.	
			Mano de obra	0,87
			Resto de obra y materiales.....	3,43
			Suma la partida	4,30
			Costes indirectos 6%	0,26
			TOTAL PARTIDA.....	4,56

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
035	P-102AMBPRY	ud	Proyecto de restauración ambiental en la zona de extracción de gravas de la Balsa de Tudela, con medidas específicas para dar continuidad al enclave forestal de las laderas repobladas en el emplazamiento de la Balsa; otras medidas de revegetación específicas para la conservación de la fauna del Área de Importancia para la Conservación de la Avifauna Esteparia del Entorno del Pulguer y medidas adicionales para el cumplimiento de los requisitos establecidos en el Área de Especial Protección por Conectividad Territorial del Plan de Ordenación Territorial de Navarra (POT-5); incluida la implantación de medidas adicionales propuestas por el Gobierno de Navarra.	
			Resto de obra y materiales.....	90.000,00
			Suma la partida	90.000,00
			Costes indirectos 6%	5.400,00
			TOTAL PARTIDA.....	95.400,00
036	P-103AMBAR-03	km²	Prospección arqueológica intensiva de cobertura total en una superficie afectada de 1Km2, incluyendo excavaciones, sondeos arqueológicos, medios humanos, maquinaria, material auxiliar necesario, análisis documental, proyecto de actuación arqueológica y trabajo de campo. Unidad completa	
			Mano de obra	5.277,60
			Maquinaria	155,04
			Resto de obra y materiales.....	250,00
			Suma la partida	5.682,64
			Costes indirectos 6%	340,96
			TOTAL PARTIDA.....	6.023,60
037	P-103AMBAR00A	ud	Informe arqueológico previo incluidas tramitaciones y tasas.	
			Mano de obra	1.501,20
			Resto de obra y materiales.....	250,00
			Suma la partida	1.751,20
			Costes indirectos 6%	105,07
			TOTAL PARTIDA.....	1.856,27
038	P-103AMBAR01A	ud	Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.	
			Mano de obra	2.502,00
			Maquinaria	260,80
			Resto de obra y materiales.....	250,00
			Suma la partida	3.012,80
			Costes indirectos 6%	180,77
			TOTAL PARTIDA.....	3.193,57
039	P-103AMBAR02A	mes	Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual	
			Mano de obra	1.601,28
			Maquinaria	417,28
			Resto de obra y materiales.....	250,00
			Suma la partida	2.268,56
			Costes indirectos 6%	136,11
			TOTAL PARTIDA.....	2.404,67
040	P-103AMBAR02B	día	Día de control y seguimiento arqueológico de carácter intensivo realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluida maquinaria de desbroce y excavación, medios auxiliares necesarios y presencia permanente de técnicos, generación de informe de seguimiento	
			Mano de obra	385,20
			Maquinaria	155,04
			Resto de obra y materiales.....	50,60

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Suma la partida	590,84
		Costes indirectos 6%	35,45
		TOTAL PARTIDA.....	626,29
041	P-104AMBVA00A	ud Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación	
		Mano de obra	600,48
		Maquinaria	26,08
		Resto de obra y materiales.....	293,52
		Suma la partida	920,08
		Costes indirectos 6%	55,20
		TOTAL PARTIDA.....	975,28
042	P-104AMBVA01A	mes Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento.	
		Mano de obra	1.251,00
		Maquinaria	326,00
		Resto de obra y materiales.....	195,68
		Suma la partida	1.772,68
		Costes indirectos 6%	106,36
		TOTAL PARTIDA.....	1.879,04
043	P-104AMBVA02A	mes Medida de niveles de ruido en zona de obra. Desarrollada la medición a lo largo de una jornada laboral, con toma de datos en diversos puntos de la obra, y elaboración de informes periódicos posteriores por especialista cualificado, incluidos materiales y elementos auxiliares. Unidad totalmente terminada.	
		Mano de obra	200,16
		Maquinaria	52,16
		Resto de obra y materiales.....	328,92
		Suma la partida	581,24
		Costes indirectos 6%	34,87
		TOTAL PARTIDA.....	616,11
044	P-104AMBVA03A	ud Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina.	
		Mano de obra	2.502,00
		Maquinaria	652,00
		Resto de obra y materiales.....	587,04
		Suma la partida	3.741,04
		Costes indirectos 6%	224,46
		TOTAL PARTIDA.....	3.965,50
045	P-104AMBVA04A	ud Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe.	
		Mano de obra	2.001,60
		Maquinaria	521,60
		Resto de obra y materiales.....	195,68
		Suma la partida	2.718,88
		Costes indirectos 6%	163,13
		TOTAL PARTIDA.....	2.882,01
046	P-104AMBVA05	ud Informe y analítica de muestras de agua en puntos de cruce singulares. unidad totalmente ejecutada.	
		Mano de obra	200,16
		Maquinaria	52,16
		Resto de obra y materiales.....	26,10
		Suma la partida	278,42
		Costes indirectos 6%	16,71

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
TOTAL PARTIDA.....			295,13												
047	P-104AMBVA06	ud Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio. Unidad completa.	<table><tr><td>Mano de obra</td><td>400,32</td></tr><tr><td>Maquinaria</td><td>104,32</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.391,14</td></tr><tr><td>Suma la partida</td><td>1.895,78</td></tr><tr><td>Costes indirectos 6%</td><td>113,75</td></tr><tr><td>TOTAL PARTIDA.....</td><td>2.009,53</td></tr></table>	Mano de obra	400,32	Maquinaria	104,32	Resto de obra y materiales.....	1.391,14	Suma la partida	1.895,78	Costes indirectos 6%	113,75	TOTAL PARTIDA.....	2.009,53
Mano de obra	400,32														
Maquinaria	104,32														
Resto de obra y materiales.....	1.391,14														
Suma la partida	1.895,78														
Costes indirectos 6%	113,75														
TOTAL PARTIDA.....	2.009,53														
048	P1BRID1100.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas	<table><tr><td>Mano de obra</td><td>26,13</td></tr><tr><td>Maquinaria</td><td>13,14</td></tr><tr><td>Resto de obra y materiales.....</td><td>3.069,44</td></tr><tr><td>Suma la partida</td><td>3.108,71</td></tr><tr><td>Costes indirectos 6%</td><td>186,52</td></tr><tr><td>TOTAL PARTIDA.....</td><td>3.295,23</td></tr></table>	Mano de obra	26,13	Maquinaria	13,14	Resto de obra y materiales.....	3.069,44	Suma la partida	3.108,71	Costes indirectos 6%	186,52	TOTAL PARTIDA.....	3.295,23
Mano de obra	26,13														
Maquinaria	13,14														
Resto de obra y materiales.....	3.069,44														
Suma la partida	3.108,71														
Costes indirectos 6%	186,52														
TOTAL PARTIDA.....	3.295,23														
049	P1BRID1300.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas	<table><tr><td>Mano de obra</td><td>26,13</td></tr><tr><td>Maquinaria</td><td>13,14</td></tr><tr><td>Resto de obra y materiales.....</td><td>3.750,00</td></tr><tr><td>Suma la partida</td><td>3.789,27</td></tr><tr><td>Costes indirectos 6%</td><td>227,36</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.016,63</td></tr></table>	Mano de obra	26,13	Maquinaria	13,14	Resto de obra y materiales.....	3.750,00	Suma la partida	3.789,27	Costes indirectos 6%	227,36	TOTAL PARTIDA.....	4.016,63
Mano de obra	26,13														
Maquinaria	13,14														
Resto de obra y materiales.....	3.750,00														
Suma la partida	3.789,27														
Costes indirectos 6%	227,36														
TOTAL PARTIDA.....	4.016,63														
050	P1BRID1500.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	<table><tr><td>Mano de obra</td><td>26,13</td></tr><tr><td>Maquinaria</td><td>13,14</td></tr><tr><td>Resto de obra y materiales.....</td><td>4.650,00</td></tr><tr><td>Suma la partida</td><td>4.689,27</td></tr><tr><td>Costes indirectos 6%</td><td>281,36</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.970,63</td></tr></table>	Mano de obra	26,13	Maquinaria	13,14	Resto de obra y materiales.....	4.650,00	Suma la partida	4.689,27	Costes indirectos 6%	281,36	TOTAL PARTIDA.....	4.970,63
Mano de obra	26,13														
Maquinaria	13,14														
Resto de obra y materiales.....	4.650,00														
Suma la partida	4.689,27														
Costes indirectos 6%	281,36														
TOTAL PARTIDA.....	4.970,63														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
051	P1BRID900.25	ud	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 900 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	
			Mano de obra	26,13
			Maquinaria	13,14
			Resto de obra y materiales.....	2.225,48
			Suma la partida	2.264,75
			Costes indirectos 6%	135,89
			TOTAL PARTIDA.....	2.400,64
052	P1BRIDA150.25	ud	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN150 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	
			Mano de obra	26,13
			Maquinaria	13,14
			Resto de obra y materiales.....	51,65
			Suma la partida	90,92
			Costes indirectos 6%	5,46
			TOTAL PARTIDA.....	96,38
053	P1BRIDA200.25	ud	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 200 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	
			Mano de obra	26,13
			Maquinaria	13,14
			Resto de obra y materiales.....	76,56
			Suma la partida	115,83
			Costes indirectos 6%	6,95
			TOTAL PARTIDA.....	122,78
054	P1BRIDA250.25	ud	Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 250 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	
			Mano de obra	26,13
			Maquinaria	13,14
			Resto de obra y materiales.....	115,72
			Suma la partida	154,99
			Costes indirectos 6%	9,30
			TOTAL PARTIDA.....	164,29

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
055	P1BRIDA500.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 500 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	<table><tr><td>Mano de obra</td><td>26,13</td></tr><tr><td>Maquinaria</td><td>13,14</td></tr><tr><td>Resto de obra y materiales.....</td><td>506,27</td></tr><tr><td>Suma la partida</td><td>545,54</td></tr><tr><td>Costes indirectos 6%</td><td>32,73</td></tr><tr><td>TOTAL PARTIDA.....</td><td>578,27</td></tr></table>	Mano de obra	26,13	Maquinaria	13,14	Resto de obra y materiales.....	506,27	Suma la partida	545,54	Costes indirectos 6%	32,73	TOTAL PARTIDA.....	578,27
Mano de obra	26,13														
Maquinaria	13,14														
Resto de obra y materiales.....	506,27														
Suma la partida	545,54														
Costes indirectos 6%	32,73														
TOTAL PARTIDA.....	578,27														
056	P1BRIDA700.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 700 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	<table><tr><td>Mano de obra</td><td>26,13</td></tr><tr><td>Maquinaria</td><td>13,14</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.225,89</td></tr><tr><td>Suma la partida</td><td>1.265,16</td></tr><tr><td>Costes indirectos 6%</td><td>75,91</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.341,07</td></tr></table>	Mano de obra	26,13	Maquinaria	13,14	Resto de obra y materiales.....	1.225,89	Suma la partida	1.265,16	Costes indirectos 6%	75,91	TOTAL PARTIDA.....	1.341,07
Mano de obra	26,13														
Maquinaria	13,14														
Resto de obra y materiales.....	1.225,89														
Suma la partida	1.265,16														
Costes indirectos 6%	75,91														
TOTAL PARTIDA.....	1.341,07														
057	P1BRIDA800.25	ud Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEO-MED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	<table><tr><td>Mano de obra</td><td>26,13</td></tr><tr><td>Maquinaria</td><td>13,14</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.603,40</td></tr><tr><td>Suma la partida</td><td>1.642,67</td></tr><tr><td>Costes indirectos 6%</td><td>98,56</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.741,23</td></tr></table>	Mano de obra	26,13	Maquinaria	13,14	Resto de obra y materiales.....	1.603,40	Suma la partida	1.642,67	Costes indirectos 6%	98,56	TOTAL PARTIDA.....	1.741,23
Mano de obra	26,13														
Maquinaria	13,14														
Resto de obra y materiales.....	1.603,40														
Suma la partida	1.642,67														
Costes indirectos 6%	98,56														
TOTAL PARTIDA.....	1.741,23														
058	P1MT01A	m² Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	<table><tr><td>Mano de obra</td><td>0,05</td></tr><tr><td>Maquinaria</td><td>0,12</td></tr><tr><td>Resto de obra y materiales.....</td><td>0,03</td></tr><tr><td>Suma la partida</td><td>0,20</td></tr><tr><td>Costes indirectos 6%</td><td>0,01</td></tr><tr><td>TOTAL PARTIDA.....</td><td>0,21</td></tr></table>	Mano de obra	0,05	Maquinaria	0,12	Resto de obra y materiales.....	0,03	Suma la partida	0,20	Costes indirectos 6%	0,01	TOTAL PARTIDA.....	0,21
Mano de obra	0,05														
Maquinaria	0,12														
Resto de obra y materiales.....	0,03														
Suma la partida	0,20														
Costes indirectos 6%	0,01														
TOTAL PARTIDA.....	0,21														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
059	P1MT01B	<p>m² Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.</p>	<table><tr><td>Mano de obra</td><td>0,14</td></tr><tr><td>Maquinaria</td><td>0,98</td></tr><tr><td>Resto de obra y materiales.....</td><td>0,06</td></tr><tr><td>Suma la partida</td><td>1,18</td></tr><tr><td>Costes indirectos 6%</td><td>0,07</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1,25</td></tr></table>	Mano de obra	0,14	Maquinaria	0,98	Resto de obra y materiales.....	0,06	Suma la partida	1,18	Costes indirectos 6%	0,07	TOTAL PARTIDA.....	1,25
Mano de obra	0,14														
Maquinaria	0,98														
Resto de obra y materiales.....	0,06														
Suma la partida	1,18														
Costes indirectos 6%	0,07														
TOTAL PARTIDA.....	1,25														
060	P1MT02A	<p>m² Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.</p>	<table><tr><td>Mano de obra</td><td>0,05</td></tr><tr><td>Maquinaria</td><td>0,29</td></tr><tr><td>Resto de obra y materiales.....</td><td>0,01</td></tr><tr><td>Suma la partida</td><td>0,35</td></tr><tr><td>Costes indirectos 6%</td><td>0,02</td></tr><tr><td>TOTAL PARTIDA.....</td><td>0,37</td></tr></table>	Mano de obra	0,05	Maquinaria	0,29	Resto de obra y materiales.....	0,01	Suma la partida	0,35	Costes indirectos 6%	0,02	TOTAL PARTIDA.....	0,37
Mano de obra	0,05														
Maquinaria	0,29														
Resto de obra y materiales.....	0,01														
Suma la partida	0,35														
Costes indirectos 6%	0,02														
TOTAL PARTIDA.....	0,37														
061	P1MT02B	<p>m² Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.</p>	<table><tr><td>Mano de obra</td><td>0,05</td></tr><tr><td>Maquinaria</td><td>0,33</td></tr><tr><td>Suma la partida</td><td>0,38</td></tr><tr><td>Costes indirectos 6%</td><td>0,02</td></tr><tr><td>TOTAL PARTIDA.....</td><td>0,40</td></tr></table>	Mano de obra	0,05	Maquinaria	0,33	Suma la partida	0,38	Costes indirectos 6%	0,02	TOTAL PARTIDA.....	0,40		
Mano de obra	0,05														
Maquinaria	0,33														
Suma la partida	0,38														
Costes indirectos 6%	0,02														
TOTAL PARTIDA.....	0,40														
062	P1MT03A1	<p>m³ Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ..) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.</p>	<table><tr><td>Mano de obra</td><td>0,49</td></tr><tr><td>Maquinaria</td><td>3,25</td></tr><tr><td>Resto de obra y materiales.....</td><td>0,26</td></tr><tr><td>Suma la partida</td><td>4,00</td></tr><tr><td>Costes indirectos 6%</td><td>0,24</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4,24</td></tr></table>	Mano de obra	0,49	Maquinaria	3,25	Resto de obra y materiales.....	0,26	Suma la partida	4,00	Costes indirectos 6%	0,24	TOTAL PARTIDA.....	4,24
Mano de obra	0,49														
Maquinaria	3,25														
Resto de obra y materiales.....	0,26														
Suma la partida	4,00														
Costes indirectos 6%	0,24														
TOTAL PARTIDA.....	4,24														
063	P1MT03B1	<p>m³ Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.</p>	<table><tr><td>Mano de obra</td><td>0,45</td></tr><tr><td>Maquinaria</td><td>1,66</td></tr><tr><td>Resto de obra y materiales.....</td><td>0,50</td></tr></table>	Mano de obra	0,45	Maquinaria	1,66	Resto de obra y materiales.....	0,50						
Mano de obra	0,45														
Maquinaria	1,66														
Resto de obra y materiales.....	0,50														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Suma la partida	2,61
		Costes indirectos 6%	0,16
		TOTAL PARTIDA.....	2,77
064	P1MT03C1	m³ Excavación localizada en recinto confinado de tablestacas/apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.	
		Mano de obra	0,67
		Maquinaria	3,83
		Resto de obra y materiales.....	7,50
		Suma la partida	12,00
		Costes indirectos 6%	0,72
		TOTAL PARTIDA.....	12,72
065	P1MT03H	m³ Excavación localizada de escollera de cualquier tonelaje con carga, transporte a acopio o acopios intermedios para posterior uso, sucesivas fases de carga, transporte y colocación de escollera careada. Unidad totalmente terminada excavada y posteriormente colocada con reutilización de material.	
		Mano de obra	2,19
		Maquinaria	14,22
		Resto de obra y materiales.....	0,60
		Suma la partida	17,01
		Costes indirectos 6%	1,02
		TOTAL PARTIDA.....	18,03
066	P1MT03I	m² Entibación cuajada en zanjas, pozos o cimentaciones con paneles metálicos blindados o monocodal a cualquier profundidad, incluso desentibado y medios auxiliares. Unidad totalmente terminada incluyendo p.p. de sobresaliente del terreno natural de 0.25m como rodapié de seguridad.	
		Mano de obra	1,95
		Maquinaria	0,90
		Resto de obra y materiales.....	7,30
		Suma la partida	10,15
		Costes indirectos 6%	0,61
		TOTAL PARTIDA.....	10,76
067	P1MT04A	m³ Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	
		Mano de obra	0,28
		Maquinaria	2,27
		Resto de obra y materiales.....	3,66
		Suma la partida	6,21
		Costes indirectos 6%	0,37
		TOTAL PARTIDA.....	6,58
068	P1MT04A2	m³ Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	
		Mano de obra	0,28

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Maquinaria	3,00
		Resto de obra y materiales.....	0,39
		Suma la partida	3,67
		Costes indirectos 6%	0,22
		TOTAL PARTIDA.....	3,89
069	P1MT04B	m³ Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	
		Mano de obra	0,28
		Maquinaria	1,75
		Resto de obra y materiales.....	0,01
		Suma la partida	2,04
		Costes indirectos 6%	0,12
		TOTAL PARTIDA.....	2,16
070	P1MT04D	m³ Relleno localizado de material filtrante (grava 40-80) procedente de préstamo, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	
		Mano de obra	0,28
		Maquinaria	4,11
		Resto de obra y materiales.....	6,71
		Suma la partida	11,10
		Costes indirectos 6%	0,67
		TOTAL PARTIDA.....	11,77
071	P1MT04E	m³ Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.	
		Mano de obra	0,28
		Maquinaria	7,31
		Resto de obra y materiales.....	6,26
		Suma la partida	13,85
		Costes indirectos 6%	0,83
		TOTAL PARTIDA.....	14,68
072	P1MT04F	m³ Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	
		Mano de obra	2,28
		Maquinaria	0,59
		Resto de obra y materiales.....	12,50
		Suma la partida	15,37
		Costes indirectos 6%	0,92
		TOTAL PARTIDA.....	16,29

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
073	P1MT04G	<div>m³ Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.</div>	<div><div>Mano de obra0,28</div><div>Maquinaria2,51</div><div>Resto de obra y materiales.....1,90</div><div>Suma la partida4,69</div><div>Costes indirectos6%0,28</div><div>TOTAL PARTIDA.....4,97</div></div>
074	P1MT05C	<div>m³ Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.</div>	<div><div>Mano de obra0,49</div><div>Maquinaria1,18</div><div>Resto de obra y materiales.....0,01</div><div>Suma la partida1,68</div><div>Costes indirectos6%0,10</div><div>TOTAL PARTIDA.....1,78</div></div>
075	P1MT06A	<div>m³ Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.</div>	<div><div>Mano de obra12,35</div><div>Maquinaria34,50</div><div>Resto de obra y materiales.....3,00</div><div>Suma la partida49,85</div><div>Costes indirectos6%2,99</div><div>TOTAL PARTIDA.....52,84</div></div>
076	P1MT06B	<div>m³ Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.</div>	<div><div>Mano de obra14,47</div><div>Maquinaria14,84</div><div>Resto de obra y materiales.....3,00</div><div>Suma la partida32,31</div><div>Costes indirectos6%1,94</div><div>TOTAL PARTIDA.....34,25</div></div>
077	P1MT06C	<div>m² Demolición de pavimento hidráulico de hormigón, base de hormigón o acerado hasta 40 cm de espesor, con corte de junta con hilo diamante o radial, retirada de bordillos y elementos lineales, i retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.</div>	<div><div>Mano de obra2,47</div><div>Maquinaria3,34</div><div>Resto de obra y materiales.....1,20</div><div>Suma la partida7,01</div><div>Costes indirectos6%0,42</div><div>TOTAL PARTIDA.....7,43</div></div>
078	P1MT06D	<div>m³ Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa</div>	

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Mano de obra	3,85
			Maquinaria	8,70
			Resto de obra y materiales.....	3,00
			Suma la partida	15,55
			Costes indirectos 6%	0,93
			TOTAL PARTIDA.....	16,48
079	P1MT06E	m	Corte de hormigón con disco e hilo de diamante, corte de armaduras con disco espesor 20 cm, retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Unidad completa.	
			Mano de obra	3,54
			Maquinaria	1,92
			Resto de obra y materiales.....	0,06
			Suma la partida	5,52
			Costes indirectos 6%	0,33
			TOTAL PARTIDA.....	5,85
080	P1MT06F	m³	Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	
			Mano de obra	56,55
			Maquinaria	35,55
			Resto de obra y materiales.....	3,00
			Suma la partida	95,10
			Costes indirectos 6%	5,71
			TOTAL PARTIDA.....	100,81
081	P1MT06K	m²	Demolición de muro bloque o ladrillo hormigón con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	
			Mano de obra	4,60
			Maquinaria	0,56
			Resto de obra y materiales.....	0,90
			Suma la partida	6,06
			Costes indirectos 6%	0,36
			TOTAL PARTIDA.....	6,42
082	P1MT06L	m²	Demolición o Desmontado de muros y soleras de escollera hormigonada o mampostería con recuperación de parte de las piezas desmontadas para su posterior colocación, con retirada de escombros sobrantes, carga y transporte a vertedero o planta de reciclaje.	
			Mano de obra	20,44
			Maquinaria	3,76
			Resto de obra y materiales.....	0,06
			Suma la partida	24,26
			Costes indirectos 6%	1,46
			TOTAL PARTIDA.....	25,72
083	P1MT08BASEZA1	m³	Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	
			Mano de obra	0,49
			Maquinaria	2,00
			Resto de obra y materiales.....	16,51
			Suma la partida	19,00
			Costes indirectos 6%	1,14

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			20,14
084	P1MT08BASEZA2	m ² Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.	
Mano de obra			0,24
Maquinaria			0,88
Resto de obra y materiales.....			1,51
Suma la partida			2,63
Costes indirectos 6%			0,16
TOTAL PARTIDA.....			2,79
085	P1MT08ESC150	m ³ Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	
Mano de obra			2,12
Maquinaria			6,25
Resto de obra y materiales.....			12,96
Suma la partida			21,33
Costes indirectos 6%			1,28
TOTAL PARTIDA.....			22,61
086	P1MT08ESC150H	m ³ scollera de peso mínimo 50-150 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	
Mano de obra			2,12
Maquinaria			6,25
Resto de obra y materiales.....			22,78
Suma la partida			31,15
Costes indirectos 6%			1,87
TOTAL PARTIDA.....			33,02
087	P1MT08ESC200	m ³ Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	
Mano de obra			4,25
Maquinaria			9,17
Resto de obra y materiales.....			14,04
Suma la partida			27,46
Costes indirectos 6%			1,65
TOTAL PARTIDA.....			29,11
088	P1MT08ESC500	m ³ Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	
Mano de obra			4,25
Maquinaria			10,64
Resto de obra y materiales.....			21,60
Suma la partida			36,49

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Costes indirectos	6% 2,19
		TOTAL PARTIDA.....	38,68
089	P1MT08ESC500H	m³ Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	
		Mano de obra	4,25
		Maquinaria	9,17
		Resto de obra y materiales.....	31,42
		Suma la partida	44,84
		Costes indirectos	6% 2,69
		TOTAL PARTIDA.....	47,53
090	P1MT08GTX-002	m² Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujección provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	
		Mano de obra	0,42
		Maquinaria	0,03
		Resto de obra y materiales.....	1,33
		Suma la partida	1,78
		Costes indirectos	6% 0,11
		TOTAL PARTIDA.....	1,89
091	P1MT08GTX-003	m² Suministro y colocación de geomalla de refuerzo DLT Grid en taludes incluso enrejado con alambre galvanizado de Ø 2,00 mm y malla hexagonal 8x10-16 anclado al terreno con barras corrugadas de acero B 500 S, para protección de taludes, medios auxiliares para su sujección provisional durante su colocación y p.p de solapes (mínimo 1.5m) entre paños y mermas. Unidad totalmente terminada.	
		Mano de obra	2,12
		Maquinaria	0,03
		Resto de obra y materiales.....	3,64
		Suma la partida	5,79
		Costes indirectos	6% 0,35
		TOTAL PARTIDA.....	6,14
092	P1MT08PE-001	m² Lámina de PEAD de 1,5 mm. de espesor, tipo GSE o equivalente ,con las uniones por termofusión con doble cordón de soldadura, incluso parte proporcional de pérdidas por solapes y uniones a las obras de fábrica y pasos de tuberías, realizadas con pletinas de acero inoxidable y bridas y contrabridas de acero galvanizado, incluso juntas de neopreno, anclajes y virolas de acero inoxidable, uniones de sellado con masilla de poliuretano monocomponente, tipo SIKa FLEX 11 FC de SIKa o equivalente y todos los materiales para su instalación, completamente instalada y probada, según la normativa vigente.	
		Mano de obra	2,52
		Maquinaria	0,19
		Resto de obra y materiales.....	5,93
		Suma la partida	8,64
		Costes indirectos	6% 0,52
		TOTAL PARTIDA.....	9,16

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
093	P1MT09	<p>m² Tablestacado recuperable o perdido de cualquier profundidad mediante paneles ESTANCOS con cámara de chapa de acero en cajón, tablestacas de chapa y codales extensibles metálicos, celosía y perfiles de arrioestre, incluido desplazamiento de equipo a obra, trabajos preparatorios de plataforma, operaciones de hincado y vibrado, reperforaciones necesarias, estructura soporte, puntales-cercha y perfiles de arrioestre, anclajes de sostenimiento de 50 tn y 20 m de longitud en diferentes fases según anejo de cálculo, inyecciones, barras y tendones, perfilería metálica de sostenimiento (hasta 3 escalones de anclajes) y acodamiento para cualquier profundidad, operaciones de retirada y medios auxiliares. Unidad totalmente ejecutada.</p>	<table><tr><td>Mano de obra</td><td>1,13</td></tr><tr><td>Maquinaria</td><td>17,69</td></tr><tr><td>Resto de obra y materiales.....</td><td>60,71</td></tr><tr><td>Suma la partida</td><td>79,53</td></tr><tr><td>Costes indirectos 6%</td><td>4,77</td></tr><tr><td>TOTAL PARTIDA.....</td><td>84,30</td></tr></table>	Mano de obra	1,13	Maquinaria	17,69	Resto de obra y materiales.....	60,71	Suma la partida	79,53	Costes indirectos 6%	4,77	TOTAL PARTIDA.....	84,30
Mano de obra	1,13														
Maquinaria	17,69														
Resto de obra y materiales.....	60,71														
Suma la partida	79,53														
Costes indirectos 6%	4,77														
TOTAL PARTIDA.....	84,30														
094	P1MT15-200B	<p>m Micropilote DN200 mm con vaina metálica de acero S275 JR 155.8mm de diámetro y 8mm de espesor lechada de cemento CEM I 42,5N y HA30, con una relación agua/cemento de 0,4 dosificada en peso, vertida por el interior de la armadura mediante sistema de inyección única global (IU)., reperforando sobre pantalla de mortero, ejecutado con entubación perdida o recuperable, para cualquier profundidad, Incluido:</p> <ul style="list-style-type: none">-Replanteo de trabajos.-Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria.-Muros guía de hormigón armado de 0,70x0,50 mts. y posterior demolición del mismo con transporte a vertedero de los restos, evacuación a vertedero de la excavación.-Pérdidas de lechada y, mortero y hormigón.-Demolición de protuberancias, descabezado de pilotes y p.p. preparación de conexión viga de atado.-Partida de transporte y montaje inicial y medios auxiliares.-Partida para transporte y montaje inicial de grúa auxiliar.-Partida de espesamiento de lodos finales con transporte a vertedero.-Perforación o reperforación de pilotes incluyendo el consumo de lodos.-Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía.-Transporte de sobrantes a vertedero autorizado, incluso canon de vertido, limpieza y operaciones de demobiliación.-Puntales y perfil risotra <p>Unidad totalmente terminada medida linealmente sobre eje por la profundidad realmente ejecutada.</p>	<table><tr><td>Mano de obra</td><td>6,86</td></tr><tr><td>Maquinaria</td><td>45,22</td></tr><tr><td>Resto de obra y materiales.....</td><td>40,02</td></tr><tr><td>Suma la partida</td><td>92,10</td></tr><tr><td>Costes indirectos 6%</td><td>5,53</td></tr><tr><td>TOTAL PARTIDA.....</td><td>97,63</td></tr></table>	Mano de obra	6,86	Maquinaria	45,22	Resto de obra y materiales.....	40,02	Suma la partida	92,10	Costes indirectos 6%	5,53	TOTAL PARTIDA.....	97,63
Mano de obra	6,86														
Maquinaria	45,22														
Resto de obra y materiales.....	40,02														
Suma la partida	92,10														
Costes indirectos 6%	5,53														
TOTAL PARTIDA.....	97,63														
095	P1MT15-250M	<p>m Pilote de 250 mm de diámetro, barrenado mecánico con empleo de entubación recuperable y lodos tixotrópicos, fabricado "in situ" de mortero M-250 SR, conforme a norma UNE 36068 y/o según normativa vigente, puesto en obra según EHE vigente, incluso parte proporcional de excavación, transporte, instalación, montaje y desmontaje de equipos, recuperación de la entubación, protección de la cabeza del pilote, descabezado de pilote hasta cara inferior de viga de atado y retirada de sobrantes, ejecución, control de calidad, suministro y colocación de tubos sónicos, informes, ensayos asociados y documentación. Totalmente terminado.</p>	<table><tr><td>Mano de obra</td><td>6,86</td></tr><tr><td>Maquinaria</td><td>45,22</td></tr><tr><td>Resto de obra y materiales.....</td><td>1,64</td></tr><tr><td>Suma la partida</td><td>53,72</td></tr><tr><td>Costes indirectos 6%</td><td>3,22</td></tr></table>	Mano de obra	6,86	Maquinaria	45,22	Resto de obra y materiales.....	1,64	Suma la partida	53,72	Costes indirectos 6%	3,22		
Mano de obra	6,86														
Maquinaria	45,22														
Resto de obra y materiales.....	1,64														
Suma la partida	53,72														
Costes indirectos 6%	3,22														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				56,94
096	P1MTGB001	m³	Muro o fábrica de gaviones metálicos realizados con malla de triple torsión de acero galvanizado reforzado de DN 2,4 mm o superior, incluso anclajes. Totalmente colocado.	
Mano de obra				21,24
Maquinaria				7,88
Resto de obra y materiales.....				25,00
Suma la partida				54,12
Costes indirectos 6%				3,25
TOTAL PARTIDA.....				57,37
097	P1MTMR001	m	ml de fajinada formada por estacas de pino de 1 m de longitud y 8 cm de diámetro, hincados en el suelo 50 cm, entre los que se entrelazan una fajina construida con ramas, hasta formar una pantalla de 50 cm de altura, construida para reducir la escorrentía superficial. Incluso herramientas y medios auxiliares.	
Mano de obra				8,07
Maquinaria				0,32
Resto de obra y materiales.....				14,00
Suma la partida				22,39
Costes indirectos 6%				1,34
TOTAL PARTIDA.....				23,73
098	P1MTO3X	m³	Excavación en zanja de profundidad menor de 1 m y anchura no superior a 0,70 m, mediante retro de neumáticos con cazo pequeño o zanjadora en terreno blando, incluso acopios intermedios para posterior uso y/o transporte a vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido. Unidad totalmente terminada medido sobre perfil teórico.	
Mano de obra				2,79
Maquinaria				1,54
Suma la partida				4,33
Costes indirectos 6%				0,26
TOTAL PARTIDA.....				4,59
099	P1MTTU003	m²	Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m², para paramentos enterrados de obras de fábrica, totalmente instalada.	
Mano de obra				1,06
Maquinaria				0,03
Resto de obra y materiales.....				7,22
Suma la partida				8,31
Costes indirectos 6%				0,50
TOTAL PARTIDA.....				8,81
100	P1T0400.4B	m	Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
Mano de obra				2,37
Resto de obra y materiales.....				109,83
Suma la partida				112,20
Costes indirectos 6%				6,73
TOTAL PARTIDA.....				118,93

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
101	P1T0500.8.0B	m	<p>Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.</p>	
			Mano de obra	2,37
			Resto de obra y materiales.....	127,77
			Suma la partida	130,14
			Costes indirectos 6%	7,81
			TOTAL PARTIDA.....	137,95
102	P1T0800.12.5B	m	<p>Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.</p>	
			Mano de obra	3,32
			Resto de obra y materiales.....	321,65
			Suma la partida	324,97
			Costes indirectos 6%	19,50
			TOTAL PARTIDA.....	344,47
103	P1T0800.6.4A	m	<p>Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.</p>	
			Mano de obra	3,32
			Resto de obra y materiales.....	160,57
			Suma la partida	163,89
			Costes indirectos 6%	9,83
			TOTAL PARTIDA.....	173,72

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
104	P1T1300.10.0A	m	<p>Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.321 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.</p>	
			Mano de obra	4,73
			Resto de obra y materiales.....	432,88
			Suma la partida	437,61
			Costes indirectos 6%	26,26
			TOTAL PARTIDA.....	463,87
105	P1T1300.8.0A	m	<p>Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.321 mm y espesor mínimo de 8,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.</p>	
			Mano de obra	4,73
			Resto de obra y materiales.....	345,36
			Suma la partida	350,09
			Costes indirectos 6%	21,01
			TOTAL PARTIDA.....	371,10
106	P1T1500.10.5A	m	<p>Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 10.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refueros, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.</p>	
			Mano de obra	5,21
			Resto de obra y materiales.....	522,89
			Suma la partida	528,10
			Costes indirectos 6%	31,69
			TOTAL PARTIDA.....	559,79

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE										
107	P1T1500.16.0A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 16 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>7,11</td></tr><tr><td>Resto de obra y materiales.....</td><td>797,59</td></tr><tr><td>Suma la partida</td><td>804,70</td></tr><tr><td>Costes indirectos 6%</td><td>48,28</td></tr><tr><td>TOTAL PARTIDA.....</td><td>852,98</td></tr></table>	Mano de obra	7,11	Resto de obra y materiales.....	797,59	Suma la partida	804,70	Costes indirectos 6%	48,28	TOTAL PARTIDA.....	852,98
Mano de obra	7,11													
Resto de obra y materiales.....	797,59													
Suma la partida	804,70													
Costes indirectos 6%	48,28													
TOTAL PARTIDA.....	852,98													
108	P1T1500.9.5A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 9,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>5,21</td></tr><tr><td>Resto de obra y materiales.....</td><td>472,60</td></tr><tr><td>Suma la partida</td><td>477,81</td></tr><tr><td>Costes indirectos 6%</td><td>28,67</td></tr><tr><td>TOTAL PARTIDA.....</td><td>506,48</td></tr></table>	Mano de obra	5,21	Resto de obra y materiales.....	472,60	Suma la partida	477,81	Costes indirectos 6%	28,67	TOTAL PARTIDA.....	506,48
Mano de obra	5,21													
Resto de obra y materiales.....	472,60													
Suma la partida	477,81													
Costes indirectos 6%	28,67													
TOTAL PARTIDA.....	506,48													
109	P1T1600.10.0A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>5,21</td></tr><tr><td>Resto de obra y materiales.....</td><td>530,10</td></tr><tr><td>Suma la partida</td><td>535,31</td></tr><tr><td>Costes indirectos 6%</td><td>32,12</td></tr><tr><td>TOTAL PARTIDA.....</td><td>567,43</td></tr></table>	Mano de obra	5,21	Resto de obra y materiales.....	530,10	Suma la partida	535,31	Costes indirectos 6%	32,12	TOTAL PARTIDA.....	567,43
Mano de obra	5,21													
Resto de obra y materiales.....	530,10													
Suma la partida	535,31													
Costes indirectos 6%	32,12													
TOTAL PARTIDA.....	567,43													

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
110	P1T1600.12.5A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
			Mano de obra	5,21
			Resto de obra y materiales.....	663,90
			Suma la partida	669,11
			Costes indirectos 6%	40,15
			TOTAL PARTIDA.....	709,26
111	P1T1600.16.0A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
			Mano de obra	5,21
			Resto de obra y materiales.....	851,27
			Suma la partida	856,48
			Costes indirectos 6%	51,39
			TOTAL PARTIDA.....	907,87
112	P1T1800.11.5A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
			Mano de obra	7,11
			Resto de obra y materiales.....	682,06
			Suma la partida	689,17
			Costes indirectos 6%	41,35
			TOTAL PARTIDA.....	730,52

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE										
113	P1T1800.11.5B	m	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>7,11</td></tr><tr><td>Resto de obra y materiales.....</td><td>652,10</td></tr><tr><td>Suma la partida</td><td>659,21</td></tr><tr><td>Costes indirectos 6%</td><td>39,55</td></tr><tr><td>TOTAL PARTIDA.....</td><td>698,76</td></tr></table>	Mano de obra	7,11	Resto de obra y materiales.....	652,10	Suma la partida	659,21	Costes indirectos 6%	39,55	TOTAL PARTIDA.....	698,76
Mano de obra	7,11													
Resto de obra y materiales.....	652,10													
Suma la partida	659,21													
Costes indirectos 6%	39,55													
TOTAL PARTIDA.....	698,76													
114	P1T1800.12.5A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>7,11</td></tr><tr><td>Resto de obra y materiales.....</td><td>741,99</td></tr><tr><td>Suma la partida</td><td>749,10</td></tr><tr><td>Costes indirectos 6%</td><td>44,95</td></tr><tr><td>TOTAL PARTIDA.....</td><td>794,05</td></tr></table>	Mano de obra	7,11	Resto de obra y materiales.....	741,99	Suma la partida	749,10	Costes indirectos 6%	44,95	TOTAL PARTIDA.....	794,05
Mano de obra	7,11													
Resto de obra y materiales.....	741,99													
Suma la partida	749,10													
Costes indirectos 6%	44,95													
TOTAL PARTIDA.....	794,05													
115	P1T1800.12.5B	m	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>7,11</td></tr><tr><td>Resto de obra y materiales.....</td><td>753,37</td></tr><tr><td>Suma la partida</td><td>760,48</td></tr><tr><td>Costes indirectos 6%</td><td>45,63</td></tr><tr><td>TOTAL PARTIDA.....</td><td>806,11</td></tr></table>	Mano de obra	7,11	Resto de obra y materiales.....	753,37	Suma la partida	760,48	Costes indirectos 6%	45,63	TOTAL PARTIDA.....	806,11
Mano de obra	7,11													
Resto de obra y materiales.....	753,37													
Suma la partida	760,48													
Costes indirectos 6%	45,63													
TOTAL PARTIDA.....	806,11													

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
116	P1T1800.13.0B	m	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 13,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
			Mano de obra	7,11
			Resto de obra y materiales.....	783,81
			Suma la partida	790,92
			Costes indirectos 6%	47,46
			TOTAL PARTIDA.....	838,38
117	P1T1800.14.0A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
			Mano de obra	7,11
			Resto de obra y materiales.....	831,89
			Suma la partida	839,00
			Costes indirectos 6%	50,34
			TOTAL PARTIDA.....	889,34
118	P1T1800.14.0B	m	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
			Mano de obra	7,11
			Resto de obra y materiales.....	844,63
			Suma la partida	851,74
			Costes indirectos 6%	51,10
			TOTAL PARTIDA.....	902,84

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE										
119	P1T1800.15.0A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>7,11</td></tr><tr><td>Resto de obra y materiales.....</td><td>891,82</td></tr><tr><td>Suma la partida</td><td>898,93</td></tr><tr><td>Costes indirectos 6%</td><td>53,94</td></tr><tr><td>TOTAL PARTIDA.....</td><td>952,87</td></tr></table>	Mano de obra	7,11	Resto de obra y materiales.....	891,82	Suma la partida	898,93	Costes indirectos 6%	53,94	TOTAL PARTIDA.....	952,87
Mano de obra	7,11													
Resto de obra y materiales.....	891,82													
Suma la partida	898,93													
Costes indirectos 6%	53,94													
TOTAL PARTIDA.....	952,87													
120	P1T1800.18.0A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 18,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>7,11</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.071,57</td></tr><tr><td>Suma la partida</td><td>1.078,68</td></tr><tr><td>Costes indirectos 6%</td><td>64,72</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.143,40</td></tr></table>	Mano de obra	7,11	Resto de obra y materiales.....	1.071,57	Suma la partida	1.078,68	Costes indirectos 6%	64,72	TOTAL PARTIDA.....	1.143,40
Mano de obra	7,11													
Resto de obra y materiales.....	1.071,57													
Suma la partida	1.078,68													
Costes indirectos 6%	64,72													
TOTAL PARTIDA.....	1.143,40													
121	P1T1900.13.0A	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.930 mm y espesor mínimo de 13,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>7,58</td></tr><tr><td>Resto de obra y materiales.....</td><td>812,59</td></tr><tr><td>Suma la partida</td><td>820,17</td></tr><tr><td>Costes indirectos 6%</td><td>49,21</td></tr><tr><td>TOTAL PARTIDA.....</td><td>869,38</td></tr></table>	Mano de obra	7,58	Resto de obra y materiales.....	812,59	Suma la partida	820,17	Costes indirectos 6%	49,21	TOTAL PARTIDA.....	869,38
Mano de obra	7,58													
Resto de obra y materiales.....	812,59													
Suma la partida	820,17													
Costes indirectos 6%	49,21													
TOTAL PARTIDA.....	869,38													
122	P1T200	m	Suministro e instalación de tubería de acero de calidad ST 37.0 según DIN-1629 y ASTM-A 53, de diámetro nominal DN 219.1 mm y espesor mínimo de 6,3 mm, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>2,38</td></tr><tr><td>Resto de obra y materiales.....</td><td>43,93</td></tr><tr><td>Suma la partida</td><td>46,31</td></tr><tr><td>Costes indirectos 6%</td><td>2,78</td></tr></table>	Mano de obra	2,38	Resto de obra y materiales.....	43,93	Suma la partida	46,31	Costes indirectos 6%	2,78		
Mano de obra	2,38													
Resto de obra y materiales.....	43,93													
Suma la partida	46,31													
Costes indirectos 6%	2,78													

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				49,09
123	P1T2000.14.0A	m	Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
Mano de obra				11,84
Resto de obra y materiales.....				915,25
Suma la partida				927,09
Costes indirectos 6%				55,63
TOTAL PARTIDA.....				982,72
124	P1T2000.14.0B	m	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
Mano de obra				11,84
Resto de obra y materiales.....				929,35
Suma la partida				941,19
Costes indirectos 6%				56,47
TOTAL PARTIDA.....				997,66
125	P1T2000.15.0A	m	Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
Mano de obra				11,84
Resto de obra y materiales.....				981,50
Suma la partida				993,34
Costes indirectos 6%				59,60
TOTAL PARTIDA.....				1.052,94

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE										
126	P1T2000.15.0B	m	Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>11,84</td></tr><tr><td>Resto de obra y materiales.....</td><td>996,59</td></tr><tr><td>Suma la partida</td><td>1.008,43</td></tr><tr><td>Costes indirectos 6%</td><td>60,51</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.068,94</td></tr></table>	Mano de obra	11,84	Resto de obra y materiales.....	996,59	Suma la partida	1.008,43	Costes indirectos 6%	60,51	TOTAL PARTIDA.....	1.068,94
Mano de obra	11,84													
Resto de obra y materiales.....	996,59													
Suma la partida	1.008,43													
Costes indirectos 6%	60,51													
TOTAL PARTIDA.....	1.068,94													
127	P1T2232.20.E	m	Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2232 mm y espesor mínimo de 16,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>11,84</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.044,56</td></tr><tr><td>Suma la partida</td><td>1.056,40</td></tr><tr><td>Costes indirectos 6%</td><td>63,38</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.119,78</td></tr></table>	Mano de obra	11,84	Resto de obra y materiales.....	1.044,56	Suma la partida	1.056,40	Costes indirectos 6%	63,38	TOTAL PARTIDA.....	1.119,78
Mano de obra	11,84													
Resto de obra y materiales.....	1.044,56													
Suma la partida	1.056,40													
Costes indirectos 6%	63,38													
TOTAL PARTIDA.....	1.119,78													
128	P1T2500.20.0A	m	Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.500 mm (nominal) y espesor mínimo de 20,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada	<table><tr><td>Mano de obra</td><td>23,69</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.604,73</td></tr><tr><td>Suma la partida</td><td>1.628,42</td></tr><tr><td>Costes indirectos 6%</td><td>97,71</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.726,13</td></tr></table>	Mano de obra	23,69	Resto de obra y materiales.....	1.604,73	Suma la partida	1.628,42	Costes indirectos 6%	97,71	TOTAL PARTIDA.....	1.726,13
Mano de obra	23,69													
Resto de obra y materiales.....	1.604,73													
Suma la partida	1.628,42													
Costes indirectos 6%	97,71													
TOTAL PARTIDA.....	1.726,13													
129	P1T300	m	Suministro e instalación de tubería de acero calidad ST 37.0 según DIN-1629 y ASTM- A-53 de diámetro nominal DN 308 y espesor mínimo de 4 mm. medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	<table><tr><td>Mano de obra</td><td>2,38</td></tr><tr><td>Resto de obra y materiales.....</td><td>51,83</td></tr><tr><td>Suma la partida</td><td>54,21</td></tr><tr><td>Costes indirectos 6%</td><td>3,25</td></tr></table>	Mano de obra	2,38	Resto de obra y materiales.....	51,83	Suma la partida	54,21	Costes indirectos 6%	3,25		
Mano de obra	2,38													
Resto de obra y materiales.....	51,83													
Suma la partida	54,21													
Costes indirectos 6%	3,25													

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			57,46
130	P1T400.6.E	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
Mano de obra			2,37
Resto de obra y materiales.....			112,67
Suma la partida			115,04
Costes indirectos 6%			6,90
TOTAL PARTIDA.....			121,94
131	P1T600.6.E	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 600 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
Mano de obra			2,37
Resto de obra y materiales.....			136,27
Suma la partida			138,64
Costes indirectos 6%			8,32
TOTAL PARTIDA.....			146,96
132	P1T762.6.E	m Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 762 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	
Mano de obra			2,37
Resto de obra y materiales.....			143,57
Suma la partida			145,94
Costes indirectos 6%			8,76
TOTAL PARTIDA.....			154,70
133	P2CAT001	ud Rectificador 70V-35A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
Resto de obra y materiales.....			10.909,09
Suma la partida			10.909,09
Costes indirectos 6%			654,55

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			11.563,64
134	P2CAT002	ud Rectificador 70V-25A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
Resto de obra y materiales.....			6.763,64
Suma la partida			6.763,64
Costes indirectos 6%			405,82
TOTAL PARTIDA.....			7.169,46
135	P2CAT004	ud Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KY-NAR 1x10mm2. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
Resto de obra y materiales.....			725,47
Suma la partida			725,47
Costes indirectos 6%			43,53
TOTAL PARTIDA.....			769,00
136	P2CAT005	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
Resto de obra y materiales.....			37,09
Suma la partida			37,09
Costes indirectos 6%			2,23
TOTAL PARTIDA.....			39,32
137	P2CAT006	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
Resto de obra y materiales.....			34,91
Suma la partida			34,91
Costes indirectos 6%			2,09
TOTAL PARTIDA.....			37,00
138	P2CAT007	m Cable anódico tipo RV-K de sección 1x25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
Resto de obra y materiales.....			8,03
Suma la partida			8,03
Costes indirectos 6%			0,48
TOTAL PARTIDA.....			8,51
139	P2CAT008	Kg Coque petróleo calcinado	
Resto de obra y materiales.....			2,52
Suma la partida			2,52
Costes indirectos 6%			0,15
TOTAL PARTIDA.....			2,67
140	P2CAT009	m Manguera perforada	
Resto de obra y materiales.....			6,67
Suma la partida			6,67
Costes indirectos 6%			0,40
TOTAL PARTIDA.....			7,07

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
141	P2CAT010	ud Arqueta riego ide protección catódica incluidos p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	675,60
		Suma la partida	675,60
		Costes indirectos 6%	40,54
		TOTAL PARTIDA.....	716,14
142	P2CAT011	ud Caja de conexionado 12 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	654,00
		Suma la partida	654,00
		Costes indirectos 6%	39,24
		TOTAL PARTIDA.....	693,24
143	P2CAT012	ud Caja de conexionado 10 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	544,80
		Suma la partida	544,80
		Costes indirectos 6%	32,69
		TOTAL PARTIDA.....	577,49
144	P2CAT013	ud Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0.6/1 KV 1 x 6 mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	213,60
		Suma la partida	213,60
		Costes indirectos 6%	12,82
		TOTAL PARTIDA.....	226,42
145	P2CAT014	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 (cantidad estimada) y Handy cap, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	123,60
		Suma la partida	123,60
		Costes indirectos 6%	7,42
		TOTAL PARTIDA.....	131,02
146	P2CAT015	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	261,60
		Suma la partida	261,60
		Costes indirectos 6%	15,70
		TOTAL PARTIDA.....	277,30
147	P2CAT016A	ud Obra civil, montaje y conexionado EPC, y material en línea de TPs y TPEs en todo el conjunto del subtramo OT-T12. Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	12.000,00
		Suma la partida	12.000,00
		Costes indirectos 6%	720,00
		TOTAL PARTIDA.....	12.720,00

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
148	P2CAT016B	ud Obra civil, montaje y conexionado EPC, y material en línea de TPs y TPEs en todo el conjunto del subtramo 12-DC. Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	5.000,00
		Suma la partida	5.000,00
		Costes indirectos 6%	300,00
		TOTAL PARTIDA.....	5.300,00
149	P2CAT016C	ud Obra civil, montaje y conexionado EPC, y material en línea de TPs y TPEs en todo el conjunto del subtramo (DC-T14/15 Y DC-T21) Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	7.500,00
		Suma la partida	7.500,00
		Costes indirectos 6%	450,00
		TOTAL PARTIDA.....	7.950,00
150	P2CAT017	ud Caja toma de potencial de policarbonato con prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	65,40
		Suma la partida	65,40
		Costes indirectos 6%	3,92
		TOTAL PARTIDA.....	69,32
151	P2CAT018	ud Caja toma de potencial TPE (200 X 200) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	414,00
		Suma la partida	414,00
		Costes indirectos 6%	24,84
		TOTAL PARTIDA.....	438,84
152	P2CAT019	ud Caja toma de potencial TPE (320 x 320) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	741,60
		Suma la partida	741,60
		Costes indirectos 6%	44,50
		TOTAL PARTIDA.....	786,10
153	P2CAT020	ud UDCA en caja TPE con poste de acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	1.440,00
		Suma la partida	1.440,00
		Costes indirectos 6%	86,40
		TOTAL PARTIDA.....	1.526,40
154	P2CAT021	ud Vía de chispas en caja TPE con poste de acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	774,00
		Suma la partida	774,00
		Costes indirectos 6%	46,44
		TOTAL PARTIDA.....	820,44

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
155	P2CAT022	ud Electrodo probeta estándar, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	128,73
		Suma la partida	128,73
		Costes indirectos 6%	7,72
		TOTAL PARTIDA.....	136,45
156	P2CAT023	ud Electrodo probeta alterna, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	139,20
		Suma la partida	139,20
		Costes indirectos 6%	8,35
		TOTAL PARTIDA.....	147,55
157	P2CAT024	ud Electrodo probeta alterna ENAGÁS, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	414,00
		Suma la partida	414,00
		Costes indirectos 6%	24,84
		TOTAL PARTIDA.....	438,84
158	P2CAT025	ud Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados con mezcla activadora y 5 m de cable (Protección catódica provisional), incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	98,16
		Suma la partida	98,16
		Costes indirectos 6%	5,89
		TOTAL PARTIDA.....	104,05
159	P2CAT026	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable RV 0.6/1 KV 1 x 6 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	58,80
		Suma la partida	58,80
		Costes indirectos 6%	3,53
		TOTAL PARTIDA.....	62,33
160	P2CAT027	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable RV 0.6/1 KV 1 x 25 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	195,60
		Suma la partida	195,60
		Costes indirectos 6%	11,74
		TOTAL PARTIDA.....	207,34
161	P2CAT028	ud Cable acero galvanizado 12 mm, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	7,20
		Suma la partida	7,20
		Costes indirectos 6%	0,43
		TOTAL PARTIDA.....	7,63

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
162	P2CAT029	ud Empalme encapsulado cable 1 x 25 mm ² picas / cable gra- diente, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	10,80
		Suma la partida	10,80
		Costes indirectos 6%	0,65
		TOTAL PARTIDA.....	11,45
163	P2CAT030	ud Picas de zinc 1000 mm ensacada, incluida p.p. medios au- xiliares, obra civil, montaje y conexionado, estudios e infor- mes de la protección catódica del conjunto y puesta en fun- cionamiento.	
		Resto de obra y materiales.....	174,00
		Suma la partida	174,00
		Costes indirectos 6%	10,44
		TOTAL PARTIDA.....	184,44
164	P2CAT031	ud Vías de chispas con cable y pletina para conexión, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	430,80
		Suma la partida	430,80
		Costes indirectos 6%	25,85
		TOTAL PARTIDA.....	456,65
165	P2CAT032	ud Junta aislante embridada DN 2200 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estu- dios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	4.304,40
		Suma la partida	4.304,40
		Costes indirectos 6%	258,26
		TOTAL PARTIDA.....	4.562,66
166	P2CAT033	ud Junta aislante embridada DN 2000 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estu- dios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	3.909,60
		Suma la partida	3.909,60
		Costes indirectos 6%	234,58
		TOTAL PARTIDA.....	4.144,18
167	P2CAT034	ud Junta aislante embridada DN 1900 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estu- dios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	3.542,40
		Suma la partida	3.542,40
		Costes indirectos 6%	212,54
		TOTAL PARTIDA.....	3.754,94
168	P2CAT035A	ud Junta aislante embridada DN 1800 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estu- dios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	3.432,00
		Suma la partida	3.432,00
		Costes indirectos 6%	205,92
		TOTAL PARTIDA.....	3.637,92

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
169	P2CAT035B	ud Junta aislante embridada DN 1800 mm PN25, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	4.195,20
		Suma la partida	4.195,20
		Costes indirectos 6%	251,71
		TOTAL PARTIDA.....	4.446,91
170	P2CAT036	ud Junta aislante embridada DN 1600 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	2.925,60
		Suma la partida	2.925,60
		Costes indirectos 6%	175,54
		TOTAL PARTIDA.....	3.101,14
171	P2CAT037	ud Junta aislante embridada DN 1500 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	2.578,80
		Suma la partida	2.578,80
		Costes indirectos 6%	154,73
		TOTAL PARTIDA.....	2.733,53
172	P2CAT038	ud Junta aislante embridada DN 1300 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	2.290,80
		Suma la partida	2.290,80
		Costes indirectos 6%	137,45
		TOTAL PARTIDA.....	2.428,25
173	P2CAT039	ud Junta aislante embridada DN 1100 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	1.899,60
		Suma la partida	1.899,60
		Costes indirectos 6%	113,98
		TOTAL PARTIDA.....	2.013,58
174	P2CAT041	ud Junta aislante embridada DN 800mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	1.213,20
		Suma la partida	1.213,20
		Costes indirectos 6%	72,79
		TOTAL PARTIDA.....	1.285,99
175	P2CAT042	ud Junta aislante embridada DN 800mm PN25, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	1.560,00
		Suma la partida	1.560,00
		Costes indirectos 6%	93,60
		TOTAL PARTIDA.....	1.653,60

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
176	P2CAT043	ud Junta aislante embridada DN 700mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	1.063,20
		Suma la partida	1.063,20
		Costes indirectos 6%	63,79
		TOTAL PARTIDA.....	1.126,99
177	P2CAT044	ud Junta aislante embridada DN 500mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	801,60
		Suma la partida	801,60
		Costes indirectos 6%	48,10
		TOTAL PARTIDA.....	849,70
178	P2CAT045	ud Junta aislante embridada DN 300mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	541,20
		Suma la partida	541,20
		Costes indirectos 6%	32,47
		TOTAL PARTIDA.....	573,67
179	P2CAT046	ud Junta aislante monoblock DN 1800 PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	44.214,00
		Suma la partida	44.214,00
		Costes indirectos 6%	2.652,84
		TOTAL PARTIDA.....	46.866,84
180	P2CAT047	ud Junta aislante monoblock DN 1600 PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	
		Resto de obra y materiales.....	37.144,80
		Suma la partida	37.144,80
		Costes indirectos 6%	2.228,69
		TOTAL PARTIDA.....	39.373,49
181	P35RALUM02	m Canalización PVC corrugado de 90 mm. de diámetro en cualquier tipo de terreno, acerados y/o pavimentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexionados multiples. Unidad totalmente terminada.	
		Mano de obra	11,63
		Maquinaria	2,24
		Resto de obra y materiales.....	9,56
		Suma la partida	23,43
		Costes indirectos 6%	1,41
		TOTAL PARTIDA.....	24,84

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
182	P3ACA001	m	Formación de acanaladura con pendiente uniforme longitudinal mediante empleo de encofrado metálico perdido con una anchura de 20 cm y una altura de 10 cm, totalmente finalizada.	
			Mano de obra	6,11
			Resto de obra y materiales.....	22,18
			Suma la partida	28,29
			Costes indirectos 6%	1,70
			TOTAL PARTIDA.....	29,99
183	P3BADEN001	ud	Badén de hormigón en camino de 5 m de anchura y de longitud total 10 m, con 4 m de longitud en el plano más bajo y rampas de 3 m, con una altura de 30 cm. Unidad completamente terminada.	
			Mano de obra	222,18
			Maquinaria	0,53
			Resto de obra y materiales.....	1.210,66
			Suma la partida	1.433,37
			Costes indirectos 6%	86,00
			TOTAL PARTIDA.....	1.519,37
184	P3CUN-001	m	Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	
			Mano de obra	0,94
			Maquinaria	1,44
			Resto de obra y materiales.....	1,50
			Suma la partida	3,88
			Costes indirectos 6%	0,23
			TOTAL PARTIDA.....	4,11
185	P3CUN-002	m	Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.	
			Mano de obra	0,39
			Maquinaria	3,98
			Resto de obra y materiales.....	1,50
			Suma la partida	5,87
			Costes indirectos 6%	0,35
			TOTAL PARTIDA.....	6,22
186	P3CUN-003	m	Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	
			Mano de obra	3,25
			Maquinaria	3,93
			Resto de obra y materiales.....	6,41
			Suma la partida	13,59
			Costes indirectos 6%	0,82
			TOTAL PARTIDA.....	14,41

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
187	P3CUN-004	m	Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	
			Mano de obra	3,25
			Maquinaria	3,93
			Resto de obra y materiales.....	12,96
			Suma la partida	20,14
			Costes indirectos 6%	1,21
			TOTAL PARTIDA.....	21,35
188	P3DREN110PVC	m	Tubo dren de PVC corrugado poroso, D= 110 mm, e=3,2 mm incluso p.p. excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 0,40 cm. de ancho por 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	
			Mano de obra	0,05
			Maquinaria	0,67
			Resto de obra y materiales.....	4,62
			Suma la partida	5,34
			Costes indirectos 6%	0,32
			TOTAL PARTIDA.....	5,66
189	P3DREN160PVC	m	Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	
			Mano de obra	0,05
			Maquinaria	0,67
			Resto de obra y materiales.....	8,28
			Suma la partida	9,00
			Costes indirectos 6%	0,54
			TOTAL PARTIDA.....	9,54
190	P3EDIF.010A	m²	Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado,soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.	
			Mano de obra	10,62
			Resto de obra y materiales.....	62,88
			Suma la partida	73,50
			Costes indirectos 6%	4,41
			TOTAL PARTIDA.....	77,91

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE										
191	P3EDIF004A	<p>m² Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro , correderas o practica- bles, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. To- talmente instalada y acabada.</p>	<table><tr><td>Mano de obra</td><td>10,62</td></tr><tr><td>Resto de obra y materiales.....</td><td>82,45</td></tr><tr><td>Suma la partida</td><td>93,07</td></tr><tr><td>Costes indirectos 6%</td><td>5,58</td></tr><tr><td>TOTAL PARTIDA.....</td><td>98,65</td></tr></table>	Mano de obra	10,62	Resto de obra y materiales.....	82,45	Suma la partida	93,07	Costes indirectos 6%	5,58	TOTAL PARTIDA.....	98,65
Mano de obra	10,62												
Resto de obra y materiales.....	82,45												
Suma la partida	93,07												
Costes indirectos 6%	5,58												
TOTAL PARTIDA.....	98,65												
192	P3EDIF012B	<p>m² Fábrica de bloques de hormigón Mod. Split de medidas 40x20x20 cm., color, ejecutado a dos caras vistas, i/relle- no de hormigón H-200/20 y armadura en zona según nor- mativa y recibido con mortero de cemento y arena de río M 5 según UNE-EN 998-2, i/p.p. de piezas especiales, rotu- ras, nivelados, aplomados, llagueados y limpieza todo ello según CTE/ DB-SE-F.Unidad totalmente terminada</p>	<table><tr><td>Mano de obra</td><td>24,83</td></tr><tr><td>Resto de obra y materiales.....</td><td>14,59</td></tr><tr><td>Suma la partida</td><td>39,42</td></tr><tr><td>Costes indirectos 6%</td><td>2,37</td></tr><tr><td>TOTAL PARTIDA.....</td><td>41,79</td></tr></table>	Mano de obra	24,83	Resto de obra y materiales.....	14,59	Suma la partida	39,42	Costes indirectos 6%	2,37	TOTAL PARTIDA.....	41,79
Mano de obra	24,83												
Resto de obra y materiales.....	14,59												
Suma la partida	39,42												
Costes indirectos 6%	2,37												
TOTAL PARTIDA.....	41,79												
193	P3LAM1	<p>m² Drenaje de muros con lámina nodular con marcado CE de polietileno virgen con geotextil incorporado y doble nódulo de 12 mm. de altura nod, capacidad de drenaje 1,2 l / s y re- sistencia a compresión de 90 kn/m2. Delta Drain o similar, p.p. de fijación al soporte con taco espiga de polipropileno, a razón de 3 uds / m2 y sellado de solapes de anchura de 10 cm. con banda autoadhesiva a dos caras de caucho buti- lo Delta Fix, incluso impermeabilización del paramento de hormigón con dos manos de emulsión bituminosa modifica- da 0.7kg/m2 , según CTE/DB-HS 1. Unidad totalmente ter- minada, incluso remate de conexión a dren.</p>	<table><tr><td>Mano de obra</td><td>3,25</td></tr><tr><td>Resto de obra y materiales.....</td><td>8,57</td></tr><tr><td>Suma la partida</td><td>11,82</td></tr><tr><td>Costes indirectos 6%</td><td>0,71</td></tr><tr><td>TOTAL PARTIDA.....</td><td>12,53</td></tr></table>	Mano de obra	3,25	Resto de obra y materiales.....	8,57	Suma la partida	11,82	Costes indirectos 6%	0,71	TOTAL PARTIDA.....	12,53
Mano de obra	3,25												
Resto de obra y materiales.....	8,57												
Suma la partida	11,82												
Costes indirectos 6%	0,71												
TOTAL PARTIDA.....	12,53												
194	P3SCDN300	<p>m Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm , em- bocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excava- ción de zanja localiazada de 0.6m de ancho de base, talu- des 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta co- ta de terreno natural y reperfilado de nueva cuneta a embo- cadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compues- to por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5 , incluso perfil angula L-50-7 e apoyo de rejilla. Uni- dad totalmente terminada.</p>	<table><tr><td>Mano de obra</td><td>13,00</td></tr><tr><td>Maquinaria</td><td>3,41</td></tr><tr><td>Resto de obra y materiales.....</td><td>29,00</td></tr><tr><td>Suma la partida</td><td>45,41</td></tr><tr><td>Costes indirectos 6%</td><td>2,72</td></tr></table>	Mano de obra	13,00	Maquinaria	3,41	Resto de obra y materiales.....	29,00	Suma la partida	45,41	Costes indirectos 6%	2,72
Mano de obra	13,00												
Maquinaria	3,41												
Resto de obra y materiales.....	29,00												
Suma la partida	45,41												
Costes indirectos 6%	2,72												

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				48,13
195	P3SCDN500	m	Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	
Mano de obra				13,00
Maquinaria				3,41
Resto de obra y materiales.....				43,28
Suma la partida				59,69
Costes indirectos 6%				3,58
TOTAL PARTIDA.....				63,27
196	P3SUM2	ud	Sumidero en losa o calzada para desagües de 40x60cm. y 70 cms. de profundidad, sobre solera de hormigón HM-20 N/mm2., realizada con ladrillo macizo de 1/2 pie de espesor, enfoscada interiormente y arqueta prefabricada a criterio de la Dirección Facultativa, con salida para tubo de diámetro 160 mm. situada su arista inferior a 20 cms. del fondo del sumidero, incluso rejilla de fundición de 400x600x30 mm. sobre cerco de angular. recibido a la fábrica de ladrillo o a la arqueta prefabricada, conexionado a red de colectores de pluviales. Unidad totalmente terminada incluyendo clapeta	
Mano de obra				182,00
Maquinaria				4,00
Resto de obra y materiales.....				60,74
Suma la partida				246,74
Costes indirectos 6%				14,80
TOTAL PARTIDA.....				261,54
197	P41BARAND01	m	Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	
Mano de obra				1,30
Maquinaria				0,96
Resto de obra y materiales.....				44,05
Suma la partida				46,31
Costes indirectos 6%				2,78
TOTAL PARTIDA.....				49,09
198	P41BARAND03	m	Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.	
Mano de obra				1,30
Maquinaria				1,20
Resto de obra y materiales.....				39,45
Suma la partida				41,95
Costes indirectos 6%				2,52
TOTAL PARTIDA.....				44,47

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
199	P41BARAND05	m	Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por perfilera metálica y tubos metálicos 42,2x6 mm, montada en plataforma de tramex o elementos metálicos por soldadura, incluso parte proporcional de soldaduras, totalmente colocada y terminada.	
			Mano de obra	1,30
			Maquinaria	1,20
			Resto de obra y materiales.....	33,45
			Suma la partida	35,95
			Costes indirectos 6%	2,16
			TOTAL PARTIDA.....	38,11
200	P41CADENA III	m	Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.	
			Mano de obra	0,07
			Resto de obra y materiales.....	39,24
			Suma la partida	39,31
			Costes indirectos 6%	2,36
			TOTAL PARTIDA.....	41,67
201	P41ESCO	m	Escalera de acero inoxidable AIS-316 de dimensiones especificadas en planos. totalmente instalada, incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Unidad totalmente terminada.	
			Mano de obra	6,50
			Resto de obra y materiales.....	137,35
			Suma la partida	143,85
			Costes indirectos 6%	8,63
			TOTAL PARTIDA.....	152,48
202	P41ESC1	m	Escalera de seguridad y protección telescópica de acero inoxidable extensible en tramos de 50 cm. anchura 60 cm, longitud 5.0 m, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Unidad totalmente terminada.	
			Mano de obra	6,50
			Resto de obra y materiales.....	165,78
			Suma la partida	172,28
			Costes indirectos 6%	10,34
			TOTAL PARTIDA.....	182,62
203	P41ESC2	m	Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaída y elementos extensibles. Unidad totalmente terminada.	
			Mano de obra	1,30
			Resto de obra y materiales.....	171,86
			Suma la partida	173,16
			Costes indirectos 6%	10,39
			TOTAL PARTIDA.....	183,55

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
204	P41ESC3	m	Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	
			Mano de obra	39,51
			Resto de obra y materiales.....	65,27
			Suma la partida	104,78
			Costes indirectos 6%	6,29
			TOTAL PARTIDA.....	111,07
205	P41ESC4	m	Suministro e instalación de escalera inclinada de PRFV, de 1000 mm de ancho y peldaños antideslizantes cada 230 mm, incluyendo pasamanos, montantes, rodapié y listones intermedios, estructura de soporte y resto de elementos. Las piezas de PRFV se fabricarán mediante pultrusión, con resina ISOFTÁLICA en espacios sin agresión química y con VINILESTER en espacios confinados con agresión química, con las siguientes características: - Resistencia UV 5 en la escala de grises conforme a norma UNE-EN ISO 4892-parte 2 y/o según normativa vigente - Resistencia al fuego M-1 (ASTM-E84) - Resistencia al humo F-1 (ASTM-E84) - Pigmentación mediante resina tintada incluso p.p. de elementos de sujeción en acero inoxidable austenítico AISI 316.	
			Resto de obra y materiales.....	294,75
			Suma la partida	294,75
			Costes indirectos 6%	17,69
			TOTAL PARTIDA.....	312,44
206	P41ESC5	m	Suministro e instalación de escalera de PRFV con aros de protección anticaída, de 500 mm de ancho y peldaños antideslizantes cada 250 mm, fabricada mediante pultrusión, con resina ISOFTÁLICA en espacios sin agresión química y con VINILESTER en espacios confinados con agresión química, con las siguientes características: - Resistencia UV 5 en la escala de grises conforme a norma UNE-EN ISO 4892-parte 2 y/o según normativa vigente - Resistencia al fuego M-1 (ASTM-E84) - Resistencia al humo F-1 (ASTM-E84) - Pigmentación mediante resina tintada Incluso p.p. de elementos de sujeción en acero inoxidable austenítico AISI 316.	
			Resto de obra y materiales.....	135,42
			Suma la partida	135,42
			Costes indirectos 6%	8,13
			TOTAL PARTIDA.....	143,55
207	P41ETT-001	kg	Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	
			Mano de obra	0,34
			Maquinaria	0,19
			Resto de obra y materiales.....	1,42
			Suma la partida	1,95
			Costes indirectos 6%	0,12
			TOTAL PARTIDA.....	2,07

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
208	P41ETT-001C	kg Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	<table><tr><td>Mano de obra</td><td>0,73</td></tr><tr><td>Maquinaria</td><td>0,18</td></tr><tr><td>Resto de obra y materiales.....</td><td>1,90</td></tr><tr><td>Suma la partida</td><td>2,81</td></tr><tr><td>Costes indirectos 6%</td><td>0,17</td></tr><tr><td>TOTAL PARTIDA.....</td><td>2,98</td></tr></table>	Mano de obra	0,73	Maquinaria	0,18	Resto de obra y materiales.....	1,90	Suma la partida	2,81	Costes indirectos 6%	0,17	TOTAL PARTIDA.....	2,98
Mano de obra	0,73														
Maquinaria	0,18														
Resto de obra y materiales.....	1,90														
Suma la partida	2,81														
Costes indirectos 6%	0,17														
TOTAL PARTIDA.....	2,98														
209	P41LAG001	m² Chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, seg:n norma EN 10.025, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	<table><tr><td>Mano de obra</td><td>2,60</td></tr><tr><td>Resto de obra y materiales.....</td><td>75,00</td></tr><tr><td>Suma la partida</td><td>77,60</td></tr><tr><td>Costes indirectos 6%</td><td>4,66</td></tr><tr><td>TOTAL PARTIDA.....</td><td>82,26</td></tr></table>	Mano de obra	2,60	Resto de obra y materiales.....	75,00	Suma la partida	77,60	Costes indirectos 6%	4,66	TOTAL PARTIDA.....	82,26		
Mano de obra	2,60														
Resto de obra y materiales.....	75,00														
Suma la partida	77,60														
Costes indirectos 6%	4,66														
TOTAL PARTIDA.....	82,26														
210	P41LAG002	ud Entrada de hombre de 0,80x0,80 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, seg:n norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.	<table><tr><td>Mano de obra</td><td>32,50</td></tr><tr><td>Resto de obra y materiales.....</td><td>68,00</td></tr><tr><td>Suma la partida</td><td>100,50</td></tr><tr><td>Costes indirectos 6%</td><td>6,03</td></tr><tr><td>TOTAL PARTIDA.....</td><td>106,53</td></tr></table>	Mano de obra	32,50	Resto de obra y materiales.....	68,00	Suma la partida	100,50	Costes indirectos 6%	6,03	TOTAL PARTIDA.....	106,53		
Mano de obra	32,50														
Resto de obra y materiales.....	68,00														
Suma la partida	100,50														
Costes indirectos 6%	6,03														
TOTAL PARTIDA.....	106,53														
211	P41LAG004	ud Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.	<table><tr><td>Mano de obra</td><td>32,50</td></tr><tr><td>Resto de obra y materiales.....</td><td>95,00</td></tr><tr><td>Suma la partida</td><td>127,50</td></tr><tr><td>Costes indirectos 6%</td><td>7,65</td></tr><tr><td>TOTAL PARTIDA.....</td><td>135,15</td></tr></table>	Mano de obra	32,50	Resto de obra y materiales.....	95,00	Suma la partida	127,50	Costes indirectos 6%	7,65	TOTAL PARTIDA.....	135,15		
Mano de obra	32,50														
Resto de obra y materiales.....	95,00														
Suma la partida	127,50														
Costes indirectos 6%	7,65														
TOTAL PARTIDA.....	135,15														
212	P41LV001	ud Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	<table><tr><td>Mano de obra</td><td>158,46</td></tr><tr><td>Maquinaria</td><td>35,61</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.687,00</td></tr><tr><td>Suma la partida</td><td>1.881,07</td></tr><tr><td>Costes indirectos 6%</td><td>112,86</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.993,93</td></tr></table>	Mano de obra	158,46	Maquinaria	35,61	Resto de obra y materiales.....	1.687,00	Suma la partida	1.881,07	Costes indirectos 6%	112,86	TOTAL PARTIDA.....	1.993,93
Mano de obra	158,46														
Maquinaria	35,61														
Resto de obra y materiales.....	1.687,00														
Suma la partida	1.881,07														
Costes indirectos 6%	112,86														
TOTAL PARTIDA.....	1.993,93														
213	P41MRE002	m² Aplicación de resina epoxy en obras de fábrica. Unidad completa incluidas operaciones de tratamiento y limpieza.	<table><tr><td>Mano de obra</td><td>0,65</td></tr><tr><td>Resto de obra y materiales.....</td><td>9,76</td></tr></table>	Mano de obra	0,65	Resto de obra y materiales.....	9,76								
Mano de obra	0,65														
Resto de obra y materiales.....	9,76														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Suma la partida	10,41
			Costes indirectos 6%	0,62
			TOTAL PARTIDA.....	11,03
214	P41TRAM_001A	m²	Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	
			Mano de obra	2,60
			Resto de obra y materiales.....	110,00
			Suma la partida	112,60
			Costes indirectos 6%	6,76
			TOTAL PARTIDA.....	119,36
215	P41TRAM_003	m²	Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	
			Mano de obra	2,60
			Resto de obra y materiales.....	140,00
			Suma la partida	142,60
			Costes indirectos 6%	8,56
			TOTAL PARTIDA.....	151,16
216	P4BORD-001	m	Bordillo bicapa de hormigón prefabricado de dimensiones 17x36x100 cm., colocado en fondo de balsa.	
			Mano de obra	3,72
			Resto de obra y materiales.....	6,30
			Suma la partida	10,02
			Costes indirectos 6%	0,60
			TOTAL PARTIDA.....	10,62
217	P4CIMBRA	m³	Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.	
			Mano de obra	6,50
			Resto de obra y materiales.....	15,23
			Suma la partida	21,73
			Costes indirectos 6%	1,30
			TOTAL PARTIDA.....	23,03
218	P4CINT1300	m	Encintado para recubrimiento de protección anticorrosiva de tubería de DN1300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	
			Mano de obra	31,86
			Resto de obra y materiales.....	484,23
			Suma la partida	516,09
			Costes indirectos 6%	30,97
			TOTAL PARTIDA.....	547,06
219	P4CINT1500	m	Encintado para recubrimiento de protección anticorrosiva de tubería de DN1500mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	
			Mano de obra	31,86
			Resto de obra y materiales.....	558,86
			Suma la partida	590,72
			Costes indirectos 6%	35,44

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				626,16
220	P4CINT1600	m	Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	
Mano de obra				31,86
Resto de obra y materiales.....				597,95
Suma la partida				629,81
Costes indirectos 6%				37,79
TOTAL PARTIDA.....				667,60
221	P4CINT1800	m	Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	
Mano de obra				31,86
Resto de obra y materiales.....				670,20
Suma la partida				702,06
Costes indirectos 6%				42,12
TOTAL PARTIDA.....				744,18
222	P4CINT1900	m	Encintado para recubrimiento de protección anticorrosiva de tubería de DN1900mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	
Mano de obra				31,86
Resto de obra y materiales.....				706,92
Suma la partida				738,78
Costes indirectos 6%				44,33
TOTAL PARTIDA.....				783,11
223	P4CINT2000	m	Encintado para recubrimiento de protección anticorrosiva de tubería de DN2000mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	
Mano de obra				31,86
Resto de obra y materiales.....				744,82
Suma la partida				776,68
Costes indirectos 6%				46,60
TOTAL PARTIDA.....				823,28
224	P4CINT300	m	Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	
Mano de obra				31,86
Resto de obra y materiales.....				107,56
Suma la partida				139,42
Costes indirectos 6%				8,37
TOTAL PARTIDA.....				147,79
225	P4CINT400	m	Encintado para recubrimiento de protección anticorrosiva de tubería de DN400mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	
Mano de obra				31,86
Resto de obra y materiales.....				149,02
Suma la partida				180,88
Costes indirectos 6%				10,85
TOTAL PARTIDA.....				191,73

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
226	P4ETT-002	kg	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	
			Mano de obra	0,09
			Maquinaria	0,03
			Resto de obra y materiales.....	1,15
			Suma la partida	1,27
			Costes indirectos 6%	0,08
			TOTAL PARTIDA.....	1,35
227	P4ETT-004A-E2	m²	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	
			Mano de obra	17,15
			Maquinaria	0,53
			Resto de obra y materiales.....	7,65
			Suma la partida	25,33
			Costes indirectos 6%	1,52
			TOTAL PARTIDA.....	26,85
228	P4ETT-004C-E2	m²	Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	
			Mano de obra	20,58
			Maquinaria	0,53
			Resto de obra y materiales.....	7,65
			Suma la partida	28,76
			Costes indirectos 6%	1,73
			TOTAL PARTIDA.....	30,49
229	P4ETT-004E-E1	m²	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	
			Mano de obra	6,86
			Maquinaria	0,53
			Resto de obra y materiales.....	7,95
			Suma la partida	15,34
			Costes indirectos 6%	0,92
			TOTAL PARTIDA.....	16,26
230	P4GUN.20	m²	Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Mano de obra	25,87
		Maquinaria	7,99
		Resto de obra y materiales.....	19,43
		Suma la partida	53,29
		Costes indirectos 6%	3,20
		TOTAL PARTIDA.....	56,49
231	P4HG-001A	m³ Hormigón en masa HM-12.5/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación, p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	
		Mano de obra	1,11
		Maquinaria	1,12
		Resto de obra y materiales.....	38,73
		Suma la partida	40,96
		Costes indirectos 6%	2,46
		TOTAL PARTIDA.....	43,42
232	P4HG-002A	m³ Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	
		Mano de obra	1,11
		Maquinaria	1,12
		Resto de obra y materiales.....	44,20
		Suma la partida	46,43
		Costes indirectos 6%	2,79
		TOTAL PARTIDA.....	49,22
233	P4HG-002B	m³ Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	
		Mano de obra	1,73
		Maquinaria	6,29
		Resto de obra y materiales.....	48,35
		Suma la partida	56,37
		Costes indirectos 6%	3,38
		TOTAL PARTIDA.....	59,75
234	P4HG-002C	m³ Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	
		Mano de obra	1,58
		Maquinaria	6,29
		Resto de obra y materiales.....	50,18
		Suma la partida	58,05
		Costes indirectos 6%	3,48
		TOTAL PARTIDA.....	61,53
235	P4HG-002F	m³ Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	
		Mano de obra	0,47
		Maquinaria	1,12
		Resto de obra y materiales.....	29,64

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Suma la partida	31,23
		Costes indirectos 6%	1,87
		TOTAL PARTIDA.....	33,10
236	P4HG-003A	m³ Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	
		Mano de obra	1,73
		Maquinaria	6,29
		Resto de obra y materiales.....	51,07
		Suma la partida	59,09
		Costes indirectos 6%	3,55
		TOTAL PARTIDA.....	62,64
237	P4HG-004A	m³ Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	
		Mano de obra	1,73
		Maquinaria	6,29
		Resto de obra y materiales.....	64,57
		Suma la partida	72,59
		Costes indirectos 6%	4,36
		TOTAL PARTIDA.....	76,95
238	P4HG-004A2H	m³ Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	
		Mano de obra	1,73
		Maquinaria	6,29
		Resto de obra y materiales.....	68,28
		Suma la partida	76,30
		Costes indirectos 6%	4,58
		TOTAL PARTIDA.....	80,88
239	P4HG-004A2V	m³ Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	
		Mano de obra	5,65
		Maquinaria	12,58
		Resto de obra y materiales.....	68,55
		Suma la partida	86,78
		Costes indirectos 6%	5,21
		TOTAL PARTIDA.....	91,99
240	P4HG-004AHV	m³ Hormigón para armar HA-30/B/20/XC4, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	
		Mano de obra	1,73
		Maquinaria	6,29
		Resto de obra y materiales.....	65,59
		Suma la partida	73,61
		Costes indirectos 6%	4,42

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				78,03
241	P4HG-005A3H_E	m³	Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	
Mano de obra				1,73
Maquinaria				6,29
Resto de obra y materiales.....				77,37
Suma la partida				85,39
Costes indirectos 6%				5,12
TOTAL PARTIDA.....				90,51
242	P4IMPASF	m²	Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	
Mano de obra				0,65
Resto de obra y materiales.....				1,46
Suma la partida				2,11
Costes indirectos 6%				0,13
TOTAL PARTIDA.....				2,24
243	P4JTACOMB200B	m	Juntas horizontales o inclinadas, en canal conformadas por cordón de polisulfuro y posterior lámina de PVC 200 combifléx o similar con aplicación de epoxy de adherencia. Unidad totalmente terminada incluidos cortes en hormigón, solapes y soldaduras de unión.	
Mano de obra				0,35
Maquinaria				0,46
Resto de obra y materiales.....				12,45
Suma la partida				13,26
Costes indirectos 6%				0,80
TOTAL PARTIDA.....				14,06
244	P4JTAHIDROF	m	Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	
Mano de obra				0,65
Resto de obra y materiales.....				6,19
Suma la partida				6,84
Costes indirectos 6%				0,41
TOTAL PARTIDA.....				7,25
245	P4JTAHIDROF2	m	Junta de estanqueidad en unión arquetas prefabricadas a hormigón de base ejecutado in situ, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	
Mano de obra				0,65
Resto de obra y materiales.....				3,62
Suma la partida				4,27
Costes indirectos 6%				0,26
TOTAL PARTIDA.....				4,53
246	P4JTAPVC150	m	Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.	
Mano de obra				0,65
Resto de obra y materiales.....				3,52
Suma la partida				4,17
Costes indirectos 6%				0,25
TOTAL PARTIDA.....				4,42

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
247	P4JTAPVC200	m	Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	
			Mano de obra	0,65
			Resto de obra y materiales.....	4,31
			Suma la partida	4,96
			Costes indirectos 6%	0,30
			TOTAL PARTIDA.....	5,26
248	P4JTAPVC300	m	Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	
			Mano de obra	0,65
			Resto de obra y materiales.....	5,15
			Suma la partida	5,80
			Costes indirectos 6%	0,35
			TOTAL PARTIDA.....	6,15
249	P4JTAPVC400	m	Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	
			Mano de obra	0,65
			Resto de obra y materiales.....	14,20
			Suma la partida	14,85
			Costes indirectos 6%	0,89
			TOTAL PARTIDA.....	15,74
250	P4JTAPVC400B	m	Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	
			Mano de obra	0,65
			Resto de obra y materiales.....	14,20
			Suma la partida	14,85
			Costes indirectos 6%	0,89
			TOTAL PARTIDA.....	15,74
251	P4JTUMO001	m	Suministro y colocaci³n de tuberøa de acero al carbono API 5L/ASTM/A106 de de 300 mm de di³metro interior, totalmente colocada.	
			Mano de obra	9,75
			Maquinaria	3,09
			Resto de obra y materiales.....	37,81
			Suma la partida	50,65
			Costes indirectos 6%	3,04
			TOTAL PARTIDA.....	53,69
252	P4LOSA003	m²	Losas prefabricadas de hormigón en tapas de grandes arquetas con entrada de hombre practicable dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.	
			Mano de obra	6,50
			Maquinaria	3,56
			Resto de obra y materiales.....	85,00
			Suma la partida	95,06
			Costes indirectos 6%	5,70
			TOTAL PARTIDA.....	100,76

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
253	P4LOSA1	m ² Losas prefabricadas de hormigón en tapas de arquetas dimensionada para carga peatonal, cuantía mínima 95kg/m ³ , homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.	
		Mano de obra	6,50
		Maquinaria	3,56
		Resto de obra y materiales.....	75,00
		Suma la partida	85,06
		Costes indirectos 6%	5,10
		TOTAL PARTIDA.....	90,16
254	P4LOSA2	m ² Losas prefabricadas de hormigón en tapas de arquetas para tránsito de tráfico pesado, cuantía mínima 190 kg/m ³ homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.	
		Mano de obra	6,50
		Maquinaria	3,56
		Resto de obra y materiales.....	135,00
		Suma la partida	145,06
		Costes indirectos 6%	8,70
		TOTAL PARTIDA.....	153,76
255	P4M2.0X1.0	m Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.0x1.0 m, conforme a norma UNE-EN 14844+A2:2012incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.	
		Mano de obra	47,37
		Maquinaria	35,61
		Resto de obra y materiales.....	470,00
		Suma la partida	552,98
		Costes indirectos 6%	33,18
		TOTAL PARTIDA.....	586,16
256	P4M2.5X2.0	m Suministro y colocación de marco prefabricado visitable de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.5x2.0 m, conforme a norma UNE-EN 14844+A2:2012incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.	
		Mano de obra	47,37
		Maquinaria	35,61
		Resto de obra y materiales.....	715,00
		Suma la partida	797,98
		Costes indirectos 6%	47,88
		TOTAL PARTIDA.....	845,86
257	P4M3.0X1.5	m Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 3.0x1.5 m, conforme a norma UNE-EN 14844+A2:2012incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.	
		Mano de obra	47,37
		Maquinaria	35,61
		Resto de obra y materiales.....	705,00
		Suma la partida	787,98
		Costes indirectos 6%	47,28
		TOTAL PARTIDA.....	835,26

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
258	P4MOR-001_E	m³	Formación de capa de mortero de nivelación.	
			Mano de obra	1,73
			Maquinaria	6,29
			Resto de obra y materiales.....	17,02
			Suma la partida	25,04
			Costes indirectos 6%	1,50
			TOTAL PARTIDA.....	26,54
259	P4NEOP2	m²	Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	
			Mano de obra	3,25
			Resto de obra y materiales.....	55,00
			Suma la partida	58,25
			Costes indirectos 6%	3,50
			TOTAL PARTIDA.....	61,75
260	P4PANT1.0A1	m²	Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o reperforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amorturada con suministro y colocación del hormigón y exceso por pérdidas. -Hormigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.	
			Mano de obra	1,42
			Maquinaria	66,98
			Resto de obra y materiales.....	163,51
			Suma la partida	231,91
			Costes indirectos 6%	13,91
			TOTAL PARTIDA.....	245,82
261	P4PATE01	ud	Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	
			Mano de obra	0,07
			Resto de obra y materiales.....	4,53
			Suma la partida	4,60
			Costes indirectos 6%	0,28
			TOTAL PARTIDA.....	4,88

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
262	P4PCAT01	ud Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm2 Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	<table><tr><td>Mano de obra</td><td>84,96</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.375,64</td></tr><tr><td>Suma la partida</td><td>1.460,60</td></tr><tr><td>Costes indirectos 6%</td><td>87,64</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.548,24</td></tr></table>	Mano de obra	84,96	Resto de obra y materiales.....	1.375,64	Suma la partida	1.460,60	Costes indirectos 6%	87,64	TOTAL PARTIDA.....	1.548,24		
Mano de obra	84,96														
Resto de obra y materiales.....	1.375,64														
Suma la partida	1.460,60														
Costes indirectos 6%	87,64														
TOTAL PARTIDA.....	1.548,24														
263	P4PERN12	ud Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	<table><tr><td>Mano de obra</td><td>3,19</td></tr><tr><td>Maquinaria</td><td>0,92</td></tr><tr><td>Resto de obra y materiales.....</td><td>0,86</td></tr><tr><td>Suma la partida</td><td>4,97</td></tr><tr><td>Costes indirectos 6%</td><td>0,30</td></tr><tr><td>TOTAL PARTIDA.....</td><td>5,27</td></tr></table>	Mano de obra	3,19	Maquinaria	0,92	Resto de obra y materiales.....	0,86	Suma la partida	4,97	Costes indirectos 6%	0,30	TOTAL PARTIDA.....	5,27
Mano de obra	3,19														
Maquinaria	0,92														
Resto de obra y materiales.....	0,86														
Suma la partida	4,97														
Costes indirectos 6%	0,30														
TOTAL PARTIDA.....	5,27														
264	P4PERN16	ud Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	<table><tr><td>Mano de obra</td><td>3,19</td></tr><tr><td>Maquinaria</td><td>1,46</td></tr><tr><td>Resto de obra y materiales.....</td><td>2,96</td></tr><tr><td>Suma la partida</td><td>7,61</td></tr><tr><td>Costes indirectos 6%</td><td>0,46</td></tr><tr><td>TOTAL PARTIDA.....</td><td>8,07</td></tr></table>	Mano de obra	3,19	Maquinaria	1,46	Resto de obra y materiales.....	2,96	Suma la partida	7,61	Costes indirectos 6%	0,46	TOTAL PARTIDA.....	8,07
Mano de obra	3,19														
Maquinaria	1,46														
Resto de obra y materiales.....	2,96														
Suma la partida	7,61														
Costes indirectos 6%	0,46														
TOTAL PARTIDA.....	8,07														
265	P4PERN20	ud Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	<table><tr><td>Mano de obra</td><td>3,19</td></tr><tr><td>Maquinaria</td><td>1,83</td></tr><tr><td>Resto de obra y materiales.....</td><td>3,91</td></tr><tr><td>Suma la partida</td><td>8,93</td></tr><tr><td>Costes indirectos 6%</td><td>0,54</td></tr><tr><td>TOTAL PARTIDA.....</td><td>9,47</td></tr></table>	Mano de obra	3,19	Maquinaria	1,83	Resto de obra y materiales.....	3,91	Suma la partida	8,93	Costes indirectos 6%	0,54	TOTAL PARTIDA.....	9,47
Mano de obra	3,19														
Maquinaria	1,83														
Resto de obra y materiales.....	3,91														
Suma la partida	8,93														
Costes indirectos 6%	0,54														
TOTAL PARTIDA.....	9,47														
266	P4PERN32	ud Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	<table><tr><td>Mano de obra</td><td>5,31</td></tr><tr><td>Maquinaria</td><td>1,83</td></tr><tr><td>Resto de obra y materiales.....</td><td>8,10</td></tr><tr><td>Suma la partida</td><td>15,24</td></tr><tr><td>Costes indirectos 6%</td><td>0,91</td></tr><tr><td>TOTAL PARTIDA.....</td><td>16,15</td></tr></table>	Mano de obra	5,31	Maquinaria	1,83	Resto de obra y materiales.....	8,10	Suma la partida	15,24	Costes indirectos 6%	0,91	TOTAL PARTIDA.....	16,15
Mano de obra	5,31														
Maquinaria	1,83														
Resto de obra y materiales.....	8,10														
Suma la partida	15,24														
Costes indirectos 6%	0,91														
TOTAL PARTIDA.....	16,15														
267	P4RSACEQ01	m Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembrada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluidas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.	<table><tr><td>Mano de obra</td><td>6,50</td></tr><tr><td>Maquinaria</td><td>5,93</td></tr><tr><td>Resto de obra y materiales.....</td><td>30,83</td></tr><tr><td>Suma la partida</td><td>43,26</td></tr><tr><td>Costes indirectos 6%</td><td>2,60</td></tr></table>	Mano de obra	6,50	Maquinaria	5,93	Resto de obra y materiales.....	30,83	Suma la partida	43,26	Costes indirectos 6%	2,60		
Mano de obra	6,50														
Maquinaria	5,93														
Resto de obra y materiales.....	30,83														
Suma la partida	43,26														
Costes indirectos 6%	2,60														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				45,86
268	P4RSGPE160	m	Localización, desmontaje programado, y reposición de tubería de gas DN160 mm PE,SDR11 arquetas y valvulería asociada, incluyendo operaciones de localización mediante calas y/o sistemas de microgravimetría con técnico cualificado, programación de corte y rotura con empresa de servicios, gestión y pago de canon y tasas requeridas, demolición, carga y retirada de conducciones, arquetas y elementos asociados, transporte a vertedero autorizado, pago de canon de vertido, reposición de servicio mediante retranqueo, con excavación en zanja de ancho especificado en planos mínimo 0.8m, con base de apoyo de cama de arena de 15 cm, relleno con arena hasta 30 cm sobre clave de tubería, posterior relleno localizado con suelo seleccionado procedente de préstamo tamaño máximo 100 mm, relleno con zahorra artificial hasta sección de pavimento, lámina PVC señalizadora de servicio normalizada, losa de protección en pavimentos de 0.15m de espesor con al menos 1.20m de ancho, conexiones de elementos, juntas especiales, p.p. de arquetas normalizadas con tapa de fundición C-400, según detalle definido en planos con base y anclaje de hormigón en caso de valvulerías, arquetas en cambios de dirección, conexiones y puntos de ubicación de valvulería. Unidad totalmente ejecutada.	
Mano de obra				14,67
Maquinaria				6,72
Resto de obra y materiales.....				62,73
Suma la partida				84,12
Costes indirectos 6%				5,05
TOTAL PARTIDA.....				89,17
269	P4RSGPE200	m	Localización, desmontaje programado, y reposición de tubería de gas DN200 mm PE,SDR11 arquetas y valvulería asociada, incluyendo operaciones de localización mediante calas y/o sistemas de microgravimetría con técnico cualificado, programación de corte y rotura con empresa de servicios, gestión y pago de canon y tasas requeridas, demolición, carga y retirada de conducciones, arquetas y elementos asociados, transporte a vertedero autorizado, pago de canon de vertido, reposición de servicio mediante retranqueo, con excavación en zanja de ancho especificado en planos mínimo 0.8m, con base de apoyo de cama de arena de 15 cm, relleno con arena hasta 30 cm sobre clave de tubería, posterior relleno localizado con suelo seleccionado procedente de préstamo tamaño máximo 100 mm, relleno con zahorra artificial hasta sección de pavimento, lámina PVC señalizadora de servicio normalizada, losa de HM20 de protección en pavimentos de 0.15m de espesor con al menos 1.20m de ancho, vainas de tubería en cruzamientos, conexiones de elementos, juntas especiales, p.p. de arquetas normalizadas con tapa de fundición C-400, según detalle definido en planos con base y anclaje de hormigón en caso de valvulerías, arquetas en cambios de dirección, conexiones y puntos de ubicación de valvulería. Unidad totalmente ejecutada.	
Mano de obra				14,67
Maquinaria				6,72
Resto de obra y materiales.....				67,28
Suma la partida				88,67
Costes indirectos 6%				5,32
TOTAL PARTIDA.....				93,99
270	P4RSS1A	m	Localización, demolición, desmontaje programado y retirada de tubería de riego de varios diámetros menores a 200 mm, incluyendo arquetas y desmontaje de válvulas, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexión. Unidad totalmente terminada.	
Mano de obra				0,65
Maquinaria				1,07
Resto de obra y materiales.....				1,50
Suma la partida				3,22

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Costes indirectos	6% 0,19
			TOTAL PARTIDA.....	3,41
271	P4RSS1B	m	Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	
			Mano de obra	1,30
			Maquinaria	8,28
			Resto de obra y materiales.....	3,00
			Suma la partida	12,58
			Costes indirectos	6% 0,75
			TOTAL PARTIDA.....	13,33
272	P4RSS1C	m	Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento/riego y/o saneamiento/ pluviales de DN >1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	
			Mano de obra	3,25
			Maquinaria	11,10
			Resto de obra y materiales.....	3,00
			Suma la partida	17,35
			Costes indirectos	6% 1,04
			TOTAL PARTIDA.....	18,39
273	P4RSS5A	ud	Cegado de arqueta o punto de entronque para anulación de tramo de colector existente mediante macizo de hormigón 1.5m3 HL-150 p.p. de tapes, excavaciones, demoliciones asociadas y reposición total de superficie, carga y transporte a vertedero de escombros, canon de vertido. Unidad completa.	
			Mano de obra	65,00
			Maquinaria	3,92
			Resto de obra y materiales.....	66,45
			Suma la partida	135,37
			Costes indirectos	6% 8,12
			TOTAL PARTIDA.....	143,49
274	P4RSS5B	ud	Cegado de arqueta o punto de entronque para anulación de tramo de colector existente mediante brida ciega de dimensión igual a colector p.p. de tapes, excavaciones, rellenos y reposición total de superficie, carga y transporte a vertedero de escombros, canon de vertido. Unidad completa.	
			Mano de obra	65,00
			Maquinaria	3,44
			Resto de obra y materiales.....	174,73
			Suma la partida	243,17
			Costes indirectos	6% 14,59
			TOTAL PARTIDA.....	257,76

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
275	P4RSSFIBC1	m	Demolición y gestión de residuos de conducciones de fibrocemento de DN<1200mm, desmontaje manual por personal especializado y medios auxiliares necesarios, paletizado, flejado y etiquetado a pie de obra, carga, transporte y gestión de residuos a cargo de empresa registrada R.E.R.A., incluso redacción de plan de trabajo y unidad de descontaminación, carga y transporte a vertedero, canon de vertido, tratamiento si procede de aspiración con filtros adecuados y pulverización con líquido encapsulante adecuado, según mediciones exigidas por ley, transporte autorizado, desplazamiento de equipos de desamiantado con esclusas de descontaminación en los compartimentos que sean necesarios, equipos de protección EPI's P3, coordinado con el al Plan de Seguridad y Salud. Unidad completa incluso colocación de bridas ciegas en T.	
			Mano de obra	29,00
			Maquinaria	11,86
			Resto de obra y materiales.....	9,92
			Suma la partida	50,78
			Costes indirectos 6%	3,05
			TOTAL PARTIDA.....	53,83
276	P4RSV0A	ud	Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimentría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	
			Mano de obra	67,17
			Maquinaria	132,84
			Resto de obra y materiales.....	53,77
			Suma la partida	253,78
			Costes indirectos 6%	15,23
			TOTAL PARTIDA.....	269,01
277	P4RSV1A	ud	Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimentría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	
			Mano de obra	98,22
			Maquinaria	221,40
			Resto de obra y materiales.....	602,28
			Suma la partida	921,90
			Costes indirectos 6%	55,31
			TOTAL PARTIDA.....	977,21
278	P4RSV1B	ud	Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ..), consistente en labores de localización mediante gravimentría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	
			Mano de obra	493,80
			Maquinaria	885,60
			Resto de obra y materiales.....	2.232,20

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Suma la partida	3.611,60
		Costes indirectos 6%	216,70
		TOTAL PARTIDA.....	3.828,30
279	P4RSV1C	ud Sostenimiento y protección de poste de línea telefónica y/o eléctrica aérea de BT, mediante puntales, arriostres y resto de elementos, durante la ejecución de la obra. Unidad totalmente terminada	
		Mano de obra	102,21
		Maquinaria	44,28
		Resto de obra y materiales.....	103,97
		Suma la partida	250,46
		Costes indirectos 6%	15,03
		TOTAL PARTIDA.....	265,49
280	P4RSV1D	m Demolición y retirada de conductos y cableados de instalaciones eléctricas incluidas, iluminación, telefonía y/o comunicaciones subterráneas, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.	
		Mano de obra	2,05
		Maquinaria	3,00
		Resto de obra y materiales.....	0,03
		Suma la partida	5,08
		Costes indirectos 6%	0,30
		TOTAL PARTIDA.....	5,38
281	P4RSV2	ud Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.	
		Mano de obra	209,70
		Maquinaria	58,54
		Resto de obra y materiales.....	887,80
		Suma la partida	1.156,04
		Costes indirectos 6%	69,36
		TOTAL PARTIDA.....	1.225,40
282	P4RSV2B	ud Corte programa del servicio de GAS en conducciones de distribución.	
		Mano de obra	153,96
		Maquinaria	131,60
		Resto de obra y materiales.....	850,00
		Suma la partida	1.135,56
		Costes indirectos 6%	68,13
		TOTAL PARTIDA.....	1.203,69
283	P4RSV2D	m Demolición y retirada de tuberías de hormigón en masa, salvacunetas y conducciones, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.	
		Mano de obra	1,84
		Maquinaria	2,73
		Resto de obra y materiales.....	0,03
		Suma la partida	4,60
		Costes indirectos 6%	0,28
		TOTAL PARTIDA.....	4,88

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
284	P4TAPA60D400	ud Tapa de registro de fundición estanca acerrojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN) de la marca EJ modelo TP800 o similar. Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, perfiels, ladrillos,... unidad de obra totalmente instalada y ejecutada.	
		Mano de obra	20,33
		Resto de obra y materiales.....	91,04
		Suma la partida	111,37
		Costes indirectos 6%	6,68
		TOTAL PARTIDA.....	118,05
285	P4TAPA60D400A	ud Tapa de registro de fundición estanca y acerrojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN) . Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, cerco,... unidad de obra totalmente instalada y ejecutada.	
		Mano de obra	20,33
		Resto de obra y materiales.....	132,88
		Suma la partida	153,21
		Costes indirectos 6%	9,19
		TOTAL PARTIDA.....	162,40
286	P4TAPALG01	m² Tapa ciega modular extraible antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y candado . Totalmente terminada y colocada.	
		Mano de obra	2,60
		Resto de obra y materiales.....	102,00
		Suma la partida	104,60
		Costes indirectos 6%	6,28
		TOTAL PARTIDA.....	110,88
287	P4TUB100HA135	m Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	
		Mano de obra	6,50
		Maquinaria	1,58
		Resto de obra y materiales.....	107,67
		Suma la partida	115,75
		Costes indirectos 6%	6,95
		TOTAL PARTIDA.....	122,70
288	P4TUB120HA135	m Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.200 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	
		Mano de obra	6,50
		Maquinaria	1,58
		Resto de obra y materiales.....	145,28
		Suma la partida	153,36
		Costes indirectos 6%	9,20
		TOTAL PARTIDA.....	162,56

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
289	P4TUB315PVC	m	Tubería de PVC diámetro Nominal 315 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.	
			Mano de obra	9,75
			Maquinaria	3,09
			Resto de obra y materiales.....	17,33
			Suma la partida	30,17
			Costes indirectos 6%	1,81
			TOTAL PARTIDA.....	31,98
290	P4TUB500PVC	m	Tubería de PVC diámetro Nominal 500 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.	
			Mano de obra	7,80
			Maquinaria	3,09
			Resto de obra y materiales.....	31,89
			Suma la partida	42,78
			Costes indirectos 6%	2,57
			TOTAL PARTIDA.....	45,35
291	P4TUB80HA135	m	Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elástica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	
			Mano de obra	6,50
			Maquinaria	1,58
			Resto de obra y materiales.....	74,51
			Suma la partida	82,59
			Costes indirectos 6%	4,96
			TOTAL PARTIDA.....	87,55
292	P5ARQLD1A	ud	Arqueta de ladrillo 1 pie enfoscado interior mortero hidrófugo de diámetro interior 1.20 m, con cono reductor 1200/600 para alturas de hasta 2.5m, tapa de fundición DN 600 mm D-400, marco y contracerco, pates polipropileno alma de acero cada 20 cm, y base de apoyo HA25 y armado #8/10, con 0.4m de espesor mínimo y 10 cm de hormigón de limpieza, p.p. de excavación asociada, y rellenos con suelos seleccionados. Unidad totalmente terminada.	
			Mano de obra	390,00
			Maquinaria	92,10
			Resto de obra y materiales.....	227,35
			Suma la partida	709,45
			Costes indirectos 6%	42,57
			TOTAL PARTIDA.....	752,02
293	P5ARQLD2	ud	Arqueta de registro de dimensiones interiores 80x80x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 80x80 normalizada D-400. Unidad totalmente terminada.	
			Mano de obra	195,00
			Maquinaria	21,17
			Resto de obra y materiales.....	34,98
			Suma la partida	251,15
			Costes indirectos 6%	15,07
			TOTAL PARTIDA.....	266,22

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
294	P5ARQLD4	ud Arqueta de registro de dimensiones interiores 60x60x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 60x60normalizada D-400. Unidad totalmente terminada.	
		Mano de obra	162,50
		Maquinaria	18,55
		Resto de obra y materiales.....	20,81
		Suma la partida	201,86
		Costes indirectos 6%	12,11
		TOTAL PARTIDA.....	213,97
295	P5ARQLD6	ud Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	
		Mano de obra	65,00
		Maquinaria	7,77
		Resto de obra y materiales.....	9,77
		Suma la partida	82,54
		Costes indirectos 6%	4,95
		TOTAL PARTIDA.....	87,49
296	P5ARQP-1.2A	ud UD de Arqueta prefabricada, altura variable hasta 3.0m de tipo pozo de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltos en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base. Unidad totalmente terminada.	
		Mano de obra	329,58
		Maquinaria	131,52
		Resto de obra y materiales.....	331,81
		Suma la partida	792,91
		Costes indirectos 6%	47,57
		TOTAL PARTIDA.....	840,48

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
297	P5ARQP-1.2B	<p>ud UD de pozo de resalto de altura variable hasta 3,5m de de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltos en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base.</p> <p>Unidad totalmente terminada.</p>	<table><tr><td>Mano de obra</td><td>455,33</td></tr><tr><td>Maquinaria</td><td>144,66</td></tr><tr><td>Resto de obra y materiales.....</td><td>452,98</td></tr><tr><td>Suma la partida</td><td>1.052,97</td></tr><tr><td>Costes indirectos 6%</td><td>63,18</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.116,15</td></tr></table>	Mano de obra	455,33	Maquinaria	144,66	Resto de obra y materiales.....	452,98	Suma la partida	1.052,97	Costes indirectos 6%	63,18	TOTAL PARTIDA.....	1.116,15
Mano de obra	455,33														
Maquinaria	144,66														
Resto de obra y materiales.....	452,98														
Suma la partida	1.052,97														
Costes indirectos 6%	63,18														
TOTAL PARTIDA.....	1.116,15														
298	P5ARQP-1.5A	<p>ud UD de Arqueta prefabricada de diámetro 1.5 m y altura 1.5m para desagües tipo D formada por anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, con pates de polipropileno montados , incluida excavación localizada y rellenos necesarios. Unidad totalmente terminada.</p>	<table><tr><td>Mano de obra</td><td>47,37</td></tr><tr><td>Maquinaria</td><td>73,72</td></tr><tr><td>Resto de obra y materiales.....</td><td>69,85</td></tr><tr><td>Suma la partida</td><td>190,94</td></tr><tr><td>Costes indirectos 6%</td><td>11,46</td></tr><tr><td>TOTAL PARTIDA.....</td><td>202,40</td></tr></table>	Mano de obra	47,37	Maquinaria	73,72	Resto de obra y materiales.....	69,85	Suma la partida	190,94	Costes indirectos 6%	11,46	TOTAL PARTIDA.....	202,40
Mano de obra	47,37														
Maquinaria	73,72														
Resto de obra y materiales.....	69,85														
Suma la partida	190,94														
Costes indirectos 6%	11,46														
TOTAL PARTIDA.....	202,40														
299	P5ARQP-1A	<p>ud UD de Arqueta prefabricada, altura variable hasta 2.5m de tipo pozo de 1000mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas mediante juntas de goma, incluyendo módulo cónico superior, tubo de resalto de PVC DN 315mm, macizado hormigonado HM-20, recibido con mortero de cemento, cerco y tapa de fundición DN600 para tráfico pesado 40Tn, pates y resto de elementos asociados, incluida excavación y rellenos necesarios.</p> <p>Unidad totalmente terminada.</p>	<table><tr><td>Mano de obra</td><td>329,58</td></tr><tr><td>Maquinaria</td><td>131,52</td></tr><tr><td>Resto de obra y materiales.....</td><td>224,46</td></tr><tr><td>Suma la partida</td><td>685,56</td></tr><tr><td>Costes indirectos 6%</td><td>41,13</td></tr><tr><td>TOTAL PARTIDA.....</td><td>726,69</td></tr></table>	Mano de obra	329,58	Maquinaria	131,52	Resto de obra y materiales.....	224,46	Suma la partida	685,56	Costes indirectos 6%	41,13	TOTAL PARTIDA.....	726,69
Mano de obra	329,58														
Maquinaria	131,52														
Resto de obra y materiales.....	224,46														
Suma la partida	685,56														
Costes indirectos 6%	41,13														
TOTAL PARTIDA.....	726,69														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
300	P5ARQPREF1	ud Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de de 1,5-2,5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , pieza tapa con apertura DN600 mm, huecos preformados para conexión de tuberías de diámetro múltiple apoyada sobre fondo de caja excavado y compactado, ejecución de 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado. Unidad totalmente colocada.	
		Mano de obra	52,00
		Maquinaria	62,60
		Resto de obra y materiales.....	596,87
		Suma la partida	711,47
		Costes indirectos 6%	42,69
		TOTAL PARTIDA.....	754,16
301	P5ARQPREF1.0E	ud Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	
		Mano de obra	19,50
		Maquinaria	46,61
		Resto de obra y materiales.....	199,19
		Suma la partida	265,30
		Costes indirectos 6%	15,92
		TOTAL PARTIDA.....	281,22
302	P5ARQPREF1.0R	ud Arqueta tipo 2P comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1x1x1.5 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.0x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	
		Mano de obra	19,50
		Maquinaria	46,61
		Resto de obra y materiales.....	288,42
		Suma la partida	354,53
		Costes indirectos 6%	21,27
		TOTAL PARTIDA.....	375,80
303	P5ARQPREF1.5R	ud Arqueta tipo 2B comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1.50x1.0x1.20 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.5x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	
		Mano de obra	19,50
		Maquinaria	46,61
		Resto de obra y materiales.....	198,42
		Suma la partida	264,53
		Costes indirectos 6%	15,87
		TOTAL PARTIDA.....	280,40
304	P5ARQPREF2.0E	ud Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	
		Mano de obra	19,50

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Maquinaria	46,61
		Resto de obra y materiales.....	324,63
		Suma la partida	390,74
		Costes indirectos 6%	23,44
		TOTAL PARTIDA.....	414,18
305	P5ARQPREF2.A1	ud Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, tronco-piramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	
		Mano de obra	19,50
		Maquinaria	46,61
		Resto de obra y materiales.....	183,79
		Suma la partida	249,90
		Costes indirectos 6%	14,99
		TOTAL PARTIDA.....	264,89
306	P5ARQPREF2.A2	ud Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, tronco-piramidal, tipo A-2, de 145x90 cm de medidas interiores y 117x62 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapas de fundición dúctil, de 72x62x6,5 cm, para arqueta de conexión eléctrica tipo A-2, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	
		Mano de obra	19,50
		Maquinaria	46,61
		Resto de obra y materiales.....	258,16
		Suma la partida	324,27
		Costes indirectos 6%	19,46
		TOTAL PARTIDA.....	343,73
307	P5ARQR001	ud Arqueta riego incluida compuerta y p.p. medios auxiliares, 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.	
		Mano de obra	130,00
		Maquinaria	85,86
		Resto de obra y materiales.....	707,85
		Suma la partida	923,71
		Costes indirectos 6%	55,42
		TOTAL PARTIDA.....	979,13

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
308	P5ARQpref1.0	ud	Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de hasta 1.5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales, apoyada sobre fondo de caja excavado y compactado con 0.2m de hormigón en masa HM-20, incluida tapa superior armada, tapa de acero galvanizado en caliente de 3 mm estriada, cerco y precerco, rejillas de ventilación, unión entre módulos de cordón impermeabilizante de polisulfuro, agujeros para entrada de tuberías de dimensiones especificadas, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.	
			Mano de obra	62,29
			Maquinaria	62,60
			Resto de obra y materiales.....	358,92
			Suma la partida	483,81
			Costes indirectos 6%	29,03
			TOTAL PARTIDA.....	512,84
309	P5BANDA250	m	M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	
			Mano de obra	0,07
			Resto de obra y materiales.....	0,23
			Suma la partida	0,30
			Costes indirectos 6%	0,02
			TOTAL PARTIDA.....	0,32
310	P5BORD1	m	Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	
			Mano de obra	9,75
			Resto de obra y materiales.....	6,20
			Suma la partida	15,95
			Costes indirectos 6%	0,96
			TOTAL PARTIDA.....	16,91
311	P5BORD2	m	Bordillo de granito gris (similar al existente en caso de reposición) de dimensiones 15x25x120 cms., asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	
			Mano de obra	9,75
			Resto de obra y materiales.....	22,57
			Suma la partida	32,32
			Costes indirectos 6%	1,94
			TOTAL PARTIDA.....	34,26
312	P5BORD3	m	Bordillo de hormigón bicapa, achaflanado, de 9-10x20 cm. colocado sobre solera de hormigón HM-15/P/40, de 10 cm. de espesor, i/excavación necesaria, rejuntado y limpieza.	
			Mano de obra	6,50
			Resto de obra y materiales.....	5,70
			Suma la partida	12,20
			Costes indirectos 6%	0,73
			TOTAL PARTIDA.....	12,93
313	P5CERRAM0A	m	Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar, existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos.	
			Mano de obra	1,95
			Maquinaria	2,55
			Resto de obra y materiales.....	0,06
			Suma la partida	4,56
			Costes indirectos 6%	0,27

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				4,83
314	P5CERRAM0D	m	Reposición de muro bancal de espesor medio 0,5 m , altura variable hasta 1,5 m y longitud 4 m. incluyendo retirada de muro existente, acopio y posterior reconstrucción mediante aporte de mampuestos, ripios, perfectamente alineado, aplomado, con excavación y preparación de la superficie de asiento (20 cm de HM-20), completamente terminado. incluyendo las operaciones de acopio,recolocación de la piedra original y/o reposición de otra de características similares a la original.	
Mano de obra				32,50
Maquinaria				8,84
Resto de obra y materiales.....				23,21
Suma la partida				64,55
Costes indirectos 6%				3,87
TOTAL PARTIDA.....				68,42
315	P5CERRAM1	m	Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	
Mano de obra				10,69
Maquinaria				0,96
Resto de obra y materiales.....				79,41
Suma la partida				91,06
Costes indirectos 6%				5,46
TOTAL PARTIDA.....				96,52
316	P5CERRAM2	m	Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, sin incluir puerta de acceso.	
Mano de obra				9,75
Maquinaria				1,30
Resto de obra y materiales.....				16,28
Suma la partida				27,33
Costes indirectos 6%				1,64
TOTAL PARTIDA.....				28,97
317	P5CERRAM4	m	Cerramiento ganadero a base de postes de hormigón de 17x12x170 cm y 1,40 m o metálicos sobre el terreno a 7 m separación media, empotrados y anclados en el terreno 30 cm y guarnecido con un malla 100x8x15 mm y dos hiladas superiores de alambre, doble hilo 13x15, tensado en tramos de 50 m, y con dos riostras cada 100 m. Unidad completamente terminada.	
Mano de obra				3,25
Maquinaria				1,30
Resto de obra y materiales.....				2,87
Suma la partida				7,42
Costes indirectos 6%				0,45
TOTAL PARTIDA.....				7,87

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
318	P5CERRAMPU	m	Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, incluyendo parte proporcional de puerta de acceso.	
			Mano de obra	9,75
			Maquinaria	1,30
			Resto de obra y materiales.....	16,28
			Suma la partida	27,33
			Costes indirectos 6%	1,64
			TOTAL PARTIDA.....	28,97
319	P5COM12F	m	Suministro e instalación de cable de 12 fibras ópticas en Mono-modo 9/125, con aislamiento PEAP, bajo canalización de tritubo según especificaciones , incluso parte proporcional de empalmes, fusionado y conectorización, probado y certificado.	
			Mano de obra	1,57
			Resto de obra y materiales.....	0,76
			Suma la partida	2,33
			Costes indirectos 6%	0,14
			TOTAL PARTIDA.....	2,47
320	P5COM62F	m	Suministro e instalación de cable de 64 fibras ópticas en Mono-modo 9/125, con aislamiento PEAP, bajo canalización de tritubo según especificaciones , incluso parte proporcional de empalmes, fusionado y conectorización, probado y certificado.	
			Mano de obra	1,83
			Resto de obra y materiales.....	4,05
			Suma la partida	5,88
			Costes indirectos 6%	0,35
			TOTAL PARTIDA.....	6,23
321	P5COMCAJA64F	ud	Suministro e instalación de cajas de empalme estanca para 64 fibras ópticas de tipo monomodo, ejecutados por fusión, con p/p de verificación de tipo ODTR.	
			Mano de obra	39,20
			Resto de obra y materiales.....	58,40
			Suma la partida	97,60
			Costes indirectos 6%	5,86
			TOTAL PARTIDA.....	103,46
322	P5COMCBL001A	m	Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	
			Mano de obra	0,78
			Resto de obra y materiales.....	2,55
			Suma la partida	3,33
			Costes indirectos 6%	0,20
			TOTAL PARTIDA.....	3,53
323	P5COMCBL001B	m	Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	
			Mano de obra	0,78
			Resto de obra y materiales.....	3,41
			Suma la partida	4,19
			Costes indirectos 6%	0,25
			TOTAL PARTIDA.....	4,44

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
324	P5COMCBL001C	m	Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.	
			Mano de obra	7,83
			Resto de obra y materiales.....	2,78
			Suma la partida	10,61
			Costes indirectos 6%	0,64
			TOTAL PARTIDA.....	11,25
325	P5COMCBL001D	m	Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.	
			Mano de obra	7,83
			Resto de obra y materiales.....	3,06
			Suma la partida	10,89
			Costes indirectos 6%	0,65
			TOTAL PARTIDA.....	11,54
326	P5COMCBL004	m	Cable comunicaciones RS232. Unidad totalmente instalada.	
			Mano de obra	3,92
			Resto de obra y materiales.....	1,60
			Suma la partida	5,52
			Costes indirectos 6%	0,33
			TOTAL PARTIDA.....	5,85
327	P5COMCBL005	m	Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.	
			Mano de obra	3,92
			Resto de obra y materiales.....	1,66
			Suma la partida	5,58
			Costes indirectos 6%	0,33
			TOTAL PARTIDA.....	5,91
328	P5COMCBL006	m	Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.	
			Mano de obra	3,92
			Resto de obra y materiales.....	3,14
			Suma la partida	7,06
			Costes indirectos 6%	0,42
			TOTAL PARTIDA.....	7,48
329	P5COMCBL007	m	Cable comunicaciones RS45 .Unidad totalmente instalada.	
			Mano de obra	3,92
			Resto de obra y materiales.....	0,76
			Suma la partida	4,68
			Costes indirectos 6%	0,28
			TOTAL PARTIDA.....	4,96
330	P5COMLATFO	ud	Suministro e instalación de latiguillos de fibra óptica multimodo con conectores FC-FC, de una longitud de 1,50 m.	
			Mano de obra	2,61
			Resto de obra y materiales.....	5,67
			Suma la partida	8,28
			Costes indirectos 6%	0,50
			TOTAL PARTIDA.....	8,78
331	P5COMREP64F	ud	Suministro e instalación de repartidor de 64 fibras ópticas para un total de 64 adaptadores de tipo FC-FC y sus correspondientes 64 pig-tail de monomodos, todos fusionados y comprobados con equipo ODTR.	
			Mano de obra	104,52
			Resto de obra y materiales.....	836,15

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Suma la partida	940,67
			Costes indirectos 6%	56,44
			TOTAL PARTIDA.....	997,11
332	P5ELE10	ud	Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	
			Mano de obra	5,23
			Resto de obra y materiales.....	90,70
			Suma la partida	95,93
			Costes indirectos 6%	5,76
			TOTAL PARTIDA.....	101,69
333	P5ELE110PVC	m	Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D= 110 mm, e=3,2 mm. embebido en hormigón o adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	
			Mano de obra	3,14
			Resto de obra y materiales.....	2,20
			Suma la partida	5,34
			Costes indirectos 6%	0,32
			TOTAL PARTIDA.....	5,66
334	P5ELE110X2	m	Canalización de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	
			Mano de obra	1,88
			Maquinaria	6,67
			Resto de obra y materiales.....	8,33
			Suma la partida	16,88
			Costes indirectos 6%	1,01
			TOTAL PARTIDA.....	17,89
335	P5ELE110X2H	m	Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	
			Mano de obra	14,94
			Maquinaria	15,05
			Resto de obra y materiales.....	12,89
			Suma la partida	42,88
			Costes indirectos 6%	2,57
			TOTAL PARTIDA.....	45,45

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
336	P5ELE110X4H	m	Canalización hormigonada de 4x110mm PVC normalizado instalación, en cualquier tipo de terreno, Acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada	
			Mano de obra	14,94
			Maquinaria	15,05
			Resto de obra y materiales.....	16,71
			Suma la partida	46,70
			Costes indirectos 6%	2,80
			TOTAL PARTIDA.....	49,50
337	P5ELE125PVC	m	Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D=125 mm, e=3,2 mm. adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	
			Mano de obra	3,14
			Resto de obra y materiales.....	2,03
			Suma la partida	5,17
			Costes indirectos 6%	0,31
			TOTAL PARTIDA.....	5,48
338	P5ELE160PVC	m	Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	
			Mano de obra	3,14
			Resto de obra y materiales.....	2,80
			Suma la partida	5,94
			Costes indirectos 6%	0,36
			TOTAL PARTIDA.....	6,30
339	P5ELE160X2HT1	m	Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	
			Mano de obra	14,94
			Maquinaria	15,05
			Resto de obra y materiales.....	22,40
			Suma la partida	52,39
			Costes indirectos 6%	3,14
			TOTAL PARTIDA.....	55,53

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
340	P5ELE160X4H	m	Canalización hormigonada de 4x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x1.0m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	
			Mano de obra	14,94
			Maquinaria	15,05
			Resto de obra y materiales.....	45,30
			Suma la partida	75,29
			Costes indirectos 6%	4,52
			TOTAL PARTIDA.....	79,81
341	P5ELE160X4HT2	m	Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	
			Mano de obra	14,94
			Maquinaria	15,05
			Resto de obra y materiales.....	34,26
			Suma la partida	64,25
			Costes indirectos 6%	3,86
			TOTAL PARTIDA.....	68,11
342	P5ELE200X2H1	m	Canalización de línea de media tensión hormigonada en terrenos rústicos y/o ajardinados conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 100-130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	
			Mano de obra	14,94
			Maquinaria	15,05
			Resto de obra y materiales.....	23,73
			Suma la partida	53,72
			Costes indirectos 6%	3,22
			TOTAL PARTIDA.....	56,94
343	P5ELE200X2H2	m	Canalización de línea de media tensión hormigonada bajo acerados y pavimentos conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	
			Mano de obra	14,94
			Maquinaria	18,59
			Resto de obra y materiales.....	23,94

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
			Suma la partida 57,47
			Costes indirectos 6% 3,45
			TOTAL PARTIDA..... 60,92
344	P5ELE200X2HT2	m Canalización de línea de media tensión hormigonada en terrenos rústicos conformado por tubos 2x200mm PE normalizado para instalación eléctrica, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	
			Mano de obra 14,94
			Maquinaria 11,95
			Resto de obra y materiales..... 33,31
			Suma la partida 60,20
			Costes indirectos 6% 3,61
			TOTAL PARTIDA..... 63,81
345	P5ELE20GALV	m Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	
			Mano de obra 0,26
			Resto de obra y materiales..... 4,80
			Suma la partida 5,06
			Costes indirectos 6% 0,30
			TOTAL PARTIDA..... 5,36
346	P5ELE20PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	
			Mano de obra 0,47
			Maquinaria 0,04
			Resto de obra y materiales..... 0,76
			Suma la partida 1,27
			Costes indirectos 6% 0,08
			TOTAL PARTIDA..... 1,35
347	P5ELE25GALV	m Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	
			Mano de obra 0,26
			Resto de obra y materiales..... 5,19
			Suma la partida 5,45
			Costes indirectos 6% 0,33
			TOTAL PARTIDA..... 5,78
348	P5ELE25PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	
			Mano de obra 0,47

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Maquinaria	0,04
		Resto de obra y materiales.....	1,02
		Suma la partida	1,53
		Costes indirectos 6%	0,09
		TOTAL PARTIDA.....	1,62
349	P5ELE32GALV	m Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	
		Mano de obra	0,26
		Resto de obra y materiales.....	6,04
		Suma la partida	6,30
		Costes indirectos 6%	0,38
		TOTAL PARTIDA.....	6,68
350	P5ELE32PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	
		Mano de obra	0,47
		Maquinaria	0,04
		Resto de obra y materiales.....	1,02
		Suma la partida	1,53
		Costes indirectos 6%	0,09
		TOTAL PARTIDA.....	1,62
351	P5ELE40PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=40 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada	
		Mano de obra	0,47
		Maquinaria	0,04
		Resto de obra y materiales.....	1,19
		Suma la partida	1,70
		Costes indirectos 6%	0,10
		TOTAL PARTIDA.....	1,80
352	P5ELE50PVC	m Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada	
		Mano de obra	0,47
		Maquinaria	0,04
		Resto de obra y materiales.....	1,31
		Suma la partida	1,82
		Costes indirectos 6%	0,11
		TOTAL PARTIDA.....	1,93

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
353	P5ELE75PVC	m	Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	
			Mano de obra	2,61
			Resto de obra y materiales.....	1,11
			Suma la partida	3,72
			Costes indirectos 6%	0,22
			TOTAL PARTIDA.....	3,94
354	P5ELEARQ1X1TF	ud	Arqueta prefabricada estanca para recogida de aceites de dimensiones 1,0x1,0m y altura de hasta 1.5m, tapa de fundición 600x600 mm, cerco y precerco, conectada a conductor de recogida, incluidos pasamuros y tuberías de conexión. Unidad totalmente colocada.	
			Mano de obra	62,29
			Maquinaria	62,60
			Resto de obra y materiales.....	798,78
			Suma la partida	923,67
			Costes indirectos 6%	55,42
			TOTAL PARTIDA.....	979,09
355	P5ELEBAND1	m	Bandeja de PVC de dimensiones 300x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	
			Mano de obra	0,13
			Resto de obra y materiales.....	26,11
			Suma la partida	26,24
			Costes indirectos 6%	1,57
			TOTAL PARTIDA.....	27,81
356	P5ELEBAND2	m	Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	
			Mano de obra	0,13
			Resto de obra y materiales.....	17,18
			Suma la partida	17,31
			Costes indirectos 6%	1,04
			TOTAL PARTIDA.....	18,35
357	P5ELEBAND3	m	Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	
			Mano de obra	0,13
			Resto de obra y materiales.....	8,24
			Suma la partida	8,37
			Costes indirectos 6%	0,50
			TOTAL PARTIDA.....	8,87
358	P5ELEBT	ud	Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	
			Resto de obra y materiales.....	3.297,87
			Suma la partida	3.297,87
			Costes indirectos 6%	197,87
			TOTAL PARTIDA.....	3.495,74
359	P5ELEBTALUMB	ud	Unidad de legalización de alumbrado público en el conjunto de la actuación , incluyendo línea de baja tensión, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización.	

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE	
			Resto de obra y materiales.....	467,83
			Suma la partida	467,83
			Costes indirectos 6%	28,07
			TOTAL PARTIDA.....	495,90
360	P5ELEC01	ud Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.		
			Mano de obra	2,61
			Resto de obra y materiales.....	4,48
			Suma la partida	7,09
			Costes indirectos 6%	0,43
			TOTAL PARTIDA.....	7,52
361	P5ELEC02	ud Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.		
			Mano de obra	5,23
			Resto de obra y materiales.....	7,17
			Suma la partida	12,40
			Costes indirectos 6%	0,74
			TOTAL PARTIDA.....	13,14
362	P5ELEC03	ud Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.		
			Mano de obra	2,61
			Resto de obra y materiales.....	4,48
			Suma la partida	7,09
			Costes indirectos 6%	0,43
			TOTAL PARTIDA.....	7,52
363	P5ELEC05	ud Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.		
			Mano de obra	5,23
			Resto de obra y materiales.....	4,48
			Suma la partida	9,71
			Costes indirectos 6%	0,58
			TOTAL PARTIDA.....	10,29
364	P5ELEC08	ud Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.		
			Mano de obra	5,23
			Resto de obra y materiales.....	17,92
			Suma la partida	23,15
			Costes indirectos 6%	1,39
			TOTAL PARTIDA.....	24,54
365	P5ELEC09	ud Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.		
			Mano de obra	5,23
			Resto de obra y materiales.....	62,73
			Suma la partida	67,96
			Costes indirectos 6%	4,08
			TOTAL PARTIDA.....	72,04
366	P5ELEC10001	I Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.		
			Resto de obra y materiales.....	0,99
			Suma la partida	0,99
			Costes indirectos 6%	0,06
			TOTAL PARTIDA.....	1,05

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
367	P5ELEC10002	día Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	
		Maquinaria	673,31
		Suma la partida	673,31
		Costes indirectos 6%	40,40
		TOTAL PARTIDA.....	713,71
368	P5ELEC10003	ud Operación de conexionado y desconexiónado de LMT.	
		Mano de obra	313,56
		Resto de obra y materiales.....	31,36
		Suma la partida	344,92
		Costes indirectos 6%	20,70
		TOTAL PARTIDA.....	365,62
369	P5ELECAJA3	ud Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	
		Mano de obra	2,61
		Resto de obra y materiales.....	16,49
		Suma la partida	19,10
		Costes indirectos 6%	1,15
		TOTAL PARTIDA.....	20,25
370	P5ELECAJA4	ud Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	
		Mano de obra	2,61
		Resto de obra y materiales.....	26,50
		Suma la partida	29,11
		Costes indirectos 6%	1,75
		TOTAL PARTIDA.....	30,86
371	P5ELECAJA5	ud Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	
		Mano de obra	2,61
		Resto de obra y materiales.....	27,48
		Suma la partida	30,09
		Costes indirectos 6%	1,81
		TOTAL PARTIDA.....	31,90
372	P5ELECAS01	ud Caseta prefabricada de hormigón armado de dimensión interior de 1.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	
		Mano de obra	195,00
		Maquinaria	178,05
		Resto de obra y materiales.....	980,00
		Suma la partida	1.353,05
		Costes indirectos 6%	81,18
		TOTAL PARTIDA.....	1.434,23
373	P5ELECAS01A	ud Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	
		Mano de obra	195,00

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Maquinaria	178,05
		Resto de obra y materiales.....	6.720,72
		Suma la partida	7.093,77
		Costes indirectos 6%	425,63
		TOTAL PARTIDA.....	7.519,40
374	P5ELECAS01B	ud Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	
		Mano de obra	46,60
		Resto de obra y materiales.....	652,70
		Suma la partida	699,30
		Costes indirectos 6%	41,96
		TOTAL PARTIDA.....	741,26
375	P5ELECAS02	ud Caseta prefabricada de hormigón armado de dimensión interior de 4.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	
		Mano de obra	195,00
		Maquinaria	178,05
		Resto de obra y materiales.....	2.900,00
		Suma la partida	3.273,05
		Costes indirectos 6%	196,38
		TOTAL PARTIDA.....	3.469,43
376	P5ELECASTRAF0	ud Caseta prefabricada normalizada para transformador hasta 160 KVA , con compartimento para celdas, puertas de paso y acceso, lamas de ventilación , ventilaciónn forzada, cubiertas y resto de elementos conformados. Unidad totalmente instalada.	
		Mano de obra	195,00
		Maquinaria	178,05
		Resto de obra y materiales.....	2.713,86
		Suma la partida	3.086,91
		Costes indirectos 6%	185,21
		TOTAL PARTIDA.....	3.272,12
377	P5ELECBATC36	ud Módulo metálico para corrección automática del factor de potencia 36 KVAR Compuesta de: condensadores sobredimensionados en tensión a 440 V, base fusibles y fusibles, regulador electrónico, contactores e interruptor general, Condensador CLZ , Contactores con bloque de preinserción y resistencia de descarga rápida, Protección en cabecera por fusibles con alto, poder de corte (APR). Serie NH-00, regulador de energía reactiva serie computer m con indicación digital y salidas de relé; Interruptor manual en cabecera de batería; Interruptor automático en cabecera de batería; Interruptor automático + Protección diferencial en cabecera de batería; Unidad de ventilación forzada + termostato; Placa de policarbonato contra contactos directos; Autotransformador 400/230 V. Totalmente instalada en armario metálico.	
		Mano de obra	209,04
		Resto de obra y materiales.....	1.209,73
		Suma la partida	1.418,77
		Costes indirectos 6%	85,13
		TOTAL PARTIDA.....	1.503,90

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
378	P5ELECGB1	ud Centro de mando de alumbrado público, hasta 6 salidas, de dimensiones 1.25x1.25x0.3m según detalle de planos, incluidas pletinas de acometida entre separadores de cobre, bases portafus, interruptor de corte 4p hasta 125 A, contador electrónico con mirilla, bornas de salida de módulo de medida de 16 mm2, Prensaestopas, automático general de 4 polos caja molde a 25 KA, intensidad ajustable hasta 100 A, Diferencial mando, automático protección enchufe 2x10A, Automático protección célula reloj, Reloj astronómico programable, célula fotoeléctrica para accionamiento automático, Tomas de corriente 2P+T 16A conectada a tierra, Bornas de reparto 95 mm2, Base portafusibles, automáticos 4 polos para protección salidas, Relés diferenciales, conmutador salidas, contactor salidas 4 polos, Clemas de conexión, Diversas bornas de salida, entrada, mando, ..., Cajas modulares de medida independiente, de mando y protección IP55, cierre triple acción, Puertas con toma tierra, armario de chapa de acero 3 mm galvanizado caliente IK-10, rejillas , incluida obra civil, cimentación y toma tierra con placa cobre 500x500x2. Todo según planos de detalle. Unidad Totalmente ejecutada y operativa, incluida tramitación de conexión, pago de tasas y proyecto de industria para tramitación de alumbrado.	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Resto de obra y materiales.....</td><td>927,45</td></tr><tr><td>Suma la partida</td><td>1.057,45</td></tr><tr><td>Costes indirectos 6%</td><td>63,45</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.120,90</td></tr></table>	Mano de obra	130,00	Resto de obra y materiales.....	927,45	Suma la partida	1.057,45	Costes indirectos 6%	63,45	TOTAL PARTIDA.....	1.120,90		
Mano de obra	130,00														
Resto de obra y materiales.....	927,45														
Suma la partida	1.057,45														
Costes indirectos 6%	63,45														
TOTAL PARTIDA.....	1.120,90														
379	P5ELECDS1	ud Descargador de sobretensiones tipo I+II	<table><tr><td>Resto de obra y materiales.....</td><td>340,09</td></tr><tr><td>Suma la partida</td><td>340,09</td></tr><tr><td>Costes indirectos 6%</td><td>20,41</td></tr><tr><td>TOTAL PARTIDA.....</td><td>360,50</td></tr></table>	Resto de obra y materiales.....	340,09	Suma la partida	340,09	Costes indirectos 6%	20,41	TOTAL PARTIDA.....	360,50				
Resto de obra y materiales.....	340,09														
Suma la partida	340,09														
Costes indirectos 6%	20,41														
TOTAL PARTIDA.....	360,50														
380	P5ELECFA02A	ud Ud. Desmontaje y desconexión de línea, traslado a acopio y posterior montaje de nuevo en su lugar de ubicación una vez concluidas las obras de columnas de alumbrado público de altura de báculo H<=8.0m, con nueva construcción de pedestales de apoyo de dimensiones especificadas en planos, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición, instalación de toma tierra de cada báculo y conexionado a red de alumbrado. Incluye la sustitución y reposición de lámpara LED, así como partes perdidas , pernos y resto de elementos, operaciones de excavación y rellenos. Totalmente instalada, incluidas operaciones de desconexión y posterior conexionado	<table><tr><td>Mano de obra</td><td>258,50</td></tr><tr><td>Maquinaria</td><td>37,49</td></tr><tr><td>Resto de obra y materiales.....</td><td>123,15</td></tr><tr><td>Suma la partida</td><td>419,14</td></tr><tr><td>Costes indirectos 6%</td><td>25,15</td></tr><tr><td>TOTAL PARTIDA.....</td><td>444,29</td></tr></table>	Mano de obra	258,50	Maquinaria	37,49	Resto de obra y materiales.....	123,15	Suma la partida	419,14	Costes indirectos 6%	25,15	TOTAL PARTIDA.....	444,29
Mano de obra	258,50														
Maquinaria	37,49														
Resto de obra y materiales.....	123,15														
Suma la partida	419,14														
Costes indirectos 6%	25,15														
TOTAL PARTIDA.....	444,29														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
381	P5ELECFA06	ud Ud. báculo de 8 m. de altura con luminaria cerrada con lámpara para 200 w. LED compuesta de: báculo troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; luminaria con reflector de aluminio tratado contra la corrosión, con equipo eléctrico incorporado, cierre de policarbonato; acoplamiento a poste en fundición de aluminio inyectado, IP-65; i/ lámpara , portalámparas, anclaje a dado de hormigón , puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión , tubo de unión,incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pié revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra d compuesto por placa de 500x500x2 mm y/o pica 200/14.3 , con unión de cable a siguiente báculo de 10m de cable desnudo de 16 mm2, y uniones de 35 mm2 a báculo según normativa vigente y planos de detalle y conexionado a red de alumbrado, , cableado interior 4x6mm2 +TT, conexionado a tendido eléctrico, operaciones de excavacion y rellenos. Unidad totalmente instalada y probada, con emisión de certificado de luminosidad.	
		Mano de obra	390,00
		Maquinaria	80,53
		Resto de obra y materiales.....	840,71
		Suma la partida	1.311,24
		Costes indirectos 6%	78,67
		TOTAL PARTIDA.....	1.389,91
382	P5ELECGBT11	ud Suministro y montaje de módulo de alimentación, control y protección de Toma-11 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	
		Resto de obra y materiales.....	9.559,42
		Suma la partida	9.559,42
		Costes indirectos 6%	573,57
		TOTAL PARTIDA.....	10.132,99

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE								
383	P5ELECGBT12	<div>ud</div> <div>Suministro y montaje de módulo de alimentación, control y protección de Toma-12 en cabina/s de 2,0x0.8X0.6m normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexonado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</div>	<table><tr><td>Resto de obra y materiales.....</td><td>9.618,70</td></tr><tr><td>Suma la partida</td><td>9.618,70</td></tr><tr><td>Costes indirectos 6%</td><td>577,12</td></tr><tr><td>TOTAL PARTIDA.....</td><td>10.195,82</td></tr></table>	Resto de obra y materiales.....	9.618,70	Suma la partida	9.618,70	Costes indirectos 6%	577,12	TOTAL PARTIDA.....	10.195,82
Resto de obra y materiales.....	9.618,70										
Suma la partida	9.618,70										
Costes indirectos 6%	577,12										
TOTAL PARTIDA.....	10.195,82										
384	P5ELECGBT13	<div>ud</div> <div>Suministro y montaje de módulo de alimentación, control y protección de Toma-13 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexonado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</div>	<table><tr><td>Resto de obra y materiales.....</td><td>9.618,70</td></tr><tr><td>Suma la partida</td><td>9.618,70</td></tr><tr><td>Costes indirectos 6%</td><td>577,12</td></tr><tr><td>TOTAL PARTIDA.....</td><td>10.195,82</td></tr></table>	Resto de obra y materiales.....	9.618,70	Suma la partida	9.618,70	Costes indirectos 6%	577,12	TOTAL PARTIDA.....	10.195,82
Resto de obra y materiales.....	9.618,70										
Suma la partida	9.618,70										
Costes indirectos 6%	577,12										
TOTAL PARTIDA.....	10.195,82										
385	P5ELECGBT13B	<div>ud</div> <div>Suministro y montaje de módulo de alimentación, control y protección de Toma-13b en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexonado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</div>									

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Costes indirectos	6% 461,60
		TOTAL PARTIDA.....	8.155,00
386	P5ELECGBT14	ud Suministro y montaje de módulo de alimentación, control y protección de Toma-14/15 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	
		Resto de obra y materiales.....	8.010,70
		Suma la partida	8.010,70
		Costes indirectos	6% 480,64
		TOTAL PARTIDA.....	8.491,34
387	P5ELECGBT16	ud Suministro y montaje de módulo de alimentación, control y protección de Toma-14/15 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	
		Resto de obra y materiales.....	8.010,70
		Suma la partida	8.010,70
		Costes indirectos	6% 480,64
		TOTAL PARTIDA.....	8.491,34

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
388	P5ELECGBT17	<div>ud</div> <div>Suministro y montaje de módulo de alimentación, control y protección de Toma-17 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</div>	<div><div>Resto de obra y materiales.....9.559,42</div><div>Suma la partida9.559,42</div><div>Costes indirectos6%573,57</div><div>TOTAL PARTIDA10.132,99</div></div>
389	P5ELECGBT18	<div>ud</div> <div>Suministro y montaje de módulo de alimentación, control y protección de Toma-18 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</div>	<div><div>Resto de obra y materiales.....8.010,70</div><div>Suma la partida8.010,70</div><div>Costes indirectos6%480,64</div><div>TOTAL PARTIDA8.491,34</div></div>
390	P5ELECGBT19	<div>ud</div> <div>Suministro y montaje de módulo de alimentación, control y protección de Toma-19 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</div>	<div><div>Resto de obra y materiales.....8.010,70</div><div>Suma la partida8.010,70</div></div>

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Costes indirectos	6% 480,64
			TOTAL PARTIDA.....	8.491,34
391	P5ELECGBT1A	ud	Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexonado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	
			Resto de obra y materiales.....	4.653,56
			Suma la partida	4.653,56
			Costes indirectos	6% 279,21
			TOTAL PARTIDA.....	4.932,77
392	P5ELECGBT20	ud	Suministro y montaje de módulo de alimentación, control y protección de Toma-20 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexonado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	
			Resto de obra y materiales.....	8.010,70
			Suma la partida	8.010,70
			Costes indirectos	6% 480,64
			TOTAL PARTIDA.....	8.491,34
393	P5ELECGBT21	ud	Suministro y montaje de módulo de alimentación, control y protección de Toma-21 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexonado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	
			Resto de obra y materiales.....	8.010,70
			Suma la partida	8.010,70
			Costes indirectos	6% 480,64
			TOTAL PARTIDA.....	8.491,34

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
394	P5ELECGBTDC	<p>ud Suministro y montaje de módulo de alimentación, control y protección de Derivación Corella en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>	
		Resto de obra y materiales.....	9.618,70
		Suma la partida	9.618,70
		Costes indirectos 6%	577,12
		TOTAL PARTIDA.....	10.195,82
395	P5ELECGBTEPC2ud	<p>Suministro y montaje de módulo de alimentación, control y protección de EPC-02 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusiónismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>	
		Resto de obra y materiales.....	7.372,33
		Suma la partida	7.372,33
		Costes indirectos 6%	442,34
		TOTAL PARTIDA.....	7.814,67

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
396	P5ELEGGEN125	ud	
		<p>Generador eléctrico silencioso móvil de 125kVA/96kW según especificaciones técnicas definidas en el PPTP, incluido cuadro eléctrico, control y automatización.</p> <p>Motor: Motor diesel 4 tiempos Refrigerado por agua; Arranque eléctrico 24V; Radiador con ventilador soplante; Filtro decantador (nivel no visible); Regulación electrónica; o Bulbos de ATA; Bulbos de BPA; Filtro de aire en seco; Protecciones de partes calientes; Protecciones de partes móviles;; Sensor de nivel agua radiador</p> <p>Alternador: Autoexcitado y autorregulado; Protección IP23; Aislamiento clase H; Sistema Eléctrico; Cuadro eléctrico de control y potencia, con aparatos de medida y central de control ; Protección magnetotérmica tetrapola; Protección diferencial regulable (tiempo y sensibilidad) y con protección magnetotérmica; Cargador de batería (incluido en grupos con cuadro de versión automática); Resistencia de caldeo (de serie en grupos con cuadro de versión automática); Alternador de carga de baterías con toma de tierra; Batería/s de arranque instaladas (incluye/n cables y soporte); Instalación eléctrica de toma de tierra, con conexión prevista para pica de tierra ; Desconector de batería/s;</p> <p>Conmutador: Armario IP55; Central; Parada de emergencia; Módulo de medida; Llave para conmutación manual; Conmutador motorizado; Conexión a tierra; Zócalo para armarios >800A</p> <p>Cuadro Automático AS5 CEM 7 o similar y cuadro de conmutación con central CC2 o similar con contactores</p> <p>Cuadros - Reloj programador: Informa a la central de la fecha y hora actual. Permite la programación semanal de: - Arranques programados - Bloqueos programados - Test de motor y mantenimientos programados - Ampliación del histórico de errores en + 100 - Contadores de energía (día, mes, año)</p> <p>Cuadros - Teleseñal: Placa que dispone de comunicación CAN y 12 relés. - Relés: 4 de contacto conmutado y 8 de contacto simple - Permite activar elementos de señalización remotos - Permite la programación de los relés en función de las diferentes variables.</p> <p>Otros elementos: Chasis Acero ; Kit de extracción de aceite del cárter; Versatilidad para el montaje de chasis de gran capacidad con depósito metálico; Amortiguadores antivibratorios; Tanque de combustible integrado en el chasis; Aforador de nivel de combustible; Pulsador parada de emergencia; Carrocería fabricada con chapa de alta calidad; Alta resistencia mecánica; o Bajo nivel de emisiones sonoras; Insonorización a base de lana de roca volcánica de alta densidad;; Acabado superficial a base de polvo de poliéster epoxídico (ensayo de niebla salina superior a 1000h); Total acceso a mantenimientos (agua, aceite y filtros sin desmontar capot); Gancho de izado reforzado para elevación con grúa; Chasis estanco (hace función de doble pared retención líquidos); Tapón drenaje depósito; Tapón drenaje chasis; Chasis predispuesto para instalación de kit móvil; Silencioso residencial de acero de -35db(A); Válvula de 3 vías para trasiego de combustible (disponible con conexiones de 1/2" y de 3/8"); Bomba de trasiego de combustible</p> <p>Unidad totalmente instalada y probada</p>	
		Resto de obra y materiales.....	14.978,60
		Suma la partida	14.978,60
		Costes indirectos 6%	898,72
		TOTAL PARTIDA.....	15.877,32

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE										
397	P5ELECGMED	ud Armario de protección, medida, y seccionamiento para in-temperie para 1 suministro trifásico con contadores de ener-gía activa y reactiva, según normas de la Cía. suministrado-ra, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con pa-nel de poliéster troquelado para 1 contador trifásico de ener-gía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neu-tro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tama-ño 1, con bornes bimetálicos de 150 mm2. para entrada, neu-tro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el con-junto con conductor de cobre tipo H07Z-R, de secciones y co-lores normalizados. Totalmente instalada, transporte, monta-je y conexionado.	<table><tr><td>Mano de obra</td><td>69,90</td></tr><tr><td>Resto de obra y materiales.....</td><td>371,42</td></tr><tr><td>Suma la partida</td><td>441,32</td></tr><tr><td>Costes indirectos 6%</td><td>26,48</td></tr><tr><td>TOTAL PARTIDA.....</td><td>467,80</td></tr></table>	Mano de obra	69,90	Resto de obra y materiales.....	371,42	Suma la partida	441,32	Costes indirectos 6%	26,48	TOTAL PARTIDA.....	467,80
Mano de obra	69,90												
Resto de obra y materiales.....	371,42												
Suma la partida	441,32												
Costes indirectos 6%	26,48												
TOTAL PARTIDA.....	467,80												
398	P5ELECING01	ud Ingeniería eléctrica incluyendo proyecto de acometida y pa-go de tasas a empresa suministradora cuando proceda, di-seño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bor-nas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	<table><tr><td>Mano de obra</td><td>4.176,90</td></tr><tr><td>Resto de obra y materiales.....</td><td>208,85</td></tr><tr><td>Suma la partida</td><td>4.385,75</td></tr><tr><td>Costes indirectos 6%</td><td>263,15</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.648,90</td></tr></table>	Mano de obra	4.176,90	Resto de obra y materiales.....	208,85	Suma la partida	4.385,75	Costes indirectos 6%	263,15	TOTAL PARTIDA.....	4.648,90
Mano de obra	4.176,90												
Resto de obra y materiales.....	208,85												
Suma la partida	4.385,75												
Costes indirectos 6%	263,15												
TOTAL PARTIDA.....	4.648,90												
399	P5ELECLM1DC	ud Trabajos de adecuación, refuerzo o reforma de LMT exis-tente, incluyendo sustitución de apoyo por celosía, monta-je de apoyo a cruceta de derivación, seccionador loadbus-ter, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones exis-tentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requeri-mientos de empresa operadora en Derivación de Corella.	<table><tr><td>Resto de obra y materiales.....</td><td>12.075,00</td></tr><tr><td>Suma la partida</td><td>12.075,00</td></tr><tr><td>Costes indirectos 6%</td><td>724,50</td></tr><tr><td>TOTAL PARTIDA.....</td><td>12.799,50</td></tr></table>	Resto de obra y materiales.....	12.075,00	Suma la partida	12.075,00	Costes indirectos 6%	724,50	TOTAL PARTIDA.....	12.799,50		
Resto de obra y materiales.....	12.075,00												
Suma la partida	12.075,00												
Costes indirectos 6%	724,50												
TOTAL PARTIDA.....	12.799,50												
400	P5ELECLM1EP02	ud Trabajos de adecuación, refuerzo o reforma de LMT exis-tente, incluyendo montaje de apoyo a cruceta de deriva-ción, seccionador loadbuster, construcción de acera equipo-tencial, izado, tensado y conexionado a nueva derivación, in-cludiendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios pa-ra la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requeri-mientos de empresa operadora en EPC01.	<table><tr><td>Resto de obra y materiales.....</td><td>9.775,00</td></tr><tr><td>Suma la partida</td><td>9.775,00</td></tr><tr><td>Costes indirectos 6%</td><td>586,50</td></tr><tr><td>TOTAL PARTIDA.....</td><td>10.361,50</td></tr></table>	Resto de obra y materiales.....	9.775,00	Suma la partida	9.775,00	Costes indirectos 6%	586,50	TOTAL PARTIDA.....	10.361,50		
Resto de obra y materiales.....	9.775,00												
Suma la partida	9.775,00												
Costes indirectos 6%	586,50												
TOTAL PARTIDA.....	10.361,50												

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE								
401	P5ELECLM1T12	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora Toma-12.	<table><tr><td>Resto de obra y materiales.....</td><td>15.398,50</td></tr><tr><td>Suma la partida</td><td>15.398,50</td></tr><tr><td>Costes indirectos 6%</td><td>923,91</td></tr><tr><td>TOTAL PARTIDA.....</td><td>16.322,41</td></tr></table>	Resto de obra y materiales.....	15.398,50	Suma la partida	15.398,50	Costes indirectos 6%	923,91	TOTAL PARTIDA.....	16.322,41
Resto de obra y materiales.....	15.398,50										
Suma la partida	15.398,50										
Costes indirectos 6%	923,91										
TOTAL PARTIDA.....	16.322,41										
402	P5ELECLM1T13	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-13	<table><tr><td>Resto de obra y materiales.....</td><td>7.180,60</td></tr><tr><td>Suma la partida</td><td>7.180,60</td></tr><tr><td>Costes indirectos 6%</td><td>430,84</td></tr><tr><td>TOTAL PARTIDA.....</td><td>7.611,44</td></tr></table>	Resto de obra y materiales.....	7.180,60	Suma la partida	7.180,60	Costes indirectos 6%	430,84	TOTAL PARTIDA.....	7.611,44
Resto de obra y materiales.....	7.180,60										
Suma la partida	7.180,60										
Costes indirectos 6%	430,84										
TOTAL PARTIDA.....	7.611,44										
403	P5ELECLM1T13B	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma 13b.	<table><tr><td>Resto de obra y materiales.....</td><td>18.147,00</td></tr><tr><td>Suma la partida</td><td>18.147,00</td></tr><tr><td>Costes indirectos 6%</td><td>1.088,82</td></tr><tr><td>TOTAL PARTIDA.....</td><td>19.235,82</td></tr></table>	Resto de obra y materiales.....	18.147,00	Suma la partida	18.147,00	Costes indirectos 6%	1.088,82	TOTAL PARTIDA.....	19.235,82
Resto de obra y materiales.....	18.147,00										
Suma la partida	18.147,00										
Costes indirectos 6%	1.088,82										
TOTAL PARTIDA.....	19.235,82										
404	P5ELECLM1T16	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-16.	<table><tr><td>Resto de obra y materiales.....</td><td>21.694,75</td></tr><tr><td>Suma la partida</td><td>21.694,75</td></tr><tr><td>Costes indirectos 6%</td><td>1.301,69</td></tr><tr><td>TOTAL PARTIDA.....</td><td>22.996,44</td></tr></table>	Resto de obra y materiales.....	21.694,75	Suma la partida	21.694,75	Costes indirectos 6%	1.301,69	TOTAL PARTIDA.....	22.996,44
Resto de obra y materiales.....	21.694,75										
Suma la partida	21.694,75										
Costes indirectos 6%	1.301,69										
TOTAL PARTIDA.....	22.996,44										

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
405	P5ELECLM1T20	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuser, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-20	
		Resto de obra y materiales.....	17.537,50
		Suma la partida	17.537,50
		Costes indirectos 6%	1.052,25
		TOTAL PARTIDA.....	18.589,75
406	P5ELECLM1T21	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuser, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma -21.	
		Resto de obra y materiales.....	14.145,00
		Suma la partida	14.145,00
		Costes indirectos 6%	848,70
		TOTAL PARTIDA.....	14.993,70
407	P5ELECLMT2	ud Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conectar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materia auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	
		Mano de obra	195,00
		Maquinaria	275,37
		Resto de obra y materiales.....	3.459,00
		Suma la partida	3.929,37
		Costes indirectos 6%	235,76
		TOTAL PARTIDA.....	4.165,13

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
408	P5ELECLMT2B	<p>ud Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por:</p> <ul style="list-style-type: none"> -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conectar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm². de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. <p>Unidad totalmente instalada.</p>	
		Mano de obra	455,00
		Maquinaria	672,05
		Resto de obra y materiales.....	7.068,59
		Suma la partida	8.195,64
		Costes indirectos 6%	491,74
		TOTAL PARTIDA.....	8.687,38

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE												
409	P5ELECMT2C	ud	<p>Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por:</p> <p>-Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado.</p> <p>-Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg</p> <p>- Cadenas de amarre necesarias</p> <p>-Base fusible XS 24 kv-100a instalada,</p> <p>-Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv,</p> <p>-Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a</p> <p>-Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora,</p> <p>-Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos</p> <p>- Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conectar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar</p> <p>- Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna</p> <p>- Elementos de protección de derivación en conexión con línea existente.</p> <p>Unidad totalmente instalada.</p>	<table><tr><td>Mano de obra</td><td>455,00</td></tr><tr><td>Maquinaria</td><td>672,05</td></tr><tr><td>Resto de obra y materiales.....</td><td>4.583,03</td></tr><tr><td>Suma la partida</td><td>5.710,08</td></tr><tr><td>Costes indirectos 6%</td><td>342,60</td></tr><tr><td>TOTAL PARTIDA.....</td><td>6.052,68</td></tr></table>	Mano de obra	455,00	Maquinaria	672,05	Resto de obra y materiales.....	4.583,03	Suma la partida	5.710,08	Costes indirectos 6%	342,60	TOTAL PARTIDA.....	6.052,68
Mano de obra	455,00															
Maquinaria	672,05															
Resto de obra y materiales.....	4.583,03															
Suma la partida	5.710,08															
Costes indirectos 6%	342,60															
TOTAL PARTIDA.....	6.052,68															
410	P5ELECMT3	m	<p>Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado.</p> <p>Unidad totalmente terminada, colocada y probada.</p>	<table><tr><td>Mano de obra</td><td>0,98</td></tr><tr><td>Maquinaria</td><td>2,68</td></tr><tr><td>Resto de obra y materiales.....</td><td>4,10</td></tr><tr><td>Suma la partida</td><td>7,76</td></tr><tr><td>Costes indirectos 6%</td><td>0,47</td></tr><tr><td>TOTAL PARTIDA.....</td><td>8,23</td></tr></table>	Mano de obra	0,98	Maquinaria	2,68	Resto de obra y materiales.....	4,10	Suma la partida	7,76	Costes indirectos 6%	0,47	TOTAL PARTIDA.....	8,23
Mano de obra	0,98															
Maquinaria	2,68															
Resto de obra y materiales.....	4,10															
Suma la partida	7,76															
Costes indirectos 6%	0,47															
TOTAL PARTIDA.....	8,23															
411	P5ELECMT	ud	<p>Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.</p>	<table><tr><td>Resto de obra y materiales.....</td><td>2.871,89</td></tr><tr><td>Suma la partida</td><td>2.871,89</td></tr><tr><td>Costes indirectos 6%</td><td>172,31</td></tr><tr><td>TOTAL PARTIDA.....</td><td>3.044,20</td></tr></table>	Resto de obra y materiales.....	2.871,89	Suma la partida	2.871,89	Costes indirectos 6%	172,31	TOTAL PARTIDA.....	3.044,20				
Resto de obra y materiales.....	2.871,89															
Suma la partida	2.871,89															
Costes indirectos 6%	172,31															
TOTAL PARTIDA.....	3.044,20															
412	P5ELECROZA	m	<p>Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.</p>													

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN		IMPORTE
			Maquinaria	0,54
			Resto de obra y materiales.....	0,30
			Suma la partida	7,21
			Costes indirectos 6%	0,43
			TOTAL PARTIDA.....	7,64
413	P5ELECT1	ud Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.		
			Mano de obra	4,66
			Resto de obra y materiales.....	131,59
			Suma la partida	136,25
			Costes indirectos 6%	8,18
			TOTAL PARTIDA.....	144,43
414	P5ELECT3	ud Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.		
			Mano de obra	4,66
			Resto de obra y materiales.....	183,09
			Suma la partida	187,75
			Costes indirectos 6%	11,27
			TOTAL PARTIDA.....	199,02
415	P5ELECTT0	ud Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.		
			Resto de obra y materiales.....	91,66
			Suma la partida	91,66
			Costes indirectos 6%	5,50
			TOTAL PARTIDA.....	97,16

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE								
416	P5ELEF001	<p>ud Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 % Datos eléctricos de CA</p> <ul style="list-style-type: none">- Modelo de inversor: IQ 7A A 230 V CA- Potencia máxima de salida 366 VA- Máx. potencia de salida continua 349 VA- Rango/Tensión nom. (LN) 219 264 V- Máx. corriente de salida continua 1,52 A- Máx. unidades por circuito derivado de 20 A (LN) 10- Eficiencia ponderada10 96,5 %- Frecuencia nominal 50 Hz- Rango de frecuencia ampliado 45-55 Hz- Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms- Puerto de CA de clase de sobretensión III- Corriente de retroalimentación del puerto de CA 18 mA- Ajuste del factor de potencia 1,0- Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo3 ciclos 5,8 A rms- Puerto de CA de clase de sobretensión III- Corriente de retroalimentación del puerto de CA 18 mA- Ajuste del factor de potencia 1,0- Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo <p>Datos de alimentación de CC</p> <ul style="list-style-type: none">- Potencia nominal11 (Pnom) 400 W- Tol. de potencia +5/0 %- Eficiencia del módulo 21,5 %- Coef. temp. (Potencia) -0,29 %/°C <p>Datos mecánicos</p> <ul style="list-style-type: none">- Células solares 66 células monocristalinas Maxeon Generación 5- Cristal frontal- Cristal templado antirreflejos de gran- transmisividad- Clasificación ambiental Microinversor con clasificación para exteriores - IP67- (UL: NEMA tipo 6)- Marco Anodizado negro de clase 1 <p>Caja de conexiones: IP65. Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión .</p> <p>Unidad totalmente instalada y operativa</p>	<table><tr><td>Resto de obra y materiales.....</td><td>693,00</td></tr><tr><td>Suma la partida</td><td>693,00</td></tr><tr><td>Costes indirectos 6%</td><td>41,58</td></tr><tr><td>TOTAL PARTIDA.....</td><td>734,58</td></tr></table>	Resto de obra y materiales.....	693,00	Suma la partida	693,00	Costes indirectos 6%	41,58	TOTAL PARTIDA.....	734,58
Resto de obra y materiales.....	693,00										
Suma la partida	693,00										
Costes indirectos 6%	41,58										
TOTAL PARTIDA.....	734,58										
417	P5ELEF002	<p>ud Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp. Unidad totalmente instalada y operativa</p>	<table><tr><td>Resto de obra y materiales.....</td><td>1.056,00</td></tr><tr><td>Suma la partida</td><td>1.056,00</td></tr><tr><td>Costes indirectos 6%</td><td>63,36</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.119,36</td></tr></table>	Resto de obra y materiales.....	1.056,00	Suma la partida	1.056,00	Costes indirectos 6%	63,36	TOTAL PARTIDA.....	1.119,36
Resto de obra y materiales.....	1.056,00										
Suma la partida	1.056,00										
Costes indirectos 6%	63,36										
TOTAL PARTIDA.....	1.119,36										
418	P5ELEF003	<p>ud Baterías de gel 20OPZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora. Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento. Unidad totalmente instalada y probada.</p>	<table><tr><td>Resto de obra y materiales.....</td><td>8.580,00</td></tr><tr><td>Suma la partida</td><td>8.580,00</td></tr><tr><td>Costes indirectos 6%</td><td>514,80</td></tr></table>	Resto de obra y materiales.....	8.580,00	Suma la partida	8.580,00	Costes indirectos 6%	514,80		
Resto de obra y materiales.....	8.580,00										
Suma la partida	8.580,00										
Costes indirectos 6%	514,80										

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			9.094,80
419	P5ELEF004	<p>ud Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo electrógeno).</p> <p>Cumplirá:</p> <ul style="list-style-type: none"> - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretensión en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. <p>Características técnicas</p> <ul style="list-style-type: none"> - Entrada DC <ul style="list-style-type: none"> o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) <ul style="list-style-type: none"> o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal; 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. <p>Unidad totalmente instalada y probada.</p>	
Resto de obra y materiales.....			2.860,00
Suma la partida			2.860,00
Costes indirectos			6% 171,60
TOTAL PARTIDA.....			3.031,60

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
420	P5ELEF005	<div>ud Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobrecalentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.</div>	<div><div>Resto de obra y materiales.....330,00</div><div>Suma la partida330,00</div><div>Costes indirectos6%19,80</div><div>TOTAL PARTIDA.....349,80</div></div>
421	P5ELEF006	<div>ud Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.</div>	<div><div>Resto de obra y materiales.....319,00</div><div>Suma la partida319,00</div><div>Costes indirectos6%19,14</div><div>TOTAL PARTIDA.....338,14</div></div>
422	P5ELEI200WEXT	<div>ud Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.</div>	<div><div>Mano de obra26,13</div><div>Resto de obra y materiales.....292,99</div><div>Suma la partida319,12</div><div>Costes indirectos6%19,15</div><div>TOTAL PARTIDA.....338,27</div></div>
423	P5ELEI400LED	<div>ud Proyector industrial les de 85 W cpn un flujo lumínico de 10500 Lm, con lámpara, totalmente instalado,incluso lámpara p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Antideflagrante. Unidad totalmente instalada.</div>	<div><div>Mano de obra26,13</div></div>

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Resto de obra y materiales.....	624,61
			Suma la partida	650,74
			Costes indirectos 6%	39,04
			TOTAL PARTIDA.....	689,78
424	P5ELEI400WX2	ud	Columna tronco-cónica de las siguientes características: Longitud: 12 metros Brazo en T para soportación de 2 proyectores. Material: Acero galvanizado Proyectores: 2 Uds Luminaria: Philips Tempo 3 MWF 330. Lámpara: 400W LED. incluida Completamente instalada, incluida obra civil (excavación, rellenos y cimentación)	
			Mano de obra	390,00
			Maquinaria	80,53
			Resto de obra y materiales.....	1.217,08
			Suma la partida	1.687,61
			Costes indirectos 6%	101,26
			TOTAL PARTIDA.....	1.788,87
425	P5ELEIL1X60LE	ud	Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de polipcarbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	
			Mano de obra	52,26
			Resto de obra y materiales.....	136,14
			Suma la partida	188,40
			Costes indirectos 6%	11,30
			TOTAL PARTIDA.....	199,70
426	P5ELEIL1X61LE	ud	Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	
			Mano de obra	52,26
			Resto de obra y materiales.....	118,22
			Suma la partida	170,48
			Costes indirectos 6%	10,23
			TOTAL PARTIDA.....	180,71
427	P5ELEILEMERG	ud	Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cabelado necesario para la instalación. Unidad totalmente operativa.	
			Mano de obra	13,07
			Resto de obra y materiales.....	48,34
			Suma la partida	61,41
			Costes indirectos 6%	3,68

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				65,09
428	P5ELEM01	ud	Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	
Resto de obra y materiales.....				638,00
Suma la partida				638,00
Costes indirectos 6%				38,28
TOTAL PARTIDA.....				676,28
429	P5ELEM1X150	m	Cable 18/30 KV aislado en polietileno reticulado, tipo HEPRZ1 1x150 mm2 CU+H16 instalado bajo tubos, según memoria y pliegos. Totalmente montado.	
Mano de obra				3,92
Resto de obra y materiales.....				21,83
Suma la partida				25,75
Costes indirectos 6%				1,55
TOTAL PARTIDA.....				27,30
430	P5ELEM1X150A	m	Manguera eléctrica HEPRZ1 1x150 mm2 A1+H16, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
Mano de obra				3,92
Resto de obra y materiales.....				12,10
Suma la partida				16,02
Costes indirectos 6%				0,96
TOTAL PARTIDA.....				16,98
431	P5ELEM1X16TT	m	Manguera eléctrica de 1 x 16 mm2, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
Mano de obra				3,92
Resto de obra y materiales.....				2,97
Suma la partida				6,89
Costes indirectos 6%				0,41
TOTAL PARTIDA.....				7,30
432	P5ELEM1X25TT	m	Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv, Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
Mano de obra				3,92
Resto de obra y materiales.....				5,00
Suma la partida				8,92
Costes indirectos 6%				0,54
TOTAL PARTIDA.....				9,46
433	P5ELEM1X35TT	m	Manguera eléctrica de 1 x 35 mm2 , aislamiento 0.6/1 kv, Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
Mano de obra				3,92
Resto de obra y materiales.....				4,10
Suma la partida				8,02
Costes indirectos 6%				0,48
TOTAL PARTIDA.....				8,50

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
434	P5ELEM1X50TT	m	Manguera eléctrica de 1 x 25 mm ² , aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	9,32
			Suma la partida	13,24
			Costes indirectos 6%	0,79
			TOTAL PARTIDA.....	14,03
435	P5ELEM1X70-2	m	Manguera eléctrica apantallada de 1 x 70 mm ² , aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	10,08
			Suma la partida	14,00
			Costes indirectos 6%	0,84
			TOTAL PARTIDA.....	14,84
436	P5ELEM1X95-2	m	Manguera eléctrica apantallada de 1 x 95 mm ² , aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	14,81
			Suma la partida	18,73
			Costes indirectos 6%	1,12
			TOTAL PARTIDA.....	19,85
437	P5ELEM1X95A	m	Manguera eléctrica HEPRZ1 1x95mm ² A1+H16 flexible completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	8,24
			Suma la partida	12,16
			Costes indirectos 6%	0,73
			TOTAL PARTIDA.....	12,89
438	P5ELEM2X1.5T2	m	Manguera eléctrica apantallada de 2 x 1.5 mm ² más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	1,99
			Suma la partida	5,91
			Costes indirectos 6%	0,35
			TOTAL PARTIDA.....	6,26
439	P5ELEM2X2.5T2	m	Manguera eléctrica apantallada de 2 x 2.5 mm ² más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	2,48
			Suma la partida	6,40
			Costes indirectos 6%	0,38
			TOTAL PARTIDA.....	6,78

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE										
440	P5ELEM2X2.5TT	m Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	<table><tr><td>Mano de obra</td><td>3,92</td></tr><tr><td>Resto de obra y materiales.....</td><td>1,64</td></tr><tr><td>Suma la partida</td><td>5,56</td></tr><tr><td>Costes indirectos 6%</td><td>0,33</td></tr><tr><td>TOTAL PARTIDA.....</td><td>5,89</td></tr></table>	Mano de obra	3,92	Resto de obra y materiales.....	1,64	Suma la partida	5,56	Costes indirectos 6%	0,33	TOTAL PARTIDA.....	5,89
Mano de obra	3,92												
Resto de obra y materiales.....	1,64												
Suma la partida	5,56												
Costes indirectos 6%	0,33												
TOTAL PARTIDA.....	5,89												
441	P5ELEM2X4T2	m Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	<table><tr><td>Mano de obra</td><td>3,92</td></tr><tr><td>Resto de obra y materiales.....</td><td>2,84</td></tr><tr><td>Suma la partida</td><td>6,76</td></tr><tr><td>Costes indirectos 6%</td><td>0,41</td></tr><tr><td>TOTAL PARTIDA.....</td><td>7,17</td></tr></table>	Mano de obra	3,92	Resto de obra y materiales.....	2,84	Suma la partida	6,76	Costes indirectos 6%	0,41	TOTAL PARTIDA.....	7,17
Mano de obra	3,92												
Resto de obra y materiales.....	2,84												
Suma la partida	6,76												
Costes indirectos 6%	0,41												
TOTAL PARTIDA.....	7,17												
442	P5ELEM2X4TT	m Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	<table><tr><td>Mano de obra</td><td>3,92</td></tr><tr><td>Resto de obra y materiales.....</td><td>1,84</td></tr><tr><td>Suma la partida</td><td>5,76</td></tr><tr><td>Costes indirectos 6%</td><td>0,35</td></tr><tr><td>TOTAL PARTIDA.....</td><td>6,11</td></tr></table>	Mano de obra	3,92	Resto de obra y materiales.....	1,84	Suma la partida	5,76	Costes indirectos 6%	0,35	TOTAL PARTIDA.....	6,11
Mano de obra	3,92												
Resto de obra y materiales.....	1,84												
Suma la partida	5,76												
Costes indirectos 6%	0,35												
TOTAL PARTIDA.....	6,11												
443	P5ELEM2X6T2	m Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	<table><tr><td>Mano de obra</td><td>3,92</td></tr><tr><td>Resto de obra y materiales.....</td><td>3,86</td></tr><tr><td>Suma la partida</td><td>7,78</td></tr><tr><td>Costes indirectos 6%</td><td>0,47</td></tr><tr><td>TOTAL PARTIDA.....</td><td>8,25</td></tr></table>	Mano de obra	3,92	Resto de obra y materiales.....	3,86	Suma la partida	7,78	Costes indirectos 6%	0,47	TOTAL PARTIDA.....	8,25
Mano de obra	3,92												
Resto de obra y materiales.....	3,86												
Suma la partida	7,78												
Costes indirectos 6%	0,47												
TOTAL PARTIDA.....	8,25												
444	P5ELEM3X1.5TT	m Manguera eléctrica de 3 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	<table><tr><td>Mano de obra</td><td>3,92</td></tr><tr><td>Resto de obra y materiales.....</td><td>1,59</td></tr><tr><td>Suma la partida</td><td>5,51</td></tr><tr><td>Costes indirectos 6%</td><td>0,33</td></tr><tr><td>TOTAL PARTIDA.....</td><td>5,84</td></tr></table>	Mano de obra	3,92	Resto de obra y materiales.....	1,59	Suma la partida	5,51	Costes indirectos 6%	0,33	TOTAL PARTIDA.....	5,84
Mano de obra	3,92												
Resto de obra y materiales.....	1,59												
Suma la partida	5,51												
Costes indirectos 6%	0,33												
TOTAL PARTIDA.....	5,84												
445	P5ELEM3X2.5T2	m Manguera eléctrica apantallada de 3 x 2.5 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.											

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Mano de obra	3,92
			Resto de obra y materiales.....	2,62
			Suma la partida	6,54
			Costes indirectos 6%	0,39
			TOTAL PARTIDA.....	6,93
446	P5ELEM3X4TT2	m	Manguera eléctrica apantallada de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	2,70
			Suma la partida	6,62
			Costes indirectos 6%	0,40
			TOTAL PARTIDA.....	7,02
447	P5ELEM3X6TT	m	Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	1,79
			Suma la partida	5,71
			Costes indirectos 6%	0,34
			TOTAL PARTIDA.....	6,05
448	P5ELEM4X10T2	m	Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	6,74
			Suma la partida	10,66
			Costes indirectos 6%	0,64
			TOTAL PARTIDA.....	11,30
449	P5ELEM4X16T2	m	Manguera eléctrica apantallada de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	9,68
			Suma la partida	13,60
			Costes indirectos 6%	0,82
			TOTAL PARTIDA.....	14,42
450	P5ELEM4X16TT	m	Manguera eléctrica de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	7,90
			Suma la partida	11,82
			Costes indirectos 6%	0,71
			TOTAL PARTIDA.....	12,53

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
451	P5ELEM4X2.5T2	m	Manguera eléctrica apantallada de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	3,23
			Suma la partida	7,15
			Costes indirectos 6%	0,43
			TOTAL PARTIDA.....	7,58
452	P5ELEM4X2.5TT	m	Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	2,30
			Suma la partida	6,22
			Costes indirectos 6%	0,37
			TOTAL PARTIDA.....	6,59
453	P5ELEM4X25T2	m	Manguera eléctrica apantallada de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	13,04
			Suma la partida	16,96
			Costes indirectos 6%	1,02
			TOTAL PARTIDA.....	17,98
454	P5ELEM4X25TT	m	Manguera eléctrica de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	10,82
			Suma la partida	14,74
			Costes indirectos 6%	0,88
			TOTAL PARTIDA.....	15,62
455	P5ELEM4X50T2	m	Manguera eléctrica apantallada de 4 x 50 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	35,19
			Suma la partida	39,11
			Costes indirectos 6%	2,35
			TOTAL PARTIDA.....	41,46
456	P5ELEM4X6T2	m	Manguera eléctrica apantallada de 4 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	6,89
			Suma la partida	10,81

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Costes indirectos	6% 0,65
			TOTAL PARTIDA.....	11,46
457	P5ELEM4X6TT	m	Manguera eléctrica de 4 x 6 mm ² más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	
			Mano de obra	3,92
			Resto de obra y materiales.....	5,47
			Suma la partida	9,39
			Costes indirectos	6% 0,56
			TOTAL PARTIDA.....	9,95
458	P5ELEPRAAYOS	ud	Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm ² * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	
			Mano de obra	130,00
			Resto de obra y materiales.....	1.277,93
			Suma la partida	1.407,93
			Costes indirectos	6% 84,48
			TOTAL PARTIDA.....	1.492,41
459	P5ELETRAF11	ud	Puesta en servicio del telecontrol, incluyendo: - Integración de la instalación en cada uno de los sistemas de concesionario eléctrico implicados en el proceso de todas las funcionalidades del Telecontrol, Control local y Automatismos del Centro de Seccionamiento - Configuración, parametrización y puesta en servicio de Terminal Remoto de Telecontrol, equipos de c/c., Relés de detección de Paso de Falta y demás elementos de la instalación - Generación de configuraciones, telecarga y comprobaciones de cada una de las bases de datos: históricas, cronológicas, de alarmas, de eventos y de medidas analógicas en el Terminal Remoto de Telecontrol, en el C.S. así como en las unidades centrales	
			Resto de obra y materiales.....	3.960,00
			Suma la partida	3.960,00
			Costes indirectos	6% 237,60
			TOTAL PARTIDA.....	4.197,60
460	P5ELETRAF12	ud	Verificación de trabajos, incluyendo: - Comprobación de la instalación, en lo que al telemando se refiere, de acuerdo al proyecto y documentación técnica aprobados - Supervisión del correcto conexionado de T/is y/o detectores de Paso de FALTA, Presencia de Tensión, etc en celdas de MT - Comprobación del esquema unifilar y rótulos para el telemando - Recepción de la Documentación de Adaptación al Telemando	
			Resto de obra y materiales.....	312,76
			Suma la partida	312,76
			Costes indirectos	6% 18,77
			TOTAL PARTIDA.....	331,53

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
461	P5ELETRAF13	ud Cuadro de alarmas y señalización de defectos del centros de transformación formado por armario metálico en chapa de acero. Conteniendo: 8 relés auxiliares. 1 fuente de alimentación normal-socorro 230/48 Vcc. con acumuladores Ni-Cd de 21 Ah, intensidad nominal 5 A. Automáticos de protección, bornas canaletas y pequeño material de montaje.	
		Resto de obra y materiales.....	2.274,64
		Suma la partida.....	2.274,64
		Costes indirectos 6%	136,48
		TOTAL PARTIDA.....	2.411,12
462	P5ELETRAF25	ud Transformador trifásico reductor de tensión (MT/BT) construido de acuerdo con UNE-EN 60076, dieléctrico éster natural biodegradable, de 50 kVA de potencia, tensión asignada 24 kV, tensión primario 20 kV, tensión de salida de 420 V entre fases en vacío o de 230/420 V entre fases en vacío, frecuencia 50 Hz, grupo de conexión Dyn 11, regulación en el primario + 2,5%, + 5%, + 7,5%, + 10%, protección propia del transformador con termómetro, para instalación interior o exterior, cuba de aletas, refrigeración natural (ONAN), conmutador de regulación maniobrable sin tensión, pasatapas MT de porcelana, pasabarras BT de porcelana, 2 terminales de tierra, dispositivo de vaciado y toma de muestras, dispositivo de llenado, placa de características y placa de seguridad e instrucciones de servicio, colocado.	
		Mano de obra	46,60
		Maquinaria	71,22
		Resto de obra y materiales.....	2.050,00
		Suma la partida.....	2.167,82
		Costes indirectos 6%	130,07
		TOTAL PARTIDA.....	2.297,89
463	P5ELETRAF4D	ud Redes de puesta a tierra de protección general y servicio para el neutro, en centro de transformación, de acuerdo con lo indicado en la MIE-RAT-13, y normas de Cía Suministradora, formada la primera de ellas por cable de cobre desnudo de 50 mm2. de sección y la segunda por cable de cobre aislado, tipo RVde 0,6/1 kV, y 50 mm2 de sección y picas de tierra de acero cobrizado de 2 m.de longitud y 14 mm. de diámetro. Incluso material de conexión y fijación.	
		Mano de obra	466,00
		Resto de obra y materiales.....	660,67
		Suma la partida.....	1.126,67
		Costes indirectos 6%	67,60
		TOTAL PARTIDA.....	1.194,27
464	P5ELETRAF4E	ud Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	
		Mano de obra	466,00
		Resto de obra y materiales.....	617,32
		Suma la partida.....	1.083,32
		Costes indirectos 6%	65,00
		TOTAL PARTIDA.....	1.148,32
465	P5ELETRAF5A	ud Conjunto de material de protección y señalización transformador. Normalizado.	
		Mano de obra	34,95
		Resto de obra y materiales.....	87,72
		Suma la partida.....	122,67
		Costes indirectos 6%	7,36
		TOTAL PARTIDA.....	130,03

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
466	P5ELETRAF5C	ud Equipamiento auxiliar para centro de transformación prefabricado comprendiendo los siguientes elementos: - 1 Red interior de tierras. - 4 Puntos de luz LED 53 W cada uno IP-55. - 2 Toma de corriente 16 Amp. - 1 Aparato autónomo de emergencia portátil equipado con interruptor. - 1 Conjunto de circuitos para alimentación a los anteriores equipos, ejecución superficie bajo tubo PVC. - 1 Par de guantes aislantes alojados en cofret. - 1 Banqueta aislante. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	
		Mano de obra	46,60
		Resto de obra y materiales.....	652,70
		Suma la partida	699,30
		Costes indirectos 6%	41,96
		TOTAL PARTIDA.....	741,26
467	P5ELETRAF5E	ud Conjunto de accesorios de seguridad y maniobra constituido por una banqueta aislante, un extintor de eficacia 89B, guantes aislantes, pértiga aislante y armario de primeros auxilios, según Instrucciones Técnicas Complementarias del Reglamento sobre Condiciones Técnicas y Garantías de Seguridad en Centrales Eléctricas, Subestaciones y Centros de Transformación. B.O.E. 25-10-84, colocado.	
		Resto de obra y materiales.....	406,21
		Suma la partida	406,21
		Costes indirectos 6%	24,37
		TOTAL PARTIDA.....	430,58
468	P5ELETRAF6	ud Celda de entrada/salida formada por módulo metálico tipo CGM-24 o similar de dimensiones aproximadas 1800mm de alto x 370mm de ancho x 850mm de tipo modular, envolvente de chapa de acero galvanizado, corte y aislamiento íntegro en SF6, intensidad nominal de 400 A/16 kA, con interruptor-seccionador rotativo tripolar de 3 posiciones (conectado, seccionado y puesta a tierra) con mando manual, captadores capacitivos para la detección de tensión y sistema de alarma sonora de puesta a tierra, colocada.	
		Mano de obra	34,95
		Resto de obra y materiales.....	2.534,02
		Suma la partida	2.568,97
		Costes indirectos 6%	154,14
		TOTAL PARTIDA.....	2.723,11
469	P5ELETRAF7	ud Celda metálica de protección de transformador tipo CGM24 -CMP-F o similar ensayado contra una eventual inmersión, de dimensiones 1800 x 480 x 850mm de corte y aislamiento íntegro en SF6, de acuerdo a UNE CEI RU6407, instalada, conteniendo : 1 interruptor rotativo trifásico de tensión nominal 24 KV e In 400A y capacidad de cierre sobre cortocircuito 40KA, 3 portafusibles para cartuchos de 24 KV 3 cartuchos de fusibles de 24KV 1 seccionador de puesta a tierra, 1 relé de protección de transformador autoalimentado 51/50n 3 captadores toroidales de intensidad para protección de fase 3 captadores capacitivos de presencia de tensión 1 Ud embarrado para 400A 1 Ud Pletina de cobre 30 x 3mm 1 Ud Accesorios y pequeño material Unidad totalmente instalada	
		Mano de obra	34,95
		Resto de obra y materiales.....	1.890,42
		Suma la partida	1.925,37
		Costes indirectos 6%	115,52
		TOTAL PARTIDA.....	2.040,89

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
470	P5ELETRAF7B	ud	Celda metálica de protección general con interruptor automático, 24 kV o 20 KV, 400 A, lcc 16 kA, aislamiento en SF6, con interruptor automático en SF6 de 24 kV, 400 A, poder de corte 16 kA, con captadores de intensidad, relé de protección contra sobreintensidades de fase y homopolares, mando manual.	
			Resto de obra y materiales.....	5.125,66
			Suma la partida	5.125,66
			Costes indirectos 6%	307,54
			TOTAL PARTIDA.....	5.433,20
471	P5ELETRAF8	ud	Celda de medida formada por módulo metálico CGM-24 de dimensiones 1800 x 800 x 1025 de fondo, conteniendo en su interior debidamente montado y conexionado : 3 transformadores de intensidad relación X/5A, tensión nominal 24KV, potencia de precisión 15VA, clase 0.5, 3 transformadores X/110V, Vn 24KV, potencia de precisión 50VA en clase 0.5. Acometida y salida con cable en seco, malla de protección quitamiedos abisagrada, carros extraíbles para el equipo de medida.	
			Mano de obra	34,95
			Resto de obra y materiales.....	5.824,62
			Suma la partida	5.859,57
			Costes indirectos 6%	351,57
			TOTAL PARTIDA.....	6.211,14
472	P5ELETRAF9	ud	Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	
			Mano de obra	46,60
			Resto de obra y materiales.....	801,99
			Suma la partida	848,59
			Costes indirectos 6%	50,92
			TOTAL PARTIDA.....	899,51
473	P5ELETT10	ud	Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	
			Resto de obra y materiales.....	65,99
			Suma la partida	65,99
			Costes indirectos 6%	3,96
			TOTAL PARTIDA.....	69,95
474	P5ELETT2	ud	Toma de tierra independiente con picas de 2.0m acero corbizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	
			Mano de obra	18,64
			Resto de obra y materiales.....	74,09
			Suma la partida	92,73
			Costes indirectos 6%	5,56
			TOTAL PARTIDA.....	98,29
475	P5ELETT4A	m	Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	
			Mano de obra	3,92
			Resto de obra y materiales.....	3,51
			Suma la partida	7,43
			Costes indirectos 6%	0,45
			TOTAL PARTIDA.....	7,88
476	P5ELETT5A	m	Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada	
			Mano de obra	2,61
			Resto de obra y materiales.....	4,07

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Suma la partida	6,68
			Costes indirectos 6%	0,40
			TOTAL PARTIDA.....	7,08
477	P5ELETT5B	m	Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	
			Mano de obra	5,23
			Resto de obra y materiales.....	5,14
			Suma la partida	10,37
			Costes indirectos 6%	0,62
			TOTAL PARTIDA.....	10,99
478	P5ELETT7	ud	Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	
			Mano de obra	10,45
			Resto de obra y materiales.....	1,42
			Suma la partida	11,87
			Costes indirectos 6%	0,71
			TOTAL PARTIDA.....	12,58
479	P5ELETT8	ud	Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	
			Mano de obra	209,04
			Resto de obra y materiales.....	9,95
			Suma la partida	218,99
			Costes indirectos 6%	13,14
			TOTAL PARTIDA.....	232,13
480	P5ELETT9	ud	Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	
			Mano de obra	209,04
			Resto de obra y materiales.....	35,03
			Suma la partida	244,07
			Costes indirectos 6%	14,64
			TOTAL PARTIDA.....	258,71
481	P5ELEZ110X6H	m	Canalización hormigonada de 4x110mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada.	
			Mano de obra	14,94
			Maquinaria	15,05
			Resto de obra y materiales.....	20,53
			Suma la partida	50,52
			Costes indirectos 6%	3,03
			TOTAL PARTIDA.....	53,55

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
482	P5ELEZ160X2H	m	Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	
			Mano de obra	14,94
			Maquinaria	15,05
			Resto de obra y materiales.....	40,28
			Suma la partida	70,27
			Costes indirectos 6%	4,22
			TOTAL PARTIDA.....	74,49
483	P5MBDTS1	m²	Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.	
			Mano de obra	0,28
			Maquinaria	0,25
			Resto de obra y materiales.....	2,91
			Suma la partida	3,44
			Costes indirectos 6%	0,21
			TOTAL PARTIDA.....	3,65
484	P5MBS12.5	m²	Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	
			Mano de obra	0,28
			Maquinaria	3,77
			Resto de obra y materiales.....	2,09
			Suma la partida	6,14
			Costes indirectos 6%	0,37
			TOTAL PARTIDA.....	6,51
485	P5MBS20.7	m²	Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	
			Mano de obra	0,28
			Maquinaria	3,77
			Resto de obra y materiales.....	2,43
			Suma la partida	6,48
			Costes indirectos 6%	0,39
			TOTAL PARTIDA.....	6,87
486	P5PANT01	ud	Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	
			Mano de obra	710,55
			Maquinaria	10.345,22
			Suma la partida	11.055,77
			Costes indirectos 6%	663,35
			TOTAL PARTIDA.....	11.719,12

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
487	P5PANT02	ud Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	
		Resto de obra y materiales.....	3.136,33
		Suma la partida	3.136,33
		Costes indirectos 6%	188,18
		TOTAL PARTIDA.....	3.324,51
488	P5PANT03	ud Desmontaje final de pantallas y transporte a punto de origen. Unidad completa.	
		Mano de obra	710,55
		Maquinaria	10.345,22
		Suma la partida	11.055,77
		Costes indirectos 6%	663,35
		TOTAL PARTIDA.....	11.719,12
489	P5PAV1A	m ² Solado de baldosas de hidráulicas de 20 x 20 gris o color (a criterio de la Dirección Facultativa), colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	
		Mano de obra	17,22
		Maquinaria	0,15
		Resto de obra y materiales.....	10,53
		Suma la partida	27,90
		Costes indirectos 6%	1,67
		TOTAL PARTIDA.....	29,57
490	P5PAV1B	m ² Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	
		Mano de obra	17,22
		Maquinaria	0,15
		Resto de obra y materiales.....	10,99
		Suma la partida	28,36
		Costes indirectos 6%	1,70
		TOTAL PARTIDA.....	30,06
491	P5PAV1C	m ² Solado de baldosas de hidráulicas de dimensión múltiple gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso biselados, rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20 y 15 cm de zahorra artificial, unidad totalmente terminada.	
		Mano de obra	17,22
		Maquinaria	0,15
		Resto de obra y materiales.....	14,35
		Suma la partida	31,72
		Costes indirectos 6%	1,90
		TOTAL PARTIDA.....	33,62
492	P5PAVFRES	m ² Metro cuadrado por centímetro de espesor, de fresado de pavimento asfáltico con máquina fresadora o levantapavimentos, incluso precorte previo y carga de productos y limpieza, así como trabajos preparatorios para extendido de MB, incluido transporte a vertedero autorizado y canon de vertido.	
		Mano de obra	0,24
		Maquinaria	0,37
		Resto de obra y materiales.....	0,06
		Suma la partida	0,67

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Costes indirectos	6% 0,04
			TOTAL PARTIDA.....	0,71
493	P5PAVHF36	m²	Pavimento de hormigón hf-4,0/p/20/iic+e de 20 cm de espesor mínimo. incluso extendido, encofrado de borde, regleado, vibrado, fratasado o pulido a máquina, corte de junta sellada y curado con producto filmógeno. Pasantes en juntas de dilatación y armadura de piel 5/20-20.	
			Mano de obra	0,47
			Maquinaria	2,05
			Resto de obra y materiales.....	15,41
			Suma la partida	17,93
			Costes indirectos	6% 1,08
			TOTAL PARTIDA.....	19,01
494	P5PAVHM20B	m²	Pavimento de hormigón HM-20 de 15 cm de espesor mínimo en acerados ruleteado con terminación estética, extendido, encofrado de borde, regleado, vibrado, fratasado a máquina, corte de junta sellada y curado con producto filmógeno. preparación de base de apoyo y aportación de 15 cm de zahorra artificial compactada al 95% del PN . Unidad totalmente terminada.	
			Mano de obra	8,50
			Maquinaria	3,97
			Resto de obra y materiales.....	9,87
			Suma la partida	22,34
			Costes indirectos	6% 1,34
			TOTAL PARTIDA.....	23,68
495	P5PUERTA1A	ud	Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	
			Mano de obra	52,72
			Resto de obra y materiales.....	98,86
			Suma la partida	151,58
			Costes indirectos	6% 9,09
			TOTAL PARTIDA.....	160,67
496	P5PUERTA1B	ud	Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitratória, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	
			Mano de obra	52,72
			Resto de obra y materiales.....	549,20
			Suma la partida	601,92
			Costes indirectos	6% 36,12
			TOTAL PARTIDA.....	638,04
497	P6CD.1000.16	ud	Carrete telescópico autoportante, PN 16 atm, DN 1.000 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	
			Mano de obra	65,00
			Maquinaria	26,27
			Resto de obra y materiales.....	2.763,14
			Suma la partida	2.854,41
			Costes indirectos	6% 171,26
			TOTAL PARTIDA.....	3.025,67

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE												
498	P6CD.1000.25	ud	Carrete telescópico autoportante, PN 25 atm, DN 1.000 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>65,00</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>6.260,44</td></tr><tr><td>Suma la partida</td><td>6.351,71</td></tr><tr><td>Costes indirectos 6%</td><td>381,10</td></tr><tr><td>TOTAL PARTIDA.....</td><td>6.732,81</td></tr></table>	Mano de obra	65,00	Maquinaria	26,27	Resto de obra y materiales.....	6.260,44	Suma la partida	6.351,71	Costes indirectos 6%	381,10	TOTAL PARTIDA.....	6.732,81
Mano de obra	65,00															
Maquinaria	26,27															
Resto de obra y materiales.....	6.260,44															
Suma la partida	6.351,71															
Costes indirectos 6%	381,10															
TOTAL PARTIDA.....	6.732,81															
499	P6CD.1100.16	ud	Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>65,00</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>3.102,74</td></tr><tr><td>Suma la partida</td><td>3.194,01</td></tr><tr><td>Costes indirectos 6%</td><td>191,64</td></tr><tr><td>TOTAL PARTIDA.....</td><td>3.385,65</td></tr></table>	Mano de obra	65,00	Maquinaria	26,27	Resto de obra y materiales.....	3.102,74	Suma la partida	3.194,01	Costes indirectos 6%	191,64	TOTAL PARTIDA.....	3.385,65
Mano de obra	65,00															
Maquinaria	26,27															
Resto de obra y materiales.....	3.102,74															
Suma la partida	3.194,01															
Costes indirectos 6%	191,64															
TOTAL PARTIDA.....	3.385,65															
500	P6CD.1300.16	ud	Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>65,00</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>3.865,24</td></tr><tr><td>Suma la partida</td><td>3.956,51</td></tr><tr><td>Costes indirectos 6%</td><td>237,39</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.193,90</td></tr></table>	Mano de obra	65,00	Maquinaria	26,27	Resto de obra y materiales.....	3.865,24	Suma la partida	3.956,51	Costes indirectos 6%	237,39	TOTAL PARTIDA.....	4.193,90
Mano de obra	65,00															
Maquinaria	26,27															
Resto de obra y materiales.....	3.865,24															
Suma la partida	3.956,51															
Costes indirectos 6%	237,39															
TOTAL PARTIDA.....	4.193,90															
501	P6CD.150.16	ud	Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente,con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	<table><tr><td>Mano de obra</td><td>5,33</td></tr><tr><td>Maquinaria</td><td>6,57</td></tr><tr><td>Resto de obra y materiales.....</td><td>135,79</td></tr><tr><td>Suma la partida</td><td>147,69</td></tr><tr><td>Costes indirectos 6%</td><td>8,86</td></tr><tr><td>TOTAL PARTIDA.....</td><td>156,55</td></tr></table>	Mano de obra	5,33	Maquinaria	6,57	Resto de obra y materiales.....	135,79	Suma la partida	147,69	Costes indirectos 6%	8,86	TOTAL PARTIDA.....	156,55
Mano de obra	5,33															
Maquinaria	6,57															
Resto de obra y materiales.....	135,79															
Suma la partida	147,69															
Costes indirectos 6%	8,86															
TOTAL PARTIDA.....	156,55															
502	P6CD.150.25	ud	Carrete de desmontaje de diametro 150 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente,con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	<table><tr><td>Mano de obra</td><td>5,33</td></tr><tr><td>Maquinaria</td><td>6,57</td></tr><tr><td>Resto de obra y materiales.....</td><td>216,00</td></tr><tr><td>Suma la partida</td><td>227,90</td></tr><tr><td>Costes indirectos 6%</td><td>13,67</td></tr><tr><td>TOTAL PARTIDA.....</td><td>241,57</td></tr></table>	Mano de obra	5,33	Maquinaria	6,57	Resto de obra y materiales.....	216,00	Suma la partida	227,90	Costes indirectos 6%	13,67	TOTAL PARTIDA.....	241,57
Mano de obra	5,33															
Maquinaria	6,57															
Resto de obra y materiales.....	216,00															
Suma la partida	227,90															
Costes indirectos 6%	13,67															
TOTAL PARTIDA.....	241,57															

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
503	P6CD.1500.16	ud Carrete telescópico autoportante, PN 16 atm, DN 1.500 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>65,00</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>4.431,74</td></tr><tr><td>Suma la partida</td><td>4.523,01</td></tr><tr><td>Costes indirectos 6%</td><td>271,38</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.794,39</td></tr></table>	Mano de obra	65,00	Maquinaria	26,27	Resto de obra y materiales.....	4.431,74	Suma la partida	4.523,01	Costes indirectos 6%	271,38	TOTAL PARTIDA.....	4.794,39
Mano de obra	65,00														
Maquinaria	26,27														
Resto de obra y materiales.....	4.431,74														
Suma la partida	4.523,01														
Costes indirectos 6%	271,38														
TOTAL PARTIDA.....	4.794,39														
504	P6CD.1600.16	ud Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>65,00</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>4.740,74</td></tr><tr><td>Suma la partida</td><td>4.832,01</td></tr><tr><td>Costes indirectos 6%</td><td>289,92</td></tr><tr><td>TOTAL PARTIDA.....</td><td>5.121,93</td></tr></table>	Mano de obra	65,00	Maquinaria	26,27	Resto de obra y materiales.....	4.740,74	Suma la partida	4.832,01	Costes indirectos 6%	289,92	TOTAL PARTIDA.....	5.121,93
Mano de obra	65,00														
Maquinaria	26,27														
Resto de obra y materiales.....	4.740,74														
Suma la partida	4.832,01														
Costes indirectos 6%	289,92														
TOTAL PARTIDA.....	5.121,93														
505	P6CD.1800.16	ud Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>65,00</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>5.420,54</td></tr><tr><td>Suma la partida</td><td>5.511,81</td></tr><tr><td>Costes indirectos 6%</td><td>330,71</td></tr><tr><td>TOTAL PARTIDA.....</td><td>5.842,52</td></tr></table>	Mano de obra	65,00	Maquinaria	26,27	Resto de obra y materiales.....	5.420,54	Suma la partida	5.511,81	Costes indirectos 6%	330,71	TOTAL PARTIDA.....	5.842,52
Mano de obra	65,00														
Maquinaria	26,27														
Resto de obra y materiales.....	5.420,54														
Suma la partida	5.511,81														
Costes indirectos 6%	330,71														
TOTAL PARTIDA.....	5.842,52														
506	P6CD.1800.25	ud Carrete telescópico autoportante, PN 25 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>65,00</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>10.655,48</td></tr><tr><td>Suma la partida</td><td>10.746,75</td></tr><tr><td>Costes indirectos 6%</td><td>644,81</td></tr><tr><td>TOTAL PARTIDA.....</td><td>11.391,56</td></tr></table>	Mano de obra	65,00	Maquinaria	26,27	Resto de obra y materiales.....	10.655,48	Suma la partida	10.746,75	Costes indirectos 6%	644,81	TOTAL PARTIDA.....	11.391,56
Mano de obra	65,00														
Maquinaria	26,27														
Resto de obra y materiales.....	10.655,48														
Suma la partida	10.746,75														
Costes indirectos 6%	644,81														
TOTAL PARTIDA.....	11.391,56														
507	P6CD.1900.25	ud Carrete telescópico autoportante, PN 25 atm, DN 1.900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>65,00</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>11.839,12</td></tr><tr><td>Suma la partida</td><td>11.930,39</td></tr><tr><td>Costes indirectos 6%</td><td>715,82</td></tr><tr><td>TOTAL PARTIDA.....</td><td>12.646,21</td></tr></table>	Mano de obra	65,00	Maquinaria	26,27	Resto de obra y materiales.....	11.839,12	Suma la partida	11.930,39	Costes indirectos 6%	715,82	TOTAL PARTIDA.....	12.646,21
Mano de obra	65,00														
Maquinaria	26,27														
Resto de obra y materiales.....	11.839,12														
Suma la partida	11.930,39														
Costes indirectos 6%	715,82														
TOTAL PARTIDA.....	12.646,21														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
508	P6CD.200.16	ud Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente,con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	<table><tr><td>Mano de obra</td><td>5,33</td></tr><tr><td>Maquinaria</td><td>6,57</td></tr><tr><td>Resto de obra y materiales.....</td><td>165,74</td></tr><tr><td>Suma la partida</td><td>177,64</td></tr><tr><td>Costes indirectos 6%</td><td>10,66</td></tr><tr><td>TOTAL PARTIDA.....</td><td>188,30</td></tr></table>	Mano de obra	5,33	Maquinaria	6,57	Resto de obra y materiales.....	165,74	Suma la partida	177,64	Costes indirectos 6%	10,66	TOTAL PARTIDA.....	188,30
Mano de obra	5,33														
Maquinaria	6,57														
Resto de obra y materiales.....	165,74														
Suma la partida	177,64														
Costes indirectos 6%	10,66														
TOTAL PARTIDA.....	188,30														
509	P6CD.200.25	ud Carrete de desmontaje de diametro 200 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente,con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	<table><tr><td>Mano de obra</td><td>5,33</td></tr><tr><td>Maquinaria</td><td>6,57</td></tr><tr><td>Resto de obra y materiales.....</td><td>265,00</td></tr><tr><td>Suma la partida</td><td>276,90</td></tr><tr><td>Costes indirectos 6%</td><td>16,61</td></tr><tr><td>TOTAL PARTIDA.....</td><td>293,51</td></tr></table>	Mano de obra	5,33	Maquinaria	6,57	Resto de obra y materiales.....	265,00	Suma la partida	276,90	Costes indirectos 6%	16,61	TOTAL PARTIDA.....	293,51
Mano de obra	5,33														
Maquinaria	6,57														
Resto de obra y materiales.....	265,00														
Suma la partida	276,90														
Costes indirectos 6%	16,61														
TOTAL PARTIDA.....	293,51														
510	P6CD.2200.16	ud Carrete telescópico autoportante, PN 25 atm, DN2.200 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornilleria de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>65,00</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>6.504,10</td></tr><tr><td>Suma la partida</td><td>6.595,37</td></tr><tr><td>Costes indirectos 6%</td><td>395,72</td></tr><tr><td>TOTAL PARTIDA.....</td><td>6.991,09</td></tr></table>	Mano de obra	65,00	Maquinaria	26,27	Resto de obra y materiales.....	6.504,10	Suma la partida	6.595,37	Costes indirectos 6%	395,72	TOTAL PARTIDA.....	6.991,09
Mano de obra	65,00														
Maquinaria	26,27														
Resto de obra y materiales.....	6.504,10														
Suma la partida	6.595,37														
Costes indirectos 6%	395,72														
TOTAL PARTIDA.....	6.991,09														
511	P6CD.250.16	ud Carrete de desmontaje de diametro 250 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente,con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	<table><tr><td>Mano de obra</td><td>5,33</td></tr><tr><td>Maquinaria</td><td>6,57</td></tr><tr><td>Resto de obra y materiales.....</td><td>185,14</td></tr><tr><td>Suma la partida</td><td>197,04</td></tr><tr><td>Costes indirectos 6%</td><td>11,82</td></tr><tr><td>TOTAL PARTIDA.....</td><td>208,86</td></tr></table>	Mano de obra	5,33	Maquinaria	6,57	Resto de obra y materiales.....	185,14	Suma la partida	197,04	Costes indirectos 6%	11,82	TOTAL PARTIDA.....	208,86
Mano de obra	5,33														
Maquinaria	6,57														
Resto de obra y materiales.....	185,14														
Suma la partida	197,04														
Costes indirectos 6%	11,82														
TOTAL PARTIDA.....	208,86														
512	P6CD.250.25	ud Carrete de desmontaje de diametro 250 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente,con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	<table><tr><td>Mano de obra</td><td>5,33</td></tr><tr><td>Maquinaria</td><td>6,57</td></tr><tr><td>Resto de obra y materiales.....</td><td>295,00</td></tr><tr><td>Suma la partida</td><td>306,90</td></tr><tr><td>Costes indirectos 6%</td><td>18,41</td></tr><tr><td>TOTAL PARTIDA.....</td><td>325,31</td></tr></table>	Mano de obra	5,33	Maquinaria	6,57	Resto de obra y materiales.....	295,00	Suma la partida	306,90	Costes indirectos 6%	18,41	TOTAL PARTIDA.....	325,31
Mano de obra	5,33														
Maquinaria	6,57														
Resto de obra y materiales.....	295,00														
Suma la partida	306,90														
Costes indirectos 6%	18,41														
TOTAL PARTIDA.....	325,31														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
513	P6CD.300.16	ud Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	
		Mano de obra	5,33
		Maquinaria	6,57
		Resto de obra y materiales.....	258,99
		Suma la partida	270,89
		Costes indirectos 6%	16,25
		TOTAL PARTIDA.....	287,14
514	P6CD.300.25	ud Carrete de desmontaje de diámetro 300 mm y PN25 at., autopoortante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	
		Mano de obra	5,33
		Maquinaria	6,57
		Resto de obra y materiales.....	312,00
		Suma la partida	323,90
		Costes indirectos 6%	19,43
		TOTAL PARTIDA.....	343,33
515	P6CD.400.16	ud Carrete de desmontaje de acero de 400 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	
		Mano de obra	5,33
		Maquinaria	6,57
		Resto de obra y materiales.....	380,84
		Suma la partida	392,74
		Costes indirectos 6%	23,56
		TOTAL PARTIDA.....	416,30
516	P6CD.500.16	ud Carrete de desmontaje de acero de 500 mm de diámetro PN16, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	
		Mano de obra	5,33
		Maquinaria	6,57
		Resto de obra y materiales.....	418,60
		Suma la partida	430,50
		Costes indirectos 6%	25,83
		TOTAL PARTIDA.....	456,33
517	P6CD.500.25	ud Carrete de desmontaje de acero de 500 mm de diámetro PN25, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	
		Mano de obra	5,33
		Maquinaria	6,57
		Resto de obra y materiales.....	750,00
		Suma la partida	761,90
		Costes indirectos 6%	45,71

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			807,61
518	P6CD.700.16	ud Carrete de desmontaje de diametro 700 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	
Mano de obra			5,33
Maquinaria			6,57
Resto de obra y materiales.....			980,00
Suma la partida			991,90
Costes indirectos 6%			59,51
TOTAL PARTIDA.....			1.051,41
519	P6CD.800.16	ud Carrete telescópico autoportante, PN 16 atm, DN 800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	
Mano de obra			65,00
Maquinaria			26,27
Resto de obra y materiales.....			1.650,74
Suma la partida			1.742,01
Costes indirectos 6%			104,52
TOTAL PARTIDA.....			1.846,53
520	P6CD.800.25	ud Carrete telescópico autoportante, PN 25 atm, DN 800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	
Mano de obra			65,00
Maquinaria			26,27
Resto de obra y materiales.....			5.255,74
Suma la partida			5.347,01
Costes indirectos 6%			320,82
TOTAL PARTIDA.....			5.667,83
521	P6CD900.16	ud Carrete telescópico autoportante, PN 16 atm, DN 900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	
Mano de obra			65,00
Maquinaria			26,27
Resto de obra y materiales.....			2.157,74
Suma la partida			2.249,01
Costes indirectos 6%			134,94
TOTAL PARTIDA.....			2.383,95

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
522	P6COMPBU_E	<div>ud</div> <div>Compuerta Bureau con las siguientes características. Accionamiento: HIDRAULICO Cuerpo: S275JR + 304 Obturador: S275JR+304+BRONCE Cierre: INOX-BRONCE Brida: PN 10 Anchura: 1700 Altura: 2200 : Presión trabajo real: 95 mca Presión diseño: 95 mca Presión prueba cuerpo: 142,5 mca Presión prueba cierre: 104,5 mca La compuerta incluye lo siguiente: - By-pass DN 150 compuesto por 2 válvulas de compuer- ta. - Sistema de aireación DN 300 compuesto por 2 válvulas de compuertas + 2 válvulas de ventosa. - Grupo hidráulico (1 para 2 compuertas BU). - Panel de control (1 para 2 compuertas BU). - Repuestos recomendados. Totalmente colocada.</div>	<table><tr><td>Mano de obra</td><td>325,00</td></tr><tr><td>Resto de obra y materiales.....</td><td>311.802,25</td></tr><tr><td>Suma la partida</td><td>312.127,25</td></tr><tr><td>Costes indirectos 6%</td><td>18.727,64</td></tr><tr><td>TOTAL PARTIDA.....</td><td>330.854,89</td></tr></table>	Mano de obra	325,00	Resto de obra y materiales.....	311.802,25	Suma la partida	312.127,25	Costes indirectos 6%	18.727,64	TOTAL PARTIDA.....	330.854,89		
Mano de obra	325,00														
Resto de obra y materiales.....	311.802,25														
Suma la partida	312.127,25														
Costes indirectos 6%	18.727,64														
TOTAL PARTIDA.....	330.854,89														
523	P6CR.100.25	<div>ud</div> <div>Conexión rápida de desagües DN 100.</div>	<table><tr><td>Mano de obra</td><td>13,00</td></tr><tr><td>Maquinaria</td><td>0,26</td></tr><tr><td>Resto de obra y materiales.....</td><td>60,00</td></tr><tr><td>Suma la partida</td><td>73,26</td></tr><tr><td>Costes indirectos 6%</td><td>4,40</td></tr><tr><td>TOTAL PARTIDA.....</td><td>77,66</td></tr></table>	Mano de obra	13,00	Maquinaria	0,26	Resto de obra y materiales.....	60,00	Suma la partida	73,26	Costes indirectos 6%	4,40	TOTAL PARTIDA.....	77,66
Mano de obra	13,00														
Maquinaria	0,26														
Resto de obra y materiales.....	60,00														
Suma la partida	73,26														
Costes indirectos 6%	4,40														
TOTAL PARTIDA.....	77,66														
524	P6CUN-09_E	<div>m</div> <div>Cuneta triangular de altura variable según perfil longitudi- nal de altura entre 0.3 m a 0.5, con taludes 1/1, con trans- porte de los productos resultantes de la excavación a verte- dero o lugar de empleo, incluso refino de taludes, emboca- dura con cunetas existentes y red de drenaje existente. Uni- dad totalmente terminada.</div>	<table><tr><td>Mano de obra</td><td>0,71</td></tr><tr><td>Maquinaria</td><td>1,10</td></tr><tr><td>Resto de obra y materiales.....</td><td>1,05</td></tr><tr><td>Suma la partida</td><td>2,86</td></tr><tr><td>Costes indirectos 6%</td><td>0,17</td></tr><tr><td>TOTAL PARTIDA.....</td><td>3,03</td></tr></table>	Mano de obra	0,71	Maquinaria	1,10	Resto de obra y materiales.....	1,05	Suma la partida	2,86	Costes indirectos 6%	0,17	TOTAL PARTIDA.....	3,03
Mano de obra	0,71														
Maquinaria	1,10														
Resto de obra y materiales.....	1,05														
Suma la partida	2,86														
Costes indirectos 6%	0,17														
TOTAL PARTIDA.....	3,03														
525	P6DT001	<div>ud</div> <div>Reposición y mantenimiento señalítica, balizamiento y ele- mentos de seguridad vial correspondiente al desvío de tráfi- co en todas sus fases, conformado por brigada de supervi- sión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.</div>	<table><tr><td>Mano de obra</td><td>2.124,00</td></tr><tr><td>Maquinaria</td><td>1.304,00</td></tr><tr><td>Resto de obra y materiales.....</td><td>171,40</td></tr><tr><td>Suma la partida</td><td>3.599,40</td></tr><tr><td>Costes indirectos 6%</td><td>215,96</td></tr><tr><td>TOTAL PARTIDA.....</td><td>3.815,36</td></tr></table>	Mano de obra	2.124,00	Maquinaria	1.304,00	Resto de obra y materiales.....	171,40	Suma la partida	3.599,40	Costes indirectos 6%	215,96	TOTAL PARTIDA.....	3.815,36
Mano de obra	2.124,00														
Maquinaria	1.304,00														
Resto de obra y materiales.....	171,40														
Suma la partida	3.599,40														
Costes indirectos 6%	215,96														
TOTAL PARTIDA.....	3.815,36														
526	P6FG.250.16	<div>ud</div> <div>Filtro colador tipo globo, DN 250, PN 16, con malla de ace- ro inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.</div>	<table><tr><td>Mano de obra</td><td>47,03</td></tr><tr><td>Resto de obra y materiales.....</td><td>3.258,24</td></tr><tr><td>Suma la partida</td><td>3.305,27</td></tr><tr><td>Costes indirectos 6%</td><td>198,32</td></tr></table>	Mano de obra	47,03	Resto de obra y materiales.....	3.258,24	Suma la partida	3.305,27	Costes indirectos 6%	198,32				
Mano de obra	47,03														
Resto de obra y materiales.....	3.258,24														
Suma la partida	3.305,27														
Costes indirectos 6%	198,32														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			3.503,59
527	P6FG.400.16	ud Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	
Mano de obra			57,49
Resto de obra y materiales.....			8.013,04
Suma la partida			8.070,53
Costes indirectos 6%			484,23
TOTAL PARTIDA.....			8.554,76
528	P6HINC.T01	m³ Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	
Mano de obra			0,65
Maquinaria			4,08
Resto de obra y materiales.....			70,00
Suma la partida			74,73
Costes indirectos 6%			4,48
TOTAL PARTIDA.....			79,21
529	P6HINC.T02	m³ Resina de silicatos inyectada en el terreno para consolidación en túneles e impermeabilización i/ rechazo.	
Mano de obra			0,65
Maquinaria			1,00
Resto de obra y materiales.....			950,00
Suma la partida			951,65
Costes indirectos 6%			57,10
TOTAL PARTIDA.....			1.008,75
530	P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	
Resto de obra y materiales.....			17,48
Suma la partida			17,48
Costes indirectos 6%			1,05
TOTAL PARTIDA.....			18,53
531	P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.	
Resto de obra y materiales.....			17,44
Suma la partida			17,44
Costes indirectos 6%			1,05
TOTAL PARTIDA.....			18,49
532	P6HINCA03A	ud Equipo de auscultación de seguimiento de túnel carretero de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	
Mano de obra			7.500,00
Resto de obra y materiales.....			3.995,20
Suma la partida			11.495,20
Costes indirectos 6%			689,71
TOTAL PARTIDA.....			12.184,91
533	P6HINCA03B	ud Equipo de auscultación de seguimiento de túnel bajo río de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Mano de obra	1.500,00
		Resto de obra y materiales.....	3.196,16
		Suma la partida	4.696,16
		Costes indirectos 6%	281,77
		TOTAL PARTIDA.....	4.977,93
534	P6HINCA03C	ud Equipo de auscultación de seguimiento de túnel del cerro de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	
		Mano de obra	1.125,00
		Resto de obra y materiales.....	3.995,20
		Suma la partida	5.120,20
		Costes indirectos 6%	307,21
		TOTAL PARTIDA.....	5.427,41
535	P6HINCA04	ud Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	
		Mano de obra	3.750,00
		Resto de obra y materiales.....	799,04
		Suma la partida	4.549,04
		Costes indirectos 6%	272,94
		TOTAL PARTIDA.....	4.821,98
536	P6HINCA05	ud Equipo de vigilancia FFCC de ADIF, incluido pago de tasas.	
		Mano de obra	5.250,00
		Resto de obra y materiales.....	6.500,00
		Suma la partida	11.750,00
		Costes indirectos 6%	705,00
		TOTAL PARTIDA.....	12.455,00
537	P6HINCA2000A1	ud Implantación y transporte de equipo perforador de escudo cerrado, para hincas de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.	
		Resto de obra y materiales.....	38.000,00
		Suma la partida	38.000,00
		Costes indirectos 6%	2.280,00
		TOTAL PARTIDA.....	40.280,00
538	P6HINCA2000A2	ud Retirada completa de obra y transporte a punto de origen de proveedor de equipo perforador de escudo cerrado, para hincas de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.	
		Resto de obra y materiales.....	38.000,00
		Suma la partida	38.000,00
		Costes indirectos 6%	2.280,00
		TOTAL PARTIDA.....	40.280,00
539	P6HINCA2000A3	ud Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hincas, mano de obra para descarga, montaje y puesta a punto.	
		Resto de obra y materiales.....	16.000,00
		Suma la partida	16.000,00
		Costes indirectos 6%	960,00
		TOTAL PARTIDA.....	16.960,00

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE												
540	P6HINCA2000B	m	<p>Tubería hincada de DN 2.000 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje , vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos , demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos) . Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje.</p> <p>Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.</p>	<table><tr><td>Mano de obra</td><td>142,11</td></tr><tr><td>Maquinaria</td><td>931,15</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.128,00</td></tr><tr><td>Suma la partida</td><td>2.201,26</td></tr><tr><td>Costes indirectos 6%</td><td>132,08</td></tr><tr><td>TOTAL PARTIDA.....</td><td>2.333,34</td></tr></table>	Mano de obra	142,11	Maquinaria	931,15	Resto de obra y materiales.....	1.128,00	Suma la partida	2.201,26	Costes indirectos 6%	132,08	TOTAL PARTIDA.....	2.333,34
Mano de obra	142,11															
Maquinaria	931,15															
Resto de obra y materiales.....	1.128,00															
Suma la partida	2.201,26															
Costes indirectos 6%	132,08															
TOTAL PARTIDA.....	2.333,34															
541	P6HINCA2000B1	ud	<p>Implantación y transporte de equipo perforador de escudo abierto, para hincado de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.</p>	<table><tr><td>Resto de obra y materiales.....</td><td>3.800,00</td></tr><tr><td>Suma la partida</td><td>3.800,00</td></tr><tr><td>Costes indirectos 6%</td><td>228,00</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.028,00</td></tr></table>	Resto de obra y materiales.....	3.800,00	Suma la partida	3.800,00	Costes indirectos 6%	228,00	TOTAL PARTIDA.....	4.028,00				
Resto de obra y materiales.....	3.800,00															
Suma la partida	3.800,00															
Costes indirectos 6%	228,00															
TOTAL PARTIDA.....	4.028,00															
542	P6HINCA2000B2	ud	<p>Retirada completa de obra y transporte de equipo perforador de escudo abierto, para hincado de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.</p>	<table><tr><td>Resto de obra y materiales.....</td><td>3.800,00</td></tr><tr><td>Suma la partida</td><td>3.800,00</td></tr><tr><td>Costes indirectos 6%</td><td>228,00</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.028,00</td></tr></table>	Resto de obra y materiales.....	3.800,00	Suma la partida	3.800,00	Costes indirectos 6%	228,00	TOTAL PARTIDA.....	4.028,00				
Resto de obra y materiales.....	3.800,00															
Suma la partida	3.800,00															
Costes indirectos 6%	228,00															
TOTAL PARTIDA.....	4.028,00															
543	P6HINCA2000B3	ud	<p>Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hincado, mano de obra para descarga, montaje y puesta a punto.</p>	<table><tr><td>Resto de obra y materiales.....</td><td>2.500,00</td></tr><tr><td>Suma la partida</td><td>2.500,00</td></tr><tr><td>Costes indirectos 6%</td><td>150,00</td></tr><tr><td>TOTAL PARTIDA.....</td><td>2.650,00</td></tr></table>	Resto de obra y materiales.....	2.500,00	Suma la partida	2.500,00	Costes indirectos 6%	150,00	TOTAL PARTIDA.....	2.650,00				
Resto de obra y materiales.....	2.500,00															
Suma la partida	2.500,00															
Costes indirectos 6%	150,00															
TOTAL PARTIDA.....	2.650,00															

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE												
544	P6HINCA2500A	m	<p>Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje , vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos , demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos) . Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje.</p> <p>Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.</p>	<table><tr><td>Mano de obra</td><td>142,11</td></tr><tr><td>Maquinaria</td><td>2.307,12</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.497,65</td></tr><tr><td>Suma la partida</td><td>3.946,88</td></tr><tr><td>Costes indirectos 6%</td><td>236,81</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.183,69</td></tr></table>	Mano de obra	142,11	Maquinaria	2.307,12	Resto de obra y materiales.....	1.497,65	Suma la partida	3.946,88	Costes indirectos 6%	236,81	TOTAL PARTIDA.....	4.183,69
Mano de obra	142,11															
Maquinaria	2.307,12															
Resto de obra y materiales.....	1.497,65															
Suma la partida	3.946,88															
Costes indirectos 6%	236,81															
TOTAL PARTIDA.....	4.183,69															
545	P6HINCA2500B	m	<p>Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje , vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos , demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos) . Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje.</p> <p>Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.</p>	<table><tr><td>Mano de obra</td><td>142,11</td></tr><tr><td>Maquinaria</td><td>981,15</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.427,50</td></tr><tr><td>Suma la partida</td><td>2.550,76</td></tr><tr><td>Costes indirectos 6%</td><td>153,05</td></tr><tr><td>TOTAL PARTIDA.....</td><td>2.703,81</td></tr></table>	Mano de obra	142,11	Maquinaria	981,15	Resto de obra y materiales.....	1.427,50	Suma la partida	2.550,76	Costes indirectos 6%	153,05	TOTAL PARTIDA.....	2.703,81
Mano de obra	142,11															
Maquinaria	981,15															
Resto de obra y materiales.....	1.427,50															
Suma la partida	2.550,76															
Costes indirectos 6%	153,05															
TOTAL PARTIDA.....	2.703,81															
546	P6HINCATUB01	m	<p>Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hincas de DN 2.000 y 2.500 mm recta o curva, mediante instalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas , operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.</p>	<table><tr><td>Resto de obra y materiales.....</td><td>85,00</td></tr><tr><td>Suma la partida</td><td>85,00</td></tr><tr><td>Costes indirectos 6%</td><td>5,10</td></tr><tr><td>TOTAL PARTIDA.....</td><td>90,10</td></tr></table>	Resto de obra y materiales.....	85,00	Suma la partida	85,00	Costes indirectos 6%	5,10	TOTAL PARTIDA.....	90,10				
Resto de obra y materiales.....	85,00															
Suma la partida	85,00															
Costes indirectos 6%	5,10															
TOTAL PARTIDA.....	90,10															
547	P6MAN01	ud	<p>Suministro, instalación y puesta en servicio de manómetro en baño de glicerina, escala 0-6 y 0-10 kg/cm2, sistema de medida Bourdon, diámetro 100 mm 1/2" montado y probado</p>													

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE	
			Resto de obra y materiales.....	66,11
			Suma la partida	66,11
			Costes indirectos 6%	3,97
			TOTAL PARTIDA.....	70,08
548	P6PM100INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 100mm de diámetro.	Resto de obra y materiales.....	91,58
			Suma la partida	91,58
			Costes indirectos 6%	5,49
			TOTAL PARTIDA.....	97,07
549	P6PM150INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 150mm de diámetro.	Resto de obra y materiales.....	165,91
			Suma la partida	165,91
			Costes indirectos 6%	9,95
			TOTAL PARTIDA.....	175,86
550	P6PM250INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 250 mm de diámetro.	Resto de obra y materiales.....	204,84
			Suma la partida	204,84
			Costes indirectos 6%	12,29
			TOTAL PARTIDA.....	217,13
551	P6PM300INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	Resto de obra y materiales.....	238,71
			Suma la partida	238,71
			Costes indirectos 6%	14,32
			TOTAL PARTIDA.....	253,03
552	P6PM400INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 400mm de diámetro.	Resto de obra y materiales.....	289,09
			Suma la partida	289,09
			Costes indirectos 6%	17,35
			TOTAL PARTIDA.....	306,44
553	P6PM500INX	ud Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 500mm de diámetro.	Resto de obra y materiales.....	396,46
			Suma la partida	396,46
			Costes indirectos 6%	23,79
			TOTAL PARTIDA.....	420,25
554	P6PRES01	ud Suministro, instalación y puesta en servicio de Transductor de presión con salida analógica, alimentación eléctrica a 24Vcc, con técnica de 2 ó 4 hilos, con precisión mejor del 0,1%, IP 67, indicación digital de medida en frontal del equi- po, señal de salida 4-20 mA, totalmente instalado y proba- do.	Resto de obra y materiales.....	363,76
			Suma la partida	363,76
			Costes indirectos 6%	21,83
			TOTAL PARTIDA.....	385,59

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
555	P6Q1100.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.100 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Maquinaria</td><td>52,54</td></tr><tr><td>Resto de obra y materiales.....</td><td>6.838,08</td></tr><tr><td>Suma la partida</td><td>7.020,62</td></tr><tr><td>Costes indirectos 6%</td><td>421,24</td></tr><tr><td>TOTAL PARTIDA.....</td><td>7.441,86</td></tr></table>	Mano de obra	130,00	Maquinaria	52,54	Resto de obra y materiales.....	6.838,08	Suma la partida	7.020,62	Costes indirectos 6%	421,24	TOTAL PARTIDA.....	7.441,86
Mano de obra	130,00														
Maquinaria	52,54														
Resto de obra y materiales.....	6.838,08														
Suma la partida	7.020,62														
Costes indirectos 6%	421,24														
TOTAL PARTIDA.....	7.441,86														
556	P6Q1300.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Maquinaria</td><td>52,54</td></tr><tr><td>Resto de obra y materiales.....</td><td>10.612,83</td></tr><tr><td>Suma la partida</td><td>10.795,37</td></tr><tr><td>Costes indirectos 6%</td><td>647,72</td></tr><tr><td>TOTAL PARTIDA.....</td><td>11.443,09</td></tr></table>	Mano de obra	130,00	Maquinaria	52,54	Resto de obra y materiales.....	10.612,83	Suma la partida	10.795,37	Costes indirectos 6%	647,72	TOTAL PARTIDA.....	11.443,09
Mano de obra	130,00														
Maquinaria	52,54														
Resto de obra y materiales.....	10.612,83														
Suma la partida	10.795,37														
Costes indirectos 6%	647,72														
TOTAL PARTIDA.....	11.443,09														
557	P6Q1600.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.600 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Maquinaria</td><td>52,54</td></tr><tr><td>Resto de obra y materiales.....</td><td>15.135,66</td></tr><tr><td>Suma la partida</td><td>15.318,20</td></tr><tr><td>Costes indirectos 6%</td><td>919,09</td></tr><tr><td>TOTAL PARTIDA.....</td><td>16.237,29</td></tr></table>	Mano de obra	130,00	Maquinaria	52,54	Resto de obra y materiales.....	15.135,66	Suma la partida	15.318,20	Costes indirectos 6%	919,09	TOTAL PARTIDA.....	16.237,29
Mano de obra	130,00														
Maquinaria	52,54														
Resto de obra y materiales.....	15.135,66														
Suma la partida	15.318,20														
Costes indirectos 6%	919,09														
TOTAL PARTIDA.....	16.237,29														
558	P6Q300.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Maquinaria</td><td>52,54</td></tr><tr><td>Resto de obra y materiales.....</td><td>3.177,05</td></tr><tr><td>Suma la partida</td><td>3.359,59</td></tr><tr><td>Costes indirectos 6%</td><td>201,58</td></tr><tr><td>TOTAL PARTIDA.....</td><td>3.561,17</td></tr></table>	Mano de obra	130,00	Maquinaria	52,54	Resto de obra y materiales.....	3.177,05	Suma la partida	3.359,59	Costes indirectos 6%	201,58	TOTAL PARTIDA.....	3.561,17
Mano de obra	130,00														
Maquinaria	52,54														
Resto de obra y materiales.....	3.177,05														
Suma la partida	3.359,59														
Costes indirectos 6%	201,58														
TOTAL PARTIDA.....	3.561,17														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
559	P6Q500.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 500 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Maquinaria</td><td>52,54</td></tr><tr><td>Resto de obra y materiales.....</td><td>4.054,61</td></tr><tr><td>Suma la partida</td><td>4.237,15</td></tr><tr><td>Costes indirectos 6%</td><td>254,23</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.491,38</td></tr></table>	Mano de obra	130,00	Maquinaria	52,54	Resto de obra y materiales.....	4.054,61	Suma la partida	4.237,15	Costes indirectos 6%	254,23	TOTAL PARTIDA.....	4.491,38
Mano de obra	130,00														
Maquinaria	52,54														
Resto de obra y materiales.....	4.054,61														
Suma la partida	4.237,15														
Costes indirectos 6%	254,23														
TOTAL PARTIDA.....	4.491,38														
560	P6Q700.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 700 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Maquinaria</td><td>52,54</td></tr><tr><td>Resto de obra y materiales.....</td><td>4.592,27</td></tr><tr><td>Suma la partida</td><td>4.774,81</td></tr><tr><td>Costes indirectos 6%</td><td>286,49</td></tr><tr><td>TOTAL PARTIDA.....</td><td>5.061,30</td></tr></table>	Mano de obra	130,00	Maquinaria	52,54	Resto de obra y materiales.....	4.592,27	Suma la partida	4.774,81	Costes indirectos 6%	286,49	TOTAL PARTIDA.....	5.061,30
Mano de obra	130,00														
Maquinaria	52,54														
Resto de obra y materiales.....	4.592,27														
Suma la partida	4.774,81														
Costes indirectos 6%	286,49														
TOTAL PARTIDA.....	5.061,30														
561	P6Q800.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 800 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Maquinaria</td><td>52,54</td></tr><tr><td>Resto de obra y materiales.....</td><td>4.704,75</td></tr><tr><td>Suma la partida</td><td>4.887,29</td></tr><tr><td>Costes indirectos 6%</td><td>293,24</td></tr><tr><td>TOTAL PARTIDA.....</td><td>5.180,53</td></tr></table>	Mano de obra	130,00	Maquinaria	52,54	Resto de obra y materiales.....	4.704,75	Suma la partida	4.887,29	Costes indirectos 6%	293,24	TOTAL PARTIDA.....	5.180,53
Mano de obra	130,00														
Maquinaria	52,54														
Resto de obra y materiales.....	4.704,75														
Suma la partida	4.887,29														
Costes indirectos 6%	293,24														
TOTAL PARTIDA.....	5.180,53														
562	P6Q800.25	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 800 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 25, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Maquinaria</td><td>52,54</td></tr><tr><td>Resto de obra y materiales.....</td><td>5.279,49</td></tr><tr><td>Suma la partida</td><td>5.462,03</td></tr><tr><td>Costes indirectos 6%</td><td>327,72</td></tr><tr><td>TOTAL PARTIDA.....</td><td>5.789,75</td></tr></table>	Mano de obra	130,00	Maquinaria	52,54	Resto de obra y materiales.....	5.279,49	Suma la partida	5.462,03	Costes indirectos 6%	327,72	TOTAL PARTIDA.....	5.789,75
Mano de obra	130,00														
Maquinaria	52,54														
Resto de obra y materiales.....	5.279,49														
Suma la partida	5.462,03														
Costes indirectos 6%	327,72														
TOTAL PARTIDA.....	5.789,75														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
563	P6Q900.16	ud Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 900 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	<table><tr><td>Mano de obra</td><td>130,00</td></tr><tr><td>Maquinaria</td><td>52,54</td></tr><tr><td>Resto de obra y materiales.....</td><td>5.631,75</td></tr><tr><td>Suma la partida</td><td>5.814,29</td></tr><tr><td>Costes indirectos 6%</td><td>348,86</td></tr><tr><td>TOTAL PARTIDA.....</td><td>6.163,15</td></tr></table>	Mano de obra	130,00	Maquinaria	52,54	Resto de obra y materiales.....	5.631,75	Suma la partida	5.814,29	Costes indirectos 6%	348,86	TOTAL PARTIDA.....	6.163,15
Mano de obra	130,00														
Maquinaria	52,54														
Resto de obra y materiales.....	5.631,75														
Suma la partida	5.814,29														
Costes indirectos 6%	348,86														
TOTAL PARTIDA.....	6.163,15														
564	P6RSBIONDA1	m Levantado y desmontaje de barrera de seguridad existente, incluida retirada de perfiles, anclajes y macizos, con acopio y posterior reposición completa.	<table><tr><td>Mano de obra</td><td>9,75</td></tr><tr><td>Maquinaria</td><td>3,94</td></tr><tr><td>Resto de obra y materiales.....</td><td>4,08</td></tr><tr><td>Suma la partida</td><td>17,77</td></tr><tr><td>Costes indirectos 6%</td><td>1,07</td></tr><tr><td>TOTAL PARTIDA.....</td><td>18,84</td></tr></table>	Mano de obra	9,75	Maquinaria	3,94	Resto de obra y materiales.....	4,08	Suma la partida	17,77	Costes indirectos 6%	1,07	TOTAL PARTIDA.....	18,84
Mano de obra	9,75														
Maquinaria	3,94														
Resto de obra y materiales.....	4,08														
Suma la partida	17,77														
Costes indirectos 6%	1,07														
TOTAL PARTIDA.....	18,84														
565	P6SENS01	ud Suministro, instalación y puesta en servicio de sensor de humedad e inundación, alimentación eléctrica a 24Vcc, incluso 15 m de tubo PVC y cable de conexión, totalmente instalado y probado.	<table><tr><td>Resto de obra y materiales.....</td><td>368,17</td></tr><tr><td>Suma la partida</td><td>368,17</td></tr><tr><td>Costes indirectos 6%</td><td>22,09</td></tr><tr><td>TOTAL PARTIDA.....</td><td>390,26</td></tr></table>	Resto de obra y materiales.....	368,17	Suma la partida	368,17	Costes indirectos 6%	22,09	TOTAL PARTIDA.....	390,26				
Resto de obra y materiales.....	368,17														
Suma la partida	368,17														
Costes indirectos 6%	22,09														
TOTAL PARTIDA.....	390,26														
566	P6SÑL-001	ud Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.	<table><tr><td>Mano de obra</td><td>22,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>38,64</td></tr><tr><td>Suma la partida</td><td>60,91</td></tr><tr><td>Costes indirectos 6%</td><td>3,65</td></tr><tr><td>TOTAL PARTIDA.....</td><td>64,56</td></tr></table>	Mano de obra	22,27	Resto de obra y materiales.....	38,64	Suma la partida	60,91	Costes indirectos 6%	3,65	TOTAL PARTIDA.....	64,56		
Mano de obra	22,27														
Resto de obra y materiales.....	38,64														
Suma la partida	60,91														
Costes indirectos 6%	3,65														
TOTAL PARTIDA.....	64,56														
567	P6SÑL-002	ud Señal circular de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.	<table><tr><td>Mano de obra</td><td>8,91</td></tr><tr><td>Maquinaria</td><td>1,23</td></tr><tr><td>Resto de obra y materiales.....</td><td>101,99</td></tr><tr><td>Suma la partida</td><td>112,13</td></tr><tr><td>Costes indirectos 6%</td><td>6,73</td></tr><tr><td>TOTAL PARTIDA.....</td><td>118,86</td></tr></table>	Mano de obra	8,91	Maquinaria	1,23	Resto de obra y materiales.....	101,99	Suma la partida	112,13	Costes indirectos 6%	6,73	TOTAL PARTIDA.....	118,86
Mano de obra	8,91														
Maquinaria	1,23														
Resto de obra y materiales.....	101,99														
Suma la partida	112,13														
Costes indirectos 6%	6,73														
TOTAL PARTIDA.....	118,86														
568	P6SÑL-002A	ud Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.	<table><tr><td>Mano de obra</td><td>22,27</td></tr><tr><td>Maquinaria</td><td>1,23</td></tr><tr><td>Resto de obra y materiales.....</td><td>63,79</td></tr><tr><td>Suma la partida</td><td>87,29</td></tr><tr><td>Costes indirectos 6%</td><td>5,24</td></tr><tr><td>TOTAL PARTIDA.....</td><td>92,53</td></tr></table>	Mano de obra	22,27	Maquinaria	1,23	Resto de obra y materiales.....	63,79	Suma la partida	87,29	Costes indirectos 6%	5,24	TOTAL PARTIDA.....	92,53
Mano de obra	22,27														
Maquinaria	1,23														
Resto de obra y materiales.....	63,79														
Suma la partida	87,29														
Costes indirectos 6%	5,24														
TOTAL PARTIDA.....	92,53														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE	
569	P6SÑL-003B	ud Señal cuadrada de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.	Mano de obra	8,91
			Maquinaria	1,23
			Resto de obra y materiales.....	77,18
			Suma la partida	87,32
			Costes indirectos 6%	5,24
			TOTAL PARTIDA.....	92,56
570	P6SÑL-004	ud Señal octogonal de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.	Mano de obra	8,91
			Maquinaria	1,23
			Resto de obra y materiales.....	102,68
			Suma la partida	112,82
			Costes indirectos 6%	6,77
			TOTAL PARTIDA.....	119,59
571	P6SÑL-010	m ² Suministro y colocación de panel de lamas de aluminio extrusionado reflexivo, incluso postes de sustentación en perfil laminado y galvanizado, de dimensiones adecuadas a la superficie del cartel, placa de anclaje y cimentación de hormigón ligeramente armado, totalmente colocado.	Mano de obra	57,81
			Maquinaria	2,46
			Resto de obra y materiales.....	286,01
			Suma la partida	346,28
			Costes indirectos 6%	20,78
			TOTAL PARTIDA.....	367,06
572	P6SÑL-020	m Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada.	Mano de obra	4,25
			Resto de obra y materiales.....	114,00
			Suma la partida	118,25
			Costes indirectos 6%	7,10
			TOTAL PARTIDA.....	125,35
573	P6SÑL-030	ud Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	Mano de obra	10,62
			Resto de obra y materiales.....	21,00
			Suma la partida	31,62
			Costes indirectos 6%	1,90
			TOTAL PARTIDA.....	33,52
574	P6SÑL-031	ud Suministro y colocación de panel direccional provisional reflectante TB5 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	Mano de obra	10,62
			Resto de obra y materiales.....	18,20
			Suma la partida	28,82
			Costes indirectos 6%	1,73
			TOTAL PARTIDA.....	30,55
575	P6SÑL-040	ud Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	Mano de obra	10,62
			Resto de obra y materiales.....	15,00

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE	
			Suma la partida	25,62
			Costes indirectos 6%	1,54
			TOTAL PARTIDA.....	27,16
576	P6SÑL-050	ud Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.		
			Mano de obra	10,62
			Resto de obra y materiales.....	17,00
			Suma la partida	27,62
			Costes indirectos 6%	1,66
			TOTAL PARTIDA.....	29,28
577	P6SÑL-060	ud Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.		
			Mano de obra	10,62
			Resto de obra y materiales.....	32,00
			Suma la partida	42,62
			Costes indirectos 6%	2,56
			TOTAL PARTIDA.....	45,18
578	P6SÑL-080	ud Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.		
			Mano de obra	2,12
			Resto de obra y materiales.....	3,60
			Suma la partida	5,72
			Costes indirectos 6%	0,34
			TOTAL PARTIDA.....	6,06
579	P6SÑL-090	ud Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.		
			Mano de obra	2,12
			Resto de obra y materiales.....	8,00
			Suma la partida	10,12
			Costes indirectos 6%	0,61
			TOTAL PARTIDA.....	10,73
580	P6SÑL-092	ud Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.		
			Mano de obra	2,12
			Resto de obra y materiales.....	12,00
			Suma la partida	14,12
			Costes indirectos 6%	0,85
			TOTAL PARTIDA.....	14,97
581	P6SÑL-100	m Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco lastrable, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico		
			Mano de obra	3,25
			Resto de obra y materiales.....	25,00
			Suma la partida	28,25
			Costes indirectos 6%	1,70
			TOTAL PARTIDA.....	29,95

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
582	P6SÑL-102	m	Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.	
			Mano de obra	1,65
			Maquinaria	1,50
			Resto de obra y materiales.....	51,04
			Suma la partida	54,19
			Costes indirectos 6%	3,25
			TOTAL PARTIDA.....	57,44
583	P6SÑL-110	ud	Semáforo portátil con mutado. Desvíos de obra	
			Mano de obra	63,72
			Maquinaria	85,50
			Resto de obra y materiales.....	550,00
			Suma la partida	699,22
			Costes indirectos 6%	41,95
			TOTAL PARTIDA.....	741,17
584	P6SÑL-PINT10	m	MI. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	
			Mano de obra	0,65
			Maquinaria	0,11
			Resto de obra y materiales.....	0,36
			Suma la partida	1,12
			Costes indirectos 6%	0,07
			TOTAL PARTIDA.....	1,19
585	P6SÑL-PINT10B	m	MI. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	
			Mano de obra	0,33
			Maquinaria	0,11
			Resto de obra y materiales.....	0,18
			Suma la partida	0,62
			Costes indirectos 6%	0,04
			TOTAL PARTIDA.....	0,66
586	P6SÑL-PINT10C	m	Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final	
			Mano de obra	0,52
			Maquinaria	0,96
			Suma la partida	1,48
			Costes indirectos 6%	0,09
			TOTAL PARTIDA.....	1,57
587	P6SÑL-PINT15	m	MI. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	
			Mano de obra	0,65
			Maquinaria	0,11
			Resto de obra y materiales.....	0,62
			Suma la partida	1,38
			Costes indirectos 6%	0,08
			TOTAL PARTIDA.....	1,46
588	P6SÑL-PINTS	m²	Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.	
			Mano de obra	7,15
			Maquinaria	0,11
			Resto de obra y materiales.....	2,42
			Suma la partida	9,68

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Costes indirectos	6% 0,58
			TOTAL PARTIDA.....	10,26
589	P6TUBPE090.16	m	Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 90 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.	
			Mano de obra	1,43
			Resto de obra y materiales.....	5,49
			Suma la partida	6,92
			Costes indirectos	6% 0,42
			TOTAL PARTIDA.....	7,34
590	P6TUBPE110.16	m	Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 110 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.	
			Mano de obra	1,43
			Resto de obra y materiales.....	8,07
			Suma la partida	9,50
			Costes indirectos	6% 0,57
			TOTAL PARTIDA.....	10,07
591	P6TUBPE160.16	m	Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.	
			Mano de obra	1,43
			Resto de obra y materiales.....	16,82
			Suma la partida	18,25
			Costes indirectos	6% 1,10
			TOTAL PARTIDA.....	19,35
592	P6VALV1	ud	Válvulas de tipo bola de 1", piezas T y conexiones, totalmente instalado y probado.	
			Resto de obra y materiales.....	42,45
			Suma la partida	42,45
			Costes indirectos	6% 2,55
			TOTAL PARTIDA.....	45,00
593	P6VC.080.16	ud	Válvula de compuerta enterrada con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo bridas y tornillería; presión de trabajo hasta 16 atm, para diámetro de 80 mm, instalada.Especificaciones s/ PPTP.	
			Mano de obra	52,00
			Maquinaria	2,63
			Resto de obra y materiales.....	36,34
			Suma la partida	90,97
			Costes indirectos	6% 5,46
			TOTAL PARTIDA.....	96,43

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE	
594	P6VC.100.16	ud Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 100 mm, instalada.	Mano de obra	65,00
			Maquinaria	2,63
			Resto de obra y materiales.....	111,15
			Suma la partida	178,78
			Costes indirectos 6%	10,73
			TOTAL PARTIDA.....	189,51
595	P6VC.150.16	ud Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada.	Mano de obra	97,50
			Maquinaria	5,25
			Resto de obra y materiales.....	217,04
			Suma la partida	319,79
			Costes indirectos 6%	19,19
			TOTAL PARTIDA.....	338,98
596	P6VC.200.16	ud Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 200 mm, instalada.	Mano de obra	97,50
			Maquinaria	5,25
			Resto de obra y materiales.....	520,71
			Suma la partida	623,46
			Costes indirectos 6%	37,41
			TOTAL PARTIDA.....	660,87
597	P6VC300.16	ud Válvula de compuerta con lenteja de asiento elástico, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 300 mm instalada.	Mano de obra	97,50
			Maquinaria	5,25
			Resto de obra y materiales.....	706,91
			Suma la partida	809,66
			Costes indirectos 6%	48,58
			TOTAL PARTIDA.....	858,24
598	P6VC400.16	ud Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 400 mm, instalada.	Mano de obra	97,50
			Maquinaria	5,25
			Resto de obra y materiales.....	778,89
			Suma la partida	881,64
			Costes indirectos 6%	52,90
			TOTAL PARTIDA.....	934,54
599	P6VD.150.25	ud Válvula dilatadora y compensadora de goma de DN 150 PN25. Unidad totalmente instalada.	Mano de obra	97,50
			Maquinaria	5,25

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Resto de obra y materiales.....	150,00
			Suma la partida	252,75
			Costes indirectos 6%	15,17
			TOTAL PARTIDA.....	267,92
600	P6VD.200.25	ud	Válvula dilatadora y compensadora de goma de DN 200 PN25. Unidad totalmente instalada.	
			Mano de obra	97,50
			Maquinaria	5,25
			Resto de obra y materiales.....	200,00
			Suma la partida	302,75
			Costes indirectos 6%	18,17
			TOTAL PARTIDA.....	320,92
601	P6VD.250.25	ud	Válvula dilatadora y compensadora de goma de DN 250 PN25. Unidad totalmente instalada.	
			Mano de obra	97,50
			Maquinaria	5,25
			Resto de obra y materiales.....	320,00
			Suma la partida	422,75
			Costes indirectos 6%	25,37
			TOTAL PARTIDA.....	448,12
602	P6VD.300.25	ud	Válvula dilatadora y compensadora de goma de DN 300 PN25. Unidad totalmente instalada.	
			Mano de obra	97,50
			Maquinaria	5,25
			Resto de obra y materiales.....	430,00
			Suma la partida	532,75
			Costes indirectos 6%	31,97
			TOTAL PARTIDA.....	564,72
603	P6VD.500.25	ud	Compensador de dilatación de goma de DN 300 PN25 em- bridado en extremos. Unidad totalmente instalada.	
			Mano de obra	97,50
			Maquinaria	5,25
			Resto de obra y materiales.....	680,00
			Suma la partida	782,75
			Costes indirectos 6%	46,97
			TOTAL PARTIDA.....	829,72
604	P6VENT.025.16	ud	Suministro e instalación de ventosa trifuncional, DN 25 mm PN16 con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica in- cluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	
			Mano de obra	52,79
			Resto de obra y materiales.....	124,40
			Suma la partida	177,19
			Costes indirectos 6%	10,63
			TOTAL PARTIDA.....	187,82
605	P6VENT.050.16	ud	Suministro e instalación de ventosa trifuncional, DN 50 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica in- cluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	
			Mano de obra	52,79
			Resto de obra y materiales.....	163,92

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Suma la partida	216,71
			Costes indirectos 6%	13,00
			TOTAL PARTIDA.....	229,71
606	P6VENT.080.16	ud	Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	
			Mano de obra	39,73
			Resto de obra y materiales.....	335,17
			Suma la partida	374,90
			Costes indirectos 6%	22,49
			TOTAL PARTIDA.....	397,39
607	P6VENT.150.16	ud	Suministro e instalación de ventosa trifuncional, DN 150 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	
			Mano de obra	91,99
			Maquinaria	26,27
			Resto de obra y materiales.....	893,01
			Suma la partida	1.011,27
			Costes indirectos 6%	60,68
			TOTAL PARTIDA.....	1.071,95
608	P6VENT.200.16	ud	Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	
			Mano de obra	91,99
			Maquinaria	26,27
			Resto de obra y materiales.....	2.900,07
			Suma la partida	3.018,33
			Costes indirectos 6%	181,10
			TOTAL PARTIDA.....	3.199,43
609	P6VENT.200.25	ud	Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	
			Mano de obra	91,99
			Maquinaria	26,27
			Resto de obra y materiales.....	3.279,00
			Suma la partida	3.397,26
			Costes indirectos 6%	203,84
			TOTAL PARTIDA.....	3.601,10

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
610	P6VENT.250.16	ud Suministro e instalación de ventosa trifuncional, DN 250 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	<table><tr><td>Mano de obra</td><td>91,99</td></tr><tr><td>Maquinaria</td><td>26,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>4.301,07</td></tr><tr><td>Suma la partida</td><td>4.419,33</td></tr><tr><td>Costes indirectos 6%</td><td>265,16</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4.684,49</td></tr></table>	Mano de obra	91,99	Maquinaria	26,27	Resto de obra y materiales.....	4.301,07	Suma la partida	4.419,33	Costes indirectos 6%	265,16	TOTAL PARTIDA.....	4.684,49
Mano de obra	91,99														
Maquinaria	26,27														
Resto de obra y materiales.....	4.301,07														
Suma la partida	4.419,33														
Costes indirectos 6%	265,16														
TOTAL PARTIDA.....	4.684,49														
611	P6VM.1000.16M	ud Válvula de mariposa, DN 1000 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>117,00</td></tr><tr><td>Maquinaria</td><td>47,29</td></tr><tr><td>Resto de obra y materiales.....</td><td>25.857,93</td></tr><tr><td>Suma la partida</td><td>26.022,22</td></tr><tr><td>Costes indirectos 6%</td><td>1.561,33</td></tr><tr><td>TOTAL PARTIDA.....</td><td>27.583,55</td></tr></table>	Mano de obra	117,00	Maquinaria	47,29	Resto de obra y materiales.....	25.857,93	Suma la partida	26.022,22	Costes indirectos 6%	1.561,33	TOTAL PARTIDA.....	27.583,55
Mano de obra	117,00														
Maquinaria	47,29														
Resto de obra y materiales.....	25.857,93														
Suma la partida	26.022,22														
Costes indirectos 6%	1.561,33														
TOTAL PARTIDA.....	27.583,55														
612	P6VM.1000.25M	ud Válvula de mariposa, DN 1000 mm, PN 25, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>117,00</td></tr><tr><td>Maquinaria</td><td>47,29</td></tr><tr><td>Resto de obra y materiales.....</td><td>33.479,93</td></tr><tr><td>Suma la partida</td><td>33.644,22</td></tr><tr><td>Costes indirectos 6%</td><td>2.018,65</td></tr><tr><td>TOTAL PARTIDA.....</td><td>35.662,87</td></tr></table>	Mano de obra	117,00	Maquinaria	47,29	Resto de obra y materiales.....	33.479,93	Suma la partida	33.644,22	Costes indirectos 6%	2.018,65	TOTAL PARTIDA.....	35.662,87
Mano de obra	117,00														
Maquinaria	47,29														
Resto de obra y materiales.....	33.479,93														
Suma la partida	33.644,22														
Costes indirectos 6%	2.018,65														
TOTAL PARTIDA.....	35.662,87														
613	P6VM.1100.16M	ud Válvula de mariposa, DN 1100 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>117,00</td></tr><tr><td>Maquinaria</td><td>47,29</td></tr><tr><td>Resto de obra y materiales.....</td><td>29.668,93</td></tr><tr><td>Suma la partida</td><td>29.833,22</td></tr><tr><td>Costes indirectos 6%</td><td>1.789,99</td></tr><tr><td>TOTAL PARTIDA.....</td><td>31.623,21</td></tr></table>	Mano de obra	117,00	Maquinaria	47,29	Resto de obra y materiales.....	29.668,93	Suma la partida	29.833,22	Costes indirectos 6%	1.789,99	TOTAL PARTIDA.....	31.623,21
Mano de obra	117,00														
Maquinaria	47,29														
Resto de obra y materiales.....	29.668,93														
Suma la partida	29.833,22														
Costes indirectos 6%	1.789,99														
TOTAL PARTIDA.....	31.623,21														
614	P6VM.1300.16M	ud Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	<table><tr><td>Mano de obra</td><td>117,00</td></tr><tr><td>Maquinaria</td><td>47,29</td></tr><tr><td>Resto de obra y materiales.....</td><td>37.496,93</td></tr><tr><td>Suma la partida</td><td>37.661,22</td></tr><tr><td>Costes indirectos 6%</td><td>2.259,67</td></tr></table>	Mano de obra	117,00	Maquinaria	47,29	Resto de obra y materiales.....	37.496,93	Suma la partida	37.661,22	Costes indirectos 6%	2.259,67		
Mano de obra	117,00														
Maquinaria	47,29														
Resto de obra y materiales.....	37.496,93														
Suma la partida	37.661,22														
Costes indirectos 6%	2.259,67														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				39.920,89
615	P6VM.1500.16M	ud	Válvula de mariposa, DN 1500 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				45.324,93
Suma la partida				45.489,22
Costes indirectos 6%				2.729,35
TOTAL PARTIDA.....				48.218,57
616	P6VM.1600.16M	ud	Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				49.547,93
Suma la partida				49.712,22
Costes indirectos 6%				2.982,73
TOTAL PARTIDA.....				52.694,95
617	P6VM.1800.16M	ud	Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				58.756,13
Suma la partida				58.920,42
Costes indirectos 6%				3.535,23
TOTAL PARTIDA.....				62.455,65
618	P6VM.1800.25M	ud	Válvula de mariposa, DN 1800 mm, PN 25, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				73.443,93
Suma la partida				73.608,22
Costes indirectos 6%				4.416,49
TOTAL PARTIDA.....				78.024,71
619	P6VM.1900.16M	ud	Válvula de mariposa, DN 1900 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				63.617,73
Suma la partida				63.782,02
Costes indirectos 6%				3.826,92

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				67.608,94
620	P6VM.200.16	ud	Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	
Mano de obra				97,50
Maquinaria				5,25
Resto de obra y materiales.....				569,82
Suma la partida				672,57
Costes indirectos 6%				40,35
TOTAL PARTIDA.....				712,92
621	P6VM.200.25	ud	Válvula de mariposa, DN 200 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	
Mano de obra				97,50
Maquinaria				5,25
Resto de obra y materiales.....				800,38
Suma la partida				903,13
Costes indirectos 6%				54,19
TOTAL PARTIDA.....				957,32
622	P6VM.2200.16M	ud	Válvula de mariposa, DN 2200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				75.689,33
Suma la partida				75.853,62
Costes indirectos 6%				4.551,22
TOTAL PARTIDA.....				80.404,84
623	P6VM.250.16	ud	Válvula de mariposa, DN 250 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	
Mano de obra				97,50
Maquinaria				5,25
Resto de obra y materiales.....				716,87
Suma la partida				819,62
Costes indirectos 6%				49,18
TOTAL PARTIDA.....				868,80
624	P6VM.250.25	ud	Válvula de mariposa, DN 250 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	
Mano de obra				97,50
Maquinaria				5,25
Resto de obra y materiales.....				948,94
Suma la partida				1.051,69
Costes indirectos 6%				63,10

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				1.114,79
625	P6VM.300.16	ud	Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	
Mano de obra				97,50
Maquinaria				5,25
Resto de obra y materiales.....				1.162,90
Suma la partida				1.265,65
Costes indirectos 6%				75,94
TOTAL PARTIDA.....				1.341,59
626	P6VM.300.25	ud	Válvula de mariposa, DN 300 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	
Mano de obra				97,50
Maquinaria				5,25
Resto de obra y materiales.....				1.599,42
Suma la partida				1.702,17
Costes indirectos 6%				102,13
TOTAL PARTIDA.....				1.804,30
627	P6VM.500.25	ud	Válvula de mariposa, DN 500 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	
Mano de obra				97,50
Maquinaria				5,25
Resto de obra y materiales.....				3.018,65
Suma la partida				3.121,40
Costes indirectos 6%				187,28
TOTAL PARTIDA.....				3.308,68
628	P6VM.700.16M	ud	Válvula de mariposa, DN 700 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				10.469,73
Suma la partida				10.634,02
Costes indirectos 6%				638,04
TOTAL PARTIDA.....				11.272,06
629	P6VM.900.16M	ud	Válvula de mariposa, DN 900 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				14.733,93
Suma la partida				14.898,22
Costes indirectos 6%				893,89

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				15.792,11
630	P6VO.200.25	ud	Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				6.493,93
Suma la partida				6.658,22
Costes indirectos 6%				399,49
TOTAL PARTIDA.....				7.057,71
631	P6VO.250.25	ud	Válvula de regulación de globo, de paso recto de 250 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				8.450,93
Suma la partida				8.615,22
Costes indirectos 6%				516,91
TOTAL PARTIDA.....				9.132,13
632	P6VO.300.25	ud	Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				12.567,84
Suma la partida				12.732,13
Costes indirectos 6%				763,93
TOTAL PARTIDA.....				13.496,06
633	P6VO.500.25	ud	Válvula de regulación de globo, de paso recto de 500 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				32.964,93
Suma la partida				33.129,22
Costes indirectos 6%				1.987,75
TOTAL PARTIDA.....				35.116,97
634	P6VP.250.25	ud	Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación , incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	
Mano de obra				117,00
Maquinaria				47,29
Resto de obra y materiales.....				12.958,79
Suma la partida				13.123,08
Costes indirectos 6%				787,38
TOTAL PARTIDA.....				13.910,46
635	P6VP.400.25	ud	Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación , incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	
Mano de obra				117,00
Maquinaria				47,29

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Resto de obra y materiales.....	25.048,75
		Suma la partida	25.213,04
		Costes indirectos 6%	1.512,78
		TOTAL PARTIDA.....	26.725,82
636	P6VREG750	ud Válvula de control de operación hidráulica (no eléctrica) y accionada por diafragma modelo WW-30"-M5L-753-66-55-18-G-C-16-EV-NN-JU o similar, DN750 (30") PN16, limitadora de caudal dinámica con doble solenoide de circuito de 3 vías (sin pérdida de carga adicional a la válvula (no orifico calibrado) especialmente diseñada para limitar un caudal dinámica, independientemente de las variaciones de la presión de entrada con solenoide extra para cambio a circuito hidráulico mantenedor de presión y control de nivel de balsa por piloto de altitud.Incluso actuador	
		Mano de obra	117,00
		Maquinaria	47,29
		Resto de obra y materiales.....	123.604,93
		Suma la partida	123.769,22
		Costes indirectos 6%	7.426,15
		TOTAL PARTIDA.....	131.195,37
637	P71COMSAHI1	ud Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.	
		Mano de obra	2,12
		Resto de obra y materiales.....	455,22
		Suma la partida	457,34
		Costes indirectos 6%	27,44
		TOTAL PARTIDA.....	484,78
638	P71COMSAHI2	ud Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y bypass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación: 1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min 1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para bypass manual del SAI 1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos 1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI 1.00 Protección Magnetotérmica II 10A 6kA. Protección forma de enchufe e instrumentación 4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación. Totalmente instalado, conexionado y funcionando. Unidad totalmente instalada	
		Mano de obra	39,15
		Resto de obra y materiales.....	1.650,00
		Suma la partida	1.689,15
		Costes indirectos 6%	101,35
		TOTAL PARTIDA.....	1.790,50

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
639	P73COMFORMA	ud Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la ·1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.	
		Mano de obra	1.501,20
		Resto de obra y materiales.....	225,18
		Suma la partida	1.726,38
		Costes indirectos 6%	103,58
		TOTAL PARTIDA.....	1.829,96
640	P73COMPUESTA1ud	Control de Calidad de señales y Pruebas Funcionales de la instalación del tramo CN-T12 incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	
		Mano de obra	2.502,00
		Resto de obra y materiales.....	375,30
		Suma la partida	2.877,30
		Costes indirectos 6%	172,64
		TOTAL PARTIDA.....	3.049,94
641	P73COMPUESTA2ud	Control de Calidad de señales y Pruebas Funcionales de la instalación del tramo T12-DC, incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	
		Mano de obra	3.502,80

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Resto de obra y materiales.....	525,42
		Suma la partida	4.028,22
		Costes indirectos 6%	241,69
		TOTAL PARTIDA.....	4.269,91
642	P73COMPUESTA3ud	Control de Calidad de señales y Pruebas Funcionales de la instalación de la Balsa Tudela incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	
		Mano de obra	4.003,20
		Resto de obra y materiales.....	600,48
		Suma la partida	4.603,68
		Costes indirectos 6%	276,22
		TOTAL PARTIDA.....	4.879,90
643	P73COMSCADA1 ud	Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	
		Mano de obra	6.004,80
		Resto de obra y materiales.....	259,53
		Suma la partida	6.264,33
		Costes indirectos 6%	375,86
		TOTAL PARTIDA.....	6.640,19
644	P73COMSCADA2 ud	Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	
		Mano de obra	6.004,80
		Resto de obra y materiales.....	259,53
		Suma la partida	6.264,33
		Costes indirectos 6%	375,86
		TOTAL PARTIDA.....	6.640,19
645	P73COMSCADA3 ud	Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	
		Mano de obra	6.004,80
		Resto de obra y materiales.....	259,53
		Suma la partida	6.264,33
		Costes indirectos 6%	375,86
		TOTAL PARTIDA.....	6.640,19

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
646	P73COMSCADA3E	ud	Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	
			Mano de obra	7.506,00
			Resto de obra y materiales.....	259,53
			Suma la partida	7.765,53
			Costes indirectos 6%	465,93
			TOTAL PARTIDA.....	8.231,46
647	P7COMARM01	ud	Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de autómatas y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de caldeo y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc,..., incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexiados y probados.	
			Mano de obra	130,65
			Resto de obra y materiales.....	2.969,98
			Suma la partida	3.100,63
			Costes indirectos 6%	186,04
			TOTAL PARTIDA.....	3.286,67
648	P7COMCABL1	m	Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antirroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.	
			Mano de obra	7,83
			Resto de obra y materiales.....	6,20
			Suma la partida	14,03
			Costes indirectos 6%	0,84
			TOTAL PARTIDA.....	14,87
649	P7COMCABL1B	m	Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua, elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antirroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro. Según EN 60794. Incluidas cajas de empalme para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.	
			Mano de obra	7,83
			Resto de obra y materiales.....	4,68
			Suma la partida	12,51
			Costes indirectos 6%	0,75
			TOTAL PARTIDA.....	13,26
650	P7COMCABL2	m	Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (Rj45), tendido y conectorizado. Unidad totalmente instalada.	
			Mano de obra	0,78
			Resto de obra y materiales.....	2,37
			Suma la partida	3,15
			Costes indirectos 6%	0,19
			TOTAL PARTIDA.....	3,34

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
651	P7COMCCTV1	Ud Hardware para gestión y control de CCTV en centro de control compuesto por : Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 píxeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.	
		Mano de obra	39,15
		Resto de obra y materiales.....	716,19
		Suma la partida	755,34
		Costes indirectos 6%	45,32
		TOTAL PARTIDA.....	800,66
652	P7COMCCTV12	ud Ud. báculo de 8 m. de altura troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje;anclaje a dado de hormigón , puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión , tubo de unión,incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3 , operaciones de excavacion y rellenos.	
		Mano de obra	258,50
		Maquinaria	35,53
		Resto de obra y materiales.....	405,89
		Suma la partida	699,92
		Costes indirectos 6%	42,00
		TOTAL PARTIDA.....	741,92
653	P7COMCCTV2	ud Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player,"Site builder",e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCADA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.	
		Mano de obra	117,45
		Resto de obra y materiales.....	4.250,00
		Suma la partida	4.367,45
		Costes indirectos 6%	262,05
		TOTAL PARTIDA.....	4.629,50
654	P7COMCCTV3	ud Servicios de instalación , configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores).	
		Mano de obra	234,90
		Resto de obra y materiales.....	511,55
		Suma la partida	746,45
		Costes indirectos 6%	44,79
		TOTAL PARTIDA.....	791,24
655	P7COMCCTV4	ud Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8TeraBytes. Unidad totalmente instalada y probada.	

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Mano de obra	117,45
			Resto de obra y materiales.....	2.696,44
			Suma la partida	2.813,89
			Costes indirectos 6%	168,83
			TOTAL PARTIDA.....	2.982,72
656	P7COMCCTV5	ud	Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcasas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenesde máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Vídeo, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad:Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.	
			Mano de obra	130,00
			Maquinaria	12,97
			Resto de obra y materiales.....	543,44
			Suma la partida	686,41
			Costes indirectos 6%	41,18
			TOTAL PARTIDA.....	727,59
657	P7COMCCTV6	m	Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2 , repetidor de señal cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexionado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.	
			Mano de obra	4,80
			Resto de obra y materiales.....	2,85
			Suma la partida	7,65
			Costes indirectos 6%	0,46
			TOTAL PARTIDA.....	8,11
658	P7COMCCTV8	ud	Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias.	
			Mano de obra	469,80
			Resto de obra y materiales.....	272,75
			Suma la partida	742,55
			Costes indirectos 6%	44,55
			TOTAL PARTIDA.....	787,10
659	P7COMCCTV9	ud	Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30.Switch gestionable para la red de vídeo y seguridad de divesos elementos.	
			Mano de obra	78,30
			Resto de obra y materiales.....	463,28
			Suma la partida	541,58
			Costes indirectos 6%	32,49

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			574,07
660	P7COMNODO1	ud Ud Suministro e instalación equipo de comunicaciones bidi-reccional compuesto de alimentación autónomo de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y modem de comunicaciones , armario IP65, armario mural de 19", 12 U y 600 mm de profundidad. , RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C), 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°C A 80°C contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica),electrificación cuadro(magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.	
Mano de obra			391,50
Resto de obra y materiales.....			3.205,44
Suma la partida			3.596,94
Costes indirectos 6%			215,82
TOTAL PARTIDA.....			3.812,76
661	P7COMNODO2	ud Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio modem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.	
Mano de obra			391,50
Resto de obra y materiales.....			2.322,79
Suma la partida			2.714,29
Costes indirectos 6%			162,86
TOTAL PARTIDA.....			2.877,15
662	P7COMP001	ud Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.	
Resto de obra y materiales.....			134,75
Suma la partida			134,75
Costes indirectos 6%			8,09
TOTAL PARTIDA.....			142,84

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
663	P7COMP002	ud Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); doubles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.	
		Resto de obra y materiales.....	338,91
		Suma la partida	338,91
		Costes indirectos 6%	20,33
		TOTAL PARTIDA.....	359,24
664	P7COMP003	ud Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&-TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.	
		Resto de obra y materiales.....	267,90
		Suma la partida	267,90
		Costes indirectos 6%	16,07
		TOTAL PARTIDA.....	283,97
665	P7COMP004	ud Suministro e instalación de CPU para autómatas programables con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 61131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.	
		Resto de obra y materiales.....	4.322,83
		Suma la partida	4.322,83
		Costes indirectos 6%	259,37
		TOTAL PARTIDA.....	4.582,20
666	P7COMP005	ud Suministro de bastidor para autómatas de 10 slots, tipo 1756-A10 de Allen Bradley o similar.	
		Resto de obra y materiales.....	329,39
		Suma la partida	329,39
		Costes indirectos 6%	19,76
		TOTAL PARTIDA.....	349,15
667	P7COMP006	ud Suministro e instalación de fuente de alimentación para autómatas programables para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar	
		Resto de obra y materiales.....	326,61
		Suma la partida	326,61
		Costes indirectos 6%	19,60
		TOTAL PARTIDA.....	346,21
668	P7COMP011	ud Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autómatas formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según referencias (V8 INPUT PLC V8/FLK14/IN - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	
		Resto de obra y materiales.....	598,43
		Suma la partida	598,43
		Costes indirectos 6%	35,91
		TOTAL PARTIDA.....	634,34

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
669	P7COMP012	ud Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, según referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	<div>Resto de obra y materiales.....670,53</div> <div>Suma la partida670,53</div> <div>Costes indirectos6%40,23</div> <div>TOTAL PARTIDA.....710,76</div>
670	P7COMP013	ud Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC - FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	<div>Resto de obra y materiales.....471,74</div> <div>Suma la partida471,74</div> <div>Costes indirectos6%28,30</div> <div>TOTAL PARTIDA.....500,04</div>
671	P7COMP014	ud Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC - FLK14/EZ-DR/300/CONFEC (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	<div>Resto de obra y materiales.....442,90</div> <div>Suma la partida442,90</div> <div>Costes indirectos6%26,57</div> <div>TOTAL PARTIDA.....469,47</div>
672	P7COMP015	ud Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.	<div>Resto de obra y materiales.....1.252,24</div> <div>Suma la partida1.252,24</div> <div>Costes indirectos6%75,13</div> <div>TOTAL PARTIDA.....1.327,37</div>
673	P7COMP016	ud Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.	<div>Resto de obra y materiales.....1.674,36</div> <div>Suma la partida1.674,36</div> <div>Costes indirectos6%100,46</div> <div>TOTAL PARTIDA.....1.774,82</div>
674	P7COMP017	ud Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.	<div>Resto de obra y materiales.....1.763,85</div>

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
				Suma la partida 1.763,85
				Costes indirectos 6% 105,83
				TOTAL PARTIDA..... 1.869,68
675	P7COMP018	ud	Suministro y montaje de pasarela de comunicaciones PO-WERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexionada.	
				Resto de obra y materiales..... 567,27
				Suma la partida 567,27
				Costes indirectos 6% 34,04
				TOTAL PARTIDA..... 601,31
676	P7COMP022	ud	Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.	
				Resto de obra y materiales..... 140,62
				Suma la partida 140,62
				Costes indirectos 6% 8,44
				TOTAL PARTIDA..... 149,06
677	P7COMPLC01	ud	PLC centralizador de todos los sistemas (Ed:64 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómatas, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje	
				Resto de obra y materiales..... 2.972,89
				Suma la partida 2.972,89
				Costes indirectos 6% 178,37
				TOTAL PARTIDA..... 3.151,26
678	P7COMPLC01EP	ud	PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómatas, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.	
				Resto de obra y materiales..... 15.572,18
				Suma la partida 15.572,18
				Costes indirectos 6% 934,33
				TOTAL PARTIDA..... 16.506,51
679	P7COMPLC02	ud	PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómatas, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje	
				Resto de obra y materiales..... 4.516,51
				Suma la partida 4.516,51
				Costes indirectos 6% 270,99
				TOTAL PARTIDA..... 4.787,50
680	P7COMPLC1B	ud	Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión.	
				Mano de obra 587,25

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Resto de obra y materiales.....	1.982,23
		Suma la partida	2.569,48
		Costes indirectos 6%	154,17
		TOTAL PARTIDA.....	2.723,65
681	P7COMPLC1C	ud Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado numérico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instalación y conexionado de unidad; Configuración Remota, Pruebas y Puesta en Servicio.	
		Mano de obra	313,20
		Resto de obra y materiales.....	94,38
		Suma la partida	407,58
		Costes indirectos 6%	24,45
		TOTAL PARTIDA.....	432,03
682	P7COMPLCT12	ud PLC centralizador de todos los sistemas (ED:96 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómatas, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.	
		Resto de obra y materiales.....	4.212,91
		Suma la partida	4.212,91
		Costes indirectos 6%	252,77
		TOTAL PARTIDA.....	4.465,68
683	P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100Base-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.	
		Mano de obra	156,60
		Resto de obra y materiales.....	2.095,61
		Suma la partida	2.252,21
		Costes indirectos 6%	135,13
		TOTAL PARTIDA.....	2.387,34
684	P7COMSEG1	ud Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS , incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expensor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.	
		Mano de obra	63,72
		Resto de obra y materiales.....	3.217,03
		Suma la partida	3.280,75
		Costes indirectos 6%	196,85
		TOTAL PARTIDA.....	3.477,60
685	P7GQIN0A39	ud Ampliación del Programa de presas con los módulos de aplicaciones gráficas con dibujos de la presa y sensores y el módulo de generación de informes numéricos y gráficos con los valores de auscultación recogidos, todo instalado y comprobado en el ordenador de la presa.	
		Mano de obra	3.400,20

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Suma la partida	3.400,20
			Costes indirectos 6%	204,01
			TOTAL PARTIDA.....	3.604,21
686	P7ING001	ud	Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	
			Mano de obra	4.003,20
			Suma la partida	4.003,20
			Costes indirectos 6%	240,19
			TOTAL PARTIDA.....	4.243,39
687	P7ING002	ud	Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	
			Mano de obra	7.005,60
			Suma la partida	7.005,60
			Costes indirectos 6%	420,34
			TOTAL PARTIDA.....	7.425,94
688	P7ING003	ud	Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	
			Mano de obra	9.007,20
			Suma la partida	9.007,20
			Costes indirectos 6%	540,43
			TOTAL PARTIDA.....	9.547,63
689	P7ING003EP1	ud	Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	
			Mano de obra	10.008,00
			Suma la partida	10.008,00
			Costes indirectos 6%	600,48
			TOTAL PARTIDA.....	10.608,48

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
690	P90VAR4	ud	Difusión y comunicación de las obras del tramo consistente en : a)-Emisión de 2 anuncios en periódico de gran tirada, b)-2 anuncios publicitarios en medio de radiodifusión , c)-edición de 200 folletos explicativos tipo tríptico de alta calidad, d)-desarrollo de WEB informativa y de seguimiento de las obras con el volcado informativo del avance de obra, estado f)-Reportaje fotográfico de evolución de obra g)-CD video divulgativo h)-Presentación y actos varios i)-Monolito actuación	
			Resto de obra y materiales.....	27.320,00
			Suma la partida	27.320,00
			Costes indirectos 6%	1.639,20
			TOTAL PARTIDA.....	28.959,20
691	P9VAR1	ud	Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	
			Resto de obra y materiales.....	2.610,80
			Suma la partida	2.610,80
			Costes indirectos 6%	156,65
			TOTAL PARTIDA.....	2.767,45
692	PACCAR-01_E	kg	Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.	
			Mano de obra	0,73
			Maquinaria	0,18
			Resto de obra y materiales.....	3,71
			Suma la partida	4,62
			Costes indirectos 6%	0,28
			TOTAL PARTIDA.....	4,90
693	PACCEBA	ud	Conjunto accesorios baño, compuesto de portarrollos, jabonera, toallero y agarradera en color, incluso instalación.	
			Mano de obra	39,20
			Resto de obra y materiales.....	124,16
			Suma la partida	163,36
			Costes indirectos 6%	9,80
			TOTAL PARTIDA.....	173,16
694	PACOMTEF	ud	Acometida de Telefonía.	
			Mano de obra	78,39
			Resto de obra y materiales.....	451,63
			Suma la partida	530,02
			Costes indirectos 6%	31,80
			TOTAL PARTIDA.....	561,82
695	PALP1026	m	Alfeizar de piedra artificial, de color blanco, de 30x5 cm, recibido con mortero M-250 de cemento CEM-I/32,5 ó BLL 22,5 con goterón, incluso pulido y abrillantado.	
			Mano de obra	6,76
			Maquinaria	0,02
			Resto de obra y materiales.....	20,73
			Suma la partida	27,51
			Costes indirectos 6%	1,65
			TOTAL PARTIDA.....	29,16

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
696	PAPANT04	m	Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.	
			Mano de obra	14,21
			Maquinaria	27,10
			Resto de obra y materiales.....	59,38
			Suma la partida	100,69
			Costes indirectos 6%	6,04
			TOTAL PARTIDA.....	106,73
697	PASEÑACC	ud	Señalización de accesos y advertencias de seguridad, etc.	
			Mano de obra	424,80
			Resto de obra y materiales.....	3.800,00
			Suma la partida	4.224,80
			Costes indirectos 6%	253,49
			TOTAL PARTIDA.....	4.478,29
698	PAZ1042	m²	Alicatado con azulejo blanco 15x15 cm de primera calidad, recibido con mortero (M-350), de cemento CEM-I/32,5, incluso rejuntado, limpieza, p.p. de piezas especiales, lechada de cemento blanco y medios auxiliares para su ejecución.	
			Mano de obra	21,53
			Maquinaria	0,29
			Resto de obra y materiales.....	12,60
			Suma la partida	34,42
			Costes indirectos 6%	2,07
			TOTAL PARTIDA.....	36,49
699	PBARR-06	ud	Barrera de seguridad rígida tipo New Jersey prefabricada de hormigón, de 2,00x0,80x0,60 m.	
			Mano de obra	1,65
			Maquinaria	1,50
			Resto de obra y materiales.....	123,59
			Suma la partida	126,74
			Costes indirectos 6%	7,60
			TOTAL PARTIDA.....	134,34
700	PBATU001	m³	Relleno localizado de material filtrante (grava 20-40) procedente de cantera, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	
			Mano de obra	0,28
			Maquinaria	4,11
			Resto de obra y materiales.....	6,71
			Suma la partida	11,10
			Costes indirectos 6%	0,67
			TOTAL PARTIDA.....	11,77
701	PBATU003	m²	Repaso y compactado de explanada ejecutada, con medios mecánicos y compactación del 95 % PM. Incluye material de refino en caso de ser necesario.	
			Maquinaria	1,47
			Suma la partida	1,47
			Costes indirectos 6%	0,09
			TOTAL PARTIDA.....	1,56
702	PBOY01	m	Barrera protectora de boyas y cuerdas en zona de aliviadero	
			Resto de obra y materiales.....	20,96
			Suma la partida	20,96
			Costes indirectos 6%	1,26

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				22,22
703	PBPVC110	m	Bajante con tubería de PVC de 110 mm de diámetro, incluso p.p. de piezas especiales, elementos de fijación y medios auxiliares para su ejecución, según normativa vigente.	
Mano de obra				5,82
Resto de obra y materiales.....				6,31
Suma la partida				12,13
Costes indirectos 6%				0,73
TOTAL PARTIDA.....				12,86
704	PCAN1022	m	Canalón de acero galvanizado, de desarrollo 250 mm, para recogida de aguas, formado por piezas preformadas, fijadas con soportes colocados cada 50 cm, con una pendiente mínima del 0,5%. Incluso soportes, esquinas, tapas, remates finales, piezas de conexión a bajantes y piezas especiales.	
Mano de obra				10,06
Resto de obra y materiales.....				19,60
Suma la partida				29,66
Costes indirectos 6%				1,78
TOTAL PARTIDA.....				31,44
705	PCANDRE	m	Canaleta para recogida de agua en galería.	
Mano de obra				0,03
Resto de obra y materiales.....				14,30
Suma la partida				14,33
Costes indirectos 6%				0,86
TOTAL PARTIDA.....				15,19
706	PCAPIN1046	m²	Carpintería de madera en interiores para barnizar en puertas, incluso herrajes de colgar y seguridad, recibido en fábrica. Totalmente terminada.	
Mano de obra				10,06
Resto de obra y materiales.....				121,43
Suma la partida				131,49
Costes indirectos 6%				7,89
TOTAL PARTIDA.....				139,38
707	PCAPMET	m²	Carpintería metálica con perfiles de acero conformado en frío, en ventanas o puertas abatibles, ejecutada con perfiles de tubo hueco de acero laminado en frío, esmaltados al horno, de 1,5 mm ó 2 mm de espesor, junquillos de 30x15 mm, con bulones a presión, perfil vierteaguas, herrajes de colgar y seguridad, patillas para anclaje i/corte, preparación y soldadura de perfiles en taller, ajuste y montaje en obra, i/ vidrio, recibido en obra.	
Mano de obra				15,09
Resto de obra y materiales.....				212,00
Suma la partida				227,09
Costes indirectos 6%				13,63
TOTAL PARTIDA.....				240,72
708	PCARG3	m	Cargadero para huecos de hasta 3 m de luz formado por viguetas prefabricadas de hormigón armado de 20 cm de canto, incluso recibido y colocación totalmente terminado.	
Mano de obra				9,92
Maquinaria				0,02
Resto de obra y materiales.....				6,65
Suma la partida				16,59
Costes indirectos 6%				1,00
TOTAL PARTIDA.....				17,59

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
709	PCARMATAL	m² Carpintería metálica de aluminio anodizado mate, en ventanas o puertas practicables, para acristalar, compuesta por cerco, hojas y herrajes de colgar y seguridad, recibido en fábrica, instalada sobre precerco de aluminio, sellado de juntas y limpieza, pintura. Totalmente instalada. p.p. de medios auxiliares. s/NTE-FCL-3.	
		Mano de obra	19,11
		Resto de obra y materiales.....	379,00
		Suma la partida	398,11
		Costes indirectos 6%	23,89
		TOTAL PARTIDA.....	422,00
710	PCOMO001	ud Compuerta mural 2250x2600, para 10 mca y diseño unidireccional de accionamiento eléctrico, incluyendo actuador, deslizaderas, sellado en cuatro lados, husillo ascendente, caperuza de plástico, totalmente montada en obra.	
		Mano de obra	260,00
		Maquinaria	105,08
		Resto de obra y materiales.....	44.702,65
		Suma la partida	45.067,73
		Costes indirectos 6%	2.704,06
		TOTAL PARTIDA.....	47.771,79
711	PCOMO002	ud Compuerta mural 350x400, para 10 mca y diseño unidireccional de accionamiento manual, incluyendo deslizaderas, sellado en cuatro lados, husillo ascendente, caperuza de plástico, totalmente montada en obra, instalado y probado.	
		Mano de obra	97,50
		Maquinaria	39,41
		Resto de obra y materiales.....	1.302,94
		Suma la partida	1.439,85
		Costes indirectos 6%	86,39
		TOTAL PARTIDA.....	1.526,24
712	PCOMO006	ud Compuerta mural 2750x3100, para 10 mca y diseño unidireccional de accionamiento eléctrico, incluyendo actuador, deslizaderas, sellado en cuatro lados, husillo ascendente, caperuza de plástico, totalmente montada en obra.	
		Mano de obra	344,50
		Maquinaria	188,73
		Resto de obra y materiales.....	68.186,55
		Suma la partida	68.719,78
		Costes indirectos 6%	4.123,19
		TOTAL PARTIDA.....	72.842,97
713	PCOMO010	m Embebidos metálicos en primera y segunda fase de hormigonado, en ranuras de elementos hidromecánicos, totalmente colocados.	
		Mano de obra	74,71
		Maquinaria	4,73
		Resto de obra y materiales.....	91,96
		Suma la partida	171,40
		Costes indirectos 6%	10,28
		TOTAL PARTIDA.....	181,68
714	PCOMO010A	m Embebidos metálicos en primera y segunda fase de hormigonado de obra de Picarana, en ranuras de elementos hidromecánicos, totalmente colocados.	
		Mano de obra	74,71
		Maquinaria	4,73
		Resto de obra y materiales.....	91,96
		Suma la partida	171,40
		Costes indirectos 6%	10,28
		TOTAL PARTIDA.....	181,68

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
715	PCUBPLAPOL	m² Suministro y montaje de placas translúcidas planas de policarbonato, con una pendiente mayor del 10%, PC Celular "ONDULINE" o similar, de 10 mm de espesor, con una transmisión de luminosidad del 90%, fijadas mecánicamente a cualquier tipo de correa estructural (no incluida en este precio). Incluso p/p de elementos de fijación, accesorios, juntas, remates perimetrales y otras piezas de remate para la resolución de puntos singulares.	<div>Mano de obra 7,11</div> <div>Maquinaria 11,55</div> <div>Resto de obra y materiales..... 15,47</div> <div>Suma la partida 34,13</div> <div>Costes indirectos 6% 2,05</div> <div>TOTAL PARTIDA..... 36,18</div>
716	PCUBSAND	m² Cubierta formada por panel de chapa de acero en perfil comercial, prelacada de 0,6 mm con núcleo de espuma de poliuretano de 40 kg/m3 con un espesor total de 30 mm sobre correas metálicas, i/p.p. de solapes, instalado, incluso medios auxiliares y elementos de seguridad, según normativa vigente.	<div>Mano de obra 9,48</div> <div>Maquinaria 15,41</div> <div>Resto de obra y materiales..... 50,97</div> <div>Suma la partida 75,86</div> <div>Costes indirectos 6% 4,55</div> <div>TOTAL PARTIDA..... 80,41</div>
717	PCUBTEJ	m² Cubierta de teja cerámica curva de 40x19 cm, incluso preparación de la superficie, mortero de agarre, medios auxiliares, y p.p. de piezas especiales, según normativa vigente.	<div>Mano de obra 30,61</div> <div>Maquinaria 0,02</div> <div>Resto de obra y materiales..... 13,34</div> <div>Suma la partida 43,97</div> <div>Costes indirectos 6% 2,64</div> <div>TOTAL PARTIDA..... 46,61</div>
718	PDOBACRAIS	m² Doble acristalamiento aislante formado por dos lunas incoloras de 4 mm y cámara de aire deshidratado de 6 mm con perfil separador de aluminio y doble sellado perimetral, fijación sobre carpintería e incluso cortes de vidrio y colocación de junquillos, según normativa vigente.	<div>Mano de obra 5,20</div> <div>Resto de obra y materiales..... 14,21</div> <div>Suma la partida 19,41</div> <div>Costes indirectos 6% 1,16</div> <div>TOTAL PARTIDA..... 20,57</div>
719	PDUC7070	ud Ducha completa de 70x70 cm de porcelana vitrificada color blanco, incluso grifería e instalación.	<div>Mano de obra 20,90</div> <div>Resto de obra y materiales..... 185,84</div> <div>Suma la partida 206,74</div> <div>Costes indirectos 6% 12,40</div> <div>TOTAL PARTIDA..... 219,14</div>
720	PELEILU	ud Instalación de electricidad e iluminación, totalmente terminada.	<div>Sin descomposición</div> <div>Resto de obra y materiales..... 9.500,00</div> <div>Suma la partida 9.500,00</div> <div>Costes indirectos 6% 570,00</div> <div>TOTAL PARTIDA..... 10.070,00</div>
721	PELESAI	ud SAI 10 KVA.	<div>Mano de obra 313,56</div>

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Resto de obra y materiales.....	3.023,44
		Suma la partida	3.337,00
		Costes indirectos 6%	200,22
		TOTAL PARTIDA.....	3.537,22
722	PEMB800	ud Embocadura de hormigón prefabricado con aletas de DN 800.	
		Mano de obra	7,62
		Maquinaria	9,42
		Resto de obra y materiales.....	753,20
		Suma la partida	770,24
		Costes indirectos 6%	46,21
		TOTAL PARTIDA.....	816,45
723	PENC1016	m² Encachado en caja para base de solera de 20 cm de espesor, mediante relleno y extendido en tongadas de espesor no superior a 20 cm de gravas procedentes de cantera caliza de 40/80 mm; y posterior compactación mediante equipo manual con bandeja vibrante, sobre la explanada homogénea y nivelada.	
		Mano de obra	4,25
		Maquinaria	0,72
		Resto de obra y materiales.....	3,74
		Suma la partida	8,71
		Costes indirectos 6%	0,52
		TOTAL PARTIDA.....	9,23
724	PENFPARV	m² Enfoscado maestreado en paramentos verticales con mortero M-350 de cemento CEM-I/32,5, incluso pañeado, acabado fratasado y medios auxiliares para su aplicación según normativa vigente.	
		Mano de obra	24,08
		Maquinaria	0,04
		Resto de obra y materiales.....	0,69
		Suma la partida	24,81
		Costes indirectos 6%	1,49
		TOTAL PARTIDA.....	26,30
725	PENLYESV	m² Enlucido de yeso en paramentos verticales con pasta de yeso Y-25 F, incluso limpieza, humedecido y medios auxiliares para su aplicación.	
		Mano de obra	4,33
		Resto de obra y materiales.....	0,11
		Suma la partida	4,44
		Costes indirectos 6%	0,27
		TOTAL PARTIDA.....	4,71
726	PENSLU001	ud Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de profundidad, incluidas obturaciones y apoyo técnico.	
		Resto de obra y materiales.....	235,10
		Suma la partida	235,10
		Costes indirectos 6%	14,11
		TOTAL PARTIDA.....	249,21
727	PEP1017	m² Fábrica de bloque hueco de hormigón estriado a cara vista, color blanco, dimensiones 40x20x20 cm, recibida con mortero M-250 de cemento BL 22,5 incluso rejuntado, limpieza de paños y piezas especiales, según normativa vigente.	
		Mano de obra	14,52
		Resto de obra y materiales.....	30,68
		Suma la partida	45,20
		Costes indirectos 6%	2,71
		TOTAL PARTIDA.....	47,91

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
728	PEP1020	m	Trasdosado de chapa mediante chapa plegada de acero, con acabado galvanizado, de 0,8 mm de espesor, colocado con fijaciones mecánicas. Incluso junta de estanqueidad.	
			Mano de obra	9,62
			Resto de obra y materiales.....	7,15
			Suma la partida	16,77
			Costes indirectos 6%	1,01
			TOTAL PARTIDA.....	17,78
729	PEP1021	m	Suministro y colocación de albardilla metálica para cubrición de muros, de chapa plegada de acero galvanizado, con goterón, espesor 0,8 mm, sobre una capa de regularización de mortero de cemento, industrial, con aditivo hidrófugo, M-5, de 4 cm de espesor, creando una pendiente suficiente para evacuar el agua, sobre la que se aplica el adhesivo bituminoso de aplicación en frío para chapas metálicas, que sirve de base al perfil de chapa de acero y sellado de las juntas entre piezas y, en su caso, de las uniones con los muros con adhesivo especial para metales. Incluso p/p de replanteo, cortes y limpieza final. Incluye: Preparación de la superficie de apoyo. Preparación de la base y de los medios de fijación. Ejecución de la base de apoyo de mortero. Replanteo de las piezas. Aplicación del adhesivo. Colocación y fijación de las piezas metálicas niveladas y aplomadas. Sellado de juntas y limpieza. Criterio de medición de proyecto: Longitud medida a ejes, según documentación gráfica de Proyecto. Criterio de medición de obra: Se medirá, a ejes, la longitud realmente ejecutada según especificaciones de Proyecto.	
			Mano de obra	12,02
			Resto de obra y materiales.....	12,52
			Suma la partida	24,54
			Costes indirectos 6%	1,47
			TOTAL PARTIDA.....	26,01
730	PEP1024	ud	Arqueta de registro de dimensiones interiores 50x50x60 cm, realizada con fábrica de ladrillo perforado tocoso de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón HM-20/P/40/I de 20 cm de espesor, enfoscada y bruñida interiormente, con cerco y tapa de hormigón prefabricada, totalmente terminada, incluso p.p. de medios auxiliares.	
			Mano de obra	75,79
			Maquinaria	0,03
			Resto de obra y materiales.....	30,35
			Suma la partida	106,17
			Costes indirectos 6%	6,37
			TOTAL PARTIDA.....	112,54
731	PEXTCO25	ud	Extintor de nieve carbónica CO2, de eficacia 89B, de 5 kg. de agente extintor, construido en acero, con soporte y manguera con difusor, según Norma UNE. Equipo con certificación AENOR, s. CTE.	
			Mano de obra	2,06
			Resto de obra y materiales.....	142,11
			Suma la partida	144,17
			Costes indirectos 6%	8,65
			TOTAL PARTIDA.....	152,82
732	PEXTPOLV6	ud	Extintor de polvo químico ABC polivalente antibrasa, de eficacia 34A/183B, de 6 kg. de agente extintor, con soporte, manómetro comprobable y manguera con difusor, según Norma UNE, certificado AENOR, s. CTE.	
			Mano de obra	10,28
			Resto de obra y materiales.....	54,64
			Suma la partida	64,92
			Costes indirectos 6%	3,90
			TOTAL PARTIDA.....	68,82

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
733	PFABLAD05P	m ² Fábrica de ladrillo perforado 24x11,5x7 cm, de 1/2 pie de espesor, recibido con mortero de cemento CEM II/B-P 32,5 N y arena tipo M-5, para revestir en alzados, conforme a norma UNE-EN 998-1 y/o según normativa vigente y medida deduciendo huecos superiores a 1 m2.	
		Mano de obra	23,12
		Resto de obra y materiales.....	7,52
		Suma la partida	30,64
		Costes indirectos 6%	1,84
		TOTAL PARTIDA.....	32,48
734	PFABLAD1P	m ² Fábrica de ladrillo cara vista 24x11,5x6,8 cm, de 1 pie de espesor, recibido con mortero de cemento CEM II/B-P 32,5 N y arena tipo M-5, para revestir en alzados, conforme a norma UNE-EN 998-1 y/o según normativa vigente y medida deduciendo huecos superiores a 1 m2.	
		Mano de obra	60,50
		Maquinaria	0,04
		Resto de obra y materiales.....	35,35
		Suma la partida	95,89
		Costes indirectos 6%	5,75
		TOTAL PARTIDA.....	101,64
735	PFILTMO001	ud Filtro de cadenas, adecuado para el tamizado de agua, para un caudal aproximado de 3.350 l/s, con luz de malla 1,5 mm de accionamiento eléctrico, totalmente instalado y probado.	
		Mano de obra	1.300,00
		Maquinaria	1.237,60
		Resto de obra y materiales.....	58.542,02
		Suma la partida	61.079,62
		Costes indirectos 6%	3.664,78
		TOTAL PARTIDA.....	64.744,40
736	PFILTMO002	ud Conjunto automatismo para el filtro de cadena, incluyendo armariode maniobre, detector de pérdida de carga y moto-bomba para agua de lavado, totalmente instalado.	
		Mano de obra	344,79
		Resto de obra y materiales.....	7.775,51
		Suma la partida	8.120,30
		Costes indirectos 6%	487,22
		TOTAL PARTIDA.....	8.607,52
737	PFORJ2555	m ² Forjado 25 + 5 cm. Formado por doble vigueta autorresistente de hormigón pretensado, separadas entre sí 60 cm, entrevigado de bloque de hormigón y capa de compresión de 5 cm., de hormigón HA 25/B/20/XC2, de Central, incluso armadura (4,50 Kg/m2), terminado (carga total 1.000 Kg/m2).	
		Mano de obra	22,63
		Resto de obra y materiales.....	44,26
		Suma la partida	66,89
		Costes indirectos 6%	4,01
		TOTAL PARTIDA.....	70,90

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
738	PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un encachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.	<table><tr><td>Mano de obra</td><td>288,09</td></tr><tr><td>Maquinaria</td><td>16,18</td></tr><tr><td>Resto de obra y materiales.....</td><td>2.060,00</td></tr><tr><td>Suma la partida</td><td>2.364,27</td></tr><tr><td>Costes indirectos 6%</td><td>141,86</td></tr><tr><td>TOTAL PARTIDA.....</td><td>2.506,13</td></tr></table>	Mano de obra	288,09	Maquinaria	16,18	Resto de obra y materiales.....	2.060,00	Suma la partida	2.364,27	Costes indirectos 6%	141,86	TOTAL PARTIDA.....	2.506,13
Mano de obra	288,09														
Maquinaria	16,18														
Resto de obra y materiales.....	2.060,00														
Suma la partida	2.364,27														
Costes indirectos 6%	141,86														
TOTAL PARTIDA.....	2.506,13														
739	PGESRES150A	ud Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.	<table><tr><td>Mano de obra</td><td>15.510,80</td></tr><tr><td>Maquinaria</td><td>11.000,70</td></tr><tr><td>Suma la partida</td><td>26.511,50</td></tr><tr><td>Costes indirectos 6%</td><td>1.590,69</td></tr><tr><td>TOTAL PARTIDA.....</td><td>28.102,19</td></tr></table>	Mano de obra	15.510,80	Maquinaria	11.000,70	Suma la partida	26.511,50	Costes indirectos 6%	1.590,69	TOTAL PARTIDA.....	28.102,19		
Mano de obra	15.510,80														
Maquinaria	11.000,70														
Suma la partida	26.511,50														
Costes indirectos 6%	1.590,69														
TOTAL PARTIDA.....	28.102,19														
740	PGESRES150B	ud Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC	<table><tr><td>Mano de obra</td><td>16.423,20</td></tr><tr><td>Maquinaria</td><td>11.647,80</td></tr><tr><td>Suma la partida</td><td>28.071,00</td></tr><tr><td>Costes indirectos 6%</td><td>1.684,26</td></tr><tr><td>TOTAL PARTIDA.....</td><td>29.755,26</td></tr></table>	Mano de obra	16.423,20	Maquinaria	11.647,80	Suma la partida	28.071,00	Costes indirectos 6%	1.684,26	TOTAL PARTIDA.....	29.755,26		
Mano de obra	16.423,20														
Maquinaria	11.647,80														
Suma la partida	28.071,00														
Costes indirectos 6%	1.684,26														
TOTAL PARTIDA.....	29.755,26														
741	PGESRES150C	ud Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15	<table><tr><td>Mano de obra</td><td>11.861,20</td></tr><tr><td>Maquinaria</td><td>8.412,30</td></tr><tr><td>Suma la partida</td><td>20.273,50</td></tr><tr><td>Costes indirectos 6%</td><td>1.216,41</td></tr><tr><td>TOTAL PARTIDA.....</td><td>21.489,91</td></tr></table>	Mano de obra	11.861,20	Maquinaria	8.412,30	Suma la partida	20.273,50	Costes indirectos 6%	1.216,41	TOTAL PARTIDA.....	21.489,91		
Mano de obra	11.861,20														
Maquinaria	8.412,30														
Suma la partida	20.273,50														
Costes indirectos 6%	1.216,41														
TOTAL PARTIDA.....	21.489,91														
742	PGESRES150D	ud Carga, transporte y deposición de residuos tipo II de naturaleza pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.	<table><tr><td>Mano de obra</td><td>13.229,80</td></tr><tr><td>Maquinaria</td><td>9.382,95</td></tr><tr><td>Suma la partida</td><td>22.612,75</td></tr><tr><td>Costes indirectos 6%</td><td>1.356,77</td></tr></table>	Mano de obra	13.229,80	Maquinaria	9.382,95	Suma la partida	22.612,75	Costes indirectos 6%	1.356,77				
Mano de obra	13.229,80														
Maquinaria	9.382,95														
Suma la partida	22.612,75														
Costes indirectos 6%	1.356,77														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
TOTAL PARTIDA.....				23.969,52
743	PGESRES150E	ud	Carga, transporte y deposición de residuos tipo II de naturaleza pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Mostrakas.	
Mano de obra				13.229,80
Maquinaria				9.382,95
Suma la partida				22.612,75
Costes indirectos 6%				1.356,77
TOTAL PARTIDA.....				23.969,52
744	PGESRES180A	ud	Carga , transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga , transporte, descarga y canon de gestión en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.	
Mano de obra				10.948,80
Maquinaria				7.765,20
Suma la partida				18.714,00
Costes indirectos 6%				1.122,84
TOTAL PARTIDA.....				19.836,84
745	PGESRES180B	ud	Carga , transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga , transporte, descarga y canon de gestión en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC.	
Mano de obra				11.861,20
Maquinaria				8.412,30
Suma la partida				20.273,50
Costes indirectos 6%				1.216,41
TOTAL PARTIDA.....				21.489,91
746	PGESRES180C	ud	Carga , transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga , transporte, descarga y canon de gestión en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15.	
Mano de obra				8.211,60
Maquinaria				5.823,90
Suma la partida				14.035,50
Costes indirectos 6%				842,13
TOTAL PARTIDA.....				14.877,63
747	PGESRES180D	ud	Carga, transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.	
Mano de obra				11.405,00
Maquinaria				8.088,75
Suma la partida				19.493,75
Costes indirectos 6%				1.169,63
TOTAL PARTIDA.....				20.663,38
748	PGESRES180E	ud	Carga, transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Mostrakas.	
Mano de obra				9.124,00
Maquinaria				6.471,00
Suma la partida				15.595,00
Costes indirectos 6%				935,70
TOTAL PARTIDA.....				16.530,70
749	PGESRES200A	ud	Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.	

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Mano de obra	9.674,40
		Maquinaria	1.941,30
		Suma la partida	11.615,70
		Costes indirectos 6%	696,94
		TOTAL PARTIDA.....	12.312,64
750	PGESRES200B	ud Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC.	
		Mano de obra	11.074,40
		Maquinaria	1.941,30
		Suma la partida	13.015,70
		Costes indirectos 6%	780,94
		TOTAL PARTIDA.....	13.796,64
751	PGESRES200C	ud Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15.	
		Mano de obra	8.974,40
		Maquinaria	1.941,30
		Suma la partida	10.915,70
		Costes indirectos 6%	654,94
		TOTAL PARTIDA.....	11.570,64
752	PGESRES200D	ud Carga, transporte y deposición de residuos tipo II de naturaleza pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tude-la.	
		Mano de obra	11.074,40
		Maquinaria	1.941,30
		Suma la partida	13.015,70
		Costes indirectos 6%	780,94
		TOTAL PARTIDA.....	13.796,64
753	PGESRES200E	ud Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos, así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en la Balsa de Mostrakas.	
		Mano de obra	8.274,40
		Maquinaria	1.941,30
		Suma la partida	10.215,70
		Costes indirectos 6%	612,94
		TOTAL PARTIDA.....	10.828,64
754	PGF21M911	m Barrera con tubo de acero galvanizado, de 130 mm de diámetro y 2 mm de espesor, incluido fijación a dado de hormigón con placa y tornillos, cualquier material auxiliar así como totalmente colocada en recta o curva de cualquier radio, incluido soldaduras necesarias, todo según planos.	
		Mano de obra	0,50
		Resto de obra y materiales.....	47,81
		Suma la partida	48,31
		Costes indirectos 6%	2,90
		TOTAL PARTIDA.....	51,21
755	PGQIN0A01	ud Piezómetro de cuerda vibrante para control de presiones intersticiales en el cimiento y cuerpo de presa, con rango de 0-10 Kg/cm², precisión 0,1% del rango y sensibilidad 0,025 % del rango , completamente instalado, incluido embalaje, transporte, carga y descarga, material de montaje, incluso obra civil, sin cableado de señal.	
		Mano de obra	71,33
		Resto de obra y materiales.....	490,00

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Suma la partida	561,33
		Costes indirectos 6%	33,68
		TOTAL PARTIDA.....	595,01
756	PGQIN0A02	ud Célula de presión total de cuerda vibrante para control de presiones totales en el núcleo y contactos con el cimiento, de rango entre 0 y 17,5 Kg/cm2 y precisión 0,1% del rango, con salida eléctrica para las lecturas, completamente instalada, incluido embalaje, transporte, carga y descarga, además del pequeño material necesario para el montaje, incluso obra civil, sin cableado de señal.	
		Mano de obra	44,05
		Resto de obra y materiales.....	535,00
		Suma la partida	579,05
		Costes indirectos 6%	34,74
		TOTAL PARTIDA.....	613,79
757	PGQIN0A03	m Cable de 2 conductores x 1 mm2, apantallado y con malla de acero, con recubrimiento de protección en PVC, conectado a cada sensor con señal eléctrica y colocado por la presa hasta las cajas de centralización, incluso zanjás, instalado y comprobado.	
		Mano de obra	1,38
		Resto de obra y materiales.....	1,48
		Suma la partida	2,86
		Costes indirectos 6%	0,17
		TOTAL PARTIDA.....	3,03
758	PGQIN0A04	ud Empalme de resina, tipo SCOTCH o similar, para la unión de cables en el interior del terreno asegurando la continuidad de la señal, colocado y comprobado.	
		Mano de obra	5,80
		Resto de obra y materiales.....	13,50
		Suma la partida	19,30
		Costes indirectos 6%	1,16
		TOTAL PARTIDA.....	20,46
759	PGQIN0A05	ud Punto de centralización y lectura manual para los sensores con señal eléctrica (piezómetros y células de cuerda vibrante) instalados en la presa, colocado en el interior de un armario de poliéster prensado con protección IP-55, frontal serigrafiado con identificación de cada sensor y conmutador o interruptores para selección del sensor a leer, incluyendo tarjetas de conexionado, canaletas, bornas y material de montaje, completamente colocado en casetas incluyendo conexionado de cables	
		Mano de obra	9,87
		Resto de obra y materiales.....	42,00
		Suma la partida	51,87
		Costes indirectos 6%	3,11
		TOTAL PARTIDA.....	54,98
760	PGQIN0A06	ud Suministro del equipo portátil de lectura para sensores de cuerda vibrante, con frecuencia seleccionable, display digital de 5 dígitos, alojado en caja resistente de material plástico, baterías recargables con cargador incorporado, indicador de carga de batería, una resolución de 0,1 microsegundo e incluyendo cable de conexión y de carga y manual de utilización.	
		Resto de obra y materiales.....	1.625,00
		Suma la partida	1.625,00
		Costes indirectos 6%	97,50
		TOTAL PARTIDA.....	1.722,50
761	PGQIN0A07	ud Célula hidráulica para el control de asientos en el interior del terreno, fabricada en PVC y con tubos interiores metálicos, completamente instalada en cuerpo de presa, incluyendo encofrado, hormigonado, zanjás y tubos.	

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Mano de obra	16,11
			Resto de obra y materiales.....	85,00
			Suma la partida	101,11
			Costes indirectos 6%	6,07
			TOTAL PARTIDA.....	107,18
762	PGQIN0A08	m	Tubo triple para conexión de células hidráulicas y paneles de lectura, recubierto de polietileno para protección ante roturas, completamente colocado en zanjas por el cuerpo de presa, incluso la ejecución de éstas y tubos de protección.	
			Mano de obra	0,77
			Resto de obra y materiales.....	4,87
			Suma la partida	5,64
			Costes indirectos 6%	0,34
			TOTAL PARTIDA.....	5,98
763	PGQIN0A09	ud	Juego de racores metálicos de empalme para longitudes largas del tubo triple de las células, de 12x10, 8x6 y 6x4, de latón y con anillo de apriete, colocado.	
			Mano de obra	1,45
			Resto de obra y materiales.....	5,92
			Suma la partida	7,37
			Costes indirectos 6%	0,44
			TOTAL PARTIDA.....	7,81
764	PGQIN0A10	ud	Panel de lectura para un punto de conexión de célula hidráulica, fabricado en metacrilato negro, de 1,5 m. de longitud, con escala graduada de lectura, serigrafiada, con 1 mm. de apreciación, incluyendo soportes y piezas de conexión de los tubos, completamente instalado en casetas al efecto incluyendo conexionado de tubos y la obra civil de casetas.	
			Mano de obra	11,50
			Resto de obra y materiales.....	382,50
			Suma la partida	394,00
			Costes indirectos 6%	23,64
			TOTAL PARTIDA.....	417,64
765	PGQIN0A11	ud	Suministro de equipo de desaireación para las células hidráulicas de una caseta (uno por caseta), incluyendo bomba de presión de accionamiento manual.	
			Resto de obra y materiales.....	668,67
			Suma la partida	668,67
			Costes indirectos 6%	40,12
			TOTAL PARTIDA.....	708,79
766	PGQIN0A20	ud	Base fija para estacionamiento del taquímetro de precisión en las lecturas topográficas, fabricada en acero inoxidable, con sistema de centraje, placa base y tapa de protección antivandalismo, completamente instalada, empotrada sobre pilar cilíndrico de hormigón armado y zapata anclada al terreno, con las dimensiones adecuadas para estacionar el equipo de lectura, incluyendo todos los materiales y la ejecución de la obra civil de construcción de zapata y pilar, terminado.	
			Mano de obra	396,75
			Resto de obra y materiales.....	355,02
			Suma la partida	751,77
			Costes indirectos 6%	45,11
			TOTAL PARTIDA.....	796,88
767	PGQIN0A22	ud	Base para nivelación de precisión con apoyo semiesférico para la mira, contenida en arqueta cilíndrica de acero inoxidable con tapa roscada, completamente colocada empotrada en huecos preparados al efecto por la coronación y bermas de la presa, incluyendo la pequeña obra civil accesoria y la fijación al cuerpo de presa, terminada.	
			Mano de obra	91,58

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
		Resto de obra y materiales.....	62,00
		Suma la partida	153,58
		Costes indirectos 6%	9,21
		TOTAL PARTIDA.....	162,79
768	PGQIN0A23	ud Señal de referencia fija para cerrar los itinerarios de nivelación, consistente en un clavo de acero inoxidable con apoyo semiesférico en cabeza para la mira, completamente colocado empotrado en roca firme del terreno natural de los estribos de la presa o en un dado de hormigón preparado al efecto, instalado incluyendo la pequeña obra civil accesoria y materiales.	
		Mano de obra	61,47
		Resto de obra y materiales.....	48,00
		Suma la partida	109,47
		Costes indirectos 6%	6,57
		TOTAL PARTIDA.....	116,04
769	PGQIN0A24	ud Aforador de filtraciones compuesto por un vertedero triangular o rectangular de pared delgada, de acero inoxidable, preparado para instalar en canaletas de recogida del agua de filtraciones en galerías y/o aguas abajo de la presa, fabricado a medida de la canaleta (hasta 400 x 400 mm), incluyendo regilla graduada para lectura, de 200 mm. de rango, con 1 mm de apreciación, de acero inoxidable sobre placa de metacrilato, completamente instalado en canaletas, sin incluir la obra civil necesaria para recogida del agua en cada punto ni protecciones de los equipos.	
		Mano de obra	134,50
		Resto de obra y materiales.....	149,00
		Suma la partida	283,50
		Costes indirectos 6%	17,01
		TOTAL PARTIDA.....	300,51
770	PGQIN0A25	ud Equipo para medida del nivel del embalse en las balsas, consistente en una balanza o telelímímetro de muy alta precisión, con toma de presión hidrostática mediante sensor de cuarzo, con la electrónica de indicación de cota contenida en caja estanca de metal ligero, con puerta acristalada. Con indicador digital de 6 cifras para la cota, rango hasta 60 m., precisión 0,015 % del rango, alimentación eléctrica por línea independiente de 220 Vac., y protección de sobretensiones; salida eléctrica en código opcional (automatizable) desde emisor digital. completamente instalada y conectada a una toma de presión hidroestática situada por debajo de la cota mínima a medir, en un lugar protegido, sin incluir la obra civil de ejecución de la toma hidroestática pero incluyendo los tubos de inoxidable y válvula de corte para conexión al sensor y la alimentación eléctrica del equipo.	
		Mano de obra	508,99
		Resto de obra y materiales.....	20.102,96
		Suma la partida	20.611,95
		Costes indirectos 6%	1.236,72
		TOTAL PARTIDA.....	21.848,67

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
771	PGQIN0A26	ud Estación Meteorológica con sistema automático de adquisición de datos, incluyendo los siguientes sensores: pluviómetro de balancín, termómetro de ambiente, anemómetro y veleta, barómetro, higrómetro con protector de radiación solar y evaporímetro con tanque de acero inoxidable o fibra de vidrio, homologado, y sensor de medida del nivel, con torreta metálica de 6 m y soportes metálicos fabricados a medida para cada uno de los equipos y sensores, además de la Estación automática con memoria para registro de datos, display y teclado de configuración, en caja con protección de intemperie a fijar sobre soporte, con programas de adquisición de datos y puerto RS-232 para conexión a ordenador, módulo de alimentación eléctrica con baterías para autonomía de una semana y cargador para conexión a red o panel fotovoltaico (no incluidos), además del cableado de conexión entre sensores y Estación, todo completamente instalado y comprobado, sin incluir obra civil de vallado y acondicionamiento del recinto.	
		Mano de obra	317,97
		Resto de obra y materiales.....	6.511,31
		Suma la partida	6.829,28
		Costes indirectos 6%	409,76
		TOTAL PARTIDA.....	7.239,04
772	PGQIN0A27	ud Sensor para medida automática del nivel de agua en la canaleta junto a un aforador totalizador de filtraciones, del tipo ultrasonidos, con electrónica de tratamiento de la señal y display indicador de nivel, alimentación a 24 Vcc, rango hasta 5 m, protección IP-68, precisión 0,2% del rango, resolución 1 mm, salida 4-20 mA, protección de interferencias, completamente instalado y calibrado, incluyendo el soporte de fijación de acero galvanizado y el sistema de alimentación eléctrica desde algún cuadro cercano.	
		Mano de obra	34,71
		Resto de obra y materiales.....	770,11
		Suma la partida	804,82
		Costes indirectos 6%	48,29
		TOTAL PARTIDA.....	853,11
773	PGQIN0A28	m Cable multihilo de 11 pares trenzados y calibre 0,91 mm., para llevar la señal entre cajas de centralización de los piezómetros y células, el equipo de nivel del embalse y los aforadores hasta las Estaciones automáticas de Adquisición de datos, de tipo telefónico EAPSP, con pantalla de acero y recubrimiento de protección, incluso zanjás, arquetas, sin tubos metálicos de protección.	
		Mano de obra	1,38
		Resto de obra y materiales.....	2,04
		Suma la partida	3,42
		Costes indirectos 6%	0,21
		TOTAL PARTIDA.....	3,63
774	PGQIN0A29	m Tubo metálico de acero galvanizado, para canalización de cables, métrica 50, instalado por zanja o en paramento y otras zonas expuestas de la presa, incluyendo elementos de sujeción y obra civil de zanjás o arquetas.	
		Mano de obra	2,44
		Resto de obra y materiales.....	5,66
		Suma la partida	8,10
		Costes indirectos 6%	0,49
		TOTAL PARTIDA.....	8,59
775	PGQIN0A30	m Tubo de material plástico reforzado, para canalización de cables, métrica 63, instalado por zanja o en paramento y otras zonas de la presa, incluyendo elementos de sujeción y obra civil de zanjás o arquetas.	
		Mano de obra	1,59
		Resto de obra y materiales.....	2,64
		Suma la partida	4,23
		Costes indirectos 6%	0,25

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			4,48
776	PGQIN0A31	ud Estación Automática de Adquisición y registro de datos de los equipos de instrumentación, instalada en caseta junto a la presa y compuesta por: microprocesador, reloj, memorias RAM y ROM, teclado y display, fuente, conversor A/D, interface serie, armario con protección IP-55 y puerta acristalada, frontal serigrafiado con teclado y display, 8 placas acondicionadoras de señal de los sensores y protecciones. Completamente instalada incluyendo conexionado de cables.	
Mano de obra			480,26
Resto de obra y materiales.....			8.362,89
Suma la partida			8.843,15
Costes indirectos 6%			530,59
TOTAL PARTIDA.....			9.373,74
777	PGQIN0A32	m Cable de comunicaciones de seis conductores (3x2x0,64) tipo FEAP, aislamiento del conductor en polietileno, cableado por pares, pantalla de aluminio, cubierta de polietileno y baja capacidad, para conexión entre las Estaciones de Adquisición, colocado y comprobado, incluso obra civil.	
Mano de obra			15,94
Resto de obra y materiales.....			2,72
Suma la partida			18,66
Costes indirectos 6%			1,12
TOTAL PARTIDA.....			19,78
778	PGQIN0A33	ud Convertidor optoeléctrico y caja de empalmes específica para conexión del cable de fibra óptica y paso a RS-485, instalada junto a la última Estación de Adquisición y junto al ordenador en las oficinas, incluyendo conexionado de cables.	
Mano de obra			212,64
Resto de obra y materiales.....			920,00
Suma la partida			1.132,64
Costes indirectos 6%			67,96
TOTAL PARTIDA.....			1.200,60
779	PGQIN0A34	m Cable de fibra óptica para comunicaciones desde la última Estación automática hasta el ordenador de las oficinas de la presa, colocado en la zona exterior en el interior de tubos de protección en zanja y con arquetas intermedias, incluso obra civil.	
Mano de obra			3,12
Resto de obra y materiales.....			3,58
Suma la partida			6,70
Costes indirectos 6%			0,40
TOTAL PARTIDA.....			7,10
780	PGQIN0A35	ud Estación Central para el control del Sistema Automático de Adquisición de datos de auscultación de las balsas de Tudela y Mostrakas, compuesta por: ordenador con disco duro, CDROM, teclado y ratón, tarjetas gráfica y de sonido, modem telefónico, monitor color 15" TFT, impresora color de inyección de tinta, licencias sistema operativo y Office. Todo instalado y comprobado en oficinas de la presa, incluyendo pruebas de comunicaciones.	
Mano de obra			99,71
Resto de obra y materiales.....			3.716,91
Suma la partida			3.816,62
Costes indirectos 6%			229,00
TOTAL PARTIDA.....			4.045,62
781	PGQIN0A36	ud Equipo SAI con autonomía de 10 minutos para protección de los equipos informáticos ante descargas y sobretensiones.	
Mano de obra			35,53
Resto de obra y materiales.....			919,75

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Suma la partida	955,28
			Costes indirectos 6%	57,32
			TOTAL PARTIDA.....	1.012,60
782	PGQIN0A37	m	Cable tipo RFV 06/1 KV, de 3 x 1,5 mm2 para alimentación eléctrica de las Estaciones Automáticas de adquisición y de los aforadores de ultrasonidos, convertidores, equipos informáticos y otros equipos que lo requieran, instalado por la presa, incluso obra civil.	
			Mano de obra	0,60
			Resto de obra y materiales.....	1,51
			Suma la partida	2,11
			Costes indirectos 6%	0,13
			TOTAL PARTIDA.....	2,24
783	PGQIN0A38	ud	Caja para derivación de la línea de alimentación eléctrica de los equipos de auscultación, protección IP-55, tapa practicable, instalada y comprobada incluyendo bornas, prensa-estopas y conexionado de cables.	
			Mano de obra	9,22
			Resto de obra y materiales.....	18,49
			Suma la partida	27,71
			Costes indirectos 6%	1,66
			TOTAL PARTIDA.....	29,37
784	PGQIN0A39	ud	Equipo para protección ante descargas y sobretensiones de la línea de alimentación específica de los equipos de auscultación, tomada de alguno de los cuadros eléctricos de la presa, compuesto por descargadores de sobretensiones con el rango adecuado, fuente de alimentación, fusibles y magnetotérmico, con diferencial rearmable, todo ello colocado en el interior de un armario de poliéster reforzado con fibra de vidrio, con grado de protección IP-66, enchufe frontal y puerta practicable, todo instalado y puesto a tierra en lugar protegido.	
			Mano de obra	171,06
			Resto de obra y materiales.....	800,00
			Suma la partida	971,06
			Costes indirectos 6%	58,26
			TOTAL PARTIDA.....	1.029,32
785	PGQIN0A40	ud	Toma de tierra de 4 electrodos, instalada junto a las oficinas de la presa para proteger los equipos informáticos de la Estación Central, incluyendo cuatro picas de tierra de 2 m. de longitud, de acero cobreizado y diámetro 14,6 mm. con grapas de unión al cable de tierra, 30 m de cable de cobre desnudo de 35 mm2 de sección, caja de registro para la centralización de tierras, instalada y dotada de puente comprobador y una arqueta para registro y comprobación de la toma de tierra, prefabricada y con tapa en poliéster reforzado con fibra de vidrio, todo instalado y comprobado junto a las oficinas de la presa.	
			Mano de obra	82,21
			Resto de obra y materiales.....	300,52
			Suma la partida	382,73
			Costes indirectos 6%	22,96
			TOTAL PARTIDA.....	405,69
786	PGQIN0A41	ud	Suministro de la partida de repuestos de las placas acondicionadoras para las Estaciones de Adquisición, incluyendo: 1 tarjeta de microprocesador; 1 tarjeta de comunicaciones; 1 tarjeta de alimentación; 2 tarjetas de cuerda vibrante; 1 tarjeta de entradas 4-20 mA.	
			Resto de obra y materiales.....	1.316,00
			Suma la partida	1.316,00
			Costes indirectos 6%	78,96
			TOTAL PARTIDA.....	1.394,96

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
787	PGQIN0A42	ud Módulo de programa desarrollado para el control de auscultación de presas, diseñado para la adquisición, registro, tratamiento y presentación de los valores obtenidos con los sensores, además de gestionar las comunicaciones con las estaciones automáticas. Desarrollado en entorno Windows y completamente instalado en un ordenador compatible de las oficinas de la presa, incluyendo licencia de uso.	
		Mano de obra	182,82
		Resto de obra y materiales.....	4.200,00
		Suma la partida	4.382,82
		Costes indirectos 6%	262,97
		TOTAL PARTIDA.....	4.645,79
788	PGQIN0A43	ud Ampliación del Programa de presas con los módulos de aplicaciones gráficas con dibujos de la presa y sensores y el módulo de generación de informes numéricos y gráficos con los valores de auscultación recogidos, todo instalado y comprobado en el ordenador de la presa.	
		Mano de obra	3.400,20
		Suma la partida	3.400,20
		Costes indirectos 6%	204,01
		TOTAL PARTIDA.....	3.604,21
789	PGQIN0A44	ud Configuración de Estaciones Automáticas y personalización del programa de presas para los sensores y equipos de la balsa de Tudela, incluyendo la creación de bases de datos y de gráficos con sensores.	
		Mano de obra	9.067,20
		Suma la partida	9.067,20
		Costes indirectos 6%	544,03
		TOTAL PARTIDA.....	9.611,23
790	PGQIN0A45	ud Calibración y puesta en marcha del sistema automatizado de control instalado en la presa: un técnico especialista en instrumentación y un técnico informático para la comprobación de comunicaciones y primeras lecturas de los equipos, incluyendo horas de viaje, costes de estancia y horas de trabajo.	
		Mano de obra	3.567,60
		Suma la partida	3.567,60
		Costes indirectos 6%	214,06
		TOTAL PARTIDA.....	3.781,66
791	PGQIN0A45M	ud Calibración y puesta en marcha del sistema automatizado de control instalado en la presa: un técnico especialista en instrumentación y un técnico informático para la comprobación de comunicaciones y primeras lecturas de los equipos, incluyendo horas de viaje, costes de estancia y horas de trabajo.	
		Mano de obra	3.567,60
		Suma la partida	3.567,60
		Costes indirectos 6%	214,06
		TOTAL PARTIDA.....	3.781,66
792	PGQIN0A46	ud Elaboración de la Documentación Final de Instalación tras la realización del montaje, que incluye los esquemas de localización definitiva de todos los equipos, esquemas de conexión a cajas de centralización y a las Estaciones Automáticas, hojas de calibración, impresos de toma de datos, condiciones y procedimientos de lectura y fórmulas de conversión a unidades de ingeniería, manuales de programas, fichas técnicas y toda la información necesaria para la gestión del sistema de auscultación. Se entregarán tres ejemplares encuadernados y en soporte informático.	
		Mano de obra	9.067,20
		Resto de obra y materiales.....	434,96
		Suma la partida	9.502,16
		Costes indirectos 6%	570,13

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
TOTAL PARTIDA.....			10.072,29
793	PGQIN0A47	ud Ternas de base de elongómetro en juntas en obras de fábrica, totalmente instaladas.	
Mano de obra			98,34
Resto de obra y materiales.....			165,00
Suma la partida			263,34
Costes indirectos 6%			15,80
TOTAL PARTIDA.....			279,14
794	PGQIN0A48	ud Elongómetro digital con rango de medida de 27 mm, con precisión de +/- 1 centésima de mm, incluso base de calibración y maletín de protección y transporte.	
Resto de obra y materiales.....			325,10
Suma la partida			325,10
Costes indirectos 6%			19,51
TOTAL PARTIDA.....			344,61
795	PGRAV512	m³ Gravilla de 5-12 mm de tamaño para la conformación del relleno de trasdós, incluido transporte y relleno.	
Mano de obra			0,28
Maquinaria			2,42
Resto de obra y materiales.....			28,05
Suma la partida			30,75
Costes indirectos 6%			1,85
TOTAL PARTIDA.....			32,60
796	PGUARNNEG	m² Guarnecido con yeso negro en paramentos verticales de 12 mm. de espesor, formación de rincones guarnecido de huecos y remates con pavimento, i/p.p. de guardavivos de chapa galvanizada y colocación de andamios (hasta 3m de altura), medido deduciendo huecos superiores a 2 m2.	
Mano de obra			6,84
Resto de obra y materiales.....			1,06
Suma la partida			7,90
Costes indirectos 6%			0,47
TOTAL PARTIDA.....			8,37
797	PHA351031	m³ Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.	
Mano de obra			1,73
Maquinaria			6,29
Resto de obra y materiales.....			89,07
Suma la partida			97,09
Costes indirectos 6%			5,83
TOTAL PARTIDA.....			102,92
798	PIEGR0810	m² Chapado de piedra granítica irregular de 8/10 cm de espesor recibido con mortero de cemento y arena de río 1/4 re-juntado y limpieza, según normativa vigente.	
Mano de obra			47,69
Maquinaria			0,45
Resto de obra y materiales.....			55,15
Suma la partida			103,29
Costes indirectos 6%			6,20
TOTAL PARTIDA.....			109,49

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN		IMPORTE
799	PIMPEXT3	m² Impermeabilización exterior de la cámara de compuertas mediante mortero elástico. Incluye los siguientes trabajos: - Preparación del soporte mediante medios manuales o mecánicos: limpieza de la superficie con agua a presión con el fin de eliminar la suciedad, restos de desencofrantes, etc. para conseguir una correcta adherencia. - Suministro y aplicación de mortero elástico Masterseal 6100 FX,o SIMILAR en el exterior de la cámara con una dotación aproximada de 3 kg/m2 y 3,0-3,5 mm de espesor medio. La aplicación se realizará de forma manual o proyectada en dos capas y sobre el soporte húmedo y limpio. Una vez aplicadas las dos capas formará una membrana superficial adherida al soporte que impide totalmente el paso del agua y de las humedades, en ambos sentidos, siendo un material que está homologado para agua potable y es compatible con hormigones y cemento Pórtland.	Mano de obra Maquinaria Resto de obra y materiales..... Suma la partida Costes indirectos 6% TOTAL PARTIDA.....	3,43 0,51 25,36 29,30 1,76 31,06
800	PIND504040	ud Inodoro de 50x40x40 cm de porcelana vitrificada color blanco, con depósito de descarga bajo, incluso mecanismo, asiento e instalación.	Mano de obra Resto de obra y materiales..... Suma la partida Costes indirectos 6% TOTAL PARTIDA.....	36,58 185,13 221,71 13,30 235,01
801	PINSAIREAC	ud Instalación de aire acondicionado en edificio de control, totalmente terminado.	Mano de obra Resto de obra y materiales..... Suma la partida Costes indirectos 6% TOTAL PARTIDA.....	502,80 2.500,00 3.002,80 180,17 3.182,97
802	PINSTCAL	ud Instalación de calefacción en edificio de control, totalmente terminado.	Mano de obra Resto de obra y materiales..... Suma la partida Costes indirectos 6% TOTAL PARTIDA.....	502,80 1.200,00 1.702,80 102,17 1.804,97
803	PINSTDES	ud Instalación de desagüe en los distintos aparatos sanitarios, hasta su unión con las bajantes, en PVC, totalmente terminada.	Mano de obra Resto de obra y materiales..... Suma la partida Costes indirectos 6% TOTAL PARTIDA.....	502,80 1.200,00 1.702,80 102,17 1.804,97
804	PINSTRGA	ud Instalación de red general de agua fría y caliente a los diversos aparatos sanitarios, totalmente terminada.	Mano de obra Resto de obra y materiales..... Suma la partida Costes indirectos 6% TOTAL PARTIDA.....	502,80 2.500,00 3.002,80 180,17 3.182,97

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
805	PINY001	ud	Estudio de optimización la mezcla de la inyección incluso ensayos previos de mezcla, propuesta de dosificación, parámetros GIN, incluso informe.	
			Mano de obra	2.140,56
			Resto de obra y materiales.....	4.000,00
			Suma la partida	6.140,56
			Costes indirectos 6%	368,43
			TOTAL PARTIDA.....	6.508,99
806	PINY002	ud	Transporte, montaje y desmontaje de equipos de inyección.	
			Maquinaria	7.500,00
			Suma la partida	7.500,00
			Costes indirectos 6%	450,00
			TOTAL PARTIDA.....	7.950,00
807	PINY003	ud	Desplazamiento del equipo de perforación entre puntos de emplazamiento.	
			Maquinaria	120,00
			Suma la partida	120,00
			Costes indirectos 6%	7,20
			TOTAL PARTIDA.....	127,20
808	PINY004	m	Perforación de taladro a rotoperforación para inyección con cualquier inclinación entre 10 y 30 con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.	
			Mano de obra	8,90
			Maquinaria	88,00
			Suma la partida	96,90
			Costes indirectos 6%	5,81
			TOTAL PARTIDA.....	102,71
809	PINY004-B	m	Perforación de taladro a rotoperforación para inyección con cualquier inclinación entre 0° y 10° con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.	
			Mano de obra	5,22
			Maquinaria	66,88
			Suma la partida	72,10
			Costes indirectos 6%	4,33
			TOTAL PARTIDA.....	76,43
810	PINY005	ud	Posicionamiento de cada obturador.	
			Resto de obra y materiales.....	9,50
			Suma la partida	9,50
			Costes indirectos 6%	0,57
			TOTAL PARTIDA.....	10,07
811	PINY006	t	Materia seca de inyección de cemento en lechada realmente inyectada con dosificación C/A entre 0,5 y 2 en función del as admisiones, incluso aditivo entre 50 y 75 kg, incluso instalación centralizada de inyección compuesta por silo báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	
			Mano de obra	29,20
			Maquinaria	305,10
			Resto de obra y materiales.....	152,77
			Suma la partida	487,07
			Costes indirectos 6%	29,22
			TOTAL PARTIDA.....	516,29

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
812	PINY007	t Materia seca de inyección de microcemento A-12 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	<table><tr><td>Mano de obra</td><td>29,20</td></tr><tr><td>Maquinaria</td><td>305,10</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.020,67</td></tr><tr><td>Suma la partida</td><td>1.354,97</td></tr><tr><td>Costes indirectos 6%</td><td>81,30</td></tr><tr><td>TOTAL PARTIDA.....</td><td>1.436,27</td></tr></table>	Mano de obra	29,20	Maquinaria	305,10	Resto de obra y materiales.....	1.020,67	Suma la partida	1.354,97	Costes indirectos 6%	81,30	TOTAL PARTIDA.....	1.436,27
Mano de obra	29,20														
Maquinaria	305,10														
Resto de obra y materiales.....	1.020,67														
Suma la partida	1.354,97														
Costes indirectos 6%	81,30														
TOTAL PARTIDA.....	1.436,27														
813	PINY008	t Materia seca de inyección de microcemento A-6 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con loscorredeintes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	<table><tr><td>Mano de obra</td><td>29,20</td></tr><tr><td>Maquinaria</td><td>305,10</td></tr><tr><td>Resto de obra y materiales.....</td><td>1.723,29</td></tr><tr><td>Suma la partida</td><td>2.057,59</td></tr><tr><td>Costes indirectos 6%</td><td>123,46</td></tr><tr><td>TOTAL PARTIDA.....</td><td>2.181,05</td></tr></table>	Mano de obra	29,20	Maquinaria	305,10	Resto de obra y materiales.....	1.723,29	Suma la partida	2.057,59	Costes indirectos 6%	123,46	TOTAL PARTIDA.....	2.181,05
Mano de obra	29,20														
Maquinaria	305,10														
Resto de obra y materiales.....	1.723,29														
Suma la partida	2.057,59														
Costes indirectos 6%	123,46														
TOTAL PARTIDA.....	2.181,05														
814	PLAVPED7055	ud Lavabo pedestal de 70x55 cm de porcelana vitrificada color blanco, incluso grifería e instalación.	<table><tr><td>Mano de obra</td><td>26,13</td></tr><tr><td>Resto de obra y materiales.....</td><td>203,53</td></tr><tr><td>Suma la partida</td><td>229,66</td></tr><tr><td>Costes indirectos 6%</td><td>13,78</td></tr><tr><td>TOTAL PARTIDA.....</td><td>243,44</td></tr></table>	Mano de obra	26,13	Resto de obra y materiales.....	203,53	Suma la partida	229,66	Costes indirectos 6%	13,78	TOTAL PARTIDA.....	243,44		
Mano de obra	26,13														
Resto de obra y materiales.....	203,53														
Suma la partida	229,66														
Costes indirectos 6%	13,78														
TOTAL PARTIDA.....	243,44														
815	PMANG110	m Manguetón de PVC flexible de 110 mm en conexión a bajantes. Totalmente terminado.	<table><tr><td>Mano de obra</td><td>2,59</td></tr><tr><td>Resto de obra y materiales.....</td><td>11,93</td></tr><tr><td>Suma la partida</td><td>14,52</td></tr><tr><td>Costes indirectos 6%</td><td>0,87</td></tr><tr><td>TOTAL PARTIDA.....</td><td>15,39</td></tr></table>	Mano de obra	2,59	Resto de obra y materiales.....	11,93	Suma la partida	14,52	Costes indirectos 6%	0,87	TOTAL PARTIDA.....	15,39		
Mano de obra	2,59														
Resto de obra y materiales.....	11,93														
Suma la partida	14,52														
Costes indirectos 6%	0,87														
TOTAL PARTIDA.....	15,39														
816	PMESADESP	ud Mesa escritorio para despacho de medidas 150x75x74 cm formado por tablero de abedul, marco de contrachapado y patas/frente de abedul macizo. Consta de balda extraíble para teclado y cajón con tres huecos. Totalmente instalado.	<table><tr><td>Mano de obra</td><td>12,91</td></tr><tr><td>Resto de obra y materiales.....</td><td>147,85</td></tr><tr><td>Suma la partida</td><td>160,76</td></tr><tr><td>Costes indirectos 6%</td><td>9,65</td></tr><tr><td>TOTAL PARTIDA.....</td><td>170,41</td></tr></table>	Mano de obra	12,91	Resto de obra y materiales.....	147,85	Suma la partida	160,76	Costes indirectos 6%	9,65	TOTAL PARTIDA.....	170,41		
Mano de obra	12,91														
Resto de obra y materiales.....	147,85														
Suma la partida	160,76														
Costes indirectos 6%	9,65														
TOTAL PARTIDA.....	170,41														
817	PMESATALL	ud Mesa taller 715 x 205.	<table><tr><td>Mano de obra</td><td>12,91</td></tr><tr><td>Resto de obra y materiales.....</td><td>93,72</td></tr><tr><td>Suma la partida</td><td>106,63</td></tr><tr><td>Costes indirectos 6%</td><td>6,40</td></tr><tr><td>TOTAL PARTIDA.....</td><td>113,03</td></tr></table>	Mano de obra	12,91	Resto de obra y materiales.....	93,72	Suma la partida	106,63	Costes indirectos 6%	6,40	TOTAL PARTIDA.....	113,03		
Mano de obra	12,91														
Resto de obra y materiales.....	93,72														
Suma la partida	106,63														
Costes indirectos 6%	6,40														
TOTAL PARTIDA.....	113,03														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE												
818	PMO-001	m³ Material "todo-uno" en dique y rellenos procedente de excavaciones efectuadas en el vaso de la balsa o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones.	<table><tr><td>Mano de obra</td><td>0,75</td></tr><tr><td>Maquinaria</td><td>3,31</td></tr><tr><td>Resto de obra y materiales.....</td><td>0,36</td></tr><tr><td>Suma la partida</td><td>4,42</td></tr><tr><td>Costes indirectos 6%</td><td>0,27</td></tr><tr><td>TOTAL PARTIDA.....</td><td>4,69</td></tr></table>	Mano de obra	0,75	Maquinaria	3,31	Resto de obra y materiales.....	0,36	Suma la partida	4,42	Costes indirectos 6%	0,27	TOTAL PARTIDA.....	4,69
Mano de obra	0,75														
Maquinaria	3,31														
Resto de obra y materiales.....	0,36														
Suma la partida	4,42														
Costes indirectos 6%	0,27														
TOTAL PARTIDA.....	4,69														
819	PMO-002	m³ Material predominantemente arcillo-limoso procedente de la excavación efectuadas en el vaso de la balsa o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones.	<table><tr><td>Mano de obra</td><td>0,27</td></tr><tr><td>Maquinaria</td><td>4,23</td></tr><tr><td>Resto de obra y materiales.....</td><td>0,36</td></tr><tr><td>Suma la partida</td><td>4,86</td></tr><tr><td>Costes indirectos 6%</td><td>0,29</td></tr><tr><td>TOTAL PARTIDA.....</td><td>5,15</td></tr></table>	Mano de obra	0,27	Maquinaria	4,23	Resto de obra y materiales.....	0,36	Suma la partida	4,86	Costes indirectos 6%	0,29	TOTAL PARTIDA.....	5,15
Mano de obra	0,27														
Maquinaria	4,23														
Resto de obra y materiales.....	0,36														
Suma la partida	4,86														
Costes indirectos 6%	0,29														
TOTAL PARTIDA.....	5,15														
820	PMOBILTE	ud Termo eléctrico de 200 l., i/lámpara de control, termómetro, termostato exterior regulable de 35º a 60º, válvula de seguridad instalado con llaves de corte y latiguillos, sin incluir conexión eléctrica.	<table><tr><td>Mano de obra</td><td>89,27</td></tr><tr><td>Resto de obra y materiales.....</td><td>697,80</td></tr><tr><td>Suma la partida</td><td>787,07</td></tr><tr><td>Costes indirectos 6%</td><td>47,22</td></tr><tr><td>TOTAL PARTIDA.....</td><td>834,29</td></tr></table>	Mano de obra	89,27	Resto de obra y materiales.....	697,80	Suma la partida	787,07	Costes indirectos 6%	47,22	TOTAL PARTIDA.....	834,29		
Mano de obra	89,27														
Resto de obra y materiales.....	697,80														
Suma la partida	787,07														
Costes indirectos 6%	47,22														
TOTAL PARTIDA.....	834,29														
821	PMOBTAQ	ud Taquilla para ropa de 0.50 x 0.50 x 1.80 metálicas.	<table><tr><td>Resto de obra y materiales.....</td><td>88,43</td></tr><tr><td>Suma la partida</td><td>88,43</td></tr><tr><td>Costes indirectos 6%</td><td>5,31</td></tr><tr><td>TOTAL PARTIDA.....</td><td>93,74</td></tr></table>	Resto de obra y materiales.....	88,43	Suma la partida	88,43	Costes indirectos 6%	5,31	TOTAL PARTIDA.....	93,74				
Resto de obra y materiales.....	88,43														
Suma la partida	88,43														
Costes indirectos 6%	5,31														
TOTAL PARTIDA.....	93,74														
822	PMOLAM010	m Anclaje de lámina impermeable PEAD a obra de fábrica, incluyendo dado de hormigón en masa, perfiles hidroexpansivos, pletinas metálicas y pequeño material adicional, totalmente terminada	<table><tr><td>Mano de obra</td><td>94,43</td></tr><tr><td>Resto de obra y materiales.....</td><td>30,23</td></tr><tr><td>Suma la partida</td><td>124,66</td></tr><tr><td>Costes indirectos 6%</td><td>7,48</td></tr><tr><td>TOTAL PARTIDA.....</td><td>132,14</td></tr></table>	Mano de obra	94,43	Resto de obra y materiales.....	30,23	Suma la partida	124,66	Costes indirectos 6%	7,48	TOTAL PARTIDA.....	132,14		
Mano de obra	94,43														
Resto de obra y materiales.....	30,23														
Suma la partida	124,66														
Costes indirectos 6%	7,48														
TOTAL PARTIDA.....	132,14														
823	PPAPELE	ud Papelera.	<table><tr><td>Resto de obra y materiales.....</td><td>15,00</td></tr><tr><td>Suma la partida</td><td>15,00</td></tr><tr><td>Costes indirectos 6%</td><td>0,90</td></tr><tr><td>TOTAL PARTIDA.....</td><td>15,90</td></tr></table>	Resto de obra y materiales.....	15,00	Suma la partida	15,00	Costes indirectos 6%	0,90	TOTAL PARTIDA.....	15,90				
Resto de obra y materiales.....	15,00														
Suma la partida	15,00														
Costes indirectos 6%	0,90														
TOTAL PARTIDA.....	15,90														
824	PPAVBALTEGM	m² Pavimento con baldosas de terrazo grano medio de 40x40 cm pulido en obra, color a elegir tomado con mortero (M-250) de cemento CEM-I/32,5, incluso nivelado de arena y mortero, corte de piezas, enlechado con pasta de cemento, pulido y limpieza.	<table><tr><td>Mano de obra</td><td>30,40</td></tr><tr><td>Maquinaria</td><td>0,02</td></tr><tr><td>Resto de obra y materiales.....</td><td>12,90</td></tr></table>	Mano de obra	30,40	Maquinaria	0,02	Resto de obra y materiales.....	12,90						
Mano de obra	30,40														
Maquinaria	0,02														
Resto de obra y materiales.....	12,90														

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Suma la partida	43,32
			Costes indirectos 6%	2,60
			TOTAL PARTIDA.....	45,92
825	PPAVUSOIND	m²	Pavimento para uso industrial incluyendo: limpieza, fresa- do o chorreado superficial del pavimento base, impregna- ción, sellado y recubrimiento, con aplicación de resinas sin- téticas mezcladas con arena de cuarzo, materiales, mano de obra, elementos y medios auxiliares necesarios, total- mente acabado.	
			Mano de obra	13,91
			Resto de obra y materiales.....	27,96
			Suma la partida	41,87
			Costes indirectos 6%	2,51
			TOTAL PARTIDA.....	44,38
826	PPERCH	ud	Perchero.	
			Resto de obra y materiales.....	30,00
			Suma la partida	30,00
			Costes indirectos 6%	1,80
			TOTAL PARTIDA.....	31,80
827	PPIL12.004	ud	Pilona prefabricada de hormigón blanco, de sección cuadra- da de 18 cm de lado y 80 cm de altura según planos, con los bordes en chaflán y rematada en punta, totalmente colo- cada.	
			Mano de obra	2,37
			Maquinaria	0,78
			Resto de obra y materiales.....	28,64
			Suma la partida	31,79
			Costes indirectos 6%	1,91
			TOTAL PARTIDA.....	33,70
828	PPILP5060	m.	Pilar prefabricado de hormigón armado, HA-35/B/16/XC4, de sección 50x60 cm., de altura máxima 15 m. , incluso p.p. de encofrado, desencofrado, vertido, vibrado, curado y armaduras, con ayuda de grúa telescópica sobre camión para montaje, aplomado, relleno del nudo de enlace con hormigón HA-35/B/16/XC4 para montaje y apeos necesá- rios, totalmente terminado.	
			Mano de obra	36,96
			Maquinaria	4,47
			Resto de obra y materiales.....	321,00
			Suma la partida	362,43
			Costes indirectos 6%	21,75
			TOTAL PARTIDA.....	384,18
829	PPINTPLASHV	m²	Pintura plástica en paramentos horizontales y verticales, dos manos de color, incluso preparación de base y medios auxiliares para su aplicación.	
			Mano de obra	4,38
			Resto de obra y materiales.....	0,86
			Suma la partida	5,24
			Costes indirectos 6%	0,31
			TOTAL PARTIDA.....	5,55
830	PPOL2000.4VI	ud	Polipasto con las siguientes características - Versión : carro eléctrico - Altura de elevación : 4 m - Voltaje: 400 V.50 Hz - Velocidad elevación : 4/1 m/min - Velocidad translación : 20/5 m/min - Potencia de elevación : 1,7 y 0,4 kw - Potencia del carro : 0,34 kw con variador - Incluye botonera a baja tensión suspendida del polipasto con 3 m de cable de mando y carro tomacorrientes Totalmente colocado.	

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE	
			Mano de obra	72,77
			Maquinaria	20,27
			Resto de obra y materiales.....	4.336,41
			Suma la partida	4.429,45
			Costes indirectos 6%	265,77
			TOTAL PARTIDA.....	4.695,22
831	PPORTAUT	ud Portero automático con placa de calle de una llamada, para comunicación entre entrada y Edificio de Control, con p.p. de canalización, cableado, alimentador y accesorios necesarios, totalmente instalado.	Mano de obra	78,39
			Resto de obra y materiales.....	300,00
			Suma la partida	378,39
			Costes indirectos 6%	22,70
			TOTAL PARTIDA.....	401,09
832	PPUENGR2000	ud Puente grúa monorriel de 5.000 Kg y 14,05 m. de luz. Características detalladas en el documento de especificaciones técnicas, Incluido fabricación, transporte a obra, montaje, conexionado y puesta en marcha.	Mano de obra	238,34
			Maquinaria	60,00
			Resto de obra y materiales.....	18.002,60
			Suma la partida	18.300,94
			Costes indirectos 6%	1.098,06
			TOTAL PARTIDA.....	19.399,00
833	PREJ001	m² Reja formada por pletinas metálicas.	Mano de obra	36,49
			Maquinaria	3,89
			Resto de obra y materiales.....	90,61
			Suma la partida	130,99
			Costes indirectos 6%	7,86
			TOTAL PARTIDA.....	138,85
834	PSEGSAL.01	ud Seguridad y salud en el Subtramo O.T. Pikarana-T12, (según valoración realizada en el Anejo nº20 del proyecto).	Sin descomposición	
			Resto de obra y materiales.....	624.912,16
			Suma la partida	624.912,16
			Costes indirectos 6%	37.494,73
			TOTAL PARTIDA.....	662.406,89
835	PSEGSAL.02	ud Seguridad y salud en el Subtramo T12-D.C. (Derivación Correla),(según valoración realizada en el Anejo nº20 del proyecto).	Sin descomposición	
			Resto de obra y materiales.....	539.415,79
			Suma la partida	539.415,79
			Costes indirectos 6%	32.364,95
			TOTAL PARTIDA.....	571.780,74
836	PSEGSAL.03	ud Seguridad y salud en el Subtramo D.C.-T21 Y DC-T14/15 , (según valoración realizada en el Anejo nº20 del proyecto).	Sin descomposición	
			Resto de obra y materiales.....	274.387,52
			Suma la partida	274.387,52
			Costes indirectos 6%	16.463,25
			TOTAL PARTIDA.....	290.850,77
837	PSEGSAL.04	ud Seguridad y salud según estudio de seguridad del proyecto en la Balsa de Tudela (según valoración realizada en el Anejo nº20 del proyecto).	Sin descomposición	

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
			Resto de obra y materiales.....	351.015,38
			Suma la partida	351.015,38
			Costes indirectos 6%	21.060,92
			TOTAL PARTIDA.....	372.076,30
838	PSEGSAL.05	ud	Seguridad y Salud.Balsa de Mostrakas y conducción de conexión (según valoración realizada en el Anejo nº20 del proyecto).	
			Sin descomposición	
			Resto de obra y materiales.....	90.452,03
			Suma la partida	90.452,03
			Costes indirectos 6%	5.427,12
			TOTAL PARTIDA.....	95.879,15
839	PSELECGBT40	ud	Suministro y montaje de módulo de alimentación, control y protección de Arqueta de Tomas en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	
			Resto de obra y materiales.....	10.623,86
			Suma la partida	10.623,86
			Costes indirectos 6%	637,43
			TOTAL PARTIDA.....	11.261,29
840	PSELECGBT41	ud	Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	
			Resto de obra y materiales.....	5.819,72
			Suma la partida	5.819,72
			Costes indirectos 6%	349,18
			TOTAL PARTIDA.....	6.168,90

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
841	PSELECLMATUD	ud Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Balsa de Mostrakas	
		Resto de obra y materiales.....	18.147,00
		Suma la partida	18.147,00
		Costes indirectos 6%	1.088,82
		TOTAL PARTIDA.....	19.235,82
842	PSELLSEXTG	m Sellado elástico exterior de las juntas de la galería mediante banda elastomérica. Incluye los siguientes trabajos: - Preparación geométrica de la superficie portante de la junta mediante abujardado. Limpieza y saneo de ambos lados de la junta. - Aplicación de resina epoxi, Masterflex 3000 o similar adhesivo o similar. - Colocación en forma de omega invertida de la banda elastomérica Masterflex 3000 de alta resistencia de 20 cm de ancho o similar. - Aplicación de una segunda capa resina epoxi, Masterflex 3000 adhesivo o similar. - Una vez seca la resina se protegerá los lados de la junta mediante relleno de mortero de reparación Emaco S 88 o similar hasta igualar en altura con la superficie de la bóveda. - Por último y como protección de la junta se colocará de forma longitudinal una geomalla Hate X P 50 de polietileno de alta resistencia y 50 cm de ancho o similar.	
		Mano de obra	31,50
		Maquinaria	2,67
		Resto de obra y materiales.....	98,52
		Suma la partida	132,69
		Costes indirectos 6%	7,96
		TOTAL PARTIDA.....	140,65
843	PSILDESP	ud Silla giratoria con asiento y respaldo contrachapado con poliuretano de gran elasticidad. Soporte de asiento y respaldo en acero, revestimiento en polvo epoxi. Tapicería en flor de piel de vacuno, teñida, tratada y pigmentada. Con piel de cabra teñida en profundidad, con superficie natural.	
		Mano de obra	12,91
		Resto de obra y materiales.....	142,75
		Suma la partida	155,66
		Costes indirectos 6%	9,34
		TOTAL PARTIDA.....	165,00
844	PSÑLPOL	ud Señalización de equipos contra incendios fotoluminiscente, de riesgo diverso, advertencia de peligro, prohibición, evacuación y salvamento, en poliestireno de 1,5 mm fotoluminiscente, de dimensiones 297x297 mm, s. CTE.	
		Mano de obra	1,03
		Resto de obra y materiales.....	3,21
		Suma la partida	4,24
		Costes indirectos 6%	0,25
		TOTAL PARTIDA.....	4,49
845	PTABPAL1	m² Formación de cubierta inclinada realizada con formación de pendientes mediante tabiquillos palomeros de ladrillo hueco doble, tablero de rasillón cerámico, capa de mortero de cemento de 2 cm de espesor, incluso p.p. de piezas especiales y medios auxiliares.	
		Mano de obra	28,61
		Resto de obra y materiales.....	38,68
		Suma la partida	67,29
		Costes indirectos 6%	4,04

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
			TOTAL PARTIDA..... 71,33
846	PTAP600_E	ud Tapa de fundición ductil para acceso a canal de descarga del aliviadero de dimensiones 0,600 x 0,600 m incluyendo cerco, mano de obra y colocación.	
			Mano de obra 20,33
			Resto de obra y materiales..... 144,34
			Suma la partida 164,67
			Costes indirectos 6% 9,88
			TOTAL PARTIDA..... 174,55
847	PTELECTT01	ud Toma de teléfono en Edificio de Control bajo tubo aislante empotrado en la pared, incluso p.p. de cajas, mecanismo y guía, totalmente terminado.	
			Mano de obra 7,84
			Resto de obra y materiales..... 13,89
			Suma la partida 21,73
			Costes indirectos 6% 1,30
			TOTAL PARTIDA..... 23,03
848	PTELEM01	ud Terminal de teléfono analógico.	
			Mano de obra 13,07
			Resto de obra y materiales..... 41,68
			Suma la partida 54,75
			Costes indirectos 6% 3,29
			TOTAL PARTIDA..... 58,04
849	PTOO300.10	m Tubería de PP masivo (Polipropileno Homopolimero), para aireación, de 300 mm de diámetro exterior, con junta colada, incluida la soportería en acero inoxidable, uniones, juntas y codos. Totalmente instalada.	
			Mano de obra 91,99
			Resto de obra y materiales..... 103,63
			Suma la partida 195,62
			Costes indirectos 6% 11,74
			TOTAL PARTIDA..... 207,36
850	PTU-001	ud Terraplén de prueba para material del núcleo de balsa, de acuerdo con las especificaciones del pliego o, en su caso, del director de prueba, incluso ensayos previos y posteriores e informe con recomendaciones.	
			Mano de obra 596,32
			Maquinaria 3.388,68
			Resto de obra y materiales..... 1.710,00
			Suma la partida 5.695,00
			Costes indirectos 6% 341,70
			TOTAL PARTIDA..... 6.036,70
851	PTU-002	m² Preparación de plataforma para realizar terraplén de prueba, según especificaciones del pliego, en su caso, directrices del Director de Obra, totalmente terminado.	
			Mano de obra 2,14
			Maquinaria 7,04
			Resto de obra y materiales..... 0,03
			Suma la partida 9,21
			Costes indirectos 6% 0,55
			TOTAL PARTIDA..... 9,76
852	PTU-003	ud Terraplén de prueba para material todo uno en espaldón de balsa, de acuerdo con las especificaciones del pliego o, en su caso, del director de prueba, incluso ensayos previos y posteriores e informe con recomendaciones.	
			Mano de obra 447,24
			Maquinaria 2.706,60
			Resto de obra y materiales..... 1.710,00
			Suma la partida 4.863,84

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE	
			Costes indirectos	6% 291,83
			TOTAL PARTIDA.....	5.155,67
853	PTU-004	m ³ Excavación de terreno no clasificado en cimientto de núcleo balsa, con medios mecánicos y taqueos puntuales, incluso refino, con carga y transporte a acopio intermedio o vertedero, incluso canon de vertido, mantenimiento y restauración de vertedero.		
			Mano de obra	1,32
			Maquinaria	3,07
			Suma la partida	4,39
			Costes indirectos	6% 0,26
			TOTAL PARTIDA.....	4,65
854	PTU-006	m ³ Excavación de terreno no clasificado en explanaciones con medios mecánicos y taqueos puntuales incluso, refino de taludes y fondo de excavación, carga y transporte a vertedero, acopio o lugar de uso, incluso cánon de vertido, mantenimiento y restauración del vertedero.		
			Mano de obra	0,74
			Maquinaria	3,07
			Suma la partida	3,81
			Costes indirectos	6% 0,23
			TOTAL PARTIDA.....	4,04
855	PTU-008	m ² Regularización de la superficie de excavación en apoyo de cimientto de núcleo de balsa de Tudela incluyendo tratamiento y relleno con mortero de diacclasas de espesor inferior a 3 cm, según P.C.T con carga y transporte de productos sobrantes a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero.		
			Mano de obra	0,63
			Maquinaria	1,65
			Resto de obra y materiales.....	0,50
			Suma la partida	2,78
			Costes indirectos	6% 0,17
			TOTAL PARTIDA.....	2,95
856	PTU-009	m ² Excavación en refino de fondos de excavación en terciaro alterado en cimientto de presa con medios mecánicos y taqueos puntuales,con carga y transporte a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero.		
			Mano de obra	0,38
			Maquinaria	0,31
			Suma la partida	0,69
			Costes indirectos	6% 0,04
			TOTAL PARTIDA.....	0,73
857	PTU-010	m ³ Material "limo-arcilloso" en núcleo de balsa, procedente de la excavación de los suelos aluviales de los fondos de valle del vaso del embalse o préstamos próximos, carga, transporte, extendido, humectado y compactado según prescripciones técnicas del pliego o según condiciones extraídas del terraplén de prueba, incluso acopios intermedios y trabajos en acopio.		
			Mano de obra	0,20
			Maquinaria	2,72
			Resto de obra y materiales.....	0,36
			Suma la partida	3,28
			Costes indirectos	6% 0,20
			TOTAL PARTIDA.....	3,48

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
858	PTU-011	m³ Material "todouno" en espaldones procedente de excavaciones efectuadas en el vaso del embalse o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones o según puesta en obra deducida de los terraplenes de prueba.	
		Mano de obra	0,75
		Maquinaria	3,11
		Resto de obra y materiales.....	0,36
		Suma la partida	4,22
		Costes indirectos 6%	0,25
		TOTAL PARTIDA.....	4,47
859	PTU-012	m³ Material tipo gravas en espaldones procedente de la terraza aluvial superior al embalse, incluida su excavación mediante medios mecánicos, incluso taqueos puntuales, selección y troceado, carga, transporte, extendido, humectado y compactado en las condiciones indicadas en el pliego, incluso acopios intermedios y trabajos en acopio.	
		Mano de obra	0,75
		Maquinaria	2,98
		Resto de obra y materiales.....	0,36
		Suma la partida	4,09
		Costes indirectos 6%	0,25
		TOTAL PARTIDA.....	4,34
860	PTU-013	m³ Material procedente de la costra calcárea en espaldón de aguas abajo procedente de la terraza aluvial superior al embalse, incluida su excavación mediante medios mecánicos, incluso taqueos puntuales, selección y troceado, carga, transporte, extendido, humectado y compactado en las condiciones indicadas en el pliego, incluso acopios intermedios y trabajos en acopio.	
		Mano de obra	0,14
		Maquinaria	3,20
		Resto de obra y materiales.....	0,28
		Suma la partida	3,62
		Costes indirectos 6%	0,22
		TOTAL PARTIDA.....	3,84
861	PTU-014	m³ Material granular para filtro procedente de gravera o préstamos cercanos, incluye excavación y selección de la roca con resistencia a compresión simple superior a 15 Mpa, fabricación en planta de machaqueo y cribado hasta la obtención de la granulometría exigida en el Pliego, extendido y compactado junto a núcleo o en drenes horizontales de presa.	
		Mano de obra	3,06
		Maquinaria	2,20
		Resto de obra y materiales.....	15,46
		Suma la partida	20,72
		Costes indirectos 6%	1,24
		TOTAL PARTIDA.....	21,96
862	PTU-015	m³ Material granular de transición procedente de préstamo de gravas en terraza superior del embalses, incluye carga, transporte, selección del material y resto de operaciones asociadas según prescripciones del pliego, extendido y compactado en espaldón de presa. Unidad totalmente terminada en balsa.	
		Mano de obra	0,75
		Maquinaria	7,34
		Resto de obra y materiales.....	0,36
		Suma la partida	8,45
		Costes indirectos 6%	0,51
		TOTAL PARTIDA.....	8,96

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
863	PTU-016	m³ Material granular para dren procedente de gravera o préstamos, incluye excavación y selección de la roca con resistencia a compresión simple superior a 15 Mpa, fabricación en planta de machaqueo y cribado hasta la obtención de la granulometría exigida en el Pliego, extendido y compactado junto a núcleo o en drenes horizontales de balsa.	
		Mano de obra	1,80
		Maquinaria	0,97
		Resto de obra y materiales.....	16,15
		Suma la partida	18,92
		Costes indirectos 6%	1,14
		TOTAL PARTIDA.....	20,06
864	PTU-017	m³ Pedraplén en relleno de pie de balsa y espaldones procedente del vaso del embalse o préstamos próximos, incluida su excavación mediante voladura, selección y troceado, carga, transporte, extendido, humectación y compactación en tongadas de 0,80 m de espesor y granulometría según lo especificado en el Pliego.	
		Mano de obra	3,73
		Maquinaria	10,46
		Resto de obra y materiales.....	14,07
		Suma la partida	28,26
		Costes indirectos 6%	1,70
		TOTAL PARTIDA.....	29,96
865	PTU-018	m³ Material grueso (rip-rap) para protección de espaldón procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto, vertida en cualquier tipo de paramento de balsa, incluso suministro, transporte, colocación y compactación, medido sobre perfil teórico, según planos.	
		Mano de obra	6,13
		Maquinaria	9,00
		Resto de obra y materiales.....	15,00
		Suma la partida	30,13
		Costes indirectos 6%	1,81
		TOTAL PARTIDA.....	31,94
866	PTU-019	m³ Escollera colocada de 500 kg procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto en el entorno de la balsa de Tudela y de la balsa de Mostrakas, colocada en cualquier tipo de paramento, incluso suministro, transporte, medido sobre perfil teórico, según planos.	
		Mano de obra	4,25
		Maquinaria	11,12
		Resto de obra y materiales.....	18,00
		Suma la partida	33,37
		Costes indirectos 6%	2,00
		TOTAL PARTIDA.....	35,37
867	PTU-020	m³ Desbroce y excavación de tierra vegetal de espesor medio de 50 cm, en balsa de Tudela y balsa de Mostrakas incluso carga, transporte a cualquier distancia a acopio intermedio no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa.	
		Mano de obra	0,56
		Maquinaria	1,17
		Resto de obra y materiales.....	0,06
		Suma la partida	1,79
		Costes indirectos 6%	0,11
		TOTAL PARTIDA.....	1,90

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD. RESUMEN	IMPORTE
868	PTU-021	m³ Material "todouno" en espaldones procedente de excavaciones efectuadas en el vaso del embalse o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones o según puesta en obra deducida de los terraplenes de prueba.	
		Mano de obra	1,28
		Maquinaria	3,43
		Resto de obra y materiales.....	0,36
		Suma la partida	5,07
		Costes indirectos 6%	0,30
		TOTAL PARTIDA.....	5,37
869	PTU-022	m² Hormigon proyectado HM-35/B/20/X0, de 5 cm. de espesor reforzado con fibras de acero, con 700 j de energía de absorción, en tratamiento de desmante, incluso aditivos y rechazo, puesto en obra	
		Mano de obra	1,51
		Maquinaria	1,30
		Resto de obra y materiales.....	6,17
		Suma la partida	8,98
		Costes indirectos 6%	0,54
		TOTAL PARTIDA.....	9,52
870	PTU-023	m³ Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado en balsas.	
		Mano de obra	0,22
		Maquinaria	0,31
		Suma la partida	0,53
		Costes indirectos 6%	0,03
		TOTAL PARTIDA.....	0,56
871	PTU-024	m² Regularización y refino de la superficie de excavación en taludes de balsa incluyendo tratamiento y relleno con mortero de diaclasas de espesor inferior a 3 cm, según P.C.T con carga y transporte de productos sobrantes a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero.	
		Mano de obra	0,62
		Maquinaria	1,62
		Resto de obra y materiales.....	0,25
		Suma la partida	2,49
		Costes indirectos 6%	0,15
		TOTAL PARTIDA.....	2,64
872	PTU-025	m³	
		Mano de obra	0,24
		Maquinaria	0,18
		Suma la partida	0,42
		Costes indirectos 6%	0,03
		TOTAL PARTIDA.....	0,45
873	PTUB160PVC	m Tubería de PVC diámetro Nominal 160 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada	
		Mano de obra	0,33
		Maquinaria	1,31
		Resto de obra y materiales.....	14,63
		Suma la partida	16,27
		Costes indirectos 6%	0,98
		TOTAL PARTIDA.....	17,25

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
874	PTUB250PVC	m	Tubería de PVC diámetro Nominal 250 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.	
			Mano de obra	0,33
			Maquinaria	1,31
			Resto de obra y materiales.....	29,89
			Suma la partida	31,53
			Costes indirectos 6%	1,89
			TOTAL PARTIDA.....	33,42
875	PTUDREB160	m	Tubo dren de PVC corrugado poroso, D= 160 mm, puesta en zanja, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	
			Mano de obra	0,33
			Maquinaria	1,31
			Resto de obra y materiales.....	6,28
			Suma la partida	7,92
			Costes indirectos 6%	0,48
			TOTAL PARTIDA.....	8,40
876	PTUDREB250	m	Tubo dren de PVC corrugado poroso, D= 250 mm, puesta en zanja, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	
			Mano de obra	0,33
			Maquinaria	1,31
			Resto de obra y materiales.....	10,55
			Suma la partida	12,19
			Costes indirectos 6%	0,73
			TOTAL PARTIDA.....	12,92
877	PU08070070	ud	Bote sifónico cilíndrico de 110 mm de diámetro, de P.V.C., incluso conexión e instalación.	
			Mano de obra	9,15
			Resto de obra y materiales.....	18,51
			Suma la partida	27,66
			Costes indirectos 6%	1,66
			TOTAL PARTIDA.....	29,32
878	PVHB400	ud	Suministro y montaje de válvula Howell-Bunger de 400 mm de diámetro, con carrete deflector de chorro incorporado a la válvula, construida en acero inoxidable, con accionamiento por cilindros oleohidráulicos, con indicador de posición electrónico digital con lectura en pupitre de mando.. Unidad totalmente instalada y probada	
			Mano de obra	117,00
			Maquinaria	47,29
			Resto de obra y materiales.....	36.989,05
			Suma la partida	37.153,34
			Costes indirectos 6%	2.229,20
			TOTAL PARTIDA.....	39.382,54
879	PVHW600	ud	Suministro y montaje de válvula Howell-Bunger de 600 mm de diámetro, con carrete deflector de chorro incorporado a la válvula, construida en acero inoxidable, con accionamiento por cilindros oleohidráulicos, con indicador de posición electrónico digital con lectura en pupitre de mando. Unidad totalmente instalada y probada.	
			Mano de obra	117,00
			Maquinaria	47,29
			Resto de obra y materiales.....	53.658,29
			Suma la partida	53.822,58
			Costes indirectos 6%	3.229,35
			TOTAL PARTIDA.....	57.051,93

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
880	PVIGJAC4040	m	Viga jacena prefabricada de hormigón armado de sección 40x40 cm., con armadura s/ cálculo y con la sección necesaria en cada nudo para acoplamiento de piezas de la estructura, incluso parte proporcional de apoyo, montaje con autogrúa, totalmente instalado.	
			Mano de obra	36,96
			Maquinaria	4,62
			Resto de obra y materiales.....	355,00
			Suma la partida	396,58
			Costes indirectos 6%	23,79
			TOTAL PARTIDA.....	420,37
881	PVPREDEL136	m	Viga prefabricada tipo Delta G136 T 2, colocada con ayuda de grúa automóvil para montaje y apeos necesarios. Según CODIGO ESTRUCTURAL y CTE.	
			Mano de obra	8,95
			Resto de obra y materiales.....	293,76
			Suma la partida	302,71
			Costes indirectos 6%	18,16
			TOTAL PARTIDA.....	320,87
882	PVPREDEL182	m	Viga prefabricada tipo Delta G182 T 10, colocada con ayuda de grúa automóvil para montaje y apeos necesarios. Según CODIGO ESTRUCTURAL y CTE.	
			Mano de obra	8,95
			Resto de obra y materiales.....	317,22
			Suma la partida	326,17
			Costes indirectos 6%	19,57
			TOTAL PARTIDA.....	345,74
883	PVPREFTVT25	m	Viga prefabricada tubular correas tipo VT-25 en cubierta, incluso transporte y colocación.	
			Mano de obra	40,94
			Maquinaria	11,55
			Resto de obra y materiales.....	28,88
			Suma la partida	81,37
			Costes indirectos 6%	4,88
			TOTAL PARTIDA.....	86,25
884	PVPREHAH	m	Viga prefabricada HA portacanal tipo H, para recogida de aguas en cubierta, incluso pp de transporte y colocación.	
			Mano de obra	40,94
			Maquinaria	11,55
			Resto de obra y materiales.....	256,61
			Suma la partida	309,10
			Costes indirectos 6%	18,55
			TOTAL PARTIDA.....	327,65
885	TUB.FD.1000A	m	Tubería de fundición dúctil de diámetro nominal 1000 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN 545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	
			Mano de obra	26,05
			Maquinaria	16,50
			Resto de obra y materiales.....	530,40
			Suma la partida	572,95
			Costes indirectos 6%	34,38
			TOTAL PARTIDA.....	607,33

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
886	TUB.FD.100A	m	Tubería de fundición dúctil de diámetro nominal 100 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	
			Mano de obra	2,38
			Maquinaria	3,00
			Resto de obra y materiales.....	16,12
			Suma la partida	21,50
			Costes indirectos 6%	1,29
			TOTAL PARTIDA.....	22,79
887	TUB.FD.150A	m	Tubería de fundición dúctil de diámetro nominal 150 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	
			Mano de obra	2,38
			Maquinaria	3,00
			Resto de obra y materiales.....	19,20
			Suma la partida	24,58
			Costes indirectos 6%	1,47
			TOTAL PARTIDA.....	26,05
888	TUB.FD.200A	m	Tubería de fundición dúctil de diámetro nominal 200 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	
			Mano de obra	2,38
			Maquinaria	3,00
			Resto de obra y materiales.....	28,54
			Suma la partida	33,92
			Costes indirectos 6%	2,04
			TOTAL PARTIDA.....	35,96
889	TUB.FD.250A	m	Tubería de fundición dúctil de diámetro nominal 250 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	
			Mano de obra	16,58
			Maquinaria	9,00
			Resto de obra y materiales.....	37,60
			Suma la partida	63,18
			Costes indirectos 6%	3,79
			TOTAL PARTIDA.....	66,97

CUADRO DE PRECIOS 2

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

Nº	CÓDIGO	UD.	RESUMEN	IMPORTE
890	TUB.FD.300A	m	Tubería de fundición dúctil de diámetro nominal 300 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	
			Mano de obra	16,58
			Maquinaria	9,00
			Resto de obra y materiales.....	41,13
			Suma la partida	66,71
			Costes indirectos 6%	4,00
			TOTAL PARTIDA.....	70,71
891	TUB.FD.500A	m	Tubería de fundición dúctil de diámetro nominal 500 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	
			Mano de obra	23,69
			Maquinaria	15,00
			Resto de obra y materiales.....	101,61
			Suma la partida	140,30
			Costes indirectos 6%	8,42
			TOTAL PARTIDA.....	148,72
892	TUB.FD.600A	m	Tubería de fundición dúctil de diámetro nominal 600 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN 545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	
			Mano de obra	26,05
			Maquinaria	16,50
			Resto de obra y materiales.....	183,60
			Suma la partida	226,15
			Costes indirectos 6%	13,57
			TOTAL PARTIDA.....	239,72

Zaragoza, marzo de 2022

El Ingeniero autor del Proyecto

Fdo.: D. Rafael Fernández-Ordóñez Carvera
Ingeniero de Caminos, Canales y Puertos
Colegiado Nº 11.444

El Ingeniero autor del Proyecto

Fdo.: D. Juan Ortiz González
Ingeniero de Caminos, Canales y Puertos
Colegiado nº 10.726

Examinado y conforma.
El Director del proyecto

Fdo.: D. Jose Maria Serna Llena
Ingeniero de Caminos, Canales y Puertos
Colegiado Nº 10.408

PRESUPUESTOS PARCIALES

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01	SUBTRAMO O.T. PIKARANA-T12			
01.01	OBRA DE TOMA PIKARANA (OT-T12)			
01.01.01	ALMENARA TOMA CANAL DE NAVARRA			
01.01.01.01	DEMOLICIONES			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	199,40	52,84	10.536,30
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	719,09	34,25	24.628,83
P5CERRAM0A	m Desmontaje de cerramiento metálico, vallado y barandillas. Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar, existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos.	41,60	4,83	200,93
TOTAL 01.01.01.01				35.366,06
01.01.01.02	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.682,37	2,77	4.660,16
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2.146,27	3,89	8.348,99
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	369,43	8,81	3.254,68
TOTAL 01.01.01.02				16.263,83
01.01.01.03	OBRA DE FÁBRICA			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	427,95	49,22	21.063,70
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	822,86	76,95	63.319,08
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	466,57	16,26	7.586,43

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	901,08	26,85	24.194,00
P4ETT-004C-E2	m² Encof/desc. muros y paramentos CURVOS y VISTOS Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	54,05	30,49	1.647,98
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	98.613,62	1,35	133.128,39
P4JTAPVC400B	m Junta elastomérica de estanqueidad PVC 400 Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	78,78	15,74	1.240,00
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	32,40	7,25	234,90
P41MRE002	m² Aplicación de resina epoxy Aplicación de resina epoxy en obras de fábrica. Unidad completa incluidas operaciones de tratamiento y limpieza.	18,40	11,03	202,95
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	369,43	8,81	3.254,68
TOTAL 01.01.01.03.....				255.872,11
01.01.01.04	ESTRUCTURA METÁLICA			
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	2.471,81	2,07	5.116,65
P41TRAM_001A	m² Trames AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Trames de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	44,28	119,36	5.285,26
TOTAL 01.01.01.04.....				10.401,91

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.01.01.05 ELEMENTOS HIDROMECAÑICOS y ACCESORIOS				
PFILTM001	ud Filtro de cadenas Filtro de cadenas, adecuado para el tamizado de agua, para un caudal aproximado de 3.350 l/s, con luz de malla 1,5 mm de accionamiento eléctrico, totalmente instalado y probado.	6,00	64.744,40	388.466,40
PFILTM002	ud Conjunto automatismo para el filtro de cadena Conjunto automatismo para el filtro de cadena, incluyendo armariode maniobre, detector de pérdida de carga y motobomba para agua de lavado, totalmente instalado.	6,00	8.607,52	51.645,12
PCOMO001	ud Compuerta mural 2250x2600 Compuerta mural 2250x2600, para 10 mca y diseño unidireccional de accionamiento eléctrico, incluyendo actuador, deslizaderas, sellado en cuatro lados, husillo ascendente, caperuza de plástico, totalmente montada en obra.	2,00	47.771,79	95.543,58
PCOMO002	ud Compuerta mural 350x400 Compuerta mural 350x400, para 10 mca y diseño unidireccional de accionamiento manual, incluyendo deslizaderas, sellado en cuatro lados, husillo ascendente, caperuza de plástico, totalmente montada en obra, instalado y probado.	2,00	1.526,24	3.052,48
PCOMO010A	m Embebidos metálicos en 1ª y 2ª fase Embebidos metálicos en primera y segunda fase de hormigonado de obra de Picarana, en ranuras de elementos hidromecánicos, totalmente colocados.	44,44	181,68	8.073,86
TOTAL 01.01.01.05.....				546.781,44
01.01.01.06 ELEMENTOS ACCESORIOS				
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	50,00	4,88	244,00
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6 Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.	51,54	44,47	2.291,98
P41BARAND05	m Barandilla de acero en plataforma de tramex Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por perfilera metálica y tubos metálicos 42,2x6 mm, montada en plataforma de tramex o elementos metálicos por soldadura, incluso parte proporcional de soldaduras, totalmente colocada y terminada.	19,66	38,11	749,24
TOTAL 01.01.01.06.....				3.285,22
TOTAL 01.01.01.....				867.970,57
01.01.02 ALIVIADERO				
01.01.02.01 MOVIMIENTO DE TIERRAS				
P1MT06L	m² Demolición obra de mapostería o escollera hormigonada Demolición o Desmontado de muros y soleras de escollera hormigonada o mampostería con recuperación de parte de las piezas desmontadas para su posterior colocación, con retirada de escombros sobrantes, carga y transporte a vertedero o planta de reciclaje.	373,19	25,72	9.598,45
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.354,49	2,77	3.751,94
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	356,49	3,89	1.386,75

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	108,68	8,81	957,47
TOTAL 01.01.02.01				15.694,61
01.01.02.02	OBRA DE FÁBRICA			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	208,71	49,22	10.272,71
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	250,56	76,95	19.280,59
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	204,02	16,26	3.317,37
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	302,34	26,85	8.117,83
P4ETT-004C-E2	m² Encof/desenc. muros y paramentos CURVOS y VISTOS Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	37,65	30,49	1.147,95
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.	25,79	23,03	593,94
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	31.597,33	1,35	42.656,40
P4JTAPVC400B	m Junta elastomérica de estanqueidad PVC 400 Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	49,82	15,74	784,17
TOTAL 01.01.02.02				86.170,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.01.02.03 SECCIÓN CANAL DE DESCARGA				
P1MT08ESC500H	m³ Escollera 500 Kg hormigonada con HM20 Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	370,81	47,53	17.624,60
TOTAL 01.01.02.03.....				17.624,60
TOTAL 01.01.02.....				119.490,17
01.01.03 CONEXIÓN CON 2ªFASE				
01.01.03.01 OBRA DE FÁBRICA				
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	41,90	59,75	2.503,53
TOTAL 01.01.03.01.....				2.503,53
01.01.03.02 ELEMENTOS ACCESORIOS				
P4JTUMO001	m Tubería acero diámetro 300 mm Suministro y colocación de tubería de acero al carbono API 5L/ASTM/A106 de 300 mm de diámetro interior, totalmente colocada.	21,50	53,69	1.154,34
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.	2.260,80	4,90	11.077,92
TOTAL 01.01.03.02.....				12.232,26
TOTAL 01.01.03.....				14.735,79
01.01.04 ACCESOS				
01.01.04.01 ACCESO POR MARGEN DERECHA				
P1MT08BASEZA2	m² Escarificado camino +30%Zahorra artificial 95%PM Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.	996,52	2,79	2.780,29
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	198,50	4,11	815,84
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.	1,00	64,56	64,56
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	298,96	20,14	6.021,05

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.	996,52	3,65	3.637,30
TOTAL 01.01.04.01.....				13.319,04
01.01.04.02	ACCESO POR MARGEN IZQUIERDA			
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	627,55	0,21	131,79
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	627,55	0,37	232,19
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	313,78	2,16	677,76
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	180,35	4,11	741,24
PASEÑACC	ud Señalización de accesos y advertencias de seguridad Señalización de accesos y advertencias de seguridad, etc.	1,00	4.478,29	4.478,29
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	188,27	20,14	3.791,76
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.	627,55	3,65	2.290,56
TOTAL 01.01.04.02.....				12.343,59
TOTAL 01.01.04.....				25.662,63
01.01.05	INSTALACIONES ELECTRICAS ALMENARA PIKARANA			
01.01.05.01	LINEA ELECTRICA DE MT			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	50,00	4.165,13	208.256,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	21.780,00	8,23	179.249,40
P5ELEM4X25TT	m Manguera eléctrica 4 x 25 + TT mm2 Cu Manguera eléctrica de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	440,00	15,62	6.872,80
P5ARQPREF2.A2	ud Arqueta BT prefabricada inst. elect. A2 (145X90)con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-2, de 145x90 cm de medidas interiores y 117x62 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapas de fundición dúctil, de 72x62x6,5 cm, para arqueta de conexión eléctrica tipo A-2, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	1,00	343,73	343,73
TOTAL 01.01.05.01				409.462,49
01.01.05.02	LINEAS DE BT			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	80,00	6,26	500,80
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	80,00	5,89	471,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM3X4TT2	m Manguera eléctrica 3 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	160,00	7,02	1.123,20
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	700,00	11,30	7.910,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	2,00	676,28	1.352,56
TOTAL 01.01.05.02.....				11.357,76
01.01.05.03	TRANSFORMACIÓN Y GENERACIÓN			
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexión el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELEARQ1X1TF	ud Arqueta estanca 1.0x1.0x1.5+ tapa función recogida de ace Arqueta prefabricada estanca para recogida de aceites de dimensiones 1,0x1,0m y altura de hasta 1.5m, tapa de fundición 600x600 mm, cerco y precerco, conectada a conductor de recogida, incluidos pasamuros y tuberías de conexión. Unidad totalmente colocada.	1,00	979,09	979,09

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEGGEN125	ud Generador eléctrico 125kVA supersilencioso+cuadro elec+conmutado Generador eléctrico silencioso móvil de 125kVA/96kW según especificaciones técnicas definidas en el PPTP, incluido cuadro eléctrico, control y automatización. Motor: Motor diesel 4 tiempos Refrigerado por agua; Arranque eléctrico 24V; Radiador con ventilador sopla; Filtro decantador (nivel no visible); Regulación electrónica; o Bulbos de ATA; Bulbos de BPA; Filtro de aire en seco; Protecciones de partes calientes; Protecciones de partes móviles;; Sensor de nivel agua radiador Alternador: Autoexcitado y autorregulado; Protección IP23; Aislamiento clase H; Sistema Eléctrico; Cuadro eléctrico de control y potencia, con aparatos de medida y central de control ; Protección magnetotérmica tetrapola; Protección diferencial regulable (tiempo y sensibilidad) y con protección magnetotérmica; Cargador de batería (incluido en grupos con cuadro de versión automática); Resistencia de caldeo (de serie en grupos con cuadro de versión automática); Alternador de carga de baterías con toma de tierra; Batería/s de arranque instaladas (incluye/n cables y soporte); Instalación eléctrica de toma de tierra, con conexión prevista para pica de tierra ; Desconector de batería/s; Conmutador: Armario IP55; Central; Parada de emergencia; Módulo de medida; Llave para conmutación manual; Conmutador motorizado; Conexión a tierra; Zócalo para armarios >800A Cuadro Automático AS5 CEM 7 o similar y cuadro de conmutación con central CC2 o similar con contactores Cuadros - Reloj programador: Informa a la central de la fecha y hora actual. Permite la programación semanal de: - Arranques programados - Bloqueos programados - Test de motor y mantenimientos programados - Ampliación del histórico de errores en + 100 - Contadores de energía (día, mes, año) Cuadros - Teleseñal: Placa que dispone de comunicación CAN y 12 relés. - Relés: 4 de contacto conmutado y 8 de contacto simple - Permite activar elementos de señalización remotos - Permite la programación de los relés en función de las diferentes variables. Otros elementos: Chasis Acero ; Kit de extracción de aceite del cárter; Versatilidad para el montaje de chasis de gran capacidad con depósito metálico; Amortiguadores antivibratorios; Tanque de combustible integrado en el chasis; Aforador de nivel de combustible; Pulsador parada de emergencia; Carrocería fabricada con chapa de alta calidad; Alta resistencia mecánica; o Bajo nivel de emisiones sonoras; Insonorización a base de lana de roca volcánica de alta densidad;; Acabado superficial a base de polvo de poliéster epoxídico (ensayo de niebla salina superior a 1000h); Total acceso a mantenimientos (agua, aceite y filtros sin desmontar capot); Gancho de izado reforzado para elevación con grúa; Chasis estanco (hace función de doble pared retención líquidos); Tapón drenaje depósito; Tapón drenaje chasis; Chasis predispuesto para instalación de kit móvil; Silencioso residencial de acero de -35db(A); Válvula de 3 vías para trasiego de combustible (disponible con conexiones de 1/2" y de 3/8"); Bomba de trasiego de combustible Unidad totalmente instalada y probada	1,00	15.877,32	15.877,32
P5ELECBATC36	ud Batería de condensadores (36 KVAR) Módulo metálico para corrección automática del factor de potencia 36 KVAR Compuesta de: condensadores sobredimensionados en tensión a 440 V, base fusibles y fusibles, regulador electrónico, contactores e interruptor general, Condensador CLZ , Contactores con bloque de preinserción y resistencia de descarga rápida, Protección en cabecera por fusibles con alto, poder de corte (APR). Serie NH-00, regulador de energía reactiva serie computer m con indicación digital y salidas de relé; Interruptor manual en cabecera de batería; Interruptor automático en cabecera de batería; Interruptor automático + Protección diferencial en cabecera de batería; Unidad de ventilación forzada + termostato; Placa de policarbonato contra contactos directos; Autotransformador 400/230 V. Totalmente instalada en armario metálico.	1,00	1.503,90	1.503,90
P5ELETRAF13	ud Cuadro de alarmas y señalización de defectos del centro de trans Cuadro de alarmas y señalización de defectos del centros de transformación formado por armario metálico en chapa de acero. Conteniendo: 8 relés auxiliares. 1 fuente de alimentación normal-socorro 230/48 Vcc. con acumuladores Ni-Cd de 21 Ah, intensidad nominal 5 A. Automáticos de protección, bornas canaletas y pequeño material de montaje.	1,00	2.411,12	2.411,12
P5ELETRAF5A	ud Conjunto material de protección y señalización transformador Conjunto de material de protección y señalización transformador. Normalizado.	1,00	130,03	130,03
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELETRAF11	ud Puesta en servicio del telecontrol de LMT Puesta en servicio del telecontrol, incluyendo: - Integración de la instalación en cada uno de los sistemas de concesionario eléctrico implicados en el procesode todas las funcionalidades del Telecontrol, Control local y Automatismos del Centro de Seccionamiento - Configuración, parametrización y puesta en servicio de Terminal Remoto de Telecontrol, equipos de c/c., Relés de detección de Paso de Falta y demás elementos de la instalación - Generación de configuraciones, telecarga y comprobaciones de cada una de las bases de datos: históricas, cronológicas, de alarmas, de eventos y de medidas analógicas en el Terminal Remoto de Telecontrol, en el C.S. así como en las unidades centrales	1,00	4.197,60	4.197,60
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafa Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62
P5ELETRAF12	ud Verificación de trabajos instalación de transformadores Verificación de trabajos, incluyendo: - Comprobación de la instalación, en lo que al telemando se refiere, de acuerdo al proyecto y documentación técnica aprobados - Supervisión del correcto conexionado de T/is y/o detectores de Paso de FALTA, Presencia de Tensión, etc en celdas de MT - Comprobación del esquema unifilar y rótulos para el telemando - Recepción de la Documentación de Adaptación al Telemando	1,00	331,53	331,53
P5ELETRAF4D	ud Puesta a tierra del Centro de Transformación Redes de puesta a tierra de protección general y servicio para el neutro, en centro de transformación, de acuerdo con lo indicado en la MIE-RAT-13, y normas de Cía Suministradora, formada la primera de ellas por cable de cobre desnudo de 50 mm2. de sección y la segunda por cable de cobre aislado, tipo RVde 0,6/1 kV, y 50 mm2 de sección y picas de tierra de acero cobrizado de 2 m.de longitud y 14 mm. de diámetro. Incluso material de conexión y fijación.	1,00	1.194,27	1.194,27
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
P5ELECASTRAFO	ud Caseta normalizada trafa 25-160 KVa Caseta prefabricada normalizada para transformador hasta 160 KVA , con compartimento para celdas, puertas de paso y acceso, lamas de ventilación , ventilaciónn forzada, cubiertas y resto de elementos conformados. Unidad totalmente instalada.	1,00	3.272,12	3.272,12
P5ELETRAF25	ud Transformador 50KVA trifásico en aceite, llenado integral Transformador trifásico reductor de tensión (MT/BT) construido de acuerdo con UNE-EN 60076, dieléctrico éster natural biodegradable, de 50 kVA de potencia, tensión asignada 24 kV, tensión primario 20 kV, tensión de salida de 420 V entre fases en vacío o de 230/420 V entre fases en vacío, frecuencia 50 Hz, grupo de conexión Dyn 11, regulación en el primario + 2,5%, + 5%, + 7,5%, + 10%, protección propia del transformador con termómetro, para instalación interior o exterior, cuba de aletas, refrigeración natural (ONAN), conmutador de regulación maniobrable sin tensión, pasatapas MT de porcelana, pasabarras BT de porcelana, 2 terminales de tierra, dispositivo de vaciado y toma de muestras, dispositivo de llenado, placa de características y placa de seguridad e instrucciones de servicio, colocado.	1,00	2.297,89	2.297,89
P5ELETRAF5C	ud Equipamiento auxiliar centro de transformación hasta 630 KVA Equipamiento auxiliar para centro de transformación prefabricado comprendiendo los siguientes elementos: - 1 Red interior de tierras. - 4 Puntos de luz LED 53 W cada uno IP-55. - 2 Toma de corriente 16 Amp. - 1 Aparato autónomo de emergencia portátil equipado con interruptor. - 1 Conjunto de circuitos para alimentación a los anteriores equipos, ejecución superficie bajo tubo PVC. - 1 Par de guantes aislantes alojados en cofret. - 1 Banqueta aislante. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P5ELETRAF5E	ud Conjunto de accesorios de seguridad y maniobra para CT Conjunto de accesorios de seguridad y maniobra constituido por una banquetta aislante, un extintor de eficacia 89B, guantes aislantes, pértiga aislante y armario de primeros auxilios, según Instrucciones Técnicas Complementarias del Reglamento sobre Condiciones Técnicas y Garantías de Seguridad en Centrales Eléctricas, Subestaciones y Centros de Transformación. B.O.E. 25-10-84, colocado.	1,00	430,58	430,58

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELETRAF6	ud Celda de e/s tipo 24-20KV 400A/16K manual Celda de entrada/salida formada por módulo metálico tipo CGM-24 o similar de dimensiones aproximadas 1800mm de alto x 370mm de ancho x 850mm de tipo modular, envolvente de chapa de acero galvanizado, corte y aislamiento íntegro en SF6, intensidad nominal de 400 A/16 kA, con interruptor-seccionador rotativo tripolar de 3 posiciones (conectado, seccionado y puesta a tierra) con mando manual, captadores capacitivos para la detección de tensión y sistema de alarma sonora de puesta a tierra, colocada.	2,00	2.723,11	5.446,22
P5ELETRAF7B	ud Cel.met.de protec general int.aut.,24-20 kV,400.Amp 16 KA manual Celda metálica de protección general con interruptor automático, 24 kV o 20 KV, 400 A, lcc 16 kA, aislamiento en SF6, con interruptor automático en SF6 de 24 kV, 400 A, poder de corte 16 kA, con captadores de intensidad, relé de protección contra sobrecorrientes de fase y homopolares, mando manual.	1,00	5.433,20	5.433,20
P5ELETRAF7	ud Celda metálica de protección 24-20kv 400A tipo CGM24 -CMP-F Celda metálica de protección de transformador tipo CGM24 -CMP-F o similar ensayado contra una eventual inmersión, de dimensiones 1800 x 480 x 850mm de corte y aislamiento íntegro en SF6, de acuerdo a UNE CEI RU6407, instalada, conteniendo : 1 interruptor rotativo trifásico de tensión nominal 24 KV e In 400A y capacidad de cierre sobre cortocircuito 40KA, 3 portafusibles para cartuchos de 24 KV 3 cartuchos de fusibles de 24KV 1 seccionador de puesta a tierra, 1 relé de protección de transformador autoalimentado 51/50n 3 captadores toroidales de intensidad para protección de fase 3 captadores capacitivos de presencia de tensión 1 Ud embarrado para 400A 1 Ud Pletina de cobre 30 x 3mm 1 Ud Accesorios y pequeño material Unidad totalmente instalada	1,00	2.040,89	2.040,89
P5ELETRAF8	ud Celda de medid 24-20KV CGM-24 con 3 transformadores X/110V Celda de medida formada por módulo metálico CGM-24 de dimensiones 1800 x 800 x 1025 de fondo, conteniendo en su interior debidamente montado y conexonado : 3 transformadores de intensidad relación X/5A, tensión nominal 24KV, potencia de precisión 15VA, clase 0.5, 3 transformadores X/110V, Vn 24KV, potencia de precisión 50VA en clase 0.5. Acometida y salida con cable en seco, malla de protección quitamiedos abisagrada, carros extraíbles para el equipo de medida.	1,00	6.211,14	6.211,14
TOTAL 01.01.05.03.....				63.696,15
01.01.05.04	CUADROS			
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	50,00	16,29	814,50
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	100,00	2,77	277,00
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	100,00	2,16	216,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	200,00	49,22	9.844,00
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	4,00	62,64	250,56
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	160,00	1,35	216,00
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	20,00	16,91	338,20
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELEGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50
P5ELEGBT41	ud CGBT AUX Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	6.168,90	6.168,90

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	6,00	101,69	610,14
TOTAL 01.01.05.04.....				25.838,83
01.01.05.05	ALUMBRADO			
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+Ip68 Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de polipcarbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	16,00	199,70	3.195,20
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	4,00	65,09	260,36
P5ELEI400LED	ud Luminaria LEDs de 1x400 W IP67 estanca Proyector industrial les de 85 W cpn un flujo lumínico de 10500 Lm, con lámpara, totalmente instalado,incluso lámpara p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Antideflagrante. Unidad totalmente instalada.	3,00	689,78	2.069,34
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	3,00	338,27	1.014,81
P5ELEI400WX2	ud Columna de 12 m + dos proyectores 400 W LED Columna tronco-cónica de las siguientes características: Longitud: 12 metros Brazo en T para soportación de 2 proyectores. Material: Acero galvanizado Proyectores: 2 Uds Luminaria: Philips Tempo 3 MWF 330. Lámpara: 400W LED. incluida Completamente instalada, incluida obra civil (excavación, rellenos y cimentación)	1,00	1.788,87	1.788,87
TOTAL 01.01.05.05.....				8.328,58
01.01.05.06	ACOMETIDA Y LEGALIZACIÓN			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	600,00	1,05	630,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexiones, arranques y mantenimiento, posterior operación de desconexiones, y operaciones necesarias de retirada. Unidad completa	20,00	713,71	14.274,20
P5ELEC10003	ud Operación de conexionado y desconexiones a trafo Operación de conexionado y desconexión de LMT.	1,00	365,62	365,62
PSELECLMATUD	ud Conex LMTS+refuerzos+adapt.línea Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Balsa de Mostrakas	2,00	19.235,82	38.471,64
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 01.01.05.06.....				67.697,75
01.01.05.07	CANALIZACIONES			
P5ELE110X4H	m Can. horm. PVC 110 mm x4 (calzadas) 0.4x1.0m (Zanja tipo-8B) Canalización hormigonada de 4x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada	300,00	49,50	14.850,00
P35RALUM02	m Canaliz alumbrado conducto Ø90 mm+tendido línea elec.4x6mm2+TT Canalización PVC corrugado de 90 mm. de diámetro en cualquier tipo de terreno, acerados y/o pavimentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexiones multiples. Unidad totalmente terminada.	20,00	24,84	496,80
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	40,00	5,36	214,40
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	80,00	1,35	108,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECROZA	m Roza en ladrillo macizo, bloque hormigón Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.	60,00	7,64	458,40
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	2,00	281,22	562,44
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	4,00	87,49	349,96
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	12,00	31,90	382,80
TOTAL 01.01.05.07				17.422,80
01.01.05.08	TOMA DE TIERRA			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	4,00	98,29	393,16
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	4,00	12,58	50,32
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	4,00	69,95	279,80
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	4,00	232,13	928,52
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	2,00	258,71	517,42
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	200,00	7,88	1.576,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	40,00	10,99	439,60
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	4,00	97,16	388,64

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm ² * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 01.01.05.08.....				7.214,19
01.01.05.09	MECANISMOS			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	10,00	7,52	75,20
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC08	ud Base de enchufe 16A monofásica Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.	12,00	24,54	294,48
P5ELEC09	ud Base de enchufe trifásica 16A Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.	4,00	72,04	288,16
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	12,00	144,43	1.733,16
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	4,00	199,02	796,08
TOTAL 01.01.05.09.....				3.200,22
TOTAL 01.01.05.....				614.218,77
01.01.06	INSTALACIONES ELÉCTRICAS ALMENARA 10 Y TOMA DE RIEGO 9			
01.01.06.01	LINEA ELECTRICA DE MT			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	2,00	8.687,38	17.374,76
P5ELE200X2H2	m Can. horm. PE 200 mm x2 (calzadas) 0.65x1.3m (Zanja tipo 2B) Canalización de línea de media tensión hormigonada bajo Acerados y pavimentos conformado por tubos 2x200mm PE normalizado para instalación eléctrica, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasagúa y corchetes. Unidad totalmente instalada y terminada.	1.458,00	60,92	88.821,36
P5ELEM4X25TT	m Manguera eléctrica 4 x 25 + TT mm2 Cu Manguera eléctrica de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	440,00	15,62	6.872,80
P5ELEM1X150	m Manguera eléctrica 1 x 150 mm2 Cu Cable 18/30 KV aislado en polietileno reticulado, tipo HEPRZ1 1x150 mm2 CU+H16 instalado bajo tubos, según memoria y pliegos. Totalmente montado.	8.226,90	27,30	224.594,37
P5ARQPREF2.0E	ud Arqueta MT prefabricada inst. elect. 110x110x160 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	34,00	414,18	14.082,12
P5ARQPREF2.A2	ud Arqueta BT prefabricada inst. elect. A2 (145X90)con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-2, de 145x90 cm de medidas interiores y 117x62 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapas de fundición dúctil, de 72x62x6,5 cm, para arqueta de conexión eléctrica tipo A-2, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	1,00	343,73	343,73
TOTAL 01.01.06.01.....				352.089,14

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.01.06.02 LINEAS DE BT				
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	120,00	6,26	751,20
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	120,00	5,89	706,80
P5ELEM3X4TT2	m Manguera eléctrica 3 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	200,00	7,02	1.404,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	2,00	676,28	1.352,56
TOTAL 01.01.06.02.....				4.214,56
01.01.06.03 TRANSFORMACION Y GENERACION				
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conxionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kv, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	2,00	8.687,38	17.374,76
P5ELEARQ1X1TF	ud Arqueta estanca 1.0x1.0x1.5+ tapa función recogida de ace Arqueta prefabricada estanca para recogida de aceites de dimensiones 1,0x1,0m y altura de hasta 1.5m, tapa de fundición 600x600 mm, cerco y precerco, conectada a conductor de recogida, incluidos pasamuros y tuberías de conexión. Unidad totalmente colocada.	3,00	979,09	2.937,27
P5ELETRAF13	ud Cuadro de alarmas y señalización de defectos del centro de trans Cuadro de alarmas y señalización de defectos del centros de transformación formado por armario metálico en chapa de acero. Conteniendo: 8 relés auxiliares. 1 fuente de alimentación normal-socorro 230/48 Vcc. con acumuladores Ni-Cd de 21 Ah, intensidad nominal 5 A. Automáticos de protección, bornas canaletas y pequeño material de montaje.	2,00	2.411,12	4.822,24

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELETRAF5A	ud Conjunto material de protección y señalización transformador Conjunto de material de protección y señalización transformador. Normalizado.	2,00	130,03	260,06
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	2,00	899,51	1.799,02
P5ELETRAF11	ud Puesta en servicio del telecontrol de LMT Puesta en servicio del telecontrol, incluyendo: - Integración de la instalación en cada uno de los sistemas de concesionario eléctrico implicados en el proceso de todas las funcionalidades del Telecontrol, Control local y Automatismos del Centro de Seccionamiento - Configuración, parametrización y puesta en servicio de Terminal Remoto de Telecontrol, equipos de c/c., Relés de detección de Paso de Falta y demás elementos de la instalación - Generación de configuraciones, telecarga y comprobaciones de cada una de las bases de datos: históricas, cronológicas, de alarmas, de eventos y de medidas analógicas en el Terminal Remoto de Telecontrol, en el C.S. así como en las unidades centrales	2,00	4.197,60	8.395,20
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafa Operación de conexionado y desconexiónado de LMT.	2,00	365,62	731,24
P5ELETRAF12	ud Verificación de trabajos instalación de transformadores Verificación de trabajos, incluyendo: - Comprobación de la instalación, en lo que al telemando se refiere, de acuerdo al proyecto y documentación técnica aprobados - Supervisión del correcto conexionado de T/is y/o detectores de Paso de FALTA, Presencia de Tensión, etc en celdas de MT - Comprobación del esquema unifilar y rótulos para el telemando - Recepción de la Documentación de Adaptación al Telemando	2,00	331,53	663,06
P5ELETRAF4D	ud Puesta a tierra del Centro de Transformación Redes de puesta a tierra de protección general y servicio para el neutro, en centro de transformación, de acuerdo con lo indicado en la MIE-RAT-13, y normas de Cía Suministradora, formada la primera de ellas por cable de cobre desnudo de 50 mm2. de sección y la segunda por cable de cobre aislado, tipo RVde 0,6/1 kV, y 50 mm2 de sección y picas de tierra de acero cobrizado de 2 m.de longitud y 14 mm. de diámetro. Incluso material de conexión y fijación.	2,00	1.194,27	2.388,54
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	2,00	1.148,32	2.296,64
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELECASTRAFO	ud Caseta normalizada trafa 25-160 KVA Caseta prefabricada normalizada para transformador hasta 160 KVA , con compartimento para celdas, puertas de paso y acceso, lamas de ventilación , ventilación forzada, cubiertas y resto de elementos conformados. Unidad totalmente instalada.	2,00	3.272,12	6.544,24
P5ELETRAF25	ud Transformador 50KVA trifásico en aceite, llenado integral Transformador trifásico reductor de tensión (MT/BT) construido de acuerdo con UNE-EN 60076, dieléctrico éster natural biodegradable, de 50 kVA de potencia, tensión asignada 24 kV, tensión primario 20 kV, tensión de salida de 420 V entre fases en vacío o de 230/420 V entre fases en vacío, frecuencia 50 Hz, grupo de conexión Dyn 11, regulación en el primario + 2,5%, + 5%, + 7,5%, + 10%, protección propia del transformador con termómetro, para instalación interior o exterior, cuba de aletas, refrigeración natural (ONAN), conmutador de regulación maniobrable sin tensión, pasatapas MT de porcelana, pasabarras BT de porcelana, 2 terminales de tierra, dispositivo de vaciado y toma de muestras, dispositivo de llenado, placa de características y placa de seguridad e instrucciones de servicio, colocado.	2,00	2.297,89	4.595,78
P5ELETRAF5C	ud Equipamiento auxiliar centro de transformación hasta 630 KVA Equipamiento auxiliar para centro de transformación prefabricado comprendiendo los siguientes elementos: - 1 Red interior de tierras. - 4 Puntos de luz LED 53 W cada uno IP-55. - 2 Toma de corriente 16 Amp. - 1 Aparato autónomo de emergencia portátil equipado con interruptor. - 1 Conjunto de circuitos para alimentación a los anteriores equipos, ejecución superficie bajo tubo PVC. - 1 Par de guantes aislantes alojados en cofre. - 1 Banqueta aislante. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	2,00	741,26	1.482,52

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELETRAF5E	ud Conjunto de accesorios de seguridad y maniobra para CT Conjunto de accesorios de seguridad y maniobra constituido por una banqueta aislante, un extintor de eficacia 89B, guantes aislantes, pértiga aislante y armario de primeros auxilios, según Instrucciones Técnicas Complementarias del Reglamento sobre Condiciones Técnicas y Garantías de Seguridad en Centrales Eléctricas, Subestaciones y Centros de Transformación. B.O.E. 25-10-84, colocado.	2,00	430,58	861,16
P5ELETRAF6	ud Celda de e/s tipo 24-20KV 400A/16K manual Celda de entrada/salida formada por módulo metálico tipo CGM-24 o similar de dimensiones aproximadas 1800mm de alto x 370mm de ancho x 850mm de tipo modular, envolvente de chapa de acero galvanizado, corte y aislamiento íntegro en SF6, intensidad nominal de 400 A/16 kA, con interruptor-seccionador rotativo tripolar de 3 posiciones (conectado, seccionado y puesta a tierra) con mando manual, captadores capacitivos para la detección de tensión y sistema de alarma sonora de puesta a tierra, colocada.	3,00	2.723,11	8.169,33
P5ELETRAF7B	ud Cel.met.de protec general int.aut.,24-20 kV,400.Amp 16 KA manual Celda metálica de protección general con interruptor automático, 24 kV o 20 KV, 400 A, lcc 16 kA, aislamiento en SF6, con interruptor automático en SF6 de 24 kV, 400 A, poder de corte 16 kA, con captadores de intensidad, relé de protección contra sobrecorrientes de fase y homopolares, mando manual.	2,00	5.433,20	10.866,40
P5ELETRAF7	ud Celda metálica de protección 24-20kv 400A tipo CGM24 -CMP-F Celda metálica de protección de transformador tipo CGM24 -CMP-F o similar ensayado contra una eventual inmersión, de dimensiones 1800 x 480 x 850mm de corte y aislamiento íntegro en SF6, de acuerdo a UNE CEI RU6407, instalada, conteniendo : 1 interruptor rotativo trifásico de tensión nominal 24 KV e In 400A y capacidad de cierre sobre cortocircuito 40KA, 3 portafusibles para cartuchos de 24 KV 3 cartuchos de fusibles de 24KV 1 seccionador de puesta a tierra, 1 relé de protección de transformador autoalimentado 51/50n 3 captadores toroidales de intensidad para protección de fase 3 captadores capacitivos de presencia de tensión 1 Ud embarrado para 400A 1 Ud Pletina de cobre 30 x 3mm 1 Ud Accesorios y pequeño material Unidad totalmente instalada	2,00	2.040,89	4.081,78
P5ELETRAF8	ud Celda de medid 24-20KV CGM-24 con 3 transformadores X/110V Celda de medida formada por módulo metálico CGM-24 de dimensiones 1800 x 800 x 1025 de fondo, conteniendo en su interior debidamente montado y conexionado : 3 transformadores de intensidad relación X/5A, tensión nominal 24KV, potencia de precisión 15VA, clase 0.5, 3 transformadores X/110V, Vn 24KV, potencia de precisión 50VA en clase 0.5. Acometida y salida con cable en seco, malla de protección quitamiedos abisagrada, carros extraíbles para el equipo de medida.	2,00	6.211,14	12.422,28
TOTAL 01.01.06.03.....				90.885,84
01.01.06.04	CUADROS			
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puer-tas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	2,00	741,26	1.482,52
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	2,00	467,80	935,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	2,00	4.932,77	9.865,54
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	2,00	360,50	721,00
P5ELECGBT41	ud CGBT AUX Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	2,00	6.168,90	12.337,80
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	4,00	101,69	406,76
TOTAL 01.01.06.04.....				25.749,22
01.01.06.05	ALUMBRADO			
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+Ip68 Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de polipcarbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	2,00	199,70	399,40
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI400LED	ud Luminaria LEDs de 1x400 W IP67 estanca Proyector industrial les de 85 W cpn un flujo lumínico de 10500 Lm, con lámpara, totalmente instalado,incluso lámpara p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Antideflagrante. Unidad totalmente instalada.	2,00	689,78	1.379,56
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	2,00	338,27	676,54

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEI400WX2	ud Columna de 12 m + dos proyectores 400 W LED Columna tronco-cónica de las siguientes características: Longitud: 12 metros Brazo en T para soportación de 2 proyectores. Material: Acero galvanizado Proyectores: 2 Uds Luminaria: Philips Tempo 3 MWF 330. Lámpara: 400W LED. incluida Completamente instalada, incluida obra civil (excavación, rellenos y cimentación)	2,00	1.788,87	3.577,74
TOTAL 01.01.06.05.....				6.163,42
01.01.06.06	ACOMETIDA Y LEGALIZACION			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	l Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	410,00	1,05	430,50
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexiones, arranques y mantenimiento, posterior operación de desconexiones, y operaciones necesarias de retirada. Unidad completa	20,00	713,71	14.274,20
P5ELEC10003	ud Operación de conexionado y desconexiones a trafo Operación de conexionado y desconexión de LMT.	2,00	365,62	731,24
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	2,00	3.495,74	6.991,48
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	2,00	3.044,20	6.088,40
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	2,00	2.767,45	5.534,90
TOTAL 01.01.06.06.....				38.699,62
01.01.06.07	CANALIZACIONES			
P5ELE110X4H	m Can. horm. PVC 110 mm x4 (calzadas) 0.4x1.0m (Zanja tipo-8B) Canalización hormigonada de 4x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasaguía y corchetes0. Unidad totalmente instalada y terminada	200,00	49,50	9.900,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P35RALUM02	m Canaliz alumbrado conducto Ø90 mm+tendido línea elec.4x6mm2+TT Canalización PVC corrugado de 90 mm. de diámetro en cualquier tipo de terreno, acerados y/o pavimentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexionados múltiples. Unidad totalmente terminada.	40,00	24,84	993,60
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	40,00	5,36	214,40
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	1.600,00	18,35	29.360,00
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	60,00	1,35	81,00
P5ELECROZA	m Roza en ladrillo macizo, bloque hormigón Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.	50,00	7,64	382,00
P5ARQPREF2.0E	ud Arqueta MT prefabricada inst. elect. 110x110x160 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	12,00	414,18	4.970,16
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	2,00	281,22	562,44
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	8,00	87,49	699,92
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	8,00	31,90	255,20
TOTAL 01.01.06.07				47.418,72
01.01.06.08	TOMA DE TIERRA			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	2,00	1.148,32	2.296,64
P5ELET2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	8,00	98,29	786,32

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	8,00	69,95	559,60
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	2,00	232,13	464,26
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	2,00	258,71	517,42
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	120,00	7,88	945,60
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	10,00	10,99	109,90
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	2,00	1.492,41	2.984,82
TOTAL 01.01.06.08.....				8.959,52
01.01.06.09	MECANISMOS			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	4,00	7,52	30,08
P5ELEC08	ud Base de enchufe 16A monofásica Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.	4,00	24,54	98,16
P5ELEC09	ud Base de enchufe trifásica 16A Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.	2,00	72,04	144,08
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	4,00	144,43	577,72
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	2,00	199,02	398,04
TOTAL 01.01.06.09.....				1.248,08
TOTAL 01.01.06.....				575.428,12

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.01.07	URBANIZACIÓN Y CERRAMIENTOS			
01.01.07.01	URBANIZACIÓN GENERAL			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	373,07	20,14	7.513,63
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial, incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas. Unidad totalmente terminada.	1.243,56	3,65	4.538,99
TOTAL 01.01.07.01.....				12.052,62
01.01.07.02	CERRAMIENTOS			
P5CERRAMPU	m Cerramiento tipo-2 Valla de D/T metálica, con pp puerta acceso Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, incluyendo parte proporcional de puerta de acceso.	485,00	28,97	14.050,45
TOTAL 01.01.07.02.....				14.050,45
TOTAL 01.01.07.....				26.103,07
TOTAL 01.01.....				2.243.609,12
01.02	MOVIMIENTO DE TIERRAS (OT-T12)			
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.	709.701,73	0,12	85.164,21
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	1.382.947,85	0,21	290.419,05
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	36.455,61	1,25	45.569,51
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	1.419.403,46	0,37	525.179,28
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	1.419.403,46	0,40	567.761,38

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ...) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	422.022,21	4,24	1.789.374,17
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	487.069,00	2,77	1.349.181,13
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	4.885,63	4,97	24.281,58
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.	88.449,17	14,68	1.298.433,82
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	208.768,30	3,89	812.108,69
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	432.515,46	2,16	934.233,39
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	160.651,35	1,78	285.959,40
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	10.499,61	61,53	646.041,00
TOTAL 01.02				8.653.706,61

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.03	TUBERÍAS (OT-T12)			
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	52.153,65	0,32	16.689,17
P1T1800.11.5A	m Tubería acero helic. L275, Ø1829 esp. 11,5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	23.580,00	730,52	17.225.661,60
P1T1800.14.0A	m Tubería acero helic. L275, Ø1829 esp. 14.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	100,00	889,34	88.934,00
P1T2000.14.0A	m Tubería acero helic. L275, Ø2032 nom esp. 14,0 Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	20.562,00	982,72	20.206.688,64
P1T2000.15.0A	m Tubería acero helic. L275, Ø2032 nom esp. 15,0 Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	3.411,65	1.052,94	3.592.262,75
P1T2000.14.0B	m Tubería acero helic. L355, Ø2032 nom esp. 14,0 Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	4.675,40	997,66	4.664.459,56

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T2000.15.0B	m Tubería acero helic. L355, Ø2032 nom esp. 15,0 Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.032 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada Unidad medida en planta.	220,00	1.068,94	235.166,80
TOTAL 01.03				46.029.862,52
01.04	DESAGÜES (OT-T12)			
01.04.01	ARQUETA DESAGÜE, VALVULERÍA Y CALDERERÍA (OT-T12)			
01.04.01.01	MOV. TIERRAS Y DREN (DESAGÜES OT-T12)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	76,00	2,77	210,52
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	190,00	9,54	1.812,60
TOTAL 01.04.01.01				2.023,12
01.04.01.02	ESTRUCTURA DE HORMIGÓN Y METÁLICA (DESAGÜES OT-T12)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	25,50	49,22	1.255,11
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	20,70	78,03	1.615,22
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	60,60	80,88	4.901,33
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	131,90	91,99	12.133,48
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	43,20	16,26	702,43

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	492,20	26,85	13.215,57
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	21.856,10	1,35	29.505,74
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	322,00	4,88	1.571,36
P4JTAHIDROF2	m Junta cordón unión prefabricado a hormigón in situ Junta de estanqueidad en unión arquetas prefabricadas a hormigón de base ejecutado in situ, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	36,60	4,53	165,80
P4JTAPVC150	m Junta elastomérica de estanqueidad PVC 150 Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.	110,50	4,42	488,41
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	36,60	6,15	225,09
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	246,10	2,24	551,26
P5ARQP-1.5A	ud Arq. pref DN=1.5 m H=1.5m +pates para desagües tipo D UD de Arqueta prefabricada de diámetro 1.5 m y altura 1.5m para desagües tipo D formada por anillos prefabricados de hormigón armado, provistos de resaltes para su acoplamiento, entre otras piezas, mediante juntas de goma, con pates de polipropileno montados , incluida excavación localizada y rellenos necesarios. Unidad totalmente terminada.	34,00	202,40	6.881,60
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda. Totalmente terminada y colocada.	198,10	110,88	21.965,33
P4LOSA2	m² Losas prefabricadas de hormigón tapas arq.trafic.cuant.190kg/m3 Losas prefabricadas de hormigón en tapas de arquetas para tránsito de tráfico pesado, cuantía mínima 190 kg/m3 homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.	70,50	153,76	10.840,08
P4TAPA60D400A	ud Tapa registro fundición, circular Ø 60 cm clase D-400 acerojada Tapa de registro de fundición estanca y acerojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN) . Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, cerco,... unidad de obra totalmente instalada y ejecutada.	2,00	162,40	324,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	30,40	49,09	1.492,34
P41ESC2	m Escalera vertical fija acero inox-tipo barco AISI 316L Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaída y elementos extensibles. Unidad totalmente terminada.	13,20	183,55	2.422,86
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	6,00	111,07	666,42
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	19,60	119,36	2.339,46
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidro-expansivo, según detalle de planos. Totalmente instalada.	2,00	41,67	83,34
TOTAL 01.04.01.02.....				113.347,03
01.04.01.03	VÁLVULAS Y CALDERERÍA (DESAGÜES OT-12)			
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	14,10	173,72	2.449,45
P1T0800.12.5B	m Tubería acero helic. L355, Ø813 esp 12.5 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	13,00	344,47	4.478,11

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	7,30	137,95	1.007,04
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	8.034,10	2,98	23.941,62
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	3.265,30	2,07	6.759,17
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	48,00	1.741,23	83.579,04
P1BRIDA500.25	ud Brida ciega PN 25 Ø500 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 500 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	2,00	578,27	1.156,54
P1BRIDA150.25	ud Brida ciega PN 25 Ø150 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN150 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	10,00	96,38	963,80
P1BRIDA250.25	ud Brida ciega PN 25 Ø250 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 250 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	2,00	164,29	328,58
P6PM500INX	ud Carrete pasamuros 500mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 500mm de diámetro.	2,00	420,25	840,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6VC.100.16	ud Válvula compuerta ø 100 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 100 mm, instalada.	48,00	189,51	9.096,48
P6VC.150.16	ud Válvula compuerta ø 150 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada.	10,00	338,98	3.389,80
P6VM.250.16	ud Válvula mariposa ø 250 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 250 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	868,80	1.737,60
P6VM.500.25	ud Válvula mariposa ø 500 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 500 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	3.308,68	6.617,36
P6VO.250.25	ud Válvula globo PN25 Ø250 multiorificio Válvula de regulación de globo, de paso recto de 250 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	9.132,13	18.264,26
P6VO.500.25	ud Válvula globo PN25 Ø500 multiorificio Válvula de regulación de globo, de paso recto de 500 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	35.116,97	70.233,94
P6CD.150.16	ud Carrete desmontaje DN150PN16 Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	15,00	156,55	2.348,25
P6CD.250.16	ud Carrete desmontaje DN250 PN16 Carrete de desmontaje de diametro 250 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	5,00	208,86	1.044,30
P6CD.500.25	ud Carrete desmontaje DN 500 PN25 Carrete de desmontaje de acero de 500 mm de diámetro PN25, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	5,00	807,61	4.038,05
P6VENT.025.16	ud Ventosa trifuncional DN25 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 25 mm PN16 con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	46,00	187,82	8.639,72
P6VD.150.25	ud Válvula dilatadora y compensadora de goma DN 150 PN25 Válvula dilatadora y compensadora de goma de DN 150 PN25. Unidad totalmente instalada.	5,00	267,92	1.339,60
P6VD.250.25	ud Válvula dilatadora y compensadora de goma DN 250 PN25 Válvula dilatadora y compensadora de goma de DN 250 PN25. Unidad totalmente instalada.	1,00	448,12	448,12

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CR.100.25	ud Conexión rápida en desagües DN100 Conexión rápida de desagües DN 100.	34,00	77,66	2.640,44
TOTAL 01.04.01.03.....				255.341,77
TOTAL 01.04.01.....				370.711,92
01.04.02	CONDUCCIÓN A VERTIDO (OT-T12)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	26.605,05	2,98	79.283,05
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	138,38	137,95	19.089,52
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	138,38	0,32	44,28
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	350,25	2,77	970,19
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	62,89	16,29	1.024,48
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	139,02	3,89	540,79
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	158,19	2,16	341,69

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	35,71	1,78	63,56
TOTAL 01.04.02.....				101.357,56
01.04.03	ARQUETA ROTURA Y VERTIDO A CAUCE (OT-T12)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.269,80	2,77	3.517,35
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	862,20	4,97	4.285,13
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	236,40	29,11	6.881,60
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	520,10	1,89	982,99
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,90	33,10	29,79
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	6,10	49,22	300,24
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	4,00	59,75	239,00
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	18,20	80,88	1.472,02
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	45,30	91,99	4.167,15

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	23,30	16,26	378,86
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	151,10	26,85	4.057,04
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	6.325,80	1,35	8.539,83
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	52,00	4,88	253,76
TOTAL 01.04.03.....				35.104,76
TOTAL 01.04				507.174,24
01.05	VENTOSAS (OT-T12)			
01.05.01	MOVIMIENTO DE TIERRAS VENTOSAS (OT-T12)			
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ..) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	185,10	4,24	784,82
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	185,10	2,16	399,82
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	950,00	9,54	9.063,00
TOTAL 01.05.01.....				10.247,64

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.05.02 OBRAS DE FÁBRICA VENTOSAS (OT-T12)				
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	92,60	59,75	5.532,85
P5ELECAS01	ud Caseta prefabricada 1.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 1.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	1,00	1.434,23	1.434,23
P5ELECAS02	ud Caseta prefabricada 4.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 4.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	38,00	3.469,43	131.838,34
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.	41,00	77,91	3.194,31
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.	38,00	98,65	3.748,70
TOTAL 01.05.02.....				145.748,43
01.05.03 VÁLVULAS Y CALDERERÍA VENTOSAS (OT-T12)				
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	10.776,70	2,98	32.114,57
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	86,60	173,72	15.044,15

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T0800.12.5B	m Tubería acero helic. L355, Ø813 esp 12.5 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	85,20	344,47	29.348,84
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	76,00	1.741,23	132.333,48
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	72,00	3.199,43	230.358,96
P6VENT.200.25	ud Ventosa trifuncional DN200 mm PN25+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	6,00	3.601,10	21.606,60
P6VENT.250.16	ud Ventosa trifuncional DN250 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 250 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	12,00	4.684,49	56.213,88
TOTAL 01.05.03.....				517.020,48
TOTAL 01.05				673.016,55
01.06	TOMAS (OT-T12)			
01.06.01	TOMA-11			
01.06.01.01	MOVIMIENTO DE TIERRAS (TOMA-11)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.135,87	2,77	5.916,36
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	942,30	4,97	4.683,23

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1.677,87	1,78	2.986,61
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	458,00	2,16	989,28
TOTAL 01.06.01.01.....				14.575,48
01.06.01.02	CALDERERÍA Y VALVULERÍA (TOMA-11)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	112.178,87	2,98	334.293,03
P1BRID1300.25	ud Brida ciega PN 25 Ø1300 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas	1,00	4.016,63	4.016,63
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	5,00	1.741,23	8.706,15
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	6,00	253,03	1.518,18
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	188,30	753,20
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	2,00	287,14	574,28
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	4.193,90	4.193,90

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.1500.16	ud Carrete desmontaje virola acero inox. PN16 DN1500 Carrete telescópico autoportante, PN 16 atm, DN 1.500 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	4.794,39	9.588,78
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800 Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	5.842,52	11.685,04
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	4,00	7.057,71	28.230,84
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	13.496,06	26.992,12
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	8,00	712,92	5.703,36
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	1.341,59	2.683,18
P6VM.1500.16M	ud Válvula mariposa motorizada PN 16 Ø1500 I Válvula de mariposa, DN 1500 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	48.218,57	96.437,14
P6VM.1800.16M	ud Válvula mariposa motorizada PN 16 Ø1800 I Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	62.455,65	124.911,30
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	2,00	3.503,59	7.007,18
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	2,00	13.910,46	27.820,92
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	5,00	3.199,43	15.997,15
TOTAL 01.06.01.02.....				711.112,38

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.06.01.03 LOSA Y ANCLAJES (TOMA-11)				
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	85,94	49,22	4.229,97
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	786,25	80,88	63.591,90
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	37,20	16,26	604,87
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	623,72	26,85	16.746,88
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	92.386,94	1,35	124.722,37
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	104,00	4,88	507,52
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	27,50	5,26	144,65
TOTAL 01.06.01.03.....				210.548,16
01.06.01.04 PROTECCIÓN Y ENCINTADOS (TOMA-11)				
P4CINT2000	m Encintado anticorrosivo DN2000 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN200mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	21,00	823,28	17.288,88
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	21,00	744,18	15.627,78
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	1,20	147,79	177,35
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y so-lapes. Unidad totalmente terminada.	82,58	61,75	5.099,32
TOTAL 01.06.01.04.....				39.741,57
01.06.01.05	OBRA DE DESAGÜE (TOMA-11)			
01.06.01.05.1	ARQUETA ROTURA (TOMA-11)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimenta-ciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecáni-cos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cual-quier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	87,50	2,77	242,38
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del ma-terial y la eliminación de tamaños máximos, carga y transporte desde caballón/ aco-pio intermedio, extendido, riego a humedad óptima, compactación y perfilado de ra-santes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente ter-minada.	39,00	2,16	84,24
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás ope-raciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,85	49,22	238,72
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cu-ñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, cura-do y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	4,80	59,75	286,80
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos hori-zontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vi-brado, curado y demás operaciones para su correcta terminación. Según Código Es-tructural. Unidad totalmente terminada.	14,55	80,88	1.176,80
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemen-to estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de adi-tivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bom-beo, vibrado, curado y demás operaciones para su correcta terminación. Según Cód-i-go Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	14,79	91,99	1.360,53
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, pun-tales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de cha-pas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correcta-mente terminada.	12,48	16,26	202,92
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados REC-TOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundi-dad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofran-te y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impi-da las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados locali-zados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correcta-mente terminada.	29,58	26,85	794,22

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	4.370,04	1,35	5.899,55
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	44,00	6,15	270,60
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	35,00	2,24	78,40
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y candado. Totalmente terminada y colocada.	18,90	110,88	2.095,63
TOTAL 01.06.01.05.1.....				12.828,39
01.06.01.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-11)				
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	17,00	87,55	1.488,35
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	54,40	2,77	150,69
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	46,75	61,53	2.876,53
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,75	33,10	24,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1,88	80,88	152,05
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,03	91,99	186,74

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	3,00	16,26	48,78
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	6,75	26,85	181,24
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	215,73	1,35	291,24
TOTAL 01.06.01.05.2.....				5.400,45
01.06.01.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-11)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	2.175,00	0,37	804,75
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	2.175,00	0,40	870,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	644,84	2,77	1.786,21
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	3,75	29,11	109,16
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	12,50	1,89	23,63

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	8,00	63,27	506,16
TOTAL 01.06.01.05.3.....				4.099,91
TOTAL 01.06.01.05.....				22.328,75
01.06.01.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-11)			
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	48,80	49,09	2.395,59
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	12,80	111,07	1.421,70
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	12,00	151,16	1.813,92
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroxexpansivo, según detalle de planos. Totalmente instalada.	4,00	41,67	166,68
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	2.365,20	2,98	7.048,30
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	2,00	1.993,93	3.987,86
TOTAL 01.06.01.06.....				16.834,05

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.06.01.07	URBANIZACIÓN (TOMA-11)			
01.06.01.07.1	PAVIMENTOS (T11)			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	832,93	20,14	16.775,21
TOTAL 01.06.01.07.1				16.775,21
01.06.01.07.2	CERRAMIENTOS (T11)			
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	2,00	160,67	321,34
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitatoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	2,00	638,04	1.276,08
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	204,00	96,52	19.690,08
TOTAL 01.06.01.07.2				21.287,50
01.06.01.07.3	DRENAJES (T11)			
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	195,00	4,11	801,45
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	6,00	14,41	86,46
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	20,00	63,27	1.265,40
TOTAL 01.06.01.07.3				2.153,31
TOTAL 01.06.01.07				40.216,02
TOTAL 01.06.01.....				1.055.356,41

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.06.02	TOMA-12			
01.06.02.01	MOVIMIENTO DE TIERRAS (TOMA-12)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	3.153,33	2,77	8.734,72
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	1.044,00	4,97	5.188,68
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	2.695,33	1,78	4.797,69
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	458,00	2,16	989,28
TOTAL 01.06.02.01				19.710,37
01.06.02.02	CALDERERÍA Y VALVULERÍA (TOMA-12)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	74.342,59	2,98	221.540,92
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	5,00	1.741,23	8.706,15
P1BRIDA500.25	ud Brida ciega PN 25 Ø500 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 500 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	1,00	578,27	578,27
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	6,00	253,03	1.518,18

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	188,30	753,20
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	2,00	287,14	574,28
P6CD.500.16	ud Carrete desmontaje DN 500 PN16 Carrete de desmontaje de acero de 500 mm de diámetro PN16, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	456,33	456,33
P6CD.700.16	ud Carrete desmontaje DN 700 PN16 Carrete de desmontaje de diametro 700 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	2,00	1.051,41	2.102,82
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800 Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	5.842,52	11.685,04
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	4,00	7.057,71	28.230,84
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	13.496,06	26.992,12
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	8,00	712,92	5.703,36
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	1.341,59	2.683,18
P6VM.700.16M	ud Válvula mariposa motorizada PN 16 Ø700 I Válvula de mariposa, DN 700 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	11.272,06	22.544,12
P6VM.1800.16M	ud Válvula mariposa motorizada PN 16 Ø1800 I Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	62.455,65	124.911,30

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400 Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación , incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	2,00	26.725,82	53.451,64
P6FG.400.16	ud Filtro globo PN 16 Ø400 Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	2,00	8.554,76	17.109,52
P6VENT.250.16	ud Ventosa trifuncional DN250 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 250 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	9,00	4.684,49	42.160,41
TOTAL 01.06.02.02.....				571.701,68
01.06.02.03	LOSA Y ANCLAJES (TOMA-12)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	96,79	49,22	4.764,00
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	814,71	80,88	65.893,74
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	37,35	16,26	607,31
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	566,07	26,85	15.198,98
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	79.663,65	1,35	107.545,93
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	104,00	4,88	507,52
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	29,60	5,26	155,70
TOTAL 01.06.02.03.....				194.673,18

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.06.02.04	PROTECCIÓN Y ENCINTADOS (TOMA-12)			
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	42,00	744,18	31.255,56
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	1,20	147,79	177,35
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	69,72	61,75	4.305,21
TOTAL 01.06.02.04.....				37.286,36
01.06.02.05	OBRA DE DESAGÜE (TOMA-12)			
01.06.02.05.1	ARQUETA ROTURA (TOMA-12)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repelido necesarias. Unidad totalmente terminada medido sobre perfil teórico.	127,00	2,77	351,79
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	52,50	2,16	113,40
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	7,45	49,22	366,69
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	6,40	59,75	382,40
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	22,35	80,88	1.807,67
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	18,03	91,99	1.658,58

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	15,48	16,26	251,70
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	29,58	26,85	794,22
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.566,62	1,35	7.514,94
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	54,00	6,15	332,10
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	35,00	2,24	78,40
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda-do . Totalmente terminada y colocada.	18,90	110,88	2.095,63
TOTAL 01.06.02.05.1				15.845,12
01.06.02.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-12)				
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	12,50	122,70	1.533,75
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	45,00	2,77	124,65
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	31,10	61,53	1.913,58

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,75	33,10	24,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1,88	80,88	152,05
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,03	91,99	186,74
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	3,00	16,26	48,78
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	6,75	26,85	181,24
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	215,73	1,35	291,24
TOTAL 01.06.02.05.2.....				4.456,86
01.06.02.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-12)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	525,00	0,37	194,25
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	525,00	0,40	210,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	262,50	2,77	727,13

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	7,50	29,11	218,33
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujección provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	25,00	1,89	47,25
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	9,00	63,27	569,43
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	7,50	20,14	151,05
TOTAL 01.06.02.05.3.....				2.117,44
TOTAL 01.06.02.05.....				22.419,42
01.06.02.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-12)			
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	48,80	49,09	2.395,59
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	12,80	111,07	1.421,70
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	12,00	151,16	1.813,92
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.	4,00	41,67	166,68

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	2.365,20	2,98	7.048,30
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	2,00	1.993,93	3.987,86
TOTAL 01.06.02.06.....				16.834,05
01.06.02.07	URBANIZACIÓN (TOMA-12)			
01.06.02.07.1	PAVIMENTOS (T12)			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	867,43	20,14	17.470,04
TOTAL 01.06.02.07.1.....				17.470,04
01.06.02.07.2	CERRAMIENTOS (T12)			
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+paint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	2,00	160,67	321,34
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+paint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	2,00	638,04	1.276,08
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	218,00	96,52	21.041,36
TOTAL 01.06.02.07.2.....				22.638,78

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.06.02.07.3 DRENAJES (T12)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	207,00	4,11	850,77
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	6,00	14,41	86,46
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	21,00	63,27	1.328,67
TOTAL 01.06.02.07.3.....				2.265,90
TOTAL 01.06.02.07.....				42.374,72
TOTAL 01.06.02.....				904.999,78
TOTAL 01.06.....				1.960.356,19
01.07 HINCAS (OT-T12)				
01.07.01 HINCA RÍO ARAGÓN				
01.07.01.01 TRABAJOS PREPARATORIOS+MT (HINCA ARAGÓN)				
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.688,07	2,77	7.445,95
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de repavimentado. Unidad totalmente terminada medido sobre perfil teórico.	4.668,55	12,72	59.383,96
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	100,10	4,97	497,50
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	178,80	20,14	3.601,03

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	198,00	4,11	813,78
TOTAL 01.07.01.01				71.742,22
01.07.01.02	PANTALLA Y ESTRUCTURA (HINCA ARAGÓN)			
P5PANT01	ud Transporte y montaje equipos ejec. pantallas Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	1,00	11.719,12	11.719,12
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	1,00	3.324,51	3.324,51
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.	107,00	106,73	11.420,11
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o reperforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Hormigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.	2.208,00	245,82	542.770,56
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	19,50	49,22	959,79
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	78,00	80,88	6.308,64
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	195,51	91,99	17.984,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	397.720,02	1,35	536.922,03
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	16,15	161,50
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	9,47	94,70
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	560,00	8,07	4.519,20
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	5,27	52,70
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	503,80	26,85	13.527,03
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	56,00	7,25	406,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	18,84	100,81	1.899,26
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	127,40	52,84	6.731,82
TOTAL 01.07.01.02.....				1.158.801,93
01.07.01.03	HINCA(HINCA ARAGÓN)			
P6HINCA2000A1	ud Implantación equipo escudo cerrado hinca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo cerrado, para hinca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.	1,00	40.280,00	40.280,00
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.	1,00	16.960,00	16.960,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	306,00	4.183,69	1.280.209,14
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	306,00	90,10	27.570,60
TOTAL 01.07.01.03.....				1.365.019,74
01.07.01.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA ARAGÓN)			
01.07.01.04.1	TRATAMIENTO (HINCA ARAGÓN)			
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-II/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	1.820,40	79,21	144.193,88
P6HINC.T02	m³ Resina de silicatos inyectada en el terreno Resina de silicatos inyectada en el terreno para consolidación en túneles e impermeabilización i/ rechazo.	183,60	1.008,75	185.206,50
P1MT15-250M	m Micropilote DN 250 mortero M250 Pilote de 250 mm de diámetro, barrenado mecánico con empleo de entubación recuperable y lodos tixotrópicos, fabricado "in situ" de mortero M-250 SR, conforme a norma UNE 36068 y/o según normativa vigente, puesto en obra según EHE vigente, incluso parte proporcional de excavación, transporte, instalación, montaje y desmontaje de equipos, recuperación de la entubación, protección de la cabeza del pilote, descabezado de pilote hasta cara inferior de viga de atado y retirada de sobrantes, ejecución, control de calidad, suministro y colocación de tubos sónicos, informes, ensayos asociados y documentación. Totalmente terminado.	56,00	56,94	3.188,64
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	200,00	56,49	11.298,00
TOTAL 01.07.01.04.1.....				343.887,02
01.07.01.04.2	AUSCULTACIÓN (HINCA ARAGÓN)			
P6HINCA03B	ud Equipo auscultación túnel / hinca río de long >100m Equipo de auscultación de seguimiento de túnel bajo río de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	4.977,93	4.977,93
TOTAL 01.07.01.04.2.....				4.977,93
TOTAL 01.07.01.04.....				348.864,95
TOTAL 01.07.01.....				2.944.428,84

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.07.02	HINCA NA-128			
01.07.02.01	TRABAJOS PREPARATORIOS+MT (HINCA NA-128)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.140,17	2,77	5.928,27
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.	2.996,55	12,72	38.116,12
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	100,10	4,97	497,50
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	166,80	20,14	3.359,35
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	220,00	4,11	904,20
TOTAL 01.07.02.01				48.805,44
01.07.02.02	PANTALLA Y ESTRUCTURA (HINCA NA-128)			
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	2,00	3.324,51	6.649,02
P5PANT03	ud Desmontaje/ desplazamiento equipos pantallas a fábricas Desmontaje final de pantallas y transporte a punto de origen. Unidad completa.	1,00	11.719,12	11.719,12
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.	107,00	106,73	11.420,11

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o perforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Hormigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.	1.712,00	245,82	420.843,84
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	19,50	49,22	959,79
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	78,00	80,88	6.308,64
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	174,87	91,99	16.086,29
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	149.974,82	1,35	202.466,01
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	16,15	161,50
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	9,47	94,70
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	560,00	8,07	4.519,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	5,27	52,70
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	425,40	26,85	11.421,99
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	56,00	7,25	406,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	18,84	100,81	1.899,26
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	94,90	52,84	5.014,52
TOTAL 01.07.02.02.....				700.022,69
01.07.02.03	HINCA (HINCA NA-128)			
P6HINCA2000A2	ud Retirada equipo escudo cerrado hınca DN 2.000-2500 a fábrica Retirada completa de obra y transporte a punto de origen de proveedor de equipo perforador de escudo cerrado, para hınca de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.	1,00	40.280,00	40.280,00
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hınca, mano de obra para descarga, montaje y puesta a punto.	2,00	16.960,00	33.920,00
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	70,00	4.183,69	292.858,30
P6HINCATUB01	m Sobre coste tubería int. hınca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hınca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	70,00	90,10	6.307,00
TOTAL 01.07.02.03.....				373.365,30

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.07.02.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA NA-128)			
01.07.02.04.1	TRATAMIENTO (HINCA NA-128)			
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	248,38	79,21	19.674,18
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	200,00	56,49	11.298,00
TOTAL 01.07.02.04.1.....				30.972,18
01.07.02.04.2	AUSCULTACIÓN (HINCA NA-128)			
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	8,00	18,53	148,24
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.	8,00	18,49	147,92
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	4.821,98	4.821,98
TOTAL 01.07.02.04.2.....				5.118,14
TOTAL 01.07.02.04.....				36.090,32
TOTAL 01.07.02.....				1.158.283,75
TOTAL 01.07				4.102.712,59
01.08	MACIZOS DE ANCLAJE (OT-T12)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	633,87	2,77	1.755,82
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	383,47	2,16	828,30
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1.379,68	80,88	111.588,52

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	1.098,62	26,85	29.497,95
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	71.784,09	1,35	96.908,52
P4CINT2000	m Encintado anticorrosivo DN2000 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN200mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	147,24	823,28	121.219,75
TOTAL 01.08				361.798,86
01.09	CAMINOS DE SERVICIO (OT-T12)			
01.09.01	MOVIMIENTO DE TIERRAS Y PAVIMENTOS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	5.269,08	2,77	14.595,35
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	2.691,02	1,78	4.790,02
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	3.759,57	20,14	75.717,74
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	357,75	80,88	28.934,82
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	7.632,00	1,35	10.303,20
TOTAL 01.09.01.....				134.341,13

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.09.02	DRENAJE TRANSVERSAL			
01.09.02.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	862,39	2,77	2.388,82
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	43,66	3,89	169,84
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	61,69	59,75	3.685,98
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	6,84	61,53	420,87
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	288,00	22,61	6.511,68
TOTAL 01.09.02.01				13.177,19
01.09.02.02	OBRAS DE FÁBRICA			
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localiazada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5, incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.	20,10	48,13	967,41
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	59,00	63,27	3.732,93
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	11,40	122,70	1.398,78

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4M2.0X1.0	m Marco prefabricado 2,0x1,0 m Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.0x1.0 m, conforme a norma UNE-EN 14844+A2:2012 incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.	3,00	586,16	1.758,48
P4M3.0X1.5	m Marco prefabricado 3.0x1.5 m Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 3.0x1.5 m, conforme a norma UNE-EN 14844+A2:2012 incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.	20,90	835,26	17.456,93
P4M2.5X2.0	m Marco prefabricado 2.5x2.0 m Suministro y colocación de marco prefabricado visitable de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.5x2.0 m, conforme a norma UNE-EN 14844+A2:2012 incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.	7,50	845,86	6.343,95
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales Hormigón para armar HA-30/B/20/XC4, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	133,46	78,03	10.413,88
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	228,10	16,26	3.708,91
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	224,04	26,85	6.015,47
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	11.344,10	1,35	15.314,54
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	176,76	2,24	395,94
P3LAM1	m² Imperm. muros+Lámina dren PE+Geotex 200 g Drenaje de muros con lámina nodular con marcado CE de polietileno virgen con geotextil incorporado y doble nódulo de 12 mm. de altura nod, capacidad de drenaje 1,2 l / s y resistencia a compresión de 90 kn/m2. Delta Drain o similar, p.p. de fijación al soporte con taco espiga de polipropileno, a razón de 3 uds / m2 y sellado de solapes de anchura de 10 cm. con banda autoadhesiva a dos caras de caucho butilo Delta Fix, incluso impermeabilización del paramento de hormigón con dos manos de emulsión bituminosa modificada 0.7kg/m2, según CTE/DB-HS 1. Unidad totalmente terminada, incluso remate de conexión a dren.	194,43	12,53	2.436,21

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	220,80	9,54	2.106,43
TOTAL 01.09.02.02.....				72.049,86
TOTAL 01.09.02.....				85.227,05
01.09.03	DRENAJE LONGITUDINAL			
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	681,43	14,41	9.819,41
TOTAL 01.09.03.....				9.819,41
TOTAL 01.09				229.387,59
01.10	PROTECCIÓN CATÓDICA (OT-T12)			
P2CAT001	ud Rectificador 70V-35A en armario intemperie. Rectificador 70V-35A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	3,00	11.563,64	34.690,92
P2CAT004	ud Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2 Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	36,00	769,00	27.684,00
P2CAT005	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vía Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	33,00	39,32	1.297,56
P2CAT006	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	6,00	37,00	222,00
P2CAT007	m Cable anódico tipo RV-K de sección 1x25mm2 Cable anódico tipo RV-K de sección 1x25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	385,00	8,51	3.276,35
P2CAT008	Kg Coque petróleo calcinado Coque petróleo calcinado	14.000,00	2,67	37.380,00
P2CAT009	m Manguera perforada Manguera perforada	282,00	7,07	1.993,74
P2CAT010	ud Arqueta riego protección catódica Arqueta riego ide protección catódica incluidos p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	6,00	716,14	4.296,84
P2CAT011	ud Caja de conexionado 12 ánodos IP.55 y prensaestopas. Caja de conexionado 12 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	1,00	693,24	693,24
P2CAT012	ud Caja de conexionado 10 ánodos IP.55 y prensaestopas. Caja de conexionado 10 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	577,49	1.154,98

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P2CAT013	ud Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0. Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0.6/1 KV 1 x 6 mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	3,00	226,42	679,26
P2CAT014	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 (cantidad estimada) y Handy cap, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	6,00	131,02	786,12
P2CAT015	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	6,00	277,30	1.663,80
P2CAT016A	ud Obra civil, mont.conex EPC+TP+TPEs+ P.Func (OT-T12) Obra civil, montaje y conexionado EPC, y material en línea de TP y TPEs en todo el conjunto del subtramo OT-T12. Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento.	2,00	12.720,00	25.440,00
P2CAT017	ud Caja toma de potencial de policarbonato con prensaestopas Caja toma de potencial de policarbonato con prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	10,00	69,32	693,20
P2CAT018	ud Caja toma de potencial TPE (200 X 200) con poste acero galvaniza Caja toma de potencial TPE (200 X 200) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	438,84	877,68
P2CAT019	ud Caja toma de potencial TPE (320 x 320) con poste acero galvaniza Caja toma de potencial TPE (320 x 320) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	3,00	786,10	2.358,30
P2CAT022	ud Electrodo probeta estándar Electrodo probeta estándar, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	14,00	136,45	1.910,30
P2CAT025	ud Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados con mezcla activadora y 5 m de cable (Protección catódica provisional), incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	180,00	104,05	18.729,00
P2CAT026	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable R Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable RV 0.6/1 KV 1 x 6 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	30,00	62,33	1.869,90
P2CAT027	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable RV 0.6/1 KV 1 x 6 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	20,00	207,34	4.146,80
P2CAT028	ud Cable acero galvanizado 12 mm Cable acero galvanizado 12 mm, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	45,00	7,63	343,35
P5ELEM1X25TT	m Manguera eléctrica 1 x 25 mm2 Cu Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	30,00	9,46	283,80
P2CAT029	ud Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	12,00	11,45	137,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P2CAT030	ud Picas de zinc 1000 mm ensacada Picas de zinc 1000 mm ensacada, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	12,00	184,44	2.213,28
P2CAT031	ud Vías de chispas con cable y pletina para conexión Vías de chispas con cable y pletina para conexión, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	14,00	456,65	6.393,10
P2CAT032	ud Junta aislante embridada DN 2200 mm PN16 Junta aislante embridada DN 2200 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	4.562,66	9.125,32
P2CAT033	ud Junta aislante embridada DN 2000 mm PN16 Junta aislante embridada DN 2000 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	4.144,18	16.576,72
P2CAT035A	ud Junta aislante embridada DN 1800 mm PN16 Junta aislante embridada DN 1800 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	6,00	3.637,92	21.827,52
P2CAT038	ud Junta aislante embridada DN 1300 mm PN16 Junta aislante embridada DN 1300 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	1,00	2.428,25	2.428,25
P2CAT044	ud Junta aislante embridada DN 500mm PN16 Junta aislante embridada DN 500mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	1,00	849,70	849,70
P2CAT045	ud Junta aislante embridada DN 300mm PN16 Junta aislante embridada DN 300mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	573,67	2.294,68
TOTAL 01.10				234.317,11
01.11	INSTALACIONES ELÉCTRICAS (OT-T12)			
01.11.01	TOMA-11 (FOTOV)			
01.11.01.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-11)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	l Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexiones, arranques y mantenimiento, posterior operación de desconexiones, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiones a trafo Operación de conexionado y desconexión de LMT.	1,00	365,62	365,62
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 01.11.01.01.....				15.371,26
01.11.01.02	FOTOVOLTAICA (TOMA-11)			
P5ELEF001	ud Panel Cel. fotovoltaicas 400w Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 % Datos eléctricos de CA - Modelo de inversor: IQ 7A A 230 V CA - Potencia máxima de salida 366 VA - Máx. potencia de salida continua 349 VA - Rango/Tensión nom. (LN) 219 264 V - Máx. corriente de salida continua 1,52 A - Máx. unidades por circuito derivado de 20 A (LN) 10 - Eficiencia ponderada 96,5 % - Frecuencia nominal 50 Hz - Rango de frecuencia ampliado 45-55 Hz - Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo Datos de alimentación de CC - Potencia nominal 11 (Pnom) 400 W - Tol. de potencia +5/0 % - Eficiencia del módulo 21,5 % - Coef. temp. (Potencia) -0,29 %/°C Datos mecánicos - Células solares 66 células monocristalinas Maxeon Generación 5 - Cristal frontal - Cristal templado antirreflejos de gran transmisividad - Clasificación ambiental Microinversor con clasificación para exteriores - IP67 - (UL: NEMA tipo 6) - Marco Anodizado negro de clase 1 Caja de conexiones: IP65. Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión . Unidad totalmente instalada y operativa	14,00	734,58	10.284,12
P5ELEF002	ud Regulador 12/24/48V 208V 15 Amp Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp. Unidad totalmente instalada y operativa	1,00	1.119,36	1.119,36
P5ELEF003	ud Baterías de gel 200PZV2500 o similar Baterías de gel 200PZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora. Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento. Unidad totalmente instalada y probada.	1,00	9.094,80	9.094,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEF004	ud Inversor-cargador 8.000w Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo electrógeno). Cumplirá: - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretensión en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. Características técnicas - Entrada DC o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal; 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. Unidad totalmente instalada y probada.	1,00	3.031,60	3.031,60
P5ELEF005	ud Convertidor CC/CC Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobrecalentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.	1,00	349,80	349,80
P5ELEF006	ud Estructura aluminio y hormigón soporte de placas fotovoltaicas Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.	14,00	338,14	4.733,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	105,00	8,25	866,25
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	1,00	98,29	98,29
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	6,00	12,58	75,48
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	1,00	69,95	69,95
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	1,00	232,13	232,13
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	20,00	10,99	219,80
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	40,00	5,78	231,20
TOTAL 01.11.01.02.....				30.503,90
01.11.01.03	CUADROS ELÉCTRICOS (TOMA-11)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3.3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano, lamas de ventilación cubiertas y resto de elementos. Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECGBT11	ud CGBT Toma-11 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-11 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	10.132,99	10.132,99
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	5,00	101,69	508,45
TOTAL 01.11.01.03.....				26.188,42
01.11.01.04	CANALIZACIONES (TOMA-11)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	102,30	55,53	5.680,72
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	25,00	6,68	167,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	31,00	18,35	568,85
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	8,00	281,22	2.249,76
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	2,00	87,49	174,98
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	9,00	31,90	287,10
TOTAL 01.11.01.04.....				10.033,90
01.11.01.05	LÍNEAS DE BT (TOMA-11)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	943,00	6,26	5.903,18
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	50,00	6,78	339,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	245,00	6,59	1.614,55

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	40,00	11,30	452,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 01.11.01.05.....				9.073,86
01.11.01.06	TOMA TIERRA (TOMA-11)			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	6,00	98,29	589,74
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	6,00	69,95	419,70
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	138,00	7,88	1.087,44
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	5,00	10,99	54,95
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 01.11.01.06.....				5.346,23

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.11.01.07	MECANISMOS (TOMA-11)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 01.11.01.07.....				381,92
01.11.01.08	ALUMBRADO (TOMA-11)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 01.11.01.08.....				1.191,29
TOTAL 01.11.01.....				98.090,78

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.11.02	TOMA-12			
01.11.02.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-12)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexiones, arranques y mantenimiento, posterior operación de desconexiones, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiones a trafo Operación de conexionado y desconexión de LMT.	1,00	365,62	365,62
P5ELEC1M1T12	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-12 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora Toma-12.	1,00	16.322,41	16.322,41
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, trámites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 01.11.02.01				34.737,87
01.11.02.02	LÍNEA DE MEDIA TENSIÓN (TOMA-12)			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	46,00	4.165,13	191.595,98
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	10.322,40	8,23	84.953,35
TOTAL 01.11.02.02.....				282.602,01

01.11.02.03 TRANSFORMACIÓN Y GENERACIÓN (TOMA-12)

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de canon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 01.11.02.03.....				9.684,05
01.11.02.04	CUADROS ELÉCTRICOS (TOMA-12)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermendio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELECGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexión y funcionamiento. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50
P5ELECGBT12	ud CGBT Toma-12 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-12 en cabina/s de 2,0x0.8X0.6m normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexión. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	10.195,82	10.195,82

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	5,00	101,69	508,45
TOTAL 01.11.02.04.....				26.251,25
01.11.02.05	CANALIZACIONES(TOMA-12)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica, y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	54,00	55,53	2.998,62
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	18,00	68,11	1.225,98
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	60,00	45,45	2.727,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	25,00	6,68	167,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	29,00	18,35	532,15
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	10,00	281,22	2.812,20
P5ARQPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	3,00	264,89	794,67
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	1,00	20,25	20,25
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	1,00	30,86	30,86
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	9,00	31,90	287,10
TOTAL 01.11.02.05.....				12.588,81

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.11.02.06	LÍNEAS DE BT (TOMA-12)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	943,00	6,26	5.903,18
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	50,00	6,78	339,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	245,00	6,59	1.614,55
P5ELEM4X16TT	m Manguera eléctrica 4 x 16 + TT16 mm2 Cu Manguera eléctrica de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	30,00	12,53	375,90
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	40,00	11,30	452,00
P5ELEM4X16T2	m Manguera eléctrica 4 x 16 + TT 16mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	30,00	14,42	432,60
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 01.11.02.06.....				9.882,36

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.11.02.07	TOMA TIERRA (TOMA-12)			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	5,00	98,29	491,45
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	5,00	12,58	62,90
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	5,00	69,95	349,75
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	130,00	7,88	1.024,40
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada	8,00	7,08	56,64
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
TOTAL 01.11.02.07				5.078,90
01.11.02.08	MECANISMOS (TOMA-12)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 01.11.02.08.....				381,92
01.11.02.09	ALUMBRADO (TOMA-12)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco barnes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 01.11.02.09.....				1.191,29
TOTAL 01.11.02.....				382.398,46
01.11.03	EPC02			
01.11.03.01	ACOMETIDA Y LEGALIZACIÓN (EPC02)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	200,00	1,05	210,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	2,00	713,71	1.427,42
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLM1EP02	ud Conex. LMTS+ refuerzos+adaptación línea EPC02 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en EPC01.	1,00	10.361,50	10.361,50
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 01.11.03.01				26.320,83
01.11.03.02	LÍNEA DE MEDIA TENSIÓN (EPC02)			
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conxionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	46,00	4.165,13	191.595,98
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	132,00	8,23	1.086,36
TOTAL 01.11.03.02.....				207.422,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.11.03.03 TRANSFORMACIÓN Y GENERACIÓN(EPC02)				
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conectar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 01.11.03.03.....				9.684,05
01.11.03.04 CUADROS ELÉCTRICOS (EPC02)				
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -laminas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermendio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexión y funcionamiento. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50
P5ELEGBTEPC2	ud CGBT EPC-02 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de EPC-02 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexión. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	7.814,67	7.814,67

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	5,00	101,69	508,45
TOTAL 01.11.03.04.....				16.350,70
01.11.03.05	CANALIZACIONES(EPC02)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, Acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	18,00	68,11	1.225,98
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, Acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	40,00	45,45	1.818,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	20,00	5,36	107,20
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	2,00	281,22	562,44
P5ARQPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	3,00	264,89	794,67
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	1,00	20,25	20,25
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	1,00	30,86	30,86
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	4,00	31,90	127,60
TOTAL 01.11.03.05.....				5.270,89
01.11.03.06	LÍNEAS DE BT (EPC02)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	345,00	6,26	2.159,70
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	32,00	6,78	216,96
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5T2	m Manguera eléctrica 4 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	20,00	7,58	151,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	245,00	6,59	1.614,55
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	40,00	11,30	452,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 01.11.03.06.....				5.359,94
01.11.03.07	TOMA TIERRA (EPC02)			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	5,00	98,29	491,45
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	5,00	12,58	62,90
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	5,00	69,95	349,75
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	130,00	7,88	1.024,40
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada	8,00	7,08	56,64
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
TOTAL 01.11.03.07.....				5.078,90

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.11.03.08	MECANISMOS (EPC02)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 01.11.03.08.....				381,92
01.11.03.09	ALUMBRADO (EPC02)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 01.11.03.09.....				1.191,29
TOTAL 01.11.03.....				277.060,92
TOTAL 01.11				757.550,16

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.12	CONTROL Y AUTOMATISMO (OT-T12)			
01.12.01	INGENIERÍA Y FORMACIÓN (OT-12)			
P7ING001	ud Ingeniería PLC's y comunicaciones (CN-T12)	1,00	4.243,39	4.243,39
	Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.			
P73COMSCADA1	ud Ingeniería adecuación SCADA, control y supervisión (CN-T12)	1,00	6.640,19	6.640,19
	Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.			
P73COMPUESTA1	ud Pruebas y puesta en marcha de instalaciones (CN-T12)	1,00	3.049,94	3.049,94
	Control de Calidad de señales y Pruebas Funcionales de la instalación del tramo CN-T12 incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.			
P73COMFORMA	ud Formación y documentación	1,00	1.829,96	1.829,96
	Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la ·1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.			
TOTAL 01.12.01.....				15.763,48
01.12.02	SISTEMA DE CONTROL Y COMUNICACIONES (OT-12)			
P7COMARM01	ud Armario de control 2000 x 800 x 600mm	3,00	3.286,67	9.860,01
	Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de autómatas y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de caldeo y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc,..., incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexionados y probados.			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMNODO1	ud Nodo comunicaciones GSM/GPRS G3-5. incl.cuadro protec. Ud Suministro e instalación equipo de comunicaciones bidireccional compuesto de alimentación autónomo de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y modem de comunicaciones , armario IP65, armario mural de 19", 12 U y 600 mm de profundidad. , RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C), 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°C A 80°C contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica), electrificación cuadro (magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.	3,00	3.812,76	11.438,28
P7COMNODO2	ud Nodo comunicaciones radiofrecuencia. incl.cuadro protec. Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio modem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.	3,00	2.877,15	8.631,45
P7COMP005	ud Bastidor Automata Suministro de bastidor para autómata de 10 slots, tipo 1756-A10 de Allen Bradley o similar.	3,00	349,15	1.047,45
P7COMPLC01	ud PLC proglamable integrable (ED:64 SD:32; EA:8 SA:8) PLC centralizador de todos los sistemas (Ed:64 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje	1,00	3.151,26	3.151,26
P7COMPLC02	ud PLC proglamable integrable (ED:128 SD:32 EA:16 SA:8) PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje	2,00	4.787,50	9.575,00
P7COMP011	ud Módulos conexión cableado E/D (IB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según referencias (V8 INPUT PLC V8/FLK14/IN - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	10,00	634,34	6.343,40
P7COMP012	ud Módulos conexión cableado S/D (OB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, según referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	3,00	710,76	2.132,28

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMP013	ud Módulos conexión cableado E/A (IF16) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC - FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	3,00	500,04	1.500,12
P7COMP014	ud Módulos conexión cableado S/A (OF8) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC - FLK14/EZ-DR/300/CONFEC (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	3,00	469,47	1.408,41
P7COMPLC1C	ud Pantallas gráficas HMI 15" táctil+cableado conex. Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado numérico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instalación y conexionado de unidad; Configuración Remota, Pruebas y Puesta en Servicio.	3,00	432,03	1.296,09
P7COMPLC1B	ud Cuadro, protecciones electricas y pantalla PLC Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión.	3,00	2.723,65	8.170,95
P7COMP001	ud Protección contra sobretensiones equipos 230 Vca Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.	1,00	142,84	142,84
P7COMP002	ud Protección contra sobretensiones analógicas Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); dobles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.	3,00	359,24	1.077,72
P7COMP003	ud Protección contra sobretensiones 24Vcc Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&-TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.	3,00	283,97	851,91
P7COMP006	ud Fuente de alimentación autómata 24 Vcc 10 A Suministro e instalación de fuente de alimentación para autómata programable para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar	3,00	346,21	1.038,63
P71COMSAH11	ud Sistema alimentación ininterrumpido-com 24 VDC Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.	3,00	484,78	1.454,34

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P71COMSAH12	ud Sistema alimentación ininterrumpido 2500w Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y by-pass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación: 1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min 1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para by-pass manual del SAI 1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos 1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI 1.00 Protección Magnetotérmica II 10A 6kA. Protección foma de enchufe e instrumentación 4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación. Totalmente instalado, conexionado y funcionando. Unidad totalmente instalada	3,00	1.790,50	5.371,50
P7COMP004	ud CPU autómatas L72 memoria 4 Mb con memoria SD Suministro e instalación de CPU para autómatas programable con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 61131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.	3,00	4.582,20	13.746,60
P7COMP015	ud Tarjeta comunicaciones Ethernet/IP Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.	3,00	1.327,37	3.982,11
P7COMP016	ud Tarjeta Ethernet/IP 2-PORT CLX HI-CAP ENET/P BRIDG o similar Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.	3,00	1.774,82	5.324,46
P7COMP017	ud Tarjeta comunicaciones Modbus Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.	3,00	1.869,68	5.609,04
P7COMP018	ud Pasarela comunicaciones POWELOGIC EGX 100 o similar Suministro y montaje de pasarela de comunicaciones POWERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexionada.	3,00	601,31	1.803,93
P7COMP022	ud Puente de diodos Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.	3,00	149,06	447,18
TOTAL 01.12.02.....				105.404,96
01.12.03	INSTRUMENTACIÓN (OT-12)			
P6VALV1	ud Valv bola y conexionados Válvulas de tipo bola de 1", piezas T y conexiones, totalmente instalado y probado.	8,00	45,00	360,00
P6SENS01	ud Sensor humedad e inundación caseta Suministro, instalación y puesta en servicio de sensor de humedad e inundación, alimentación eléctrica a 24Vcc, incluso 15 m de tubo PVC y cable de conexión, totalmente instalado y probado.	2,00	390,26	780,52
P6MAN01	ud Manómetro en baño de glicerina Suministro, instalación y puesta en servicio de manómetro en baño de glicerina, escala 0-6 y 0-10 kg/cm2, sistema de medida Bourdon, diámetro 100 mm 1/2" montado y probado .	8,00	70,08	560,64
P6PRES01	ud Transductor presión 0,1 % Analógico Suministro, instalación y puesta en servicio de Transductor de presión con salida analógica, alimentación eléctrica a 24Vcc, con técnica de 2 ó 4 hilos, con precisión mejor del 0,1%, IP 67, indicación digital de medida en frontal del equipo, señal de salida 4-20 mA, totalmente instalado y probado.	16,00	385,59	6.169,44

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6Q500.16	ud Caudalímetro ultrasónico PN 16 Ø500 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 500 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	1,00	4.491,38	4.491,38
P6Q1300.16	ud Caudalímetro ultrasónico PN 16 Ø1300 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	1,00	11.443,09	11.443,09
TOTAL 01.12.03.....				23.805,07
01.12.04	CANALIZACIÓN Y CABLEADOS (OT-12)			
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antiroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.	2,00	14,87	29,74
P7COMCABL2	m Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (RJ45), tendido y conectorizado. Unidad totalmente instalada.	20,00	3,34	66,80
P5COMCBL001A	m Cable multihilo coms. VHOV-K y VOV-K apantall.8x0,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	610,00	3,53	2.153,30
P5COMCBL001B	m Cable multihilo com. VHOV-K y VOV-K apantall. 8x1,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	20,00	4,44	88,80
P5COMCBL001C	m Cable multihilo comunicaciones señales digitales interior 19p Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.	552,00	11,25	6.210,00
P5COMCBL001D	m Cable multihilo comunicaciones señales analógica interior 19p Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.	965,00	11,54	11.136,10
P5COMCBL004	m Cable comunicaciones RS232 Cable comunicaciones RS232. Unidad totalmente instalada.	40,00	5,85	234,00
P5COMCBL005	m Cable comunicaciones RS485 multipar Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.	40,00	5,91	236,40
P5COMCBL007	m Cable comunicaciones RJ45 Cable comunicaciones RS45 .Unidad totalmente instalada.	40,00	4,96	198,40
P5COMCBL006	m Cable profibus Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.	40,00	7,48	299,20
P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, con gestión comunic Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100BAse-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.	2,00	2.387,34	4.774,68
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	24,00	5,78	138,72

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	20,00	6,68	133,60
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	33,00	18,35	605,55
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	40,00	8,87	354,80
P5ELE25PVC	m Tubo. electricidad Polímero term libre de halógenos ríg M25 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	6,00	1,62	9,72
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	16,00	1,62	25,92
P5ELE50PVC	m tubo. electricidad Polímero term libre de halógenos ríg M50 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada	6,00	1,93	11,58
P5ELE75PVC	m Tubo PVC 75 mm liso adosado o embebido Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	2,00	3,94	7,88
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	30,00	30,86	925,80
TOTAL 01.12.04.....				27.640,99
01.12.05	INTRUSISMO (OT-12)			
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antiroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.	60,00	14,87	892,20
P7COMSEG1	ud Sistema de Alarma-Intrusionismo Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS , incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expansor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.	2,00	3.477,60	6.955,20
P7COMCCTV6	m Inst. +Cable RG59 + tubo PVC32+cajasc/50m CCTV Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2 , repetidor de señal cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexionado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.	10,00	8,11	81,10

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMCCTV1	Ud Hardware de control CCTV Hardware para gestión y control de CCTV en centro de control compuesto por : Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 pixeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.	1,00	800,66	800,66
P7COMCCTV2	ud Software gestión CCTV intrusivo Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player,"Site builder",e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCADA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.	1,00	4.629,50	4.629,50
P7COMCCTV3	ud Sistema de instalación configuración in situ videocam seguridad Servicios de instalación , configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores).	1,00	791,24	791,24
P7COMCCTV4	ud Servidor CCTV Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8TeraBytes. Unidad totalmente instalada y probada.	1,00	2.982,72	2.982,72
P7COMCCTV5	ud Cámara visión nocturna IP-66+carcasa+columna y cimentación CCTV Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcasas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenesde máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Vídeo, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad:Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.	2,00	727,59	1.455,18
P7COMCCTV8	ud Formación y manuales sistema CCTV Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias.	1,00	787,10	787,10
P7COMCCTV9	ud Switch 3 puertos RJ45 para vídeo IP y cámaras Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30.Switch gestionable para la red de vídeo y seguridad de divesos elementos.	2,00	574,07	1.148,14
P7COMCABL1B	m Cable de fibra óptica 8F+fusiones+cajas Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua , elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antirroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro . Según EN 60794. Incluidas cajas de empalmen para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.	60,00	13,26	795,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMCCTV12	ud Columna 8m+ soporte CCTV Ud. báculo de 8 m. de altura troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; anclaje a dado de hormigón , puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión , tubo de unión, incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3 , operaciones de excavación y rellenos.	2,00	741,92	1.483,84
TOTAL 01.12.05.....				22.802,48
TOTAL 01.12				195.416,98
01.13	SERVICIOS AFECTADOS (OT-T12)			
01.13.01	R.S.PAVIMENTOS (OT-T12)			
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa	34,20	16,48	563,62
P1MT06C	m² Demolición pavimento hormigón o acerado 40 cm espesor+tte+canon Demolición de pavimento hidráulico de hormigón, base de hormigón o acerado hasta 40 cm de espesor, con corte de junta con hilo diamante o radial, retirada de bordillos y elementos lineales, i retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	300,00	7,43	2.229,00
P5PAVFRES	m²cmFresado pavimentos+trabajos preparatorios Metro cuadrado por centímetro de espesor, de fresado de pavimento asfáltico con máquina fresadora o levantapavimentos, incluso precorte previo y carga de productos y limpieza, así como trabajos preparatorios para extendido de MB, incluido transporte a vertedero autorizado y canon de vertido.	490,00	0,71	347,90
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	285,00	6,51	1.855,35
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	300,00	6,87	2.061,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	42,00	20,14	845,88
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	84,00	59,75	5.019,00
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.	2,00	64,56	129,12
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	150,00	1,46	219,00
TOTAL 01.13.01.....				13.269,87

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.13.02	R.S. CAMINOS (OT-T12)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	2,00	52,84	105,68
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	3,00	34,25	102,75
P1MT08BASEZA2	m² Escarificado camino +30%Zahorra artificial 95%PM Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y repavimentado del camino y formación de cunetas laterales. Unidad totalmente terminada.	27.487,00	2,79	76.688,73
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	4.727,85	20,14	95.218,90
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	40,00	4,11	164,40
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	12,00	63,27	759,24
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.162,50	2,77	3.220,13
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1.162,50	1,78	2.069,25
P1MT08ESC500	m³ Escollera 500 kg careada Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	141,75	38,68	5.482,89
P1MT08ESC500H	m³ Escollera 500 Kg hormigonada con HM20 Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	15,75	47,53	748,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	378,00	1,89	714,42
TOTAL 01.13.02.....				185.274,99
01.13.03	R.S. ABASTECIMIENTO (OT-T12)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	2,00	269,01	538,02
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	2,00	977,21	1.954,42
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.	2,00	1.225,40	2.450,80
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	160,00	13,33	2.132,80
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	432,00	2,77	1.196,64
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	43,20	16,29	703,73
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	153,60	3,89	597,50
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	235,20	2,16	508,03

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	160,00	0,32	51,20
P6TUBPE110.16	m Tubería de PE100 DN110 PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 110 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.	80,00	10,07	805,60
P6TUBPE160.16	m Tubería de PE100 DN160PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.	80,00	19,35	1.548,00
P5ARQP-1A	ud Arq. pref DN=1.0 m H=2.5m+ tapa fundición DN600 +pates UD de Arqueta prefabricada, altura variable hasta 2.5m de tipo pozo de 1000mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltes para su acoplamiento, entre otras piezas ediante juntas de goma, incluyendo módulo cónico superior, tubo de resalto de PVC DN 315mm, macizado hormigonado HM-20, recibido con mortero de cemento, cerco y tapa de fundición DN600 para tráfico pesado 40Tn, pates y resto de elementos asociados, incluida excavación y rellenos necesarios. Unidad totalmente terminada.	1,00	726,69	726,69
P6VENT.080.16	ud Ventosa trifuncional DN80 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	1,00	397,39	397,39
TUB.FD.300A	m Tubería de FD DN300 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 300 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	80,00	70,71	5.656,80
TUB.FD.100A	m Tubería de FD DN100 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 100 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	80,00	22,79	1.823,20
TOTAL 01.13.03.....				21.090,82

01.13.04 R.S. RED RIEGO (OT-T12)

P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	10,00	269,01	2.690,10
P4RSACEQ01	m Reposición acequia+excav+rellenos Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembreada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluidas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.	1.012,00	45,86	46.410,32

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.	40,00	6,22	248,80
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	80,00	21,35	1.708,00
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	25,00	63,27	1.581,75
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.	8,00	1.225,40	9.803,20
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	415,00	13,33	5.531,95
P4RSS1C	m Dem, desmont y retirada tubería DN >1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento/riego y/o saneamiento/ pluviales de DN >1000mm, incluyendo operaciones asociadas a la demolición, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	5,00	18,39	91,95
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	295,95	52,84	15.638,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.161,50	2,77	3.217,36
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	92,50	1,78	164,65
P1MT03H	m³ Excavación de escollera existente+acopio+post. colocacion Excavación localizada de escollera de cualquier tonelaje con carga, transporte a acopio o acopios intermedios para posterior uso, sucesivas fases de carga, transporte y colocación de escollera careada. Unidad totalmente terminada excavada y posteriormente colocada con reutilización de material.	81,00	18,03	1.460,43

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	104,60	16,29	1.703,93
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	503,40	3,89	1.958,23
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	438,00	2,16	946,08
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	400,00	0,32	128,00
P6TUBPE160.16	m Tubería de PE100 DN160PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.	290,00	19,35	5.611,50
P5ARQpref1.0	ud Arqueta prefabricada 1.0x1.0x1.5+ tapa acero galvanizada+pates Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de hasta 1.5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , apoyada sobre fondo de caja excavado y compactado con 0.2m de hormigón en masa HM-20, incluida tapa superior armada, tapa de acero galvanizado en caliente de 3 mm estriada, cerco y precerco, rejillas de ventilación, unión entre módulos de cordón impermeabilizante de polisulfuro, agujeros para entrada de tuberías de dimensiones especificadas, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.	2,00	512,84	1.025,68
P5ARQPREF1	ud Arqueta prefabricada 1.0x1.0x2,5+ tapa FD+pates+rellenos Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de de 1,5-2,5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , pieza tapa con apertura DN600 mm, huecos preformados para conexión de tuberías de diámetro múltiple apoyada sobre fondo de caja excavado y compactado, ejecución de 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado. Unidad totalmente colocada.	2,00	754,16	1.508,32
P6VC.150.16	ud Válvula compuerta ø 150 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada.	5,00	338,98	1.694,90
P6CD.150.16	ud Carrete desmontaje DN150PN16 Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	5,00	156,55	782,75
P6PM150INX	ud Carrete pasamuros 150mm AIS I316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 150mm de diámetro.	5,00	175,86	879,30

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TUB.FD.100A	m Tubería de FD DN100 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 100 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	10,00	22,79	227,90
TUB.FD.150A	m Tubería de FD DN150 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 150 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	15,00	26,05	390,75
TUB.FD.300A	m Tubería de FD DN300 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 300 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	290,00	70,71	20.505,90
TUB.FD.500A	m Tubería de FD DN500 C30+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 500 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	50,00	148,72	7.436,00
TUB.FD.1000A	m Tubería de FD DN1000 C30+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 1000 mm con junta flexible automática, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN 545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	50,00	607,33	30.366,50
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	5,00	20,14	100,70
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	81,00	29,11	2.357,91
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	194,40	1,89	367,42
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	2,50	49,22	123,05

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,50	33,10	148,95
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	62,05	91,99	5.707,98
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.894,75	1,35	7.957,91
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	267,30	26,85	7.177,01
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	29,70	16,26	482,92
P4LOSA1	m² Losas prefabricadas de hormigón tapas arq. peat.cuant. 95kg/m3 Losas prefabricadas de hormigón en tapas de arquetas dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.	18,75	90,16	1.690,50
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	30,00	4,88	146,40
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. de colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	10,00	5,26	52,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	40,00	6,15	246,00
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	148,50	2,24	332,64
P4TAPA60D400	ud Tapa registro fundición, circular Ø 60 cm clase D-400 Tapa de registro de fundición estanca acerrojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN) de la marca EJ modelo TP800 o similar. Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, perfiles, ladrillos,... unidad de obra totalmente instalada y ejecutada.	3,00	118,05	354,15
TOTAL 01.13.04.....				190.958,39

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.13.05	R.S. DRENAJE Y ARROYOS (OT-T12)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	130,00	52,84	6.869,20
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.	2.070,00	6,22	12.875,40
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	520,00	21,35	11.102,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.850,00	2,77	7.894,50
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	2.850,00	1,78	5.073,00
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	15,00	22,61	339,15
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	150,00	29,11	4.366,50
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	360,00	1,89	680,40
TOTAL 01.13.05.....				49.200,15

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.13.06	R.S. ELECTRICIDAD(OT-T12)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	3,00	269,01	807,03
P4RSV1D	m Demolición y retirada de conductos y cableados inst. subterránea Demolición y retirada de conductos y cableados de instalaciones eléctricas incluidas, iluminación, telefonía y/o comunicaciones subterráneas, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.	90,00	5,38	484,20
P5ELE110X2	m Can. cama arena PVC 110 mm x 2 (calzadas) 0.4x1.0m(Zanja 7a) Canalización de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, Acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexión a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	90,00	17,89	1.610,10
P5ARQLD2	ud Arqueta de registro 80x80x100 1/2 tapa FD Arqueta de registro de dimensiones interiores 80x80x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 80x80 normalizada D-400. Unidad totalmente terminada.	6,00	266,22	1.597,32
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	60,00	6,59	395,40
P4RSV1C	ud Sostenimiento poste telefonía y/o electricidad BT Sostenimiento y protección de poste de línea telefónica y/o eléctrica aérea de BT, mediante puntales, arriostres y resto de elementos, durante la ejecución de la obra. Unidad totalmente terminada	1,00	265,49	265,49
P1MT08ESC500	m³ Escollera 500 kg careada Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	33,75	38,68	1.305,45
P1MT08ESC500H	m³ Escollera 500 Kg hormigonada con HM20 Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	3,75	47,53	178,24
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	90,00	1,89	170,10
TOTAL 01.13.06.....				6.813,33

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.13.07	R.S. COMUNICACIONES(OT-T12)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1,00	269,01	269,01
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	1,00	977,21	977,21
TOTAL 01.13.07.....				1.246,22
01.13.08	R.S. GAS(OT-T12)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1,00	269,01	269,01
P4RSGPE200	m Reposición tub. DN200mm PE-SDR11+arq+valv.+excav+rellenos GAS Localización, desmontaje programado, y reposición de tubería de gas DN200 mm PE, SDR11 arquetas y valvulería asociada, incluyendo operaciones de localización mediante calas y/o sistemas de microgravimetría con técnico cualificado, programación de corte y rotura con empresa de servicios, gestión y pago de canon y tasas requeridas, demolición, carga y retirada de conducciones, arquetas y elementos asociados, transporte a vertedero autorizado, pago de canon de vertido, reposición de servicio mediante retranqueo, con excavación en zanja de ancho especificado en planos mínimo 0.8m, con base de apoyo de cama de arena de 15 cm, relleno con arena hasta 30 cm sobre clave de tubería, posterior relleno localizado con suelo seleccionado procedente de préstamo tamaño máximo 100 mm, relleno con zahorra artificial hasta sección de pavimento, lámina PVC señalizadora de servicio normalizada, losa de HM20 de protección en pavimentos de 0.15m de espesor con al menos 1.20m de ancho, vainas de tubería en cruzamientos, conexiones de elementos, juntas especiales, p.p. de arquetas normalizadas con tapa de fundición C-400, según detalle definido en planos con base y anclaje de hormigón en caso de valvulerías, arquetas en cambios de dirección, conexiones y puntos de ubicación de valvulería. Unidad totalmente ejecutada.	30,00	93,99	2.819,70
TOTAL 01.13.08.....				3.088,71
01.13.09	R.S. CANAL(OT-T12)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	47,25	52,84	2.496,69
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	56,00	2,77	155,12
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	300,00	1,78	534,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04D	m³ Rellenos localizado con material filtrante 40/80 95%PN Relleno localizado de material filtrante (grava 40-80) procedente de préstamo, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	56,00	11,77	659,12
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	90,00	20,14	1.812,60
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	45,15	80,88	3.651,73
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	1.806,00	1,35	2.438,10
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	10,50	16,26	170,73
P3DREN110PVC	m Tubo dren PVC 110 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 110 mm, e=3,2 mm incluso p.p. excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 0,40 cm. de ancho por 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	85,00	5,66	481,10
P4JTACOMB200B	m Junta canal Juntas horizontales o inclinadas, en canal conformadas por cordón de polisulfuro y posterior lámina de PVC 200 combiflex o similar con aplicación de epoxy de adherencia. Unidad totalmente terminada incluidos cortes en hormigón, solapes y soldaduras de unión.	70,00	14,06	984,20
P1MT06E	m Corte junta diamante en losa o pavimento e=0.2m Corte de hormigón con disco e hilo de diamante, corte de armaduras con disco espesor 20 cm, retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Unidad completa.	70,00	5,85	409,50
TOTAL 01.13.09.....				13.792,89
01.13.10	R.S. CERRAMIENTOS(OT-T12)			
P1MT06K	m² Demolición muro bloque o ladrillo Demolición de muro bloque o ladrillo hormigón con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	90,00	6,42	577,80
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	9,00	34,25	308,25
P5CERRAM0D	m Reposición de cerramiento muro mampuesto Reposición de muro bancal de espesor medio 0,5 m, altura variable hasta 1,5 m y longitud 4 m. incluyendo retirada de muro existente, acopio y posterior reconstrucción mediante aporte de mampuestos, ripios, perfectamente alineado, aplomado, con excavación y preparación de la superficie de asiento (20 cm de HM-20), completamente terminado. incluyendo las operaciones de acopio, recolocación de la piedra original y/o reposición de otra de características similares a la original.	15,00	68,42	1.026,30

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5CERRAM0A	m Desmontaje de cerramiento metálico, vallado y barandillas. Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar, existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos.	60,00	4,83	289,80
P5CERRAM2	m Cerramiento tipo-2 Valla de D/T metálica Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, sin incluir puerta de acceso.	60,00	28,97	1.738,20
P5CERRAM4	m Cerramiento tipo-4 ganadero Cerramiento ganadero a base de postes de hormigón de 17x12x170 cm y 1,40 m o metálicos sobre el terreno a 7 m separación media, empotrados y anclados en el terreno 30 cm y guarnecido con un malla 100x8x15 mm y dos hiladas superiores de alambre, doble hilo 13x15, tensado en tramos de 50 m, y con dos riostras cada 100 m. Unidad completamente terminada.	120,00	7,87	944,40
P3EDIF012B	m² Fab. Bloq. split 40x20x20 dos caras color Fábrica de bloques de hormigón Mod. Split de medidas 40x20x20 cm., color, ejecutado a dos caras vistas, i/relleno de hormigón H-200/20 y armadura en zona según normativa y recibido con mortero de cemento y arena de río M 5 según UNE-EN 998-2, i/p.p. de piezas especiales, roturas, nivelados, aplomados, llagueados y limpieza todo ello según CTE/ DB-SE-F.Unidad totalmente terminada	90,00	41,79	3.761,10
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para canda-do, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	2,00	638,04	1.276,08
TOTAL 01.13.10.....				9.921,93
01.13.11	R.S. VARIOS (OT-T12)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1,00	269,01	269,01
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	5,00	52,84	264,20
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.	35,00	6,22	217,70
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	5,00	21,35	106,75
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	37,50	20,14	755,25

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	50,00	2,77	138,50
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	10,00	91,99	919,90
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	950,00	1,35	1.282,50
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	30,00	26,85	805,50
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	3,33	16,26	54,15
TOTAL 01.13.11.....				4.813,46
01.13.12	R.S. DESV. TRAFICO (OT-T12)			
01.13.12.01	DESVÍO NA-1240			
01.13.12.01.1	MOV. TIERRAS (DESVÍO NA-1240)			
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	3.810,00	1,25	4.762,50
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	3.810,00	0,37	1.409,70
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccione Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	3.810,00	0,40	1.524,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	7.289,80	2,77	20.192,75
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	4.953,00	1,78	8.816,34
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	43,50	20,14	876,09
TOTAL 01.13.12.01.1.....				37.581,38
01.13.12.01.2 DRENAJES (DESVÍO NA-1240)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	250,00	4,11	1.027,50
TOTAL 01.13.12.01.2.....				1.027,50
01.13.12.01.3 PAVIMENTOS (DESVÍO NA-1240)				
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa	274,32	16,48	4.520,79
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	2.286,00	6,51	14.881,86
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	2.286,00	6,87	15.704,82
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	838,20	20,14	16.881,35
TOTAL 01.13.12.01.3.....				51.988,82

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
01.13.12.01.4 SEÑALIZACIÓN (DESVÍO NA-1240)				
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA Ml. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	2.100,00	0,66	1.386,00
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final	1.350,00	1,57	2.119,50
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.	6,00	10,26	61,56
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm Ml. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	700,00	1,19	833,00
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	1.400,00	1,46	2.044,00
P6SÑL-020	m Banda sonora 90cmx50cmx5cm Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada.	14,00	125,35	1.754,90
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.	247,00	6,06	1.496,82
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	13,00	33,52	435,76
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	13,00	27,16	353,08
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	29,28	117,12
P6SÑL-060	ud Señal advertencia e indicadoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	45,18	180,72
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.	38,00	10,73	407,74
P6SÑL-092	ud Lámpara luminosa intermitente en trípode Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.	2,00	14,97	29,94
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.	2,00	64,56	129,12
P6SÑL-002A	ud Señal triangular normal L=90 cm. Nivel1 Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.	1,00	92,53	92,53
P6SÑL-003B	ud Señal cuadrada normal L=60 cm. Nivel1 Señal cuadrada de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.	1,00	92,56	92,56

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6SÑL-002	ud Señal circular normal L=60 cm Nivel1 Señal circular de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.	2,00	118,86	237,72
P6SÑL-004	ud Señal octogonal normal L=60 cm Nivel1 Señal octogonal de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.	3,00	119,59	358,77
P6SÑL-100	m Barrera New Jersey plástico. desv. tráfico Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco las-trable, incluso p.p. de montaje y desmontaje, valorada en función del número ópti-mo de utilizaciones en desvíos de tráfico	194,00	29,95	5.810,30
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.	114,00	57,44	6.548,16
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señalítica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la du-ración del desvío de tráfico.	1,00	3.815,36	3.815,36
TOTAL 01.13.12.01.4.....				28.304,66
TOTAL 01.13.12.01.....				118.902,36
TOTAL 01.13.12.....				118.902,36
TOTAL 01.13.....				618.373,12
01.14	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (OT-T12)			
01.14.01	MEDIDAS PROTECTORAS, CORRECTORAS (OT-T12)			
01.14.01.01	ATMÓSFERA (OT-T12)			
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tra-mos DC-T21;DC-T14/15.	18,00	2.488,07	44.785,26
TOTAL 01.14.01.01.....				44.785,26
01.14.01.02	SUELO (OT-T12)			
P-101AMB-MP03	m Jalonamiento de protección malla Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutili-zación en obra. 4 usos, incluido montaje y desmontaje.	5.240,00	1,74	9.117,60
P-101AMB-MP09	m Jalonamiento de protección cinta Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reuti-lización en campo hasta 4 usos.	52.400,00	0,52	27.248,00
P1MT08GTX-003	m² Geomalla refuerzo taludes Suministro y colocación de geomalla de refuerzo DLT Grid en taludes incluso enreja-do con alambre galvanizado de Ø 2,00 mm y malla hexagonal 8x10-16 anclado al te-rreno con barras corrugadas de acero B 500 S, para protección de taludes, medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (míni-mo 1.5m) entre paños y mermas. Unidad totalmente terminada.	4.550,00	6,14	27.937,00
P1MTMR001	m Fajina retención rollizo 0.5m altura ml de fajinada formada por estacas de pino de 1 m de longitud y 8 cm de diáme-tro,hincados en el suelo 50 cm, entre los que se entrelazan una fajina construida con ramas, hasta formar una pantalla de 50 cm de altura, construida para reducir la escorrentía superficial. Incluso herramientas y medios auxiliares.	675,00	23,73	16.017,75
P-102AMBPL001	m² Hidrosiembra incluso rastrillado y tapado Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiem-bra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jor-nada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.	7.800,00	1,64	12.792,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 01.14.01.02.....				93.112,35
01.14.01.03 HIDROLOGIA (OT-T12)				
P-101AMB-MP05	m Barrera de retención sedimentos Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.	840,00	5,54	4.653,60
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.	15,00	806,83	12.102,45
TOTAL 01.14.01.03.....				16.756,05
01.14.01.04 FAUNA Y FLORA (OT-T12)				
P-101AMB-MP03	m Jalonamiento de protección malla Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.	2.620,00	1,74	4.558,80
P-101AMB-MP09	m Jalonamiento de protección cinta Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.	7.860,00	0,52	4.087,20
P-101AMB-MP10	ud Protector de fauna Protector de fauna: Instalación de vallas plásticas y elementos necesarios.	50,00	13,08	654,00
TOTAL 01.14.01.04.....				9.300,00
TOTAL 01.14.01.....				163.953,66
01.14.02 SEGUIMIENTO ARQUEOLÓGICO (OT-T12)				
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.	1,00	3.193,57	3.193,57
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz. Informe arqueológico previo incluidas tramitaciones y tasas.	1,00	1.856,27	1.856,27
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual	36,00	2.404,67	86.568,12
P-103AMBAR-03	km² Prospección arqueológica detallada, análisis y trabajo de campo Prospección arqueológica intensiva de cobertura total en una superficie afectada de 1Km2, incluyendo excavaciones, sondeos arqueológicos, medios humanos, maquinaria, material auxiliar necesario, análisis documental, proyecto de actuación arqueológica y trabajo de campo. Unidad completa	1,00	6.023,60	6.023,60
TOTAL 01.14.02.....				97.641,56
01.14.03 PROGRAMA VIGILANCIA AMBIENTAL (OT-T12)				
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación	1,00	975,28	975,28
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento.	36,00	1.879,04	67.645,44
P-104AMBVA02A	mes Seguimiento acústico (ruido ambiental) Medida de niveles de ruido en zona de obra. Desarrollada la medición a lo largo de una jornada laboral, con toma de datos en diversos puntos de la obra, y elaboración de informes periódicos posteriores por especialista cualificado, incluidos materiales y elementos auxiliares. Unidad totalmente terminada.	36,00	616,11	22.179,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P-104AMBVA03A	ud Informe especializado de flora Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina.	1,00	3.965,50	3.965,50
P-104AMBVA04A	ud Informe especializado de fauna Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe.	1,00	2.882,01	2.882,01
P-104AMBVA05	ud Informe y analítica de muestra de aguas Informe y analítica de muestras de agua en puntos de cruce singulares. unidad totalmente ejecutada.	12,00	295,13	3.541,56
P-104AMBVA06	ud Informe de prevención acústica Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio. Unidad completa.	1,00	2.009,53	2.009,53
TOTAL 01.14.03.....				103.199,28
01.14.04	INTEGRACIÓN PAISAJÍSTICA (OT-T12)			
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	214.459,96	0,21	45.036,59
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	214.459,96	0,37	79.350,19
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	214.459,96	0,40	85.783,98
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.	107.229,98	0,12	12.867,60
P-102AMB-PL06	Pie Apeo árboles ø >20-<=30 cm densidad <=750 pies/ha c/mat (R.E.A.) Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y densidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la intensidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, incluido canon de vertido, herramientas y medios auxiliares.	410,25	150,73	61.836,98
P-102AMBPL08	mes Mantenimiento de plantaciones, riego y reposición extraordinaria Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de marrras, realización de podas de realce necesarias y otras operaciones de mantenimiento. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande realizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, incluyendo la escarda y mezcla con el sustrato de malas hierbas, herramientas y medios auxiliares.	36,00	928,33	33.419,88
P-102AMBPL38B	ud Plantación de Crataegus monogyna de 0,6-0,8 m en contenedor Plantación de Crataegus monogyna 0,6-0,8 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, riego de hoyo, alcorcado y riego de implantación.	30,00	4,12	123,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P-102AMBPL03B	ud Plantación de Pinus halepensis de 1,0-1,5 m en contenedor Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso apertura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación.	299,00	9,33	2.789,67
P-102AMBPL39B	ud Plantación de Populus alba de 1,0-1,5 m en cepellón Populus alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x6,0 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto.	783,00	6,60	5.167,80
P-102AMBPL31A	ud Plantación de Quercus coccifera 1,8-2,0m alt. CEP. Quercus ilex de 1,8-2,0m alt. de perímetro de tronco, suministrado en cepellón y plantación en hoyo de 1x1x1x m., incluso apertura del mismo con los medios indicados, abonado, formación de alcorque, tutor y primer riego.	27,00	19,63	530,01
P-102AMBPL34E	ud Plantación de Rosa canina 20-30 cm. CONT. Rosa canina de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,6x0,6x0,6 m., incluso apertura del mismo a mano, abonado, formación de alcorque y primer riego.	423,00	2,46	1.040,58
P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m en contenedor Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	2.377,00	2,22	5.276,94
P-102AMBPL17I	ud Plantación de Rubus ulmifolius 0,3-0,5m en contenedor Plantación de Rubus ulmifolius extensa de 0,3-0,50m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	677,00	1,60	1.083,20
P-102AMBPL39	ud Plantación de Salix alba de 1,0-1,5 m en cepellón Plantación de Salix alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x6,0 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto	58,00	6,60	382,80
P-102AMBPL18	ud Plantación de Salix atrocinerea de 0,50-0,75 m en contenedor Ud. Suministro y plantación de Salix atrocinerea (Sarga negra) de 0,50 a 0,75 m. de altura, suministrado en contenedor, y plantación en hoyo de 0,4 x 0,4 x 0,4 m., incluso apertura manual del mismo, abonado, formación de alcorque y primer riego.	76,00	2,45	186,20
P-102AMBPL36	ud Plantación de Salvia officinalis 20-30cm. CONT. Salvia officinalis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, formación de alcorque y primer riego.	75,00	2,64	198,00
P-102AMBPL37	ud Plantación de Thymus vulgaris de 0,2-0,4 m en envase forestal Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso apertura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	3.035,00	2,04	6.191,40
P-102AMBPL12B	m² Formación de pasto gramíneas y leguminosas Formación de pasto por siembra de una mezcla de especies gramíneas y leguminosas, a determinar por la Dirección de Obra, incluso la limpieza del terreno, laboreo con dos pases de motocultor cruzados y abonado de fondo, rastrillado y retirada de todo material de tamaño superior a 2 cm., distribución de la semilla.	221.633,74	0,19	42.110,41
P-102AMBPL40	ud Tutor árbol Entutorado de árbol con 1 tutor vertical de rollizo de pino torneado, de 3 m de longitud y 8 cm de diámetro con punta en un extremo y baquetón en el otro, tanalizado en autoclave, hincado en el fondo del hoyo de plantación, retacado con la tierra de plantación, y sujeción del tronco con cincha textil no degradable, de 3-4 cm de anchura y tornillos galvanizados.	1.082,00	4,56	4.933,92
P-102AMBPL01	ud Plantación de Genista scorpius 0.3-0.5m en contenedor Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	3.035,00	1,49	4.522,15

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P-102AMBPL02	ud Plantación de Suaeda vera 0,2-0,4m en contenedor Plantación de Suaeda vera 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	835,00	1,63	1.361,05
P-102AMBPL04	ud Plantación de Salsola vermiculata 0,2-0,4m en contenedor Plantación de Salsola vermiculata 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	337,00	1,67	562,79
P-102AMBPL05	ud Plantación de Santolina chamaecyparissus 0,2-0,4m en contenedor Plantación de Santolina chamaecyparissus 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	337,00	1,45	488,65
P-102AMBPL06	ud Plantación de Ononis fruticosa 0,2-0,4m en contenedor Plantación de Ononis fruticosa 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	1.012,00	2,17	2.196,04
P-102AMBPL07	ud Plantación de Linum suffruticosum 0,2-0,4m en contenedor Plantación de Linum suffruticosum 0,2-0,4m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	1.866,00	2,47	4.609,02
P-102AMBPL09	ud Plantación de Stipa parviflora 0,1-0,25m en contenedor Plantación de Stipa parviflora 0,1-0,25m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	1.866,00	1,52	2.836,32
P-102AMBPL10	ud Plantación de Rhamnus alaternus 0,2-0,5m en contenedor Plantación de Rhamnus alaternus 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	27,00	1,59	42,93
P-102AMBPL002	ud Plantación de Juniperus phoenicea 0,1-0,2m en contenedor Plantación de Juniperus phoenicea 0,1-0,2m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	27,00	1,70	45,90
P-102AMBPL003	ud Plantación de Artemisia herba-alba 0,2-0,5m en contenedor Plantación de Artemisia herba-alba 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	658,00	2,37	1.559,46
TOTAL 01.14.04.....				406.534,06
TOTAL 01.14				771.328,56
01.15	GESTIÓN DE RESIDUOS (OT-T12)			
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un encachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.	15,00	2.506,13	37.591,95

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PGESRES180A	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (OT-12). Carga , transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.	1,00	19.836,84	19.836,84
PGESRES150A	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (OT-T12) Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.	1,00	28.102,19	28.102,19
PGESRES200A	ud Carga, transporte y depos.de Res. peligrosos (OT-T12) Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertid o en obras definidas en los tramos Obra de toma, CN-T11 y T11-T12.	1,00	12.312,64	12.312,64
TOTAL 01.15				97.843,62
01.16	VARIOS (OT-T12)			
P90VAR4	ud Difusión y comunicación actuación del tramo Difusión y comunicación de las obras del tramo consistente en : a)-Emisión de 2 anuncios en periódico de gran tirada, b)-2 anuncios publicitarios en medio de radiodifusión , c)-edición de 200 folletos explicativos tipo tríptico de alta calidad, d)-desarrollo de WEB informativa y de seguimiento de las obras con el volcado informativo del avance de obra, estado f)-Reportaje fotográfico de evolución de obra g)-CD video divulgativo h)-Presentación y actos varios i)-Monolito actuación	1,00	28.959,20	28.959,20
TOTAL 01.16				28.959,20
01.17	SEGURIDAD Y SALUD (OT-T12)			
PSEGSAL.01	ud Seguridad y Salud. Subtramo O.T. Pikarana-T12 Seguridad y salud en el Subtramo O.T. Pikarana-T12, (según valoración realizada en el Anejo nº20 del proyecto).	1,00	662.406,89	662.406,89
TOTAL 01.17				662.406,89
TOTAL 01 SUBTRAMO O.T. PIKARANA-T12.....				68.127.819,91

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02	SUBTRAMO T12-D.C. (Derivación Corella)			
02.01	MOVIMIENTO DE TIERRAS (T12-D.C.)			
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.	659.608,34	0,12	79.153,00
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	1.201.822,54	0,21	252.382,73
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	117.394,13	1,25	146.742,66
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	1.319.216,67	0,37	488.110,17
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	1.319.216,67	0,40	527.686,67
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ...) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	570.452,30	4,24	2.418.717,75
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	410.140,30	2,77	1.136.088,63

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT15-200B	m Micropilote DN 200HA-30 Vaina 155/8 p.p. puntales+viga riostra Micropilote DN200 mm con vaina metálica de acero S275 JR 155.8mm de diámetro y 8mm de espesor lechada de cemento CEM I 42,5N y HA30, con una relación agua/cemento de 0,4 dosificada en peso, vertida por el interior de la armadura mediante sistema de inyección única global (IU)., reperforando sobre pantalla de mortero, ejecutado con entubación perdida o recuperable, para cualquier profundidad, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Muros guía de hormigón armado de 0,70x0,50 mts. y posterior demolición del mismo con transporte a vertedero de los restos, evacuación a vertedero de la excavación. -Pérdidas de Ichada y, mortero y hormigón. -Demolición de protuberancias, descabezado de pilotes y p.p. preparación de conexión viga de atado. -Partida de transporte y montaje inicial y medios auxiliares. -Partida para transporte y montaje inicial de grúa auxiliar. -Partida de espesamiento de lodos finales con transporte a vertedero. -Perforación o reperforación de pilotes incluyendo el consumo de lodos. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. -Transporte de sobrantes a vertedero autorizado, incluso canon de vertido, limpieza y operaciones de demobiliación. -Puntales y perfil risotra Unidad totalmente terminada medida linealmente sobre eje por la profundidad realmente ejecutada.	1.940,00	97,63	189.402,20
P1MT09	m² Tablestacado recuperable o perdido cualquier profundidad Tablestacado recuperable o perdido de cualquier profundidad mediante paneles ES-TANCOS con cámara de chapa de acero en cajón, tablestacas de chapa y codales extensibles metálicos, celosía y perfiles de arrioestre, incluido desplazamiento de equipo a obra, trabajos preparatorios de plataforma, operaciones de hincado y vibrado, reperforaciones necesarias, estructura soporte, puntales-cercha y perfiles de arrioestre, anclajes de sostenimiento de 50 tn y 20 m de longitud en diferentes fases según anejo de cálculo, inyecciones, barras y tendones, perfilera metálica de sostenimiento (hasta 3 escalones de anclajes) y acodalamiento para cualquier profundidad, operaciones de retirada y medios auxiliares. Unidad totalmente ejecutada.	100,00	84,30	8.430,00
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	4.299,92	4,97	21.370,60
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjás y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.	74.499,46	14,68	1.093.652,07
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	174.291,48	3,89	677.993,86
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	564.017,54	2,16	1.218.277,89

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	126.323,08	1,78	224.855,08
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	30.231,93	61,53	1.860.170,65
TOTAL 02.01				10.343.033,96
02.02	TUBERÍAS (T12-D.C.)			
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	47.585,70	0,32	15.227,42
P1T1600.10.0A	m Tubería acero helic. L275, Ø1626 esp. 10.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cónico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	8.873,46	567,43	5.035.067,41
P1T1600.12.5A	m Tubería acero helic. L275, Ø1626 esp. 12,5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cónico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	4.888,00	709,26	3.466.862,88
P1T1600.16.0A	m Tubería acero helic. L275, Ø1626 esp. 16.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cónico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	94,00	907,87	85.339,78
P1T1800.11.5A	m Tubería acero helic. L275, Ø1829 esp. 11,5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cónico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	11.348,00	730,52	8.289.940,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T1800.12.5A	m Tubería acero helic. L275, Ø1829 esp. 12,5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1.094,00	794,05	868.690,70
P1T1800.14.0A	m Tubería acero helic. L275, Ø1829 esp. 14.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	30,00	889,34	26.680,20
P1T1800.15.0A	m Tubería acero helic. L275, Ø1829 esp. 15.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 15,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	704,00	952,87	670.820,48
P1T1800.11.5B	m Tubería acero helic. L355, Ø1829 esp. 11,5 Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	6.946,00	698,76	4.853.586,96
P1T1800.12.5B	m Tubería acero helic. L355, Ø1829 esp. 12,5 Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1.694,00	806,11	1.365.550,34
P1T1800.13.0B	m Tubería acero helic. L355, Ø1829 esp. 13,0 Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 13,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	8.376,00	838,38	7.022.270,88

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T1800.14.0B	m Tubería acero helic. L355, Ø1829 esp. 14,0 Suministro e instalación de tubería de acero de calidad L355, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	2.138,10	902,84	1.930.362,20
P1T1900.13.0A	m Tubería acero helic. L275, Ø1930 esp. 13.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.930 mm y espesor mínimo de 13.0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	3.288,95	869,38	2.859.347,35
TOTAL 02.02				36.489.747,56
02.03	DESAGÜES (T12-D.C.)			
02.03.01	ARQUETA DESAGÜE, VALVULERÍA Y CALDERERÍA (T12-DC)			
02.03.01.01	MOV. TIERRAS Y DREN (DESAGÜES T12-DC)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	33,20	2,77	91,96
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	80,00	9,54	763,20
TOTAL 02.03.01.01				855,16
02.03.01.02	ESTRUCTURA DE HORMIGÓN Y METÁLICA (DESAGÜES T12-DC)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	11,10	49,22	546,34
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	11,70	78,03	912,95
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	37,40	80,88	3.024,91

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	64,50	91,99	5.933,36
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	20,20	16,26	328,45
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	194,00	26,85	5.208,90
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	10.618,80	1,35	14.335,38
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	398,00	4,88	1.942,24
P4JTAHIDROF2	m Junta cordón unión prefabricado a hormigón in situ Junta de estanqueidad en unión arquetas prefabricadas a hormigón de base ejecutado in situ, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	36,60	4,53	165,80
P4JTAPVC150	m Junta elastomérica de estanqueidad PVC 150 Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.	18,40	4,42	81,33
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	36,60	6,15	225,09
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	97,00	2,24	217,28
P5ARQP-1.5A	ud Arq. pref DN=1.5 m H=1.5m +pates para desagües tipo D UD de Arqueta prefabricada de diámetro 1.5 m y altura 1.5m para desagües tipo D formada por anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, con pates de polipropileno montados , incluida excavación localizada y rellenos necesarios. Unidad totalmente terminada.	60,00	202,40	12.144,00
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa laminada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda. Totalmente terminada y colocada.	171,20	110,88	18.982,66
P4LOSA2	m² Losas prefabricadas de hormigón tapas arq.traffic.cuant.190kg/m3 Losas prefabricadas de hormigón en tapas de arquetas para tránsito de tráfico pesado, cuantía mínima 190 kg/m3 homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.	70,50	153,76	10.840,08

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4TAPA60D400A	ud Tapa registro fundición, circular Ø 60 cm clase D-400 acerojada Tapa de registro de fundición estanca y acerojada, de sección circular Ø 60 cm. clase D-400 (fuerza de ensayo 400kN) . Incluye precerco de fundición, junta EPDM estanca, anclaje y parte proporcional de materiales a emplear para la ejecución, mortero, cerco,... unidad de obra totalmente instalada y ejecutada.	2,00	162,40	324,80
P41ESC0	m Escalera vertical pozos acero inox. AISI 316 L Escalera de acero inoxidable AIS-316 de dimensiones especificadas en planos. totalmente instalada, incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Unidad totalmente terminada.	2,20	152,48	335,46
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	6,00	111,07	666,42
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	13,60	119,36	1.623,30
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidro-expansivo, según detalle de planos. Totalmente instalada.	2,00	41,67	83,34
TOTAL 02.03.01.02.....				77.922,09
02.03.01.03	VÁLVULAS Y CALDERERÍA (DESAGÜES T12-DC)			
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cónico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	16,00	173,72	2.779,52
P1T0800.12.5B	m Tubería acero helic. L355, Ø813 esp 12.5 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cónico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	17,40	344,47	5.993,78
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cónico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1,90	137,95	262,11

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	7.155,10	2,98	21.322,20
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	3.921,70	2,07	8.117,92
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada.	2,00	1.741,23	3.482,46
P1BRIDA200.25	ud Brida ciega PN 25 Ø200 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 200 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada.	2,00	122,78	245,56
P6VC.100.16	ud Válvula compuerta ø 100 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 100 mm, instalada.	64,00	189,51	12.128,64
P6VM.200.25	ud Válvula mariposa ø 200 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	957,32	1.914,64
P6VM.500.25	ud Válvula mariposa ø 500 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 500 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	3.308,68	6.617,36
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	7.057,71	14.115,42
P6VO.500.25	ud Válvula globo PN25 Ø500 multiorificio Válvula de regulación de globo, de paso recto de 500 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	35.116,97	70.233,94

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.200.25	ud Carrete desmontaje DN200 PN25 Carrete de desmontaje de diametro 200 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	5,00	293,51	1.467,55
P6CD.500.25	ud Carrete desmontaje DN 500 PN25 Carrete de desmontaje de acero de 500 mm de diámetro PN25, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	807,61	3.230,44
P6VENT.025.16	ud Ventosa trifuncional DN25 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 25 mm PN16 con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornilleria de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	62,00	187,82	11.644,84
P6VD.200.25	ud Válvula dilatadora y compensadora de goma DN 200 PN25 Válvula dilatadora y compensadora de goma de DN 200 PN25. Unidad totalmente instalada.	1,00	320,92	320,92
P6CR.100.25	ud Conexión rápida en desagües DN100 Conexión rápida de desagües DN 100.	60,00	77,66	4.659,60
TOTAL 02.03.01.03.....				168.536,90
TOTAL 02.03.01.....				247.314,15
02.03.02	CONDUCCIÓN A VERTIDO (T12-DC)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	715,02	2,98	2.130,76
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	3,72	137,95	513,17
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	3,72	0,32	1,19
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	10,36	2,77	28,70

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,69	16,29	27,53
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	3,74	3,89	14,55
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	3,88	2,16	8,38
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1,05	1,78	1,87
TOTAL 02.03.02.....				2.726,15
02.03.03	ARQUETA ROTURA Y VERTIDO A CAUCE (T12-DC)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repelido necesarias. Unidad totalmente terminada medido sobre perfil teórico.	582,20	2,77	1.612,69
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	380,60	2,16	822,10
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	95,90	29,11	2.791,65
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	211,00	1,89	398,79
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	3,40	49,22	167,35

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	2,50	59,75	149,38
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	10,10	80,88	816,89
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	23,30	91,99	2.143,37
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	9,20	16,26	149,59
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	77,70	26,85	2.086,25
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	3.278,30	1,35	4.425,71
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	17,00	4,88	82,96
TOTAL 02.03.03.....				15.646,73
TOTAL 02.03				265.687,03
02.04	VENTOSAS (T12-D.C.)			
02.04.01	MOVIMIENTO DE TIERRAS VENTOSAS (T12-DC)			
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ..) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	204,60	4,24	867,50
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	204,60	2,16	441,94

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	1.050,00	9,54	10.017,00
TOTAL 02.04.01.....				11.326,44
02.04.02 OBRAS DE FÁBRICA VENTOSAS (T12-DC)				
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	102,30	59,75	6.112,43
P5ELECAS01	ud Caseta prefabricada 1.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 1.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	1,00	1.434,23	1.434,23
P5ELECAS02	ud Caseta prefabricada 4.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 4.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	42,00	3.469,43	145.716,06
P3EDIF.010A	m² Lamas para ventilación acero S275JR+paint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.	44,20	77,91	3.443,62
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.	42,00	98,65	4.143,30
TOTAL 02.04.02.....				160.849,64
02.04.03 VÁLVULAS Y CALDERERÍA VENTOSAS (T12-DC)				
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	172,20	2,98	513,16

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	85,20	173,72	14.800,94
P1T0800.12.5B	m Tubería acero helic. L355, Ø813 esp 12.5 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 12.5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	35,60	344,47	12.263,13
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada.	84,00	1.741,23	146.263,32
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	62,00	3.199,43	198.364,66
P6VENT.200.25	ud Ventosa trifuncional DN200 mm PN25+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	30,00	3.601,10	108.033,00
P6VENT.250.16	ud Ventosa trifuncional DN250 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 250 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	4,00	4.684,49	18.737,96
TOTAL 02.04.03.....				498.976,17
TOTAL 02.04				671.152,25

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.05	TOMAS (T12-D.C.)			
02.05.01	TOMA-13			
02.05.01.01	MOVIMIENTO DE TIERRAS (TOMA-13)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	3.178,26	2,77	8.803,78
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	1.044,00	4,97	5.188,68
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	2.720,26	1,78	4.842,06
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	458,00	2,16	989,28
TOTAL 02.05.01.01				19.823,80
02.05.01.02	CALDERERÍA Y VALVULERÍA (TOMA-13)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	81.423,88	2,98	242.643,16
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	6,00	1.741,23	10.447,38
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	4,00	253,03	1.012,12
P6PM400INX	ud Carrete pasamuros 400mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 400mm de diámetro.	2,00	306,44	612,88

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.200.25	ud Carrete desmontaje DN200 PN25 Carrete de desmontaje de diametro 200 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	293,51	1.174,04
P6CD.300.25	ud Carrete desmontaje DN300 PN25 Carrete de desmontaje de diametro 300 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	343,33	343,33
P6CD.800.25	ud Carrete desmontaje virola acero inox. PN25 DN 800 Carrete telescópico autoportante, PN 25 atm, DN 800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	5.667,83	5.667,83
P6CD.1000.25	ud Carrete desmontaje virola acero inox. PN25 DN 1000 Carrete telescópico autoportante, PN 25 atm, DN 1.000 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	6.732,81	13.465,62
P6CD.1800.25	ud Carrete desmontaje virola acero inox. PN25 DN1800 Carrete telescópico autoportante, PN 25 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	11.391,56	22.783,12
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	4,00	7.057,71	28.230,84
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	13.496,06	26.992,12
P6VM.200.25	ud Válvula mariposa ø 200 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	8,00	957,32	7.658,56
P6VM.300.25	ud Válvula mariposa ø 300 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	1.804,30	3.608,60
P6VM.1000.25M	ud Válvula mariposa motorizada PN 25 Ø1000 I Válvula de mariposa, DN 1000 mm, PN 25, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	35.662,87	71.325,74
P6VM.1800.25M	ud Válvula mariposa motorizada PN 25 Ø1800 I Válvula de mariposa, DN 1800 mm, PN 25, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	78.024,71	156.049,42

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400 Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación , incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	2,00	26.725,82	53.451,64
P6FG.400.16	ud Filtro globo PN 16 Ø400 Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	2,00	8.554,76	17.109,52
P6VENT.200.25	ud Ventosa trifuncional DN200 mm PN25+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	9,00	3.601,10	32.409,90
TOTAL 02.05.01.02.....				694.985,82
02.05.01.03	LOSA Y ANCLAJES (TOMA-13)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	118,05	49,22	5.810,42
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	892,22	80,88	72.162,75
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	41,10	16,26	668,29
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	632,14	26,85	16.972,96
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	93.690,99	1,35	126.482,84
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	104,00	4,88	507,52
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	62,70	5,26	329,80
TOTAL 02.05.01.03.....				222.934,58

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.05.01.04	PROTECCIÓN Y ENCINTADOS (TOMA-13)			
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	42,00	744,18	31.255,56
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	1,20	147,79	177,35
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	74,65	61,75	4.609,64
TOTAL 02.05.01.04.....				37.590,79
02.05.01.05	OBRA DE DESAGÜE (TOMA-13)			
02.05.01.05.1	ARQUETA ROTURA (TOMA-13)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reprellado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	127,00	2,77	351,79
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	52,50	2,16	113,40
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	7,45	49,22	366,69
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	6,40	59,75	382,40
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	22,35	80,88	1.807,67
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	18,03	91,99	1.658,58

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	15,48	16,26	251,70
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	29,58	26,85	794,22
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.566,62	1,35	7.514,94
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	54,00	6,15	332,10
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	35,00	2,24	78,40
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda-do . Totalmente terminada y colocada.	18,90	110,88	2.095,63
TOTAL 02.05.01.05.1				15.845,12
02.05.01.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-13)				
P4TUB120HA135	m Tubería hormigón armado junta elastomérica 135 Ø1200 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.200 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	22,50	162,56	3.657,60
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	101,25	2,77	280,46
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	76,67	61,53	4.717,51

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,75	33,10	24,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1,88	80,88	152,05
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,03	91,99	186,74
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	3,00	16,26	48,78
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	6,75	26,85	181,24
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	215,73	1,35	291,24
TOTAL 02.05.01.05.2.....				9.540,45
02.05.01.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-13)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclados con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	360,00	0,37	133,20
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	360,00	0,40	144,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	180,00	2,77	498,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	7,50	29,11	218,33
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujección provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	25,00	1,89	47,25
TOTAL 02.05.01.05.3.....				1.041,38
TOTAL 02.05.01.05.....				26.426,95
02.05.01.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-13)			
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	48,80	49,09	2.395,59
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	12,80	111,07	1.421,70
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	12,00	151,16	1.813,92
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroxexpansivo, según detalle de planos. Totalmente instalada.	4,00	41,67	166,68
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	2.365,20	2,98	7.048,30
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	2,00	1.993,93	3.987,86
TOTAL 02.05.01.06.....				16.834,05

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.05.01.07	URBANIZACIÓN (TOMA-13)			
02.05.01.07.1	PAVIMENTOS (T13)			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	821,23	20,14	16.539,57
TOTAL 02.05.01.07.1				16.539,57
02.05.01.07.2	CERRAMIENTOS (T13)			
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	2,00	160,67	321,34
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitatoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	2,00	638,04	1.276,08
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	213,00	96,52	20.558,76
TOTAL 02.05.01.07.2				22.156,18
02.05.01.07.3	DRENAJES (T13)			
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	231,00	4,11	949,41
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	6,00	14,41	86,46
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	21,00	63,27	1.328,67
TOTAL 02.05.01.07.3				2.364,54
TOTAL 02.05.01.07				41.060,29
TOTAL 02.05.01.....				1.059.656,28

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.05.02	TOMA-13B			
02.05.02.01	MOVIMIENTO DE TIERRAS (TOMA-13B)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	349,50	2,77	968,12
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	349,50	4,97	1.737,02
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	349,50	1,78	622,11
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	91,93	2,16	198,57
TOTAL 02.05.02.01				3.525,82
02.05.02.02	ARQUETAS, VALVULERÍA Y CALDERERÍA (TOMA 13B)			
02.05.02.02.1	MOVIMIENTO DE TIERRAS (T13B)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	327,43	2,77	906,98
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	165,89	2,16	358,32
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	161,54	1,78	287,54
TOTAL 02.05.02.02.1				1.552,84

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.05.02.02.2 ESTRUCTURA DE HORMIGÓN Y METÁLICA (T13B)				
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	6,83	49,22	336,17
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	14,32	80,88	1.158,20
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	41,10	91,99	3.780,79
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	10,65	16,26	173,17
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	51,42	26,85	1.380,63
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.532,11	1,35	7.468,35
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	38,00	4,88	185,44
P4JTAPVC150	m Junta elastomérica de estanqueidad PVC 150 Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.	35,10	4,42	155,14
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda. Totalmente terminada y colocada.	49,50	110,88	5.488,56
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	10,40	49,09	510,54

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41ESC5	m Escalera vertical tipo barco PRFV de 500 mm de ancho Suministro e instalación de escalera de PRFV con aros de protección anticaída, de 500 mm de ancho y peldaños antideslizantes cada 250 mm, fabricada mediante pultrusión, con resina ISOFTÁLICA en espacios sin agresión química y con VINILES-TER en espacios confinados con agresión química, con las siguientes características: - Resistencia UV 5 en la escala de grises conforme a norma UNE-EN ISO 4892-parte 2 y/o según normativa vigente - Resistencia al fuego M-1 (ASTM-E84) - Resistencia al humo F-1 (ASTM-E84) - Pigmentación mediante resina tintada Incluso p.p. de elementos de sujeción en acero inoxidable austenítico AISI 316.	5,60	143,55	803,88
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m²) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m², con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	3,45	119,36	411,79
TOTAL 02.05.02.02.2.....				21.852,66
02.05.02.02.3 VÁLVULAS Y CALDERERÍA (T13B)				
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m² 700 g/m². Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	4.572,94	2,98	13.627,36
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	3,00	253,03	759,09
P6PM500INX	ud Carrete pasamuros 500mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 500mm de diámetro.	1,00	420,25	420,25
P6VC.080.16	ud Válvula compuerta ø 80 mm, 16 atm, instalada Válvula de compuerta enterrada con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo bridas y tornillería; presión de trabajo hasta 16 atm, para diámetro de 80 mm, instalada. Especificaciones s/ PPTP.	1,00	96,43	96,43
P6VM.300.25	ud Válvula mariposa ø 300 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanqueidad. Instalación y pruebas.	2,00	1.804,30	3.608,60
P6VM.500.25	ud Válvula mariposa ø 500 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 500 mm, PN 20/25, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanqueidad. Instalación y pruebas.	2,00	3.308,68	6.617,36
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1,00	13.496,06	13.496,06
P6VO.500.25	ud Válvula globo PN25 Ø500 multiorificio Válvula de regulación de globo, de paso recto de 500 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1,00	35.116,97	35.116,97

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	287,14	1.148,56
P6CD.500.16	ud Carrete desmontaje DN 500 PN16 Carrete de desmontaje de acero de 500 mm de diámetro PN16, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	3,00	456,33	1.368,99
P6CD.500.25	ud Carrete desmontaje DN 500 PN25 Carrete de desmontaje de acero de 500 mm de diámetro PN25, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	3,00	807,61	2.422,83
P6VENT.025.16	ud Ventosa trifuncional DN25 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 25 mm PN16 con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	4,00	187,82	751,28
P6VENT.080.16	ud Ventosa trifuncional DN80 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	1,00	397,39	397,39
P6VD.300.25	ud Válvula dilatadora y compensadora de goma DN 300 PN25 Válvula dilatadora y compensadora de goma de DN 300 PN25. Unidad totalmente instalada.	1,00	564,72	564,72
P6VD.500.25	ud Válvula dilatadora y compensadora de goma DN 500 PN25 Compensador de dilatación de goma de DN 300 PN25 embreado en extremos. Unidad totalmente instalada.	2,00	829,72	1.659,44
TOTAL 02.05.02.02.3.....				82.055,33
TOTAL 02.05.02.02.....				105.460,83

02.05.02.03 OBRA DE DESAGÜE (TOMA 13B)

02.05.02.03.1 ARQUETA ROTURA (TOMA 13B)

P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	161,60	2,77	447,63
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	119,70	2,16	258,55

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,94	49,22	46,27
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	0,60	59,75	35,85
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	2,81	80,88	227,27
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	5,91	91,99	543,66
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	18,50	29,11	538,54
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	3,72	16,26	60,49
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	19,70	26,85	528,95
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	874,73	1,35	1.180,89
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	7,00	4,88	34,16
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	54,00	6,15	332,10
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	12,00	2,24	26,88
TOTAL 02.05.02.03.1				4.261,24

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.05.02.03.2 CONDUCCIÓN Y EMBOCADURA (TOMA 13B)				
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	20,43	2,77	56,59
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1,41	1,78	2,51
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	3,13	16,29	50,99
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	6,92	3,89	26,92
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	16,82	2,16	36,33
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	6,89	0,32	2,20
TOTAL 02.05.02.03.2.....				175,54
TOTAL 02.05.02.03.....				4.436,78
02.05.02.04 URBANIZACIÓN (TOMA 13B)				
02.05.02.04.1 PAVIMENTOS (T13B)				
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, perfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	102,37	20,14	2.061,73
TOTAL 02.05.02.04.1.....				2.061,73

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.05.02.04.2 CERRAMIENTOS (T13B)				
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+ pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	1,00	160,67	160,67
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+ pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitratória, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	1,00	638,04	638,04
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	73,80	96,52	7.123,18
TOTAL 02.05.02.04.2.....				7.921,89
02.05.02.04.3 DRENAJES (T13B)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	82,20	4,11	337,84
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	6,00	14,41	86,46
TOTAL 02.05.02.04.3.....				424,30
TOTAL 02.05.02.04.....				10.407,92
TOTAL 02.05.02.....				123.831,35
02.05.03 DERIVACION CORELLA				
02.05.03.01 MOVIMIENTO DE TIERRAS (DC)				
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.216,66	2,77	6.140,15
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	1.044,00	4,97	5.188,68

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1.758,66	1,78	3.130,41
P1MT08ESC500	m³ Escollera 500 kg careada Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	45,00	38,68	1.740,60
P1MT08ESC500H	m³ Escollera 500 Kg hormigonada con HM20 Escollera de peso mínimo 500 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	45,00	47,53	2.138,85
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	225,00	1,89	425,25
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	458,00	2,16	989,28
TOTAL 02.05.03.01.....				19.753,22
02.05.03.02	CALDERERÍA Y VALVULERÍA (DC)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	103.007,07	2,98	306.961,07
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	5,00	1.741,23	8.706,15
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	188,30	753,20
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	3,00	287,14	861,42

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800 Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado , incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	4,00	5.842,52	23.370,08
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	4,00	7.057,71	28.230,84
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	8,00	712,92	5.703,36
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	3,00	1.341,59	4.024,77
P6VM.1800.16M	ud Válvula mariposa motorizada PN 16 Ø1800 I Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	4,00	62.455,65	249.822,60
P6VENT.200.25	ud Ventosa trifuncional DN200 mm PN25+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN25, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	5,00	3.601,10	18.005,50
TOTAL 02.05.03.02.....				646.438,99
02.05.03.03	LOSA Y ANCLAJES (DC)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	9,85	49,22	484,82
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	868,91	80,88	70.277,44
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	37,80	16,26	614,63
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	754,95	26,85	20.270,41

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	61.701,06	1,35	83.296,43
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	104,00	4,88	507,52
TOTAL 02.05.03.03.....				175.451,25
02.05.03.04	PROTECCIÓN Y ENCINTADOS (DC)			
P4CINT1900	m Encintado anticorrosivo DN1900 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1900mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	21,00	783,11	16.445,31
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	31,50	744,18	23.441,67
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	1,50	147,79	221,69
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	72,54	61,75	4.479,35
TOTAL 02.05.03.04.....				46.136,26
02.05.03.05	OBRA DE DESAGÜE (DC)			
02.05.03.05.1	ARQUETA ROTURA (DC)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	15,63	2,77	43,30
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	11,23	2,16	24,26

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ARQP-1.2A	ud Arq. pref DN=1.2 m H=3.0m+ tapa fundición DN600 +pates UD de Arqueta prefabricada, altura variable hasta 3.0m de tipo pozo de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltes para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltes en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base. Unidad totalmente terminada.	1,00	840,48	840,48
TOTAL 02.05.03.05.1				908,04
02.05.03.05.2 CONDUCCIÓN Y EMBOCADURA (DC)				
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	18,00	122,70	2.208,60
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	64,80	2,77	179,50
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	45,92	61,53	2.825,46
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,00	33,10	132,40
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,13	80,88	253,15
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,93	91,99	269,53
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	5,00	16,26	81,30

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	9,75	26,85	261,79
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	401,18	1,35	541,59
TOTAL 02.05.03.05.2.....				6.753,32
02.05.03.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (DC)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	125,00	0,37	46,25
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	125,00	0,40	50,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	143,75	2,77	398,19
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	7,50	29,11	218,33
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	27,50	1,89	51,98
TOTAL 02.05.03.05.3.....				764,75
TOTAL 02.05.03.05.....				8.426,11

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.05.03.06 ESTRUCTURA METÁLICA Y VARIOS (DC)				
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	48,80	49,09	2.395,59
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm, barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante, incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	12,80	111,07	1.421,70
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	12,00	151,16	1.813,92
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.	4,00	41,67	166,68
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	2.365,20	2,98	7.048,30
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje, incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	3,00	1.993,93	5.981,79
TOTAL 02.05.03.06.....				18.827,98
02.05.03.07 URBANIZACIÓN (DC)				
02.05.03.07.1 PAVIMENTOS (DC)				
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	520,50	20,14	10.482,87
TOTAL 02.05.03.07.1.....				10.482,87

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.05.03.07.2 CERRAMIENTOS (DC)				
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+ pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	1,00	160,67	160,67
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+ pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	1,00	638,04	638,04
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	155,00	96,52	14.960,60
TOTAL 02.05.03.07.2.....				15.759,31
02.05.03.07.3 DRENAJES(DC)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	45,00	4,11	184,95
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	172,00	21,35	3.672,20
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	10,00	63,27	632,70
TOTAL 02.05.03.07.3.....				4.489,85
TOTAL 02.05.03.07.....				30.732,03
TOTAL 02.05.03.....				945.765,84
TOTAL 02.05.....				2.129.253,47

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.06	HINCAS (T12-D.C.)			
02.06.01	HINCA CERRO			
02.06.01.01	TRABAJOS PREPARATORIOS+MT (HINCA CERRO)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	16.276,00	2,77	45.084,52
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	227,72	1,78	405,34
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	99,75	20,14	2.008,97
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	330,00	4,11	1.356,30
TOTAL 02.06.01.01				48.855,13
02.06.01.02	ESTRUCTURA (HINCA CERRO)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	20,40	49,22	1.004,09
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	17,50	61,53	1.076,78
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	81,60	80,88	6.599,81
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	84,90	91,99	7.809,95
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.411,60	1,35	7.305,66

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	332,00	26,85	8.914,20
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	18,84	100,81	1.899,26
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	36,72	52,84	1.940,28
TOTAL 02.06.01.02.....				36.550,03
02.06.01.03	HINCA (HINCA CERRO)			
P6HINCA2000B1	ud Implantación equipo escudo abierto hinca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo abierto, para hinca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.	1,00	4.028,00	4.028,00
P6HINCA2000B3	ud Retirada de equipos esc. abierto+ traslado+imp. interior de obra Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.	1,00	2.650,00	2.650,00
P6HINCA2500B	m Tubería hincada hormigón armado DN 2500 escudo abierto Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con virola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de coriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	400,00	2.703,81	1.081.524,00
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	400,00	90,10	36.040,00
TOTAL 02.06.01.03.....				1.124.242,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.06.01.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA CERRO)			
02.06.01.04.1	TRATAMIENTO (HINCA Cerro)			
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-II/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	1.665,70	79,21	131.940,10
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	200,00	56,49	11.298,00
TOTAL 02.06.01.04.1.....				143.238,10
02.06.01.04.2	AUSCULTACIÓN (HINCA Cerro)			
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	20,00	18,53	370,60
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.	20,00	18,49	369,80
P6HINCA03C	ud Equipo auscultación túnel / hinca de long >100m Equipo de auscultación de seguimiento de túnel del cerro de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	5.427,41	5.427,41
TOTAL 02.06.01.04.2.....				6.167,81
TOTAL 02.06.01.04.....				149.405,91
TOTAL 02.06.01.....				1.359.053,07
02.06.02	HINCA NA-134			
02.06.02.01	TRABAJOS PREPARATORIOS+MT (HINCA NA-134)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.806,56	2,77	5.004,17
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.	2.903,20	12,72	36.928,70
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	100,10	4,97	497,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	886,12	1,78	1.577,29
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	166,80	20,14	3.359,35
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	220,00	4,11	904,20
TOTAL 02.06.02.01				48.271,21
02.06.02.02	PANTALLA Y ESTRUCTURA (HINCA NA-134)			
P5PANT01	ud Transporte y montaje equipos ejec. pantallas Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	1,00	11.719,12	11.719,12
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	1,00	3.324,51	3.324,51
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.	107,00	106,73	11.420,11
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o reperforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Hormigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.	1.712,00	245,82	420.843,84
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	19,50	49,22	959,79

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	78,00	80,88	6.308,64
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	174,87	91,99	16.086,29
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	163.701,22	1,35	220.996,65
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	16,15	161,50
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	9,47	94,70
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	560,00	8,07	4.519,20
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	5,27	52,70
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	425,40	26,85	11.421,99
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	56,00	7,25	406,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	18,84	100,81	1.899,26
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	94,90	52,84	5.014,52
TOTAL 02.06.02.02.....				715.228,82

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.06.02.03 HINCA (HINCA NA-134)				
P6HINCA2000A1	ud Implantación equipo escudo cerrado hinca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo cerrado, para hinca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.	1,00	40.280,00	40.280,00
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.	1,00	16.960,00	16.960,00
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con vira metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	100,00	4.183,69	418.369,00
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	100,00	90,10	9.010,00
TOTAL 02.06.02.03.....				484.619,00
02.06.02.04 TRATAMIENTOS Y AUSCULTACIÓN (HINCA NA-134)				
02.06.02.04.1 TRATAMIENTO (HINCA NA-134)				
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	416,40	79,21	32.983,04
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	200,00	56,49	11.298,00
TOTAL 02.06.02.04.1.....				44.281,04
02.06.02.04.2 AUSCULTACIÓN (HINCA NA-134)				
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	8,00	18,53	148,24
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada, excavaciones, rellenos y gravilla incluidos.	8,00	18,49	147,92
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	4.821,98	4.821,98
TOTAL 02.06.02.04.2.....				5.118,14
TOTAL 02.06.02.04.....				49.399,18

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 02.06.02.....				1.297.518,21
02.06.03	HINCA EBRO			
02.06.03.01	TRABAJOS PREPARATORIOS+MT (HINCA Ebro)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.979,53	2,77	5.483,30
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de repperfilado. Unidad totalmente terminada medido sobre perfil teórico.	3.528,70	12,72	44.885,06
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	100,10	4,97	497,50
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	166,80	20,14	3.359,35
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	235,00	4,11	965,85
TOTAL 02.06.03.01.....				55.191,06
02.06.03.02	PANTALLA Y ESTRUCTURA (HINCA Ebro)			
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	2,00	3.324,51	6.649,02
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.	107,00	106,73	11.420,11

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o perforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Hormigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.	1.926,00	245,82	473.449,32
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	19,50	49,22	959,79
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	78,00	80,88	6.308,64
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	174,87	91,99	16.086,29
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	227.162,32	1,35	306.669,13
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	16,15	161,50
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	9,47	94,70
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	560,00	8,07	4.519,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	5,27	52,70
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	425,40	26,85	11.421,99
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	56,00	7,25	406,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	18,84	100,81	1.899,26
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	114,40	52,84	6.044,90
TOTAL 02.06.03.02.....				846.142,55
02.06.03.03	HINCA (HINCA Ebro)			
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.	2,00	16.960,00	33.920,00
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con vira metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	1.000,00	4.183,69	4.183.690,00
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	1.000,00	90,10	90.100,00
TOTAL 02.06.03.03.....				4.307.710,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.06.03.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA Ebro)			
02.06.03.04.1	TRATAMIENTO (HINCA Ebro)			
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-II/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	5.268,00	79,21	417.278,28
P6HINC.T02	m³ Resina de silicatos inyectada en el terreno Resina de silicatos inyectada en el terreno para consolidación en túneles e impermeabilización i/ rechazo.	300,00	1.008,75	302.625,00
P1MT15-250M	m Micropilote DN 250 mortero M250 Pilote de 250 mm de diámetro, barrenado mecánico con empleo de entubación recuperable y lodos tixotrópicos, fabricado "in situ" de mortero M-250 SR, conforme a norma UNE 36068 y/o según normativa vigente, puesto en obra según EHE vigente, incluso parte proporcional de excavación, transporte, instalación, montaje y desmontaje de equipos, recuperación de la entubación, protección de la cabeza del pilote, descabezado de pilote hasta cara inferior de viga de atado y retirada de sobrantes, ejecución, control de calidad, suministro y colocación de tubos sónicos, informes, ensayos asociados y documentación. Totalmente terminado.	56,00	56,94	3.188,64
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	200,00	56,49	11.298,00
TOTAL 02.06.03.04.1				734.389,92
02.06.03.04.2	AUSCULTACIÓN (HINCA Ebro)			
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	4,00	18,53	74,12
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada, excavaciones, rellenos y gravilla incluidos.	4,00	18,49	73,96
P6HINCA03B	ud Equipo auscultación túnel / hinca río de long >100m Equipo de auscultación de seguimiento de túnel bajo río de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	4.977,93	4.977,93
TOTAL 02.06.03.04.2				5.126,01
TOTAL 02.06.03.04				739.515,93
TOTAL 02.06.03				5.948.559,54
02.06.04	HINCA FFCC ALSASUA			
02.06.04.01	TRABAJOS PREPARATORIOS+MT (HINCA FFCC)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.170,27	2,77	6.011,65

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT03C1	m³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.	3.248,70	12,72	41.323,46
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasanten, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	100,10	4,97	497,50
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	174,30	20,14	3.510,40
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	270,00	4,11	1.109,70
TOTAL 02.06.04.01				52.452,71
02.06.04.02	PANTALLA Y ESTRUCTURA (HINCA FFCC)			
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	2,00	3.324,51	6.649,02
P5PANT03	ud Desmontaje/ desplazamiento equipos pantallas a fábricas Desmontaje final de pantallas y transporte a punto de origen. Unidad completa.	1,00	11.719,12	11.719,12
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.	107,00	106,73	11.420,11
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o reperforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amortizada con suministro y colocación del hormigón y exceso por pérdidas. -Homigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.	1.712,00	245,82	420.843,84

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	19,50	49,22	959,79
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	78,00	80,88	6.308,64
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	174,87	91,99	16.086,29
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	173.401,27	1,35	234.091,71
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	16,15	161,50
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	9,47	94,70
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	560,00	8,07	4.519,20
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	5,27	52,70
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	425,40	26,85	11.421,99
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	56,00	7,25	406,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulfurresistente sin retracción.	18,84	100,81	1.899,26
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	101,40	52,84	5.357,98

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 02.06.04.02.....				731.991,85
02.06.04.03	HINCA (HINCA FFCC)			
P6HINCA2000A2	ud Retirada equipo escudo cerrado hınca DN 2.000-2500 a fábrica Retirada completa de obra y transporte a punto de origen de proveedor de equipo perforador de escudo cerrado, para hınca de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.	1,00	40.280,00	40.280,00
P6HINCA2000A3	ud Retirada de equipos esc. cerrado + traslado+imp interior de obra Retirada y desmontaje de equipos esc. cerrado con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hınca, mano de obra para descarga, montaje y puesta a punto.	2,00	16.960,00	33.920,00
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con vñrola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	100,00	4.183,69	418.369,00
P6HINCATUB01	m Sobre coste tubería int. hınca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hınca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	100,00	90,10	9.010,00
TOTAL 02.06.04.03.....				501.579,00
02.06.04.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA FFCC)			
02.06.04.04.1	TRATAMIENTO (HINCA FFCC)			
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	446,40	79,21	35.359,34
P6HINC.T02	m³ Resina de silicatos inyectada en el terreno Resina de silicatos inyectada en el terreno para consolidación en túneles e impermeabilización i/ rechazo.	7,50	1.008,75	7.565,63
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	200,00	56,49	11.298,00
TOTAL 02.06.04.04.1				54.222,97
02.06.04.04.2	AUSCULTACIÓN (HINCA FFCC)			
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	12,00	18,53	222,36
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada, excavaciones, rellenos y gravilla incluidos.	12,00	18,49	221,88

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de niveles, control de subsidencias y generación de informes. Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	4.821,98	4.821,98
P6HINCA05	ud Equipo vigilancia FFCC+tasas Equipo de vigilancia FFCC de ADIF, incluido pago de tasas.	1,00	12.455,00	12.455,00
TOTAL 02.06.04.04.2.....				17.721,22
TOTAL 02.06.04.04.....				71.944,19
TOTAL 02.06.04.....				1.357.967,75
02.06.05	HINCA AP-68			
02.06.05.01	TRABAJOS PREPARATORIOS+MT (HINCA AP-68)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	10.549,99	2,77	29.223,47
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	88,50	20,14	1.782,39
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	310,00	4,11	1.274,10
TOTAL 02.06.05.01.....				32.279,96
02.06.05.02	ESTRUCTURA (HINCA AP68)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	18,60	49,22	915,49
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	15,50	61,53	953,72
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	74,40	80,88	6.017,47
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	79,68	91,99	7.329,76

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.020,40	1,35	6.777,54
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	308,00	26,85	8.269,80
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	18,84	100,81	1.899,26
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	33,48	52,84	1.769,08
TOTAL 02.06.05.02.....				33.932,12
02.06.05.03	HINCA (HINCA AP68)			
P6HINCA2000B2	ud Retirada equipo escudo cerrado hınca DN 2.000-2500 a fáb. Retirada completa de obra y transporte de equipo perforador de escudo abierto, para hınca de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.	1,00	4.028,00	4.028,00
P6HINCA2000B3	ud Retirada de equipos esc. abierto+ traslado+imp. interior de obra Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hınca, mano de obra para descarga, montaje y puesta a punto.	2,00	2.650,00	5.300,00
P6HINCA2000B	m Tubería hincada hormigón armado DN 2000 escudo abierto Tubería hincada de DN 2.000 mm de diámetro interior, de hormigón armado, con vórola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	230,00	2.333,34	536.668,20
P6HINCATUB01	m Sobre coste tubería int. hınca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hınca de DN 2.000 y 2.500 mm recta o curva, mediante instalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	230,00	90,10	20.723,00
TOTAL 02.06.05.03.....				566.719,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.06.05.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA AP68)			
02.06.05.04.1	TRATAMIENTO (HINCA AP68)			
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-II/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	591,64	79,21	46.863,80
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	200,00	56,49	11.298,00
TOTAL 02.06.05.04.1.....				58.161,80
02.06.05.04.2	AUSCULTACIÓN (HINCA AP68)			
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	20,00	18,53	370,60
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.	20,00	18,49	369,80
P6HINCA03A	ud Equipo auscultación túnel / hinca carretera de long >100m Equipo de auscultación de seguimiento de túnel carretero de longitud superior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	12.184,91	12.184,91
TOTAL 02.06.05.04.2.....				12.925,31
TOTAL 02.06.05.04.....				71.087,11
TOTAL 02.06.05.....				704.018,39
TOTAL 02.06				10.667.116,96
02.07	MACIZOS DE ANCLAJE (T12-D.C.)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	420,60	2,77	1.165,06
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	162,00	2,16	349,92
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	758,74	80,88	61.366,89

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	428,58	26,85	11.507,37
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	51.736,83	1,35	69.844,72
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	635,72	744,18	473.090,11
TOTAL 02.07				617.324,07
02.08	CAMINOS DE SERVICIO (T12-D.C.)			
02.08.01	MOVIMIENTO DE TIERRAS Y PAVIMENTOS (T12-DC)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	12.286,65	2,77	34.034,02
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	3.172,16	1,78	5.646,44
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	8.878,66	20,14	178.816,21
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	324,20	80,88	26.221,30
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	6.916,33	1,35	9.337,05
TOTAL 02.08.01.....				254.055,02

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.08.02	DRENAJE TRANSVERSAL (T12-DC)			
02.08.02.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	229,25	2,77	635,02
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantos, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	181,35	3,89	705,45
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	9,07	59,75	541,93
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	28,41	61,53	1.748,07
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	158,00	22,61	3.572,38
TOTAL 02.08.02.01				7.202,85
02.08.02.02	OBRAS DE FÁBRICA			
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5, incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.	52,70	48,13	2.536,45
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	207,95	63,27	13.157,00
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	47,35	122,70	5.809,85

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4M2.0X1.0	m Marco prefabricado 2,0x1,0 m Suministro y colocación de marco prefabricado de hormigón armado tipo HA-35/S/20/XA3-SR, resistente a los sulfatos, de 2.0x1.0 m, conforme a norma UNE-EN 14844+A2:2012 incluso normativa vigente, incluso sellado de juntas interiores y exteriores con mortero tipo M-450, CEM-I 32,5/SR, todo calculado para carga de tráfico 60tn y altura de tierras H<2,0m. Unidad totalmente instalada en base de hormigón y cama de arena.	2,00	586,16	1.172,32
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	80,65	78,03	6.293,12
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	129,90	16,26	2.112,17
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	118,22	26,85	3.174,21
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	6.854,83	1,35	9.254,02
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	71,76	2,24	160,74
P3LAM1	m² Imperm. muros+Lámina dren PE+Geotex 200 g Drenaje de muros con lámina nodular con marcado CE de polietileno virgen con geotextil incorporado y doble nódulo de 12 mm. de altura nod, capacidad de drenaje 1,2 l / s y resistencia a compresión de 90 kn/m2. Delta Drain o similar, p.p. de fijación al soporte con taco espiga de polipropileno, a razón de 3 uds / m2 y sellado de solapes de anchura de 10 cm. con banda autoadhesiva a dos caras de caucho butilo Delta Fix, incluso impermeabilización del paramento de hormigón con dos manos de emulsión bituminosa modificada 0.7kg/m2 , según CTE/DB-HS 1. Unidad totalmente terminada, incluso remate de conexión a dren.	78,93	12,53	988,99
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	89,52	9,54	854,02
TOTAL 02.08.02.02.....				45.512,89
TOTAL 02.08.02.....				52.715,74

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.08.03	DRENAJE LONGITUDINAL (T12-DC)			
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	617,53	14,41	8.898,61
TOTAL 02.08.03.....				8.898,61
TOTAL 02.08				315.669,37
02.09	PROTECCIÓN CATÓDICA (T12-D.C.)			
P2CAT001	ud Rectificador 70V-35A en armario intemperie. Rectificador 70V-35A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	1,00	11.563,64	11.563,64
P2CAT004	ud Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2 Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	10,00	769,00	7.690,00
P2CAT005	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vía Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	9,00	39,32	353,88
P2CAT006	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	37,00	74,00
P2CAT007	m Cable anódico tipo RV-K de sección 1x25mm2 Cable anódico tipo RV-K de sección 1x25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	120,00	8,51	1.021,20
P2CAT008	Kg Coque petróleo calcinado Coque petróleo calcinado	4.000,00	2,67	10.680,00
P2CAT009	m Manguera perforada Manguera perforada	54,00	7,07	381,78
P2CAT010	ud Arqueta riego protección catódica Arqueta riego ide protección catódica incluidos p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	716,14	1.432,28
P2CAT012	ud Caja de conexionado 10 ánodos IP.55 y prensaestopas. Caja de conexionado 10 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	1,00	577,49	577,49
P2CAT013	ud Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0. Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0.6/1 KV 1 x 6 mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	1,00	226,42	226,42
P2CAT014	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 (cantidad estimada) y Handy cap, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	131,02	262,04
P2CAT015	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	277,30	554,60
P2CAT016B	ud Obra civil, mont.conex EPC+TP+TPEs+ P.Func (T12-DC) Obra civil, montaje y conexionado EPC, y material en línea de TP y TPEs en todo el conjunto del subtramo 12-DC. Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento.	4,00	5.300,00	21.200,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P2CAT017	ud Caja toma de potencial de policarbonato con prensaestopas Caja toma de potencial de policarbonato con prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	3,00	69,32	207,96
P2CAT018	ud Caja toma de potencial TPE (200 X 200) con poste acero galvaniza Caja toma de potencial TPE (200 X 200) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	8,00	438,84	3.510,72
P2CAT019	ud Caja toma de potencial TPE (320 x 320) con poste acero galvaniza Caja toma de potencial TPE (320 x 320) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	6,00	786,10	4.716,60
P2CAT020	ud UDCA en caja TPE con poste de acero galvanizado diámetro 2" y 2 UDCA en caja TPE con poste de acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	11,00	1.526,40	16.790,40
P2CAT021	ud Vía de chispas en caja TPE con poste de acero galvanizado Vía de chispas en caja TPE con poste de acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	18,00	820,44	14.767,92
P2CAT022	ud Electrodo probeta estándar Electrodo probeta estándar, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	15,00	136,45	2.046,75
P2CAT023	ud Electrodo probeta alterna Electrodo probeta alterna, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	29,00	147,55	4.278,95
P2CAT024	ud Electrodo probeta alterna ENAGÁS. Electrodo probeta alterna ENAGÁS, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	1,00	438,84	438,84
P2CAT025	ud Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados con mezcla activadora y 5 m de cable (Protección catódica provisional), incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	552,00	104,05	57.435,60
P2CAT026	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable R Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable RV 0.6/1 KV 1 x 6 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	40,00	62,33	2.493,20
P2CAT027	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable RV 0.6/1 KV 1 x 25 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	98,00	207,34	20.319,32
P2CAT028	ud Cable acero galvanizado 12 mm Cable acero galvanizado 12 mm, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	16.180,00	7,63	123.453,40
P5ELEM1X25TT	m Manguera eléctrica 1 x 25 mm2 Cu Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	2.110,00	9,46	19.960,60
P5ELEM1X50TT	m Manguera eléctrica 1 x 50 mm2 Cu Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv,Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	150,00	14,03	2.104,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P2CAT029	ud Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	103,00	11,45	1.179,35
P2CAT030	ud Picas de zinc 1000 mm ensacada Picas de zinc 1000 mm ensacada, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	16,00	184,44	2.951,04
P2CAT031	ud Vías de chispas con cable y pletina para conexión Vías de chispas con cable y pletina para conexión, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	26,00	456,65	11.872,90
P2CAT034	ud Junta aislante embridada DN 1900 mm PN16 Junta aislante embridada DN 1900 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	3.754,94	15.019,76
P2CAT035A	ud Junta aislante embridada DN 1800 mm PN16 Junta aislante embridada DN 1800 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	5,00	3.637,92	18.189,60
P2CAT035B	ud Junta aislante embridada DN 1800 mm PN25 Junta aislante embridada DN 1800 mm PN25, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	4.446,91	17.787,64
P2CAT036	ud Junta aislante embridada DN 1600 mm PN16 Junta aislante embridada DN 1600 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	3.101,14	12.404,56
P2CAT041	ud Junta aislante embridada DN 800mm PN16 Junta aislante embridada DN 800mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	1.285,99	5.143,96
P2CAT042	ud Junta aislante embridada DN 800mm PN25 Junta aislante embridada DN 800mm PN25, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	1,00	1.653,60	1.653,60
P2CAT045	ud Junta aislante embridada DN 300mm PN16 Junta aislante embridada DN 300mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	573,67	2.294,68
P2CAT046	ud Junta aislante monoblock DN 1800 PN16 Junta aislante monoblock DN 1800 PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	46.866,84	187.467,36
P2CAT047	ud Junta aislante monoblock DN 1600 PN16 Junta aislante monoblock DN 1600 PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	39.373,49	157.493,96
TOTAL 02.09				762.000,50
02.10	INSTALACIONES ELÉCTRICAS (T12-D.C.)			
02.10.01	TOMA-13+EPC			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.10.01.01 ACOMETIDA Y LEGALIZACIÓN (TOMA-13)				
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62
P5ELEC1M1T13	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-13 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-13	1,00	7.611,44	7.611,44
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 02.10.01.01				26.026,90
02.10.01.02 LÍNEA DE MEDIA TENSIÓN (TOMA-13)				

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	51,00	4.165,13	212.421,63
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	11.341,28	8,23	93.338,73
TOTAL 02.10.01.02.....				311.813,04

02.10.01.03 TRANSFORMACIÓN Y GENERACIÓN (TOMA-13)

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de canon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 02.10.01.03.....				9.684,05
02.10.01.04	CUADROS ELÉCTRICOS (TOMA-13)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEGGBT13	ud CGBT Toma-13 incl. cabina y aparamenta	1,00	10.195,82	10.195,82
	<p>Suministro y montaje de módulo de alimentación, control y protección de Toma-13 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD,</p> <p>Pulsantería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>			
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia	5,00	101,69	508,45
	<p>Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción.</p> <p>Unidad totalmente instalada.</p>			
TOTAL 02.10.01.04.....				26.251,25
02.10.01.05	CANALIZACIONES (TOMA-13)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)	3,00	74,49	223,47
	<p>Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.</p>			
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a)	58,50	55,53	3.248,51
	<p>Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.</p>			
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b)	18,00	68,11	1.225,98
	<p>Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada</p>			
P5ELE20GALV	m Tubo galvanizado estanco 20 mm	60,00	5,36	321,60
	<p>Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.</p>			
P5ELE25GALV	m Tubo galvanizado estanco 25 mm	3,00	5,78	17,34
	<p>Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.</p>			
P5ELE32GALV	m Tubo galvanizado estanco 32 mm	25,00	6,68	167,00
	<p>Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.</p>			
P5ELEBAND2	m Bandeja PVC 200x60mm	29,00	18,35	532,15
	<p>Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.</p>			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	10,00	281,22	2.812,20
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	1,00	20,25	20,25
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	1,00	30,86	30,86
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	9,00	31,90	287,10
TOTAL 02.10.01.05.....				9.317,03
02.10.01.06	LÍNEAS DE BT (TOMA-13)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	943,00	6,26	5.903,18
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	50,00	6,78	339,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT 2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	245,00	6,59	1.614,55
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	40,00	11,30	452,00
P5ELEM4X16T2	m Manguera eléctrica 4 x 16 + TT 16mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	30,00	14,42	432,60
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 02.10.01.06.....				9.506,46
02.10.01.07	TOMA TIERRA (TOMA-13)			
P5ELETRA4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	5,00	98,29	491,45
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	2,00	69,95	139,90
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	144,00	7,88	1.134,72
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada	5,00	7,08	35,40
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	5,00	10,99	54,95
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 02.10.01.07				5.050,82
02.10.01.08	MECANISMOS (TOMA-13)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 02.10.01.08.....				381,92
02.10.01.09	ALUMBRADO (TOMA-13)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruirdos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 02.10.01.09.....				1.191,29
TOTAL 02.10.01.....				399.222,76
02.10.02	TOMA-13b			
02.10.02.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-13b)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexiones, arranques y mantenimiento, posterior operación de desconexiones, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiones a trafo Operación de conexionado y desconexión de LMT.	1,00	365,62	365,62
P5ELEC1M1T13B	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-13B Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma 13b.	1,00	19.235,82	19.235,82
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECTMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 02.10.02.01				37.651,28
02.10.02.02	LÍNEA DE MEDIA TENSIÓN (TOMA-13b)			
P5ELECTMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexión el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68
P5ELECTMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexión el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	4.165,13	4.165,13
P5ELECTMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas, elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	52,80	8,23	434,54

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE200X2HT2	m Can. horm. PE 200x2+3x65mm (rustico) 0.65x1.3m (Zanja tipo 1A) Canalización de línea de media tensión hormigonada en terrenos rústicos conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	545,00	63,81	34.776,45
P5ELE200X2H2	m Can. horm. PE 200 mm x2 (calzadas) 0.65x1.3m (Zanja tipo 2B) Canalización de línea de media tensión hormigonada bajo Acerados y pavimentos conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	60,92	182,76
P5ELE200X2H1	m Can. horm. PE 200 mm x2 (aceras-rust) 0.65x1.3m Zanja tipo 2A) Canalización de línea de media tensión hormigonada en terrenos rústicos y/o ajardinados conformado por tubos 2x200mm PE normalizado para instalación eléctrica , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 100-130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	56,94	170,82
P5ELEM1X95A	m Manguera eléctrica 1 x 95 Al mm2 Manguera eléctrica HEPRZ1 1x95mm2 A1+H16 flexible completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	1.695,00	12,89	21.848,55
P5ARQPREF2.0E	ud Arqueta MT prefabricada inst. elect. 110x110x160 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	14,00	414,18	5.798,52
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	3,00	269,01	807,03
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ...), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	3,00	3.828,30	11.484,90
TOTAL 02.10.02.02.....				85.721,38
02.10.02.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-13b)			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 02.10.02.03.....				9.684,05
02.10.02.04	CUADROS ELÉCTRICOS (TOMA-13b)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELECGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEGGBT13B	ud CGBT Toma-13b incl. cabina y aparamenta	1,00	8.155,00	8.155,00
	<p>Suministro y montaje de módulo de alimentación, control y protección de Toma-13b en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD,</p> <p>Pulsantería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>			
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia	5,00	101,69	508,45
	<p>Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción.</p> <p>Unidad totalmente instalada.</p>			
TOTAL 02.10.02.04.....				24.210,43
02.10.02.05	CANALIZACIONES(TOMA-13b)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)	3,00	74,49	223,47
	<p>Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.</p>			
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a)	20,00	55,53	1.110,60
	<p>Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.</p>			
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b)	10,00	68,11	681,10
	<p>Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada</p>			
P5ELE20GALV	m Tubo galvanizado estanco 20 mm	60,00	5,36	321,60
	<p>Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.</p>			
P5ELE25GALV	m Tubo galvanizado estanco 25 mm	3,00	5,78	17,34
	<p>Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.</p>			
P5ELE32GALV	m Tubo galvanizado estanco 32 mm	12,00	6,68	80,16
	<p>Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.</p>			
P5ELEBAND2	m Bandeja PVC 200x60mm	20,00	18,35	367,00
	<p>Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.</p>			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	20,00	8,87	177,40
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	10,00	281,22	2.812,20
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	1,00	20,25	20,25
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	1,00	30,86	30,86
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	11,00	31,90	350,90
TOTAL 02.10.02.05.....				6.313,00
02.10.02.06	LÍNEAS DE BT (TOMA-13b)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	941,00	6,26	5.890,66
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	52,00	6,78	352,56
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	10,00	8,25	82,50
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT 2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	70,00	6,59	461,30
P5ELEM4X16TT	m Manguera eléctrica 4 x 16 + TT 16 mm2 Cu Manguera eléctrica de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	30,00	12,53	375,90
P5ELEM4X6T2	m Manguera eléctrica 4 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	35,00	11,46	401,10
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 02.10.02.06.....				8.287,90
02.10.02.07	TOMA TIERRA (TOMA-13b)			
P5ELETRA4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	5,00	98,29	491,45
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	2,00	69,95	139,90
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120	1,00	1.492,41	1.492,41
	Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.			
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro	30,00	7,88	236,40
	Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.			
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25	5,00	7,08	35,40
	Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada			
P5ELECTT0	ud Informe resultados ejecución toma tierra	2,00	97,16	194,32
	Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.			
TOTAL 02.10.02.07.....				4.097,55
02.10.02.08	MECANISMOS (TOMA-13b)			
P5ELEC01	ud Interruptor monopolar	1,00	7,52	7,52
	Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.			
P5ELEC02	ud Interruptor bipolar	1,00	13,14	13,14
	Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.			
P5ELEC03	ud Conmutador serie básica	1,00	7,52	7,52
	Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.			
P5ELEC05	ud Doble interruptor	1,00	10,29	10,29
	Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.			
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66	1,00	144,43	144,43
	Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.			
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66	1,00	199,02	199,02
	Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.			
TOTAL 02.10.02.08.....				381,92
02.10.02.09	ALUMBRADO (TOMA-13b)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65	4,00	180,71	722,84
	Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.			
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm	2,00	65,09	130,18
	Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 02.10.02.09.....				1.191,29
TOTAL 02.10.02.....				177.538,80
02.10.03	Derivación Corella			
02.10.03.01	ACOMETIDA Y LEGALIZACIÓN (DC)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62
P5ELEC1M1DC	ud Conex. LMTS+ refuerzos+adaptación línea Derivación Corella Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Derivación de Corella.	1,00	12.799,50	12.799,50
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 02.10.03.01.....				31.214,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.10.03.02	LÍNEA DE MEDIA TENSIÓN (DC)			
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexión el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexión el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	7,00	4.165,13	29.155,91
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	1.064,25	8,23	8.758,78
TOTAL 02.10.03.02.....				43.967,37

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.10.03.03 TRANSFORMACIÓN Y GENERACIÓN (DC)				
P5ELECMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 02.10.03.03.....				9.684,05
02.10.03.04 CUADROS ELÉCTRICOS (DC)				
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECGBTDC	ud CGBT Derivac. Corella incl. cabina y apartament	1,00	10.195,82	10.195,82
	<p>Suministro y montaje de módulo de alimentación, control y protección de Derivación Corella en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD,</p> <p>Pulsantería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>			
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia	5,00	101,69	508,45
	<p>Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción.</p> <p>Unidad totalmente instalada.</p>			
TOTAL 02.10.03.04.....				26.251,25
02.10.03.05	CANALIZACIONES(DC)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b)	3,00	74,49	223,47
	<p>Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.</p>			
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a)	48,50	55,53	2.693,21
	<p>Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.</p>			
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b)	7,00	68,11	476,77
	<p>Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada</p>			
P5ELE20GALV	m Tubo galvanizado estanco 20 mm	60,00	5,36	321,60
	<p>Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.</p>			
P5ELE25GALV	m Tubo galvanizado estanco 25 mm	3,00	5,78	17,34
	<p>Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.</p>			
P5ELE32GALV	m Tubo galvanizado estanco 32 mm	25,00	6,68	167,00
	<p>Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.</p>			
P5ELEBAND2	m Bandeja PVC 200x60mm	29,00	18,35	532,15
	<p>Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.</p>			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	8,00	281,22	2.249,76
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	1,00	20,25	20,25
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	1,00	30,86	30,86
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	9,00	31,90	287,10
TOTAL 02.10.03.05.....				7.450,08
02.10.03.06	LÍNEAS DE BT (DC)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	943,00	6,26	5.903,18
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	50,00	6,78	339,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	245,00	6,59	1.614,55
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	40,00	11,30	452,00
P5ELEM4X16T2	m Manguera eléctrica 4 x 16 + TT 16mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 16 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	30,00	14,42	432,60
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 02.10.03.06.....				9.506,46
02.10.03.07	TOMA TIERRA (DC)			
P5ELETRA4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	5,00	98,29	491,45
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	5,00	12,58	62,90
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	2,00	69,95	139,90
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	130,00	7,88	1.024,40
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	8,00	10,99	87,92
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
TOTAL 02.10.03.07.....				4.900,33
02.10.03.08	MECANISMOS (DC)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 02.10.03.08.....				381,92
02.10.03.09	ALUMBRADO (Dc)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 02.10.03.09.....				1.191,29
TOTAL 02.10.03.....				134.547,71
TOTAL 02.10				711.309,27
02.11	CONTROL Y AUTOMATISMO (T12-D.C.)			
02.11.01	INGENIERÍA Y FORMACIÓN (T12-DC)			
P7ING002	ud Ingeniería PLC's y comunicaciones (T12-DC) Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	1,00	7.425,94	7.425,94
P73COMSCADA2	ud Ingeniería adecuación SCADA, control y supervisión (T12-DC) Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	1,00	6.640,19	6.640,19
P73COMPUESTA2	ud Pruebas y puesta en marcha de instalaciones (T12-DC) Control de Calidad de señales y Pruebas Funcionales de la instalación del tramo T12-DC, incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	1,00	4.269,91	4.269,91
P73COMFORMA	ud Formación y documentación Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la ·1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.	1,00	1.829,96	1.829,96
TOTAL 02.11.01.....				20.166,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.11.02	SISTEMA DE CONTROL Y COMUNICACIONES (T12-DC)			
P7COMARM01	ud Armario de control 2000 x 800 x 600mm Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de automatización y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de calefacción y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc.,..., incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexiones y probados.	3,00	3.286,67	9.860,01
P7COMNODO1	ud Nodo comunicaciones GSM/GPRS G3-5. incl.cuadro protec. Ud Suministro e instalación equipo de comunicaciones bidireccional compuesto de alimentación autónomo de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y modem de comunicaciones, armario IP65, armario mural de 19", 12 U y 600 mm de profundidad., RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C), 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°C a 80°C contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica), electrificación cuadro (magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.	3,00	3.812,76	11.438,28
P7COMNODO2	ud Nodo comunicaciones radiofrecuencia. incl.cuadro protec. Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio modem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.	3,00	2.877,15	8.631,45
P7COMP005	ud Bastidor Automata Suministro de bastidor para autómata de 10 slots, tipo 1756-A10 de Allen Bradley o similar.	3,00	349,15	1.047,45
P7COMPLC02	ud PLC proglamable integrable (ED:128 SD:32 EA:16 SA:8) PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje	1,00	4.787,50	4.787,50
P7COMPLCT12	ud PLC proglamable integrable (ED:96 SD:32; EA:8 SA:8) PLC centralizador de todos los sistemas (ED:96 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.	2,00	4.465,68	8.931,36

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMP011	ud Módulos conexión cableado E/D (IB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según referencias (V8 INPUT PLC V8/FLK14/IN - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	10,00	634,34	6.343,40
P7COMP012	ud Módulos conexión cableado S/D (OB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, según referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	3,00	710,76	2.132,28
P7COMP013	ud Módulos conexión cableado E/A (IF16) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC - FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	3,00	500,04	1.500,12
P7COMP014	ud Módulos conexión cableado S/A (OF8) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC - FLK14/EZ-DR/300/CONFEC (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	3,00	469,47	1.408,41
P7COMPLC1C	ud Pantallas gráficas HMI 15" táctil+cableado conex. Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado numérico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instalación y conexionado de unidad; Configuración Remota, Pruebas y Puesta en Servicio.	3,00	432,03	1.296,09
P7COMPLC1B	ud Cuadro, protecciones electricas y pantalla PLC Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión.	3,00	2.723,65	8.170,95
P7COMP001	ud Protección contra sobretensiones equipos 230 Vca Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.	3,00	142,84	428,52
P7COMP002	ud Protección contra sobretensiones analógicas Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); dobles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.	3,00	359,24	1.077,72
P7COMP003	ud Protección contra sobretensiones 24Vcc Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&-TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.	3,00	283,97	851,91

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMP006	ud Fuente de alimentación automática 24 Vcc 10 A Suministro e instalación de fuente de alimentación para automático programable para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar	3,00	346,21	1.038,63
P71COMSAH11	ud Sistema alimentación ininterrumpido-com 24 VDC Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.	3,00	484,78	1.454,34
P71COMSAH12	ud Sistema alimentación ininterrumpido 2500w Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y by-pass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación: 1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min 1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para by-pass manual del SAI 1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos 1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI 1.00 Protección Magnetotérmica II 10A 6kA. Protección foma de enchufe e instrumentación 4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación. Totalmente instalado, conexionado y funcionando. Unidad totalmente instalada	3,00	1.790,50	5.371,50
P7COMP004	ud CPU automática L72 memoria 4 Mb con memoria SD Suministro e instalación de CPU para automático programable con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 61131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.	3,00	4.582,20	13.746,60
P7COMP015	ud Tarjeta comunicaciones Ethernet/IP Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.	3,00	1.327,37	3.982,11
P7COMP016	ud Tarjeta Ethernet/IP 2-PORT CLX HI-CAP ENET/P BRIDG o similar Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.	3,00	1.774,82	5.324,46
P7COMP017	ud Tarjeta comunicaciones Modbus Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.	3,00	1.869,68	5.609,04
P7COMP018	ud Pasarela comunicaciones POWELOGIC EGX 100 o similar Suministro y montaje de pasarela de comunicaciones POWERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexionada.	3,00	601,31	1.803,93
P7COMP022	ud Puente de diodos Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.	3,00	149,06	447,18
TOTAL 02.11.02.....				106.683,24
02.11.03	INSTRUMENTACIÓN (T12-DC)			
P6VALV1	ud Valv bola y conexionados Válvulas de tipo bola de 1", piezas T y conexiones, totalmente instalado y probado.	9,00	45,00	405,00
P6SENS01	ud Sensor humedad e inundación caseta Suministro, instalación y puesta en servicio de sensor de humedad e inundación, alimentación eléctrica a 24Vcc, incluso 15 m de tubo PVC y cable de conexión, totalmente instalado y probado.	3,00	390,26	1.170,78

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6MAN01	ud Manómetro en baño de glicerina Suministro, instalación y puesta en servicio de manómetro en baño de glicerina, escala 0-6 y 0-10 kg/cm2, sistema de medida Bourdon, diámetro 100 mm 1/2" montado y probado .	9,00	70,08	630,72
P6PRES01	ud Transductor presión 0,1 % Analógico Suministro, instalación y puesta en servicio de Transductor de presión con salida analógica, alimentación eléctrica a 24Vcc, con técnica de 2 ó 4 hilos, con precisión mejor del 0,1%, IP 67, indicación digital de medida en frontal del equipo, señal de salida 4-20 mA, totalmente instalado y probado.	24,00	385,59	9.254,16
P6Q300.16	ud Caudalímetro ultrasónico PN 16 Ø300 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	1,00	3.561,17	3.561,17
P6Q800.25	ud Caudalímetro ultrasónico PN 25 Ø800 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 800 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 25, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	1,00	5.789,75	5.789,75
TOTAL 02.11.03.....				20.811,58
02.11.04	CANALIZACIÓN Y CABLEADOS (T12-DC)			
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antiroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.	2,00	14,87	29,74
P7COMCABL2	m Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (Rj45), tendido y conectorizado. Unidad totalmente instalada.	20,00	3,34	66,80
P5COMCBL001A	m Cable multihilo coms. VHOV-K y VOV-K apantall.8x0,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	585,00	3,53	2.065,05
P5COMCBL001B	m Cable multihilo com. VHOV-K y VOV-K apantall. 8x1,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	60,00	4,44	266,40
P5COMCBL001C	m Cable multihilo comunicaciones señales digitales interior 19p Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.	683,00	11,25	7.683,75
P5COMCBL001D	m Cable multihilo comunicaciones señales analógica interior 19p Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.	910,00	11,54	10.501,40
P5COMCBL004	m Cable comunicaciones RS232 Cable comunicaciones RS232. Unidad totalmente instalada.	60,00	5,85	351,00
P5COMCBL005	m Cable comunicaciones RS485 multipar Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.	60,00	5,91	354,60
P5COMCBL007	m Cable comunicaciones RJ45 Cable comunicaciones RS45 .Unidad totalmente instalada.	60,00	4,96	297,60
P5COMCBL006	m Cable profibus Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.	60,00	7,48	448,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, con gestión comunic Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100Base-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.	3,00	2.387,34	7.162,02
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	25,50	5,78	147,39
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	24,00	6,68	160,32
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	45,00	18,35	825,75
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	40,00	8,87	354,80
P5ELE25PVC	m Tubo. electricidad Polímero term libre de halógenos ríg M25 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	9,00	1,62	14,58
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	24,00	1,62	38,88
P5ELE50PVC	m tubo. electricidad Polímero term libre de halógenos ríg M50 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada	9,00	1,93	17,37
P5ELE75PVC	m Tubo PVC 75 mm liso adosado o embebido Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	3,00	3,94	11,82
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	33,00	30,86	1.018,38
TOTAL 02.11.04.....				31.816,45
02.11.05	INTRUSISMO (T12-DC)			
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antiroedores, totalmente instalado, incluyendo tubo de protección, conectORIZACIÓN y reflectometrías, Unidad totalmente instalada.	90,00	14,87	1.338,30
P7COMSEG1	ud Sistema de Alarma-Intrusionismo Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS , incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expensor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.	3,00	3.477,60	10.432,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMCCTV6	m Inst. +Cable RG59 + tubo PVC32+cajasc/50m CCTV Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2 , repetidor de seña cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexionado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.	15,00	8,11	121,65
P7COMCABL1B	m Cable de fibra óptica 8F+fusiones+cajas Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua , elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antirroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro . Según EN 60794. Incluidas cajas de empalmen para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.	90,00	13,26	1.193,40
P7COMCCTV5	ud Cámara visión nocturna IP-66+carcasa+columna y cimentación CCTV Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcassas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenesde máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Vídeo, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad:Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.	3,00	727,59	2.182,77
P7COMCCTV9	ud Switch 3 puertos RJ45 para vídeo IP y cámaras Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30.Switch gestionable para la red de vídeo y seguridad de divesos elementos.	3,00	574,07	1.722,21
P7COMCCTV12	ud Columna 8m+ soporte CCTV Ud. báculo de 8 m. de altura troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje;anclaje a dado de hormigón , puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión , tubo de unión,incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pié revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3 , operaciones de excavacion y rellenos.	3,00	741,92	2.225,76
P7COMCCTV1	Ud Hardware de control CCTV Hardware para gestión y control de CCTV en centro de control compuesto por : Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 píxeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.	1,00	800,66	800,66
P7COMCCTV2	ud Software gestión CCTV intrusivo Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player,"Site builder",e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCA-DA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.	1,00	4.629,50	4.629,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMCCTV3	ud Sistema de instalación configuración in situ videocam seguridad Servicios de instalación , configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores).	1,00	791,24	791,24
P7COMCCTV4	ud Servidor CCTV Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8TeraBytes. Unidad totalmente instalada y probada.	1,00	2.982,72	2.982,72
P7COMCCTV8	ud Formación y manuales sistema CCTV Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias.	1,00	787,10	787,10
TOTAL 02.11.05.....				29.208,11
TOTAL 02.11				208.685,38
02.12	SERVICIOS AFECTADOS (T12-D.C.)			
02.12.01	R.S.PAVIMENTOS (T12-DC)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	16,80	52,84	887,71
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa	196,50	16,48	3.238,32
P1MT06C	m² Demolición pavimento hormigón o acerado 40 cm espesor+tte+canon Demolición de pavimento hidráulico de hormigón, base de hormigón o acerado hasta 40 cm de espesor, con corte de junta con hilo diamante o radial, retirada de bordillos y elementos lineales, i retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	1.871,50	7,43	13.905,25
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	195,00	4,11	801,45
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	112,00	21,35	2.391,20
P5PAVFRES	m²cmFresado pavimentos+trabajos preparatorios Metro cuadrado por centímetro de espesor, de fresado de pavimento asfáltico con máquina fresadora o levantapavimentos, incluso precorte previo y carga de productos y limpieza, así como trabajos preparatorios para extendido de MB, incluido transporte a vertedero autorizado y canon de vertido.	2.175,00	0,71	1.544,25
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	1.637,50	6,51	10.660,13
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	1.697,50	6,87	11.661,83

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	456,00	20,14	9.183,84
P5PAVHF36	m² Pav. hormigón HF-4, 20 cm Pavimento de hormigón hf-4,0/p/20/iiic+e de 20 cm de espesor mínimo. incluso extendido, encofrado de borde, regleado, vibrado, fratasado o pulido a máquina, corte de junta sellada y curado con producto filmógeno. Pasantes en juntas de dilatación y armadura de piel 5/20-20.	144,00	19,01	2.737,44
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	291,50	59,75	17.417,13
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm² (20 N/mm²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	10,00	16,91	169,10
P5BORD2	m Bordillo granito 15x25x120 cm Bordillo de granito gris (similar al existente en caso de reposición) de dimensiones 15x25x120 cms., asentado sobre base de hormigón HM-20 kg/cm² (20 N/mm²), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	80,00	34,26	2.740,80
P5PAV1C	m² Pav. solado acerado baldosa dim. multiple +10 HM20+15 ZA1 Solado de baldosas de hidráulicas de dimensión multiple gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso biselados, rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20 y 15 cm de zahorra artificial, unidad totalmente terminada.	2,25	33,62	75,65
P5PAVHM20B	m² Pav.de hormigón HM-20 ruleteado, 15 cm en acerados+15 cm ZA1 Pavimento de hormigón HM-20 de 15 cm de espesor mínimo en acerados ruleteado con terminación estética, extendido, encofrado de borde, regleado, vibrado, fratasado a máquina, corte de junta sellada y curado con producto filmógeno. preparación de base de apoyo y aportación de 15 cm de zahorra artificial compactada al 95% del PN. Unidad totalmente terminada.	75,00	23,68	1.776,00
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.	2,00	64,56	129,12
P6SÑL-002A	ud Señal triangular normal L=90 cm. Nivel1 Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.	2,00	92,53	185,06
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	670,00	1,46	978,20
P6SÑL-PINTS	m² Simbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebr, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.	2,50	10,26	25,65
P6RSBIONDA1	m Levantado y reposición de barrera de seguridad bionda Levantado y desmontaje de barrera de seguridad existente, incluida retirada de perfiles, anclajes y macizos, con acopio y posterior reposición completa.	180,00	18,84	3.391,20
TOTAL 02.12.01.....				83.899,33

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.12.02	R.S. CAMINOS (T12-DC)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	2,00	52,84	105,68
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	3,00	34,25	102,75
P1MT08BASEZA2	m² Escarificado camino +30%Zahorra artificial 95%PM Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.	19.144,00	2,79	53.411,76
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	4.595,85	20,14	92.560,42
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	537,00	4,11	2.207,07
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	30,00	21,35	640,50
TOTAL 02.12.02.....				149.028,18
02.12.03	R.S. ABASTECIMIENTO (T12-DC)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	3,00	269,01	807,03
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	3,00	977,21	2.931,63
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.	3,00	1.225,40	3.676,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	270,00	13,33	3.599,10
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	702,00	2,77	1.944,54
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	127,80	16,29	2.081,86
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	158,40	3,89	616,18
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	415,80	2,16	898,13
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	270,00	0,32	86,40
P6TUBPE090.16	m Tubería de PE100 DN90 PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 90 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.	120,00	7,34	880,80
P6TUBPE160.16	m Tubería de PE100 DN160PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.	150,00	19,35	2.902,50
P5ARQP-1A	ud Arq. pref DN=1.0 m H=2.5m+tapa fundición DN600 +pates UD de Arqueta prefabricada, altura variable hasta 2.5m de tipo pozo de 1000mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltes para su acoplamiento, entre otras piezas ediante juntas de goma, incluyendo módulo cónico superior, tubo de resalto de PVC DN 315mm, macizado hormigonado HM-20, recibido con mortero de cemento, cerco y tapa de fundición DN600 para tráfico pesado 40Tn, pates y resto de elementos asociados, incluida excavación y rellenos necesarios. Unidad totalmente terminada.	1,00	726,69	726,69

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6VENT.080.16	ud Ventosa trifuncional DN80 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	1,00	397,39	397,39
TUB.FD.200A	m Tubería de FD DN 200 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 200 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	60,00	35,96	2.157,60
TUB.FD.300A	m Tubería de FD DN300 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 300 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	90,00	70,71	6.363,90
TUB.FD.100A	m Tubería de FD DN100 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 100 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. unidad totalmente terminada.	80,00	22,79	1.823,20
TOTAL 02.12.03.....				31.893,15
02.12.04	R.S. RED RIEGO (T12-DC)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	5,00	269,01	1.345,05
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.	3,00	1.225,40	3.676,20
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	3,00	977,21	2.931,63
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	59,00	52,84	3.117,56
P4RSACEQ01	m Reposición acequia+excav+rellenos Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembreada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluidas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.	280,00	45,86	12.840,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4RSS1A	m Dem, desmont y retirada tubería riego varios diám. DN<200 Localización, demolición, desmontaje programado y retirada de tubería de riego de varios diámetros menores a 200 mm, incluyendo arquetas y desmontaje de válvulas, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	350,00	3,41	1.193,50
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	185,00	13,33	2.466,05
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	433,50	2,77	1.200,80
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	43,20	16,29	703,73
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	162,00	3,89	630,18
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	226,80	2,16	489,89
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	185,00	0,32	59,20
P6TUBPE160.16	m Tubería de PE100 DN160PN16 Tubería de polietileno de alta densidad PE100,s/ normas UNE 12201, de 160 mm de diámetro y 16 atm de presión nominal de trabajo y unión por manguito; incluyendo transporte, distribución de materiales a pie de obra, montaje, colocación y pruebas de funcionamiento, así como piezas especiales, codos, T's y derivaciones. Unidad totalmente terminada.	290,00	19,35	5.611,50
P5ARQpref1.0	ud Arqueta prefabricada 1.0x1.0x1.5+ tapa acero galvanizada+pates Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de hasta 1.5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales, apoyada sobre fondo de caja excavado y compactado con 0.2m de hormigón en masa HM-20, incluida tapa superior armada, tapa de acero galvanizado en caliente de 3 mm estriada, cerco y precerco, rejillas de ventilación, unión entre módulos de cordón impermeabilizante de polisulfuro, agujeros para entrada de tuberías de dimensiones especificadas, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.	1,00	512,84	512,84

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ARQPREF1	ud Arqueta prefabricada 1.0x1.0x2,5+ tapa FD+pates+rellenos Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de de 1,5-2,5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , pieza tapa con apertura DN600 mm, huecos preformados para conexión de tuberías de diámetro múltiple apoyada sobre fondo de caja excavado y compactado, ejecución de 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado. Unidad totalmente colocada.	1,00	754,16	754,16
P6VC.150.16	ud Válvula compuerta ø 150 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada.	1,00	338,98	338,98
P6CD.150.16	ud Carrete desmontaje DN150PN16 Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	156,55	156,55
P6PM150INX	ud Carrete pasamuros 150mm AIS I316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 150mm de diámetro.	1,00	175,86	175,86
P6VENT.050.16	ud Ventosa trifuncional DN50 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 50 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	1,00	229,71	229,71
TUB.FD.100A	m Tubería de FD DN100 C40+pp piezas+J. Flex Tuberia de fundicion ductil de diametro nominal 100 mm con junta flexible automatica, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribucion en obra, instalacion en zanja y pruebas segun pliego. unidad totalmente terminada.	5,00	22,79	113,95
TUB.FD.250A	m Tubería de FD DN250 C40+pp piezas+J. Flex Tuberia de fundicion ductil de diametro nominal 250 mm con junta flexible automatica, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribucion en obra, instalacion en zanja y pruebas segun pliego. unidad totalmente terminada.	180,00	66,97	12.054,60
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	5,00	20,14	100,70
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,63	49,22	31,01
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	1,50	33,10	49,65

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	1,50	91,99	137,99
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	142,50	1,35	192,38
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	5,40	26,85	144,99
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	0,60	16,26	9,76
TOTAL 02.12.04.....				51.269,22
02.12.05	R.S. PLUVIALES (T12-DC)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	5,00	52,84	264,20
P4RSS5A	ud Cegado arqueta o tuberías mediante tape y hormigonado Cegado de arqueta o punto de entronque para anulación de tramo de colector existente mediante macizo de hormigón 1.5m3 HL-150 p.p. de tapes, excavaciones, demoliciones asociadas y reposición total de superficie, carga y transporte a vertedero de escombros, canon de vertido. Unidad completa.	2,00	143,49	286,98
P4RSS5B	ud Cegado de tuberías con brida ciega cualq. diam. Cegado de arqueta o punto de entronque para anulación de tramo de colector existente mediante brida ciega de dimensión igual a colector p.p. de tapes, excavaciones, rellenos y reposición total de superficie, carga y transporte a vertedero de escombros, canon de vertido. Unidad completa.	1,00	257,76	257,76
P4TUB315PVC	m Tubería PVC D=315 mm SN-8 Tubería de PVC diámetro Nominal 315 mm SN8, Incluso p.p. juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.	6,00	31,98	191,88
P4TUB500PVC	m Tubería PVC D=500 mm SN-8 Tubería de PVC diámetro Nominal 500 mm SN8, Incluso p.p. juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.	30,00	45,35	1.360,50
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	30,00	0,32	9,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3SUM2	ud Sumidero sifónico 40x60 Sumidero en losa o calzada para desagües de 40x60cm. y 70 cms. de profundidad, sobre solera de hormigón HM-20 N/mm2., realizada con ladrillo macizo de 1/2 pie de espesor, enfoscada interiormente y arqueta prefabricada a criterio de la Dirección Facultativa, con salida para tubo de diámetro 160 mm. situada su arista inferior a 20 cms. del fondo del sumidero, incluso rejilla de fundición de 400x600x30 mm. sobre cerco de angular. recibido a la fábrica de ladrillo o a la arqueta prefabricada, conexión a red de colectores de pluviales. Unidad totalmente terminada incluyendo clapeta	2,00	261,54	523,08
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	90,00	2,77	249,30
P1MT03I	m² Entibación zanjas y pozos blindada o monocodal Entibación cuajada en zanjas, pozos o cimentaciones con paneles metálicos blindados o monocodal a cualquier profundidad, incluso desentibado y medios auxiliares. Unidad totalmente terminada incluyendo p.p. de sobresaliente del terreno natural de 0.25m como rodapié de seguridad.	120,00	10,76	1.291,20
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.	39,30	14,68	576,92
P1MT04A	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	22,50	6,58	148,05
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	9,00	59,75	537,75
P5ARQLD1A	ud Arq. ladrillo 1pie DN1.2m+enfosc+ tapa FD H<=2.5m Arqueta de ladrillo 1 pie enfoscado interior mortero hidrófugo de diámetro interior 1.20 m, con cono reductor 1200/600 para alturas de hasta 2.5m, tapa de fundición DN 600 mm D-400, marco y contracerco, pates polipropileno alma de acero cada 20 cm, y base de apoyo HA25 y armado #8/10, con 0.4m de espesor mínimo y 10 cm de hormigón de limpieza, p.p. de excavación asociada, y rellenos con suelos seleccionados. Unidad totalmente terminada.	2,00	752,02	1.504,04
TOTAL 02.12.05.....				7.201,26
02.12.06	R.S. DRENAJE Y ARROYOS (T12-DC)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	137,20	52,84	7.249,65
P1MT06B	m³ Demolición muro en masa o mamposteria+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	1,50	34,25	51,38

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.	1.507,00	6,22	9.373,54
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.753,80	2,77	4.858,03
P1MT04D	m³ Rellenos localizado con material filtrante 40/80 95%PN Relleno localizado de material filtrante (grava 40-80) procedente de préstamo, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	117,60	11,77	1.384,15
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1.048,00	1,78	1.865,44
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	137,20	91,99	12.621,03
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.488,00	1,35	7.408,80
P1MT15-200B	m Micropilote DN 200HA-30 Vaina 155/8 p.p. puntales+viga riostra Micropilote DN200 mm con vaina metálica de acero S275 JR 155.8mm de diámetro y 8mm de espesor lechada de cemento CEM I 42,5N y HA30, con una relación agua/cemento de 0,4 dosificada en peso, vertida por el interior de la armadura mediante sistema de inyección única global (IU)., reperforando sobre pantalla de mortero, ejecutado con entubación perdida o recuperable, para cualquier profundidad, Incluido: -Repunteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Muros guía de hormigón armado de 0,70x0,50 mts. y posterior demolición del mismo con transporte a vertedero de los restos, evacuación a vertedero de la excavación. -Pérdidas de lechada y, mortero y hormigón. -Demolición de protuberancias, descabezado de pilotes y p.p. preparación de conexión viga de atado. -Partida de transporte y montaje inicial y medios auxiliares. -Partida para transporte y montaje inicial de grúa auxiliar. -Partida de espesamiento de lodos finales con transporte a vertedero. -Perforación o reperforación de pilotes incluyendo el consumo de lodos. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. -Transporte de sobrantes a vertedero autorizado, incluso canon de vertido, limpieza y operaciones de demoliación. -Puntales y perfil riostra Unidad totalmente terminada medida linealmente sobre eje por la profundidad realmente ejecutada.	2.000,00	97,63	195.260,00
TOTAL 02.12.06.....				240.072,02

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.12.07	R.S. ALUMBRADO (T12-DC)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1,00	269,01	269,01
P5ELEBTALUMB	ud Legalización de alumbrado público+OCA's Unidad de legalización de alumbrado público en el conjunto de la actuación, incluyendo línea de baja tensión, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización.	1,00	495,90	495,90
P4RSV1D	m Demolición y retirada de conductos y cableados inst. subterránea Demolición y retirada de conductos y cableados de instalaciones eléctricas incluidas, iluminación, telefonía y/o comunicaciones subterráneas, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.	40,00	5,38	215,20
P5ELECFA02A	ud Desmontaje y post. montaje farolas H<8.0m + base+ arqu+TT Ud. Desmontaje y desconexión de línea, traslado a acopio y posterior montaje de nuevo en su lugar de ubicación una vez concluidas las obras de columnas de alumbrado público de altura de báculo H<=8.0m, con nueva construcción de pedestales de apoyo de dimensiones especificadas en planos, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición, instalación de toma tierra de cada báculo y conexionado a red de alumbrado. Incluye la sustitución y reposición de lámpara LED, así como partes perdidas, pernos y resto de elementos, operaciones de excavación y rellenos. Totalmente instalada, incluidas operaciones de desconexión y posterior conexionado	2,00	444,29	888,58
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	40,00	45,45	1.818,00
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	2,00	87,49	174,98
P5ELE40PVC	m tubo. electricidad Polímero term libre de halógenos ríg M40 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=40 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada	10,00	1,80	18,00
P5ELEM4X6TT	m Manguera eléctrica 4 x 6 + TT6 mm2 Cu Manguera eléctrica de 4 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	60,00	9,95	597,00
TOTAL 02.12.07.....				4.476,67

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.12.08	R.S. ELECTRICIDAD (T12-DC)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	9,00	269,01	2.421,09
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	1,00	977,21	977,21
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ...), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	8,00	3.828,30	30.626,40
P5ELE160X4H	m Can. horm. PVC 160 mm x4 (calzadas) 0.6x1.0m (Zanja tipo-5b) Canalización hormigonada de 4x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x1.0m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	60,00	79,81	4.788,60
P5ELE200X2H2	m Can. horm. PE 200 mm x2 (calzadas) 0.65x1.3m (Zanja tipo 2B) Canalización de línea de media tensión hormigonada bajo acerados y pavimentos conformado por tubos 2x200mm PE normalizado para instalación eléctrica, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 65 cm. de ancho y 130 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma hormigón HM20 según planos, relleno de cobertura arena, suelo seleccionado y suelo de adecuado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	794,00	60,92	48.370,48
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	2,00	281,22	562,44
P5ARQPREF2.0E	ud Arqueta MT prefabricada inst. elect. 110x110x160 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica de media tensión normalizada de dimensiones 110x110x160 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	16,00	414,18	6.626,88
P5ELEM1X95A	m Manguera eléctrica 1 x 95 Al mm2 Manguera eléctrica HEPRZ1 1x95mm2 A1+H16 flexible completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	180,00	12,89	2.320,20
P5ELEM1X150A	m Manguera eléctrica 1 x 150 Al mm2 Manguera eléctrica HEPRZ1 1x150 mm2 A1+H16, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	2.382,00	16,98	40.446,36
TOTAL 02.12.08.....				137.139,66

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.12.09	R.S. COMUNICACIONES (T12-DC)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	4,00	269,01	1.076,04
P4RSV1D	m Demolición y retirada de conductos y cableados inst. subterránea Demolición y retirada de conductos y cableados de instalaciones eléctricas incluidas, iluminación, telefonía y/o comunicaciones subterráneas, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.	270,00	5,38	1.452,60
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	4,00	977,21	3.908,84
P5ELEZ110X6H	m Can. horm PVC 110 mm x6 Ud cualq. terreno + zanja+rell. Canalización hormigonada de 4x110mm PVC liso serie B (UNE-EN 1329-1) normalizada instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexión a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada.	270,00	53,55	14.458,50
P5ARQPREF1.0R	ud Arqueta tipo 2P comunicaciones 100x100x150 cm con tapa FD Arqueta tipo 2P comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1x1x1.5 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.0x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	6,00	375,80	2.254,80
P5ARQPREF1.5R	ud Arqueta tipo 2b comunicaciones 150x100x130 cm con tapa FD Arqueta tipo 2B comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1.50x1.0x1.20 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.5x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	2,00	280,40	560,80
P5COM62F	m Cable 62 fibras monomodo Suministro e instalación de cable de 64 fibras ópticas en Mono-modo 9/125, con aislamiento PEAP, bajo canalización de tritubo según especificaciones, incluso parte proporcional de empalmes, fusionado y conectorización, probado y certificado.	270,00	6,23	1.682,10
P5COMCAJA64F	ud Caja empalme 64 FO Suministro e instalación de cajas de empalme estanca para 64 fibras ópticas de tipo monomodo, ejecutados por fusión, con p/p de verificación de tipo ODTR.	8,00	103,46	827,68
P5COMLATFO	ud Latiguillo FO Multimodo Suministro e instalación de latiguillos de fibra óptica multimodo con conectores FC-FC, de una longitud de 1,50 m.	8,00	8,78	70,24
TOTAL 02.12.09.....				26.291,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.12.10 R.S. GAS (T12-DC)				
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1,00	269,01	269,01
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ...), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	1,00	3.828,30	3.828,30
P4RSV2B	ud Corte programado servicio GAS pequeño diam. Corte programa del servicio de GAS en conducciones de distribución.	1,00	1.203,69	1.203,69
TOTAL 02.12.10.....				5.301,00
02.12.11 R.S. HIDROCARBUROS (T12-DC)				
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	3,00	269,01	807,03
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	2,00	977,21	1.954,42
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ...), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	1,00	3.828,30	3.828,30
TOTAL 02.12.11.....				6.589,75
02.12.12 R.S. CANAL (T12-DC)				
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	65,53	52,84	3.462,61
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	87,50	2,77	242,38

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	875,00	1,78	1.557,50
P1MT04D	m³ Rellenos localizado con material filtrante 40/80 95%PN Relleno localizado de material filtrante (grava 40-80) procedente de préstamo, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	87,50	11,77	1.029,88
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	90,00	20,14	1.812,60
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	65,63	80,88	5.308,15
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	2.625,00	1,35	3.543,75
P4ETT-004E-E1	m² Encofr/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	10,50	16,26	170,73
P3DREN110PVC	m Tubo dren PVC 110 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 110 mm, e=3,2 mm incluso p.p. excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 0,40 cm. de ancho por 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	109,38	5,66	619,09
P4JTACOMB200B	m Junta canal Juntas horizontales o inclinadas, en canal conformadas por cordón de polisulfuro y posterior lámina de PVC 200 combiflex o similar con aplicación de epoxy de adherencia. Unidad totalmente terminada incluidos cortes en hormigón, solapes y soldaduras de unión.	109,38	14,06	1.537,88
P1MT06E	m Corte junta diamante en losa o pavimento e=0.2m Corte de hormigón con disco e hilo de diamante, corte de armaduras con disco espesor 20 cm, retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Unidad completa.	109,38	5,85	639,87
TOTAL 02.12.12.....				19.924,44
02.12.13	R.S. CERRAMIENTOS (T12-DC)			
P1MT06K	m² Demolición muro bloque o ladrillo Demolición de muro bloque o ladrillo hormigón con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	90,00	6,42	577,80
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	9,00	34,25	308,25

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5CERRAM0D	m Reposición de cerramiento muro mampuesto Reposición de muro bancal de espesor medio 0,5 m , altura variable hasta 1,5 m y longitud 4 m. incluyendo retirada de muro existente, acopio y posterior reconstrucción mediante aporte de mampuestos, ripios, perfectamente alineado, aplomado, con excavación y preparación de la superficie de asiento (20 cm de HM-20), completamente terminado. incluyendo las operaciones de acopio,recolocación de la piedra original y/o reposición de otra de características similares a la original.	15,00	68,42	1.026,30
P5CERRAM0A	m Desmontaje de cerramiento metálico, vallado y barandillas. Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar , existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos.	60,00	4,83	289,80
P5CERRAM2	m Cerramiento tipo-2 Valla de D/T metálica Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, sin incluir puerta de acceso.	60,00	28,97	1.738,20
P5CERRAM4	m Cerramiento tipo-4 ganadero Cerramiento ganadero a base de postes de hormigón de 17x12x170 cm y 1,40 m o metálicos sobre el terreno a 7 m separación media, empotrados y anclados en el terreno 30 cm y guarnecido con un malla 100x8x15 mm y dos hiladas superiores de alambre, doble hilo 13x15, tensado en tramos de 50 m, y con dos riostras cada 100 m. Unidad completamente terminada.	120,00	7,87	944,40
P3EDIF012B	m² Fab. Bloq. split 40x20x20 dos caras color Fábrica de bloques de hormigón Mod. Split de medidas 40x20x20 cm., color, ejecutado a dos caras vistas, i/relleno de hormigón H-200/20 y armadura en zona según normativa y recibido con mortero de cemento y arena de río M 5 según UNE-EN 998-2, i/p.p. de piezas especiales, roturas, nivelados, aplomados, llagueados y limpieza todo ello según CTE/ DB-SE-F.Unidad totalmente terminada	90,00	41,79	3.761,10
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitratória, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	1,00	638,04	638,04
TOTAL 02.12.13.....				9.283,89
02.12.14	R.S. VARIOS (T12-DC)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	28,50	52,84	1.505,94
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.	60,00	6,22	373,20
P4RSACEQ01	m Reposición acequia+excav+rellenos Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembrada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluidas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.	40,00	45,86	1.834,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	12,00	63,27	759,24
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	96,00	20,14	1.933,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	126,00	2,77	349,02
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	400,00	0,32	128,00
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	22,50	91,99	2.069,78
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	2.137,50	1,35	2.885,63
TOTAL 02.12.14.....				11.838,65
02.12.15	R.S. DESV. TRAFICO (T12-DC)			
02.12.15.01	DESVÍO NA-8712			
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA Ml. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	4.875,00	0,66	3.217,50
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final	4.875,00	1,57	7.653,75
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.	20,00	10,26	205,20
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm Ml. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	3.250,00	1,19	3.867,50
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	1.625,00	1,46	2.372,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.	140,00	6,06	848,40
P6SÑL-031	ud Panel direccional TB5. Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB5 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	30,55	122,20
P6SÑL-010	m² Panel informativo urbano. Desv. tráfico Suministro y colocación de panel de lamas de aluminio extrusionado reflexivo, incluso postes de sustentación en perfil laminado y galvanizado, de dimensiones adecuadas a la superficie del cartel, placa de anclaje y cimentación de hormigón ligeramente armado, totalmente colocado.	10,50	367,06	3.854,13
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	42,00	27,16	1.140,72
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	13,00	29,28	380,64
P6SÑL-060	ud Señal advertencia e indicadoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	7,00	45,18	316,26
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.	1,00	64,56	64,56
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señalítica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.	1,00	3.815,36	3.815,36
TOTAL 02.12.15.01.....				27.858,72

02.12.15.02 DESVÍO NA-6830

02.12.15.02.1 MOV. TIERRAS (DESVÍO NA-6830)

P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	2.925,00	1,25	3.656,25
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	2.925,00	0,37	1.082,25
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	2.925,00	0,40	1.170,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	5.596,50	2,77	15.502,31
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	3.802,50	1,78	6.768,45
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	43,50	20,14	876,09
TOTAL 02.12.15.02.1				29.055,35
02.12.15.02.2 DRENAJES (DESVÍO NA-6830)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	195,00	4,11	801,45
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localiazada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5, incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.	31,00	48,13	1.492,03
P4RSV2D	m Demolición y retirada de tubería de hormigón < 500 mm Demolición y retirada de tuberías de hormigón en masa, salvacunetas y conducciones, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.	31,00	4,88	151,28
TOTAL 02.12.15.02.2				2.444,76
02.12.15.02.3 PAVIMENTOS (DESVÍO NA-6830)				
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa	210,60	16,48	3.470,69
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	1.755,00	6,51	11.425,05
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	1.755,00	6,87	12.056,85

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	643,50	20,14	12.960,09
TOTAL 02.12.15.02.3.....				39.912,68
02.12.15.02.4 SEÑALIZACIÓN (DESVÍO NA-6830)				
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA Ml. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	1.845,00	0,66	1.217,70
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final	1.260,00	1,57	1.978,20
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.	6,00	10,26	61,56
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm Ml. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	615,00	1,19	731,85
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	1.230,00	1,46	1.795,80
P6SÑL-020	m Banda sonora 90cmx50cmx5cm Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada.	14,00	125,35	1.754,90
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.	188,00	6,06	1.139,28
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	12,00	33,52	402,24
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	10,00	27,16	271,60
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	29,28	117,12
P6SÑL-060	ud Señal advertencia e indicadoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	45,18	180,72
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.	40,00	10,73	429,20
P6SÑL-092	ud Lámpara luminosa intermitente en trípode Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.	2,00	14,97	29,94
P6SÑL-100	m Barrera New Jersey plástico. desv. tráfico Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco las-trable, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico	143,00	29,95	4.282,85

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.	82,00	57,44	4.710,08
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señálica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.	1,00	3.815,36	3.815,36
TOTAL 02.12.15.02.4.....				22.918,40
TOTAL 02.12.15.02.....				94.331,19
TOTAL 02.12.15.....				122.189,91
TOTAL 02.12.....				906.398,73
02.13	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (T12-D.C.)			
02.13.01	MEDIDAS PROTECTORAS, CORRECTORAS (T12-DC)			
02.13.01.01	ATMÓSFERA (T12-DC)			
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.	18,00	2.488,07	44.785,26
TOTAL 02.13.01.01.....				44.785,26
02.13.01.02	SUELO (T12-DC)			
P-101AMB-MP03	m Jalonamiento de protección malla Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.	4.950,00	1,74	8.613,00
P-101AMB-MP09	m Jalonamiento de protección cinta Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.	49.500,00	0,52	25.740,00
P1MTGB001	m³ Fábrica gaviones DN 2,4. h<4m acero galv. Muro o fábrica de gaviones metálicos realizados con malla de triple torsión de acero galvanizado reforzado de DN 2,4 mm o superior, incluso anclajes. Totalmente colocado.	300,00	57,37	17.211,00
P1MT08GTX-003	m² Geomalla refuerzo taludes Suministro y colocación de geomalla de refuerzo DLT Grid en taludes incluso enrejado con alambre galvanizado de Ø 2,00 mm y malla hexagonal 8x10-16 anclado al terreno con barras corrugadas de acero B 500 S, para protección de taludes, medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 1.5m) entre paños y mermas. Unidad totalmente terminada.	1.400,00	6,14	8.596,00
P1MTMR001	m Fajina retención rollizo 0.5m altura ml de fajinada formada por estacas de pino de 1 m de longitud y 8 cm de diámetro, hincados en el suelo 50 cm, entre los que se entrelazan una fajina construida con ramas, hasta formar una pantalla de 50 cm de altura, construida para reducir la escorrentía superficial. Incluso herramientas y medios auxiliares.	280,00	23,73	6.644,40
P-102AMBPL001	m² Hidrosiembra incluso rastrillado y tapado Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.	1.400,00	1,64	2.296,00
TOTAL 02.13.01.02.....				69.100,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
02.13.01.03 HIDROLOGIA (T12-DC)				
P-101AMB-MP05	m Barrera de retención sedimentos Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.	1.100,00	5,54	6.094,00
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.	12,00	806,83	9.681,96
TOTAL 02.13.01.03.....				15.775,96
02.13.01.04 FAUNA Y FLORA (T12-DC)				
P-101AMB-MP03	m Jalonamiento de protección malla Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.	2.475,00	1,74	4.306,50
P-101AMB-MP09	m Jalonamiento de protección cinta Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.	7.425,00	0,52	3.861,00
P-101AMB-MP10	ud Protector de fauna Protector de fauna: Instalación de vallas plásticas y elementos necesarios.	120,00	13,08	1.569,60
TOTAL 02.13.01.04.....				9.737,10
TOTAL 02.13.01.....				139.398,72
02.13.02 SEGUIMIENTO ARQUEOLÓGICO (T12-DC)				
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.	1,00	3.193,57	3.193,57
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz. Informe arqueológico previo incluidas tramitaciones y tasas.	1,00	1.856,27	1.856,27
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual	36,00	2.404,67	86.568,12
P-103AMBAR02B	día Seguimiento intensivo arqueológico de las obras+informe Día de control y seguimiento arqueológico de carácter intensivo realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluida maquinaria de desbroce y excavación, medios auxiliares necesarios y presencia permanente de técnicos, generación de informe de seguimiento	5,00	626,29	3.131,45
P-103AMBAR-03	km² Prospección arqueológica detallada, análisis y trabajo de campo Prospección arqueológica intensiva de cobertura total en una superficie afectada de 1Km2, incluyendo excavaciones, sondeos arqueológicos, medios humanos, maquinaria, material auxiliar necesario, análisis documental, proyecto de actuación arqueológica y trabajo de campo. Unidad completa	2,00	6.023,60	12.047,20
TOTAL 02.13.02.....				106.796,61
02.13.03 PROGRAMA VIGILANCIA AMBIENTAL (T12-DC)				
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación	1,00	975,28	975,28
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento.	36,00	1.879,04	67.645,44

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P-104AMBVA02A	mes Seguimiento acústico (ruido ambiental) Medida de niveles de ruido en zona de obra. Desarrollada la medición a lo largo de una jornada laboral, con toma de datos en diversos puntos de la obra, y elaboración de informes periódicos posteriores por especialista cualificado, incluidos materiales y elementos auxiliares. Unidad totalmente terminada.	36,00	616,11	22.179,96
P-104AMBVA03A	ud Informe especializado de flora Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina.	1,00	3.965,50	3.965,50
P-104AMBVA04A	ud Informe especializado de fauna Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe.	1,00	2.882,01	2.882,01
P-104AMBVA05	ud Informe y analítica de muestra de aguas Informe y analítica de muestras de agua en puntos de cruce singulares. unidad totalmente ejecutada.	12,00	295,13	3.541,56
P-104AMBVA06	ud Informe de prevención acústica Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio. Unidad completa.	1,00	2.009,53	2.009,53
TOTAL 02.13.03.....				103.199,28
02.13.04	INTEGRACIÓN PAISAJÍSTICA (T12-DC)			
P1MT01A	m ² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	279.600,61	0,21	58.716,13
P1MT02A	m ² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	279.600,61	0,37	103.452,23
P1MT02B	m ² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	279.600,61	0,40	111.840,24
P-102AMB-PL01	m ² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.	139.800,31	0,12	16.776,04
P-102AMB-PL06	Pie Apeo árboles ø >20-<=30 cm densidad <=750 pies/ha c/mat (R.E.A.) Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y densidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la intensidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, incluido canon de vertido, herramientas y medios auxiliares.	425,20	150,73	64.090,40
P-102AMBPL08	mes Mantenimiento de plantaciones, riego y reposición extraordinaria Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de mallas, realización de podas de realce necesarias y otras operaciones de mantenimiento. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande realizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, incluyendo la escarda y mezcla con el sustrato de malas hierbas, herramientas y medios auxiliares.	36,00	928,33	33.419,88

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P-102AMBPL38B	ud Plantación de Crataegus monogyna de 0,6-0,8 m en contenedor Plantación de Crataegus monogyna 0,6-0,8 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	96,00	4,12	395,52
P-102AMBPL03B	ud Plantación de Pinus halepensis de 1,0-1,5 m en contenedor Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso apertura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación.	436,00	9,33	4.067,88
P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m en contenedor Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	109,00	2,22	241,98
P-102AMBPL36	ud Plantación de Salvia officinalis 20-30cm. CONT. Salvia officinalis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, formación de alcorque y primer riego.	109,00	2,64	287,76
P-102AMBPL37	ud Plantación de Thymus vulgaris de 0,2-0,4 m en envase forestal Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso apertura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	1.241,00	2,04	2.531,64
P-102AMBPL12B	m ² Formación de pasto gramíneas y leguminosas Formación de pasto por siembra de una mezcla de especies gramíneas y leguminosas, a determinar por la Dirección de Obra, incluso la limpieza del terreno, laboreo con dos pases de motocultor cruzados y abonado de fondo, rastrillado y retirada de todo material de tamaño superior a 2 cm., distribución de la semilla.	334.257,50	0,19	63.508,93
P-102AMBPL01	ud Plantación de Genista scorpius 0.3-0.5m en contenedor Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	1.241,00	1,49	1.849,09
P-102AMBPL003	ud Plantación de Artemisia herba-alba 0,2-0,5m en contenedor Plantación de Artemisia herba-alba 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	1.132,00	2,37	2.682,84
TOTAL 02.13.04.....				463.860,56
TOTAL 02.13				813.255,17
02.14	GESTIÓN DE RESIDUOS (T12-D.C.)			
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un encachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.	12,00	2.506,13	30.073,56
PGESRES180B	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (T12-DC) Carga , transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC.	1,00	21.489,91	21.489,91

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PGESRES150B	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (T12-DC) Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :se- lección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC	1,00	29.755,26	29.755,26
PGESRES200B	ud Carga, transporte y depos.de Res. peligrosos (T12-DC) Carga, transporte y deposición controlada en vertedero autorizado de residuos peli- grosos , así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en los tramos T12-T13, T13-T13B, T13B-BT, BT-DC.	1,00	13.796,64	13.796,64
TOTAL 02.14				95.115,37
02.15	VARIOS (T12-D.C.)			
P90VAR4	ud Difusión y comunicación actuación del tramo Difusión y comunicación de las obras del tramo consistente en : a)-Emisión de 2 anuncios en periódico de gran tirada, b)-2 anuncios publicitarios en medio de radiodifusión , c)-edición de 200 folletos explicativos tipo tríptico de alta calidad, d)-desarrollo de WEB informativa y de seguimiento de las obras con el volcado infor- mativo del avance de obra, estado f)-Reportaje fotográfico de evolución de obra g)-CD video divulgativo h)-Presentación y actos varios i)-Monolito actuación	1,00	28.959,20	28.959,20
TOTAL 02.15				28.959,20
02.16	SEGURIDAD Y SALUD (T12-D.C.)			
PSEGSAL.02	ud Seguridad y Salud.Subtramo T12-D.C. (Derivación Corella) Seguridad y salud en el Subtramo T12-D.C. (Derivación Corella),(según valoración realizada en el Anejo nº20 del proyecto).	1,00	571.780,74	571.780,74
TOTAL 02.16				571.780,74
TOTAL 02 SUBTRAMO T12-D.C. (Derivación Corella)				65.596.489,03

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03	SUBTRAMO D.C.-T21 y DC-T14/15			
03.01	MOVIMIENTO DE TIERRAS (DC-T21 y DC-T14/15)			
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.	535.893,19	0,12	64.307,18
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	856.072,70	0,21	179.775,27
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	215.713,61	1,25	269.642,01
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	1.071.786,31	0,37	396.560,93
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	1.071.786,31	0,40	428.714,52
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ...) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	448.179,95	4,24	1.900.282,99
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	57.292,96	2,77	158.701,50
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	1.687,66	4,97	8.387,67
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.	41.490,74	14,68	609.084,06

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	95.756,62	3,89	372.493,25
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	290.699,52	2,16	627.910,96
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	64.226,60	1,78	114.323,35
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	7.236,92	61,53	445.287,69
P1MT08ESC500	m³ Escollera 500 kg careada Escollera careada de peso mínimo 500 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	390,00	38,68	15.085,20
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	819,00	1,89	1.547,91
TOTAL 03.01				5.592.104,49
03.02	TUBERÍAS (DC-T21 y DC-T14/15)			
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	26.284,32	0,32	8.410,98
P1T1300.8.0A	m Tubería acero helic. L275, Ø1321 esp. 8 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.321 mm y espesor mínimo de 8,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1.655,00	371,10	614.170,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T1300.10.0A	m Tubería acero helic. L275, Ø1321 esp10 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.321 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	400,00	463,87	185.548,00
P1T1500.9.5A	m Tubería acero helic. L275, Ø1524 esp. 9.5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 9,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	1.522,00	506,48	770.862,56
P1T1500.10.5A	m Tubería acero helic. L275, Ø1524 esp. 10.5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 10,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	450,00	559,79	251.905,50
P1T1500.16.0A	m Tubería acero helic. L275, Ø1524 esp. 16.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.524 mm y espesor mínimo de 16 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	468,00	852,98	399.194,64
P1T1600.10.0A	m Tubería acero helic. L275, Ø1626 esp. 10.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	9.440,00	567,43	5.356.539,20
P1T1600.12.5A	m Tubería acero helic. L275, Ø1626 esp. 12,5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 12,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	261,37	709,26	185.379,29

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T1800.11.5A	m Tubería acero helic. L275, Ø1829 esp. 11,5 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 11,5 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	11.651,00	730,52	8.511.288,52
P1T1800.14.0A	m Tubería acero helic. L275, Ø1829 esp. 14.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 14,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	212,00	889,34	188.540,08
P1T1800.18.0A	m Tubería acero helic. L275, Ø1829 esp. 18.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.829 mm y espesor mínimo de 18,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	357,00	1.143,40	408.193,80
TOTAL 03.02				16.880.033,07
03.03	DESAGÜES (DC-T21 y DC-T14/15)			
03.03.01	ARQUETA DESAGÜE, VALVULERÍA Y CALDERERÍA (DC-T21 y DC-T14/15)			
03.03.01.01	MOV. TIERRAS Y DREN (DESAGÜES DC-T21 y T14/15)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	23,00	2,77	63,71
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	80,00	9,54	763,20
TOTAL 03.03.01.01				826,91

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.03.01.02	ESTRUCTURA DE HORMIGÓN Y METÁLICA (DESAGÜES DC-T21 y T14/15)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	7,70	49,22	378,99
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	7,20	78,03	561,82
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	11,90	80,88	962,47
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	40,90	91,99	3.762,39
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	29,50	16,26	479,67
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	186,50	26,85	5.007,53
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	6.617,40	1,35	8.933,49
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	286,00	4,88	1.395,68
P4JTAPVC150	m Junta elastomérica de estanqueidad PVC 150 Junta elastómera de estanqueidad de 150 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares.Unidad totalmente terminada, p.p. de junta hidroexpansiva en uniones.	55,60	4,42	245,75
P5ARQP-1.5A	ud Arq. pref DN=1.5 m H=1.5m +pates para desagües tipo D UD de Arqueta prefabricada de diámetro 1.5 m y altura 1.5m para desagües tipo D formada por anillos prefabricados de hormigón armado, provistos de resaltes para su acoplamiento, entre otras piezas, mediante juntas de goma, con pates de polipropileno montados , incluida excavación localizada y rellenos necesarios. Unidad totalmente terminada.	37,00	202,40	7.488,80
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda. Totalmente terminada y colocada.	141,50	110,88	15.689,52

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	13,60	49,09	667,62
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	4,80	119,36	572,93
TOTAL 03.03.01.02.....				46.146,66
03.03.01.03	VÁLVULAS Y CALDERERÍA (DESAGÜES DC-T21 y T14/15)			
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	36,90	173,72	6.410,27
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	4.623,10	2,98	13.776,84
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. de espesores y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	1.931,30	2,07	3.997,79
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada.	42,00	1.741,23	73.131,66
P1BRIDA150.25	ud Brida ciega PN 25 Ø150 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN150 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada.	4,00	96,38	385,52

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1BRIDA250.25	ud Brida ciega PN 25 Ø250 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 250 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanqueidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	1,00	164,29	164,29
P6PM100INX	ud Carrete pasamuros 100 mm AISI 316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 100mm de diámetro.	42,00	97,07	4.076,94
P6PM150INX	ud Carrete pasamuros 150mm AISI 316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 150mm de diámetro.	4,00	175,86	703,44
P6VM.250.25	ud Válvula mariposa ø 250 mm, 25 atm, instalada. Manual Válvula de mariposa, DN 250 mm, PN 25, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanqueidad. Instalación y pruebas.	1,00	1.114,79	1.114,79
P6VO.250.25	ud Válvula globo PN25 Ø250 multiorificio Válvula de regulación de globo, de paso recto de 250 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1,00	9.132,13	9.132,13
P6CD.150.16	ud Carrete desmontaje DN150PN16 Carrete de desmontaje de diametro 150 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	24,00	156,55	3.757,20
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	17,00	188,30	3.201,10
P6CD.250.16	ud Carrete desmontaje DN250 PN16 Carrete de desmontaje de diametro 250 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	19,00	208,86	3.968,34
P6CD.150.25	ud Carrete desmontaje DN150PN25 Carrete de desmontaje de diametro 150 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	17,00	241,57	4.106,69
P6CD.200.25	ud Carrete desmontaje DN200 PN25 Carrete de desmontaje de diametro 200 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	17,00	293,51	4.989,67
P6CD.250.25	ud Carrete desmontaje DN250 PN25 Carrete de desmontaje de diametro 250 mm y PN25 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	17,00	325,31	5.530,27
P6VD.150.25	ud Válvula dilatadora y compensadora de goma DN 150 PN25 Válvula dilatadora y compensadora de goma de DN 150 PN25. Unidad totalmente instalada.	1,00	267,92	267,92
TOTAL 03.03.01.03.....				138.714,86

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 03.03.01.....				185.688,43
03.03.02	CONDUCCIÓN A VERTIDO (DC-T21 y DC-T14/15)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	6.204,49	2,98	18.489,38
P1T0500.8.0B	m Tubería acero helic. L355, Ø500 esp 8.0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 505 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	32,27	137,95	4.451,65
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	32,27	0,32	10,33
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	54,59	2,77	151,21
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	14,67	16,29	238,97
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	32,42	3,89	126,11
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	76,54	2,16	165,33
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	2,86	1,78	5,09
TOTAL 03.03.02.....				23.638,07

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.03.03	ARQUETA ROTURA Y VERTIDO A CAUCE (DC-T21 y DC-T14/15))			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	554,90	2,77	1.537,07
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	408,60	2,16	882,58
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	83,60	29,11	2.433,60
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	183,90	1,89	347,57
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	2,60	49,22	127,97
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1,25	59,75	74,69
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	7,70	80,88	622,78
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada..	19,10	91,99	1.757,01
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	12,20	16,26	198,37

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	63,70	26,85	1.710,35
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	2.703,30	1,35	3.649,46
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	28,00	4,88	136,64
TOTAL 03.03.03.....				13.478,09
TOTAL 03.03				222.804,59
03.04	VENTOSAS (DC-T21;T14)			
03.04.01	MOVIMIENTO DE TIERRAS VENTOSAS (DC-T21; T14)			
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ...) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	103,20	4,24	437,57
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	103,20	2,16	222,91
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	775,00	9,54	7.393,50
TOTAL 03.04.01.....				8.053,98
03.04.02	OBRAS DE FÁBRICA VENTOSAS (DC-T21; T14)			
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	51,60	59,75	3.083,10
P5ELECAS01	ud Caseta prefabricada 1.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 1.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	19,00	1.434,23	27.250,37

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECAS02	ud Caseta prefabricada 4.5x1.5x2.3 Caseta prefabricada de hormigón armado de dimensión interior de 4.5x1.5x2.3m con cubierta desmontable, incluyendo ganchos de tiro, huecode puerta de paso, lamas de ventilación y resto de elementos normalizados. Unidad totalmente instalada.	12,00	3.469,43	41.633,16
P3EDIF.010A	m² Lamas para ventilación acero S275JR+paint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.	29,80	77,91	2.321,72
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.	31,00	98,65	3.058,15
TOTAL 03.04.02.....				77.346,50
03.04.03	VÁLVULAS Y CALDERERÍA VENTOSAS (T12-DC)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	4.497,30	2,98	13.401,95
P1T0800.6.4A	m Tubería acero helic. L275, Ø813 esp 6.4 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 813 mm y espesor mínimo de 6.4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	84,60	173,72	14.696,71
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	43,00	1.741,23	74.872,89
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	43,00	3.199,43	137.575,49
TOTAL 03.04.03.....				240.547,04

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 03.04				325.947,52
03.05	TOMAS (DC-T21 y DC-T14/15)			
03.05.01	TOMA-17			
03.05.01.01	MOVIMIENTO DE TIERRAS (TOMA-17)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reprellado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.330,98	2,77	6.456,81
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	928,20	4,97	4.613,15
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1.872,98	1,78	3.333,90
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	458,00	2,16	989,28
TOTAL 03.05.01.01				15.393,14
03.05.01.02	CALDERERÍA Y VALVULERÍA (TOMA-17)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	79.455,67	2,98	236.777,90
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	6,00	1.741,23	10.447,38
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	6,00	253,03	1.518,18
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	188,30	753,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	2,00	287,14	574,28
P6CD.800.16	ud Carrete desmontaje virola acero inox. PN16 DN 800 Carrete telescópico autoportante, PN 16 atm, DN 800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	1.846,53	1.846,53
P6CD.1000.16	ud Carrete desmontaje virola acero inox. PN16 DN 1000 Carrete telescópico autoportante, PN 16 atm, DN 1.000 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	3.025,67	6.051,34
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800 Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	5.842,52	11.685,04
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	4,00	7.057,71	28.230,84
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	13.496,06	26.992,12
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	8,00	712,92	5.703,36
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, centrada o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	1.341,59	2.683,18
P6VM.1000.16M	ud Válvula mariposa motorizada PN 16 Ø1000 I Válvula de mariposa, DN 1000 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	27.583,55	55.167,10
P6VM.1600.16M	ud Válvula mariposa motorizada PN 16 Ø1600 I Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	52.694,95	105.389,90
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	2,00	3.503,59	7.007,18
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	2,00	13.910,46	27.820,92

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocemento según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	5,00	3.199,43	15.997,15
TOTAL 03.05.01.02.....				544.645,60
03.05.01.03	LOSA Y ANCLAJES (TOMA-17)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	96,79	49,22	4.764,00
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	778,37	80,88	62.954,57
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	37,35	16,26	607,31
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, sílica o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	608,75	26,85	16.344,94
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	78.920,08	1,35	106.542,11
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	104,00	4,88	507,52
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	29,60	5,26	155,70
TOTAL 03.05.01.03.....				191.876,15
03.05.01.04	PROTECCIÓN Y ENCINTADOS (TOMA-17)			
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	21,00	744,18	15.627,78
P4CINT1600	m Encintado anticorrosivo DN1600 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	21,00	667,60	14.019,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	1,20	147,79	177,35
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	69,72	61,75	4.305,21
TOTAL 03.05.01.04.....				35.678,18
03.05.01.05	OBRA DE DESAGÜE (TOMA-17)			
03.05.01.05.1	ARQUETA ROTURA (TOMA-17)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	127,00	2,77	351,79
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	52,50	2,16	113,40
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	7,45	49,22	366,69
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	6,40	59,75	382,40
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	22,35	80,88	1.807,67
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada..	18,03	91,99	1.658,58
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	15,48	16,26	251,70

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	29,58	26,85	794,22
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.566,62	1,35	7.514,94
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	54,00	6,15	332,10
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	35,00	2,24	78,40
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y candaado . Totalmente terminada y colocada.	18,90	110,88	2.095,63
TOTAL 03.05.01.05.1				15.845,12
03.05.01.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-17)				
P4TUB120HA135	m Tubería hormigón armado junta elastomérica 135 Ø1200 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.200 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	8,00	162,56	1.300,48
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	36,00	2,77	99,72
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	27,81	61,53	1.711,15
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,75	33,10	24,83

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1,88	80,88	152,05
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,03	91,99	186,74
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	3,00	16,26	48,78
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	6,75	26,85	181,24
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	215,73	1,35	291,24
TOTAL 03.05.01.05.2.....				3.996,23
03.05.01.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-17)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	585,00	0,37	216,45
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	585,00	0,40	234,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	292,50	2,77	810,23
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	3,75	29,11	109,16

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	12,50	1,89	23,63
TOTAL 03.05.01.05.3.....				1.393,47
TOTAL 03.05.01.05.....				21.234,82
03.05.01.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-17)			
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	48,80	49,09	2.395,59
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	12,80	111,07	1.421,70
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	12,00	151,16	1.813,92
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidro-expansivo, según detalle de planos. Totalmente instalada.	4,00	41,67	166,68
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	2.365,20	2,98	7.048,30
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	2,00	1.993,93	3.987,86
TOTAL 03.05.01.06.....				16.834,05

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.01.07	URBANIZACIÓN (TOMA-17)			
03.05.01.07.1	PAVIMENTOS (T17)			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	775,93	20,14	15.627,23
TOTAL 03.05.01.07.1				15.627,23
03.05.01.07.2	CERRAMIENTOS (T17)			
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	2,00	160,67	321,34
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	2,00	638,04	1.276,08
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	198,00	96,52	19.110,96
TOTAL 03.05.01.07.2				20.708,38
03.05.01.07.3	DRENAJES (T17)			
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	223,00	4,11	916,53
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	6,00	14,41	86,46
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	9,00	63,27	569,43
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	1,00	22,61	22,61

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	4,00	29,11	116,44
TOTAL 03.05.01.07.3.....				1.711,47
TOTAL 03.05.01.07.....				38.047,08
TOTAL 03.05.01.....				863.709,02
03.05.02	TOMA-18			
03.05.02.01	MOVIMIENTO DE TIERRAS (TOMA-18)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	5.610,50	2,77	15.541,09
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	814,50	4,97	4.048,07
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	5.267,00	1,78	9.375,26
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	343,50	2,16	741,96
TOTAL 03.05.02.01.....				29.706,38
03.05.02.02	CALDERERÍA Y VALVULERÍA (TOMA-18)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	72.005,31	2,98	214.575,82
P1BRID1300.25	ud Brida ciega PN 25 Ø1300 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas	1,00	4.016,63	4.016,63

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	3,00	1.741,23	5.223,69
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	4,00	253,03	1.012,12
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diámetro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espargos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	3,00	188,30	564,90
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espargos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	2,00	287,14	574,28
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	4.193,90	4.193,90
P6CD.1600.16	ud Carrete desmontaje virola acero inox. PN16 DN1600 Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	5.121,93	10.243,86
P6CD.1800.16	ud Carrete desmontaje virola acero inox. PN16 DN1800 Carrete telescópico autoportante, PN 16 atm, DN 1.800 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	5.842,52	5.842,52
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	3,00	7.057,71	21.173,13
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	13.496,06	26.992,12
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	6,00	712,92	4.277,52
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	1.341,59	2.683,18

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6VM.1600.16M	ud Válvula mariposa motorizada PN 16 Ø1600 I Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	52.694,95	105.389,90
P6VM.1800.16M	ud Válvula mariposa motorizada PN 16 Ø1800 I Válvula de mariposa, DN 1800 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	1,00	62.455,65	62.455,65
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	2,00	3.503,59	7.007,18
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación , incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	2,00	13.910,46	27.820,92
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	3,00	3.199,43	9.598,29
TOTAL 03.05.02.02.....				513.645,61
03.05.02.03	LOSA Y ANCLAJES (TOMA-18)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	96,83	49,22	4.765,97
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	750,28	80,88	60.682,65
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	37,92	16,26	616,58
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	657,48	26,85	17.653,34
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	49.832,39	1,35	67.273,73

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	61,00	4,88	297,68
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	26,10	5,26	137,29
TOTAL 03.05.02.03.....				151.427,24
03.05.02.04	PROTECCIÓN Y ENCINTADOS (TOMA-18)			
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	10,50	744,18	7.813,89
P4CINT1600	m Encintado anticorrosivo DN1600 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	21,00	667,60	14.019,60
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	1,80	147,79	266,02
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	67,07	61,75	4.141,57
TOTAL 03.05.02.04.....				27.789,32
03.05.02.05	OBRA DE DESAGÜE (TOMA-18)			
03.05.02.05.1	ARQUETA ROTURA (TOMA-18)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	90,00	2,77	249,30
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	44,50	2,16	96,12
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,55	49,22	223,95
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	7,80	59,75	466,05

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	13,65	80,88	1.104,01
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	16,35	91,99	1.504,04
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	13,68	16,26	222,44
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	34,06	26,85	914,51
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	4.393,85	1,35	5.931,70
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	36,60	6,15	225,09
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	30,30	2,24	67,87
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda. Totalmente terminada y colocada.	18,90	110,88	2.095,63
TOTAL 03.05.02.05.1				13.198,31

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.02.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-18)				
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	36,50	87,55	3.195,58
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	116,80	2,77	323,54
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	99,40	61,53	6.116,08
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,75	33,10	24,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1,88	80,88	152,05
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,03	91,99	186,74
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	3,00	16,26	48,78
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	6,75	26,85	181,24
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	215,73	1,35	291,24
TOTAL 03.05.02.05.2.....				10.520,08

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.02.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-18)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	225,00	0,37	83,25
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	225,00	0,40	90,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	56,25	2,77	155,81
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	7,50	29,11	218,33
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	12,50	1,89	23,63
TOTAL 03.05.02.05.3.....				571,02
TOTAL 03.05.02.05.....				24.289,41
03.05.02.06 ESTRUCTURA METÁLICA Y VARIOS (TOMA-18)				
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	36,60	49,09	1.796,69
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	9,60	111,07	1.066,27
P41TRAM_003	m² Trames AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Trames de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	9,00	151,16	1.360,44
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroxpansivo, según detalle de planos. Totalmente instalada.	3,00	41,67	125,01

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	1.773,90	2,98	5.286,22
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	2,00	1.993,93	3.987,86
TOTAL 03.05.02.06.....				13.622,49
03.05.02.07	URBANIZACIÓN (TOMA-18)			
03.05.02.07.1	PAVIMENTOS (T18)			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	848,53	20,14	17.089,39
TOTAL 03.05.02.07.1.....				17.089,39
03.05.02.07.2	CERRAMIENTOS (T18)			
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+paint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	2,00	160,67	321,34
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+paint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitratória, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	2,00	638,04	1.276,08
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeo de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	210,00	96,52	20.269,20
TOTAL 03.05.02.07.2.....				21.866,62

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.02.07.3 DRENAJES (T18)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	95,00	4,11	390,45
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	15,00	14,41	216,15
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	126,00	21,35	2.690,10
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	32,00	63,27	2.024,64
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	1,00	22,61	22,61
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	4,00	29,11	116,44
TOTAL 03.05.02.07.3.....				5.460,39
TOTAL 03.05.02.07.....				44.416,40
TOTAL 03.05.02.....				804.896,85
03.05.03 TOMA-19				
03.05.03.01 MOVIMIENTO DE TIERRAS (TOMA-19)				
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.802,95	2,77	7.764,17
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	729,60	4,97	3.626,11

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	2.573,95	1,78	4.581,63
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	229,00	2,16	494,64
TOTAL 03.05.03.01.....				16.466,55
03.05.03.02	CALDERERÍA Y VALVULERÍA (TOMA-19)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	49.216,92	2,98	146.666,42
P1BRID1500.25	ud Brida ciega PN 25 Ø1500 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada.	2,00	4.970,63	9.941,26
P1BRID1300.25	ud Brida ciega PN 25 Ø1300 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada.	1,00	4.016,63	4.016,63
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada.	2,00	1.741,23	3.482,46
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	2,00	253,03	506,06
P6PM400INX	ud Carrete pasamuros 400mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 400mm de diámetro.	1,00	306,44	306,44
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	2,00	188,30	376,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	287,14	287,14
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	4.193,90	4.193,90
P6CD.1500.16	ud Carrete desmontaje virola acero inox. PN16 DN1500 Carrete telescópico autoportante, PN 16 atm, DN 1.500 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	4.794,39	9.588,78
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	7.057,71	14.115,42
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1,00	13.496,06	13.496,06
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	4,00	712,92	2.851,68
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	1.341,59	2.683,18
P6VM.1500.16M	ud Válvula mariposa motorizada PN 16 Ø1500 I Válvula de mariposa, DN 1500 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	48.218,57	96.437,14
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400 Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	1,00	26.725,82	26.725,82
P6FG.400.16	ud Filtro globo PN 16 Ø400 Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	1,00	8.554,76	8.554,76
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	2,00	3.199,43	6.398,86
TOTAL 03.05.03.02.....				350.628,61

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.03.03	LOSA Y ANCLAJES (TOMA-19)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	87,78	49,22	4.320,53
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	597,33	80,88	48.312,05
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	36,66	16,26	596,09
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	478,85	26,85	12.857,12
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	53.558,75	1,35	72.304,31
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	37,00	4,88	180,56
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	83,00	5,26	436,58
TOTAL 03.05.03.03.....				139.007,24
03.05.03.04	PROTECCIÓN Y ENCINTADOS (TOMA-19)			
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	10,50	744,18	7.813,89
P4CINT1500	m Encintado anticorrosivo DN1500 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1500mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	10,50	626,16	6.574,68
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	0,90	147,79	133,01
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y so-lapes. Unidad totalmente terminada.	60,51	61,75	3.736,49
TOTAL 03.05.03.04.....				19.806,31
03.05.03.05	OBRA DE DESAGÜE (TOMA-19)			
03.05.03.05.1	ARQUETA ROTURA (TOMA-19)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimenta-ciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecáni-cos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cual-quier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	90,00	2,77	249,30
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del ma-terial y la eliminación de tamaños máximos, carga y transporte desde caballón/ aco-pio intermedio, extendido, riego a humedad óptima, compactación y perfilado de ra-santes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente ter-minada.	44,50	2,16	96,12
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás ope-raciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,55	49,22	223,95
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cu-ñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, cura-do y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	7,80	59,75	466,05
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos hori-zontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vi-brado, curado y demás operaciones para su correcta terminación. Según Código Es-tructural. Unidad totalmente terminada.	13,65	80,88	1.104,01
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemen-to estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de adi-tivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bom-beo, vibrado, curado y demás operaciones para su correcta terminación. Según Cód-i-go Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	15,05	91,99	1.384,45
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, pun-tales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de cha-pas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correcta-mente terminada.	12,75	16,26	207,32
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados REC-TOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundi-dad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofran-te y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impi-da las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados locali-zados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correcta-mente terminada.	34,42	26,85	924,18

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	4.374,42	1,35	5.905,47
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	45,90	6,15	282,29
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	30,30	2,24	67,87
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda-do . Totalmente terminada y colocada.	10,53	110,88	1.167,57
TOTAL 03.05.03.05.1.....				12.176,18
03.05.03.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-19)				
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	22,00	122,70	2.699,40
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	99,00	2,77	274,23
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	83,68	61,53	5.148,83
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,75	33,10	24,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	17,60	80,88	1.423,49
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	13,50	91,99	1.241,87

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	20,00	16,26	325,20
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	45,00	26,85	1.208,25
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	2.500,58	1,35	3.375,78
TOTAL 03.05.03.05.2.....				15.721,88
03.05.03.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-19)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	201,00	0,37	74,37
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	201,00	0,40	80,40
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	150,75	2,77	417,58
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	12,50	29,11	363,88
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	25,00	1,89	47,25
TOTAL 03.05.03.05.3.....				983,48
TOTAL 03.05.03.05.....				28.881,54

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.03.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-19)			
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	24,40	49,09	1.197,80
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	6,40	111,07	710,85
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	6,00	151,16	906,96
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidro-expansivo, según detalle de planos. Totalmente instalada.	2,00	41,67	83,34
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	1.182,60	2,98	3.524,15
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	1,00	1.993,93	1.993,93
TOTAL 03.05.03.06.....				8.417,03
03.05.03.07	URBANIZACIÓN (TOMA-19)			
03.05.03.07.1	PAVIMENTOS (T19)			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	702,49	20,14	14.148,15
TOTAL 03.05.03.07.1				14.148,15

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.03.07.2 CERRAMIENTOS (T19)				
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+paint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	2,00	160,67	321,34
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+paint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitatoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	2,00	638,04	1.276,08
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	168,00	96,52	16.215,36
TOTAL 03.05.03.07.2.....				17.812,78
03.05.03.07.3 DRENAJES (T19)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	172,00	4,11	706,92
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	9,00	14,41	129,69
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	12,00	63,27	759,24
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	1,00	22,61	22,61
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	4,00	29,11	116,44
TOTAL 03.05.03.07.3.....				1.734,90
TOTAL 03.05.03.07.....				33.695,83
TOTAL 03.05.03.....				596.903,11

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.04	TOMA-20			
03.05.04.01	MOVIMIENTO DE TIERRAS (TOMA-20)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.046,17	2,77	5.667,89
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	828,00	4,97	4.115,16
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1.892,17	1,78	3.368,06
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	154,00	2,16	332,64
TOTAL 03.05.04.01				13.483,75
03.05.04.02	CALDERERÍA Y VALVULERÍA (TOMA-20)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	36.314,96	2,98	108.218,58
P1BRID1100.25	ud Brida ciega PN 25 Ø1100 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas	2,00	3.295,23	6.590,46
P1BRID900.25	ud Brida ciega PN 25 Ø900 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 900 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	1,00	2.400,64	2.400,64

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	2,00	1.741,23	3.482,46
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	3,00	253,03	759,09
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diámetro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	188,30	753,20
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	287,14	287,14
P6CD900.16	ud Carrete desmontaje virola acero inox. PN16 DN 900 Carrete telescópico autoportante, PN 16 atm, DN 900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	2.383,95	2.383,95
P6CD.1100.16	ud Carrete desmontaje virola acero inox. PN16 DN 1100 Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	3.385,65	3.385,65
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	4.193,90	4.193,90
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	7.057,71	14.115,42
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1,00	13.496,06	13.496,06
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	4,00	712,92	2.851,68
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	1,00	1.341,59	1.341,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6VM.1100.16M	ud Válvula mariposa motorizada PN 16 Ø1100 I Válvula de mariposa, DN 1100 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	1,00	31.623,21	31.623,21
P6VM.1300.16M	ud Válvula mariposa motorizada PN 16 Ø1300 I Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	1,00	39.920,89	39.920,89
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400 Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación , incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	1,00	26.725,82	26.725,82
P6FG.400.16	ud Filtro globo PN 16 Ø400 Filtro colador tipo globo, DN 400, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	1,00	8.554,76	8.554,76
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	2,00	3.199,43	6.398,86
TOTAL 03.05.04.02.....				277.483,36
03.05.04.03	LOSA Y ANCLAJES (TOMA 20)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	82,80	49,22	4.075,42
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	498,61	80,88	40.327,58
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	35,10	16,26	570,73
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	478,85	26,85	12.857,12
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	46.773,31	1,35	63.143,97

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	33,00	4,88	161,04
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	58,50	5,26	307,71
TOTAL 03.05.04.03.....				121.443,57
03.05.04.04	PROTECCIÓN Y ENCINTADOS (TOMA 20)			
P4CINT1500	m Encintado anticorrosivo DN1500 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1500mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	10,50	626,16	6.574,68
P4CINT1300	m Encintado anticorrosivo DN1300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	10,50	547,06	5.744,13
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	0,90	147,79	133,01
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	32,63	61,75	2.014,90
TOTAL 03.05.04.04.....				16.014,96
03.05.04.05	OBRA DE DESAGÜE (TOMA 20)			
03.05.04.05.1	ARQUETA ROTURA (TOMA-20)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	61,84	2,77	171,30
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	36,54	2,16	78,93
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,56	49,22	224,44
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	7,80	59,75	466,05

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	16,83	80,88	1.361,21
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	15,05	91,99	1.384,45
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	12,75	16,26	207,32
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	34,42	26,85	924,18
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	4.374,42	1,35	5.905,47
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	45,90	6,15	282,29
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	30,00	2,24	67,20
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda. Totalmente terminada y colocada.	10,53	110,88	1.167,57
TOTAL 03.05.04.05.1				12.338,01

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.04.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-20)				
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	21,30	122,70	2.613,51
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	95,85	2,77	265,50
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	81,08	61,53	4.988,85
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,75	33,10	24,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,52	80,88	284,70
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,70	91,99	248,37
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	4,00	16,26	65,04
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	9,00	26,85	241,65
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	500,11	1,35	675,15
TOTAL 03.05.04.05.2.....				9.407,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.04.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-20)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	305,70	0,37	113,11
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	305,70	0,40	122,28
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	229,28	2,77	635,11
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	53,55	29,11	1.558,84
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	25,00	1,89	47,25
TOTAL 03.05.04.05.3.....				2.476,59
TOTAL 03.05.04.05.....				24.222,20
03.05.04.06 ESTRUCTURA METÁLICA Y VARIOS (TOMA 20)				
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	24,40	49,09	1.197,80
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	6,40	111,07	710,85
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	6,00	151,16	906,96
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.	2,00	41,67	83,34

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	1.182,60	2,98	3.524,15
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	1,00	1.993,93	1.993,93
TOTAL 03.05.04.06.....				8.417,03
03.05.04.07	URBANIZACIÓN (TOMA 20)			
03.05.04.07.1	PAVIMENTOS (T20)			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	631,63	20,14	12.721,03
TOTAL 03.05.04.07.1.....				12.721,03
03.05.04.07.2	CERRAMIENTOS (T20)			
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+paint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	2,00	160,67	321,34
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+paint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitratória, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	2,00	638,04	1.276,08
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeo de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	187,00	96,52	18.049,24
TOTAL 03.05.04.07.2.....				19.646,66

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.04.07.3 DRENAJES (T20)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	192,00	4,11	789,12
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	9,00	14,41	129,69
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	102,00	21,35	2.177,70
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	8,00	63,27	506,16
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	1,00	22,61	22,61
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	52,90	29,11	1.539,92
TOTAL 03.05.04.07.3.....				5.165,20
TOTAL 03.05.04.07.....				37.532,89
TOTAL 03.05.04.....				498.597,76
03.05.05 TOMA-21				
03.05.05.01 MOVIMIENTO DE TIERRAS (TOMA-21)				
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.016,85	2,77	2.816,67
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	780,00	4,97	3.876,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	941,10	1,78	1.675,16
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	75,75	2,16	163,62
TOTAL 03.05.05.01				8.532,05
03.05.05.02	CALDERERÍA Y VALVULERÍA (TOMA-21)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	19.774,50	2,98	58.928,01
P1BRID1100.25	ud Brida ciega PN 25 Ø1100 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas	1,00	3.295,23	3.295,23
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	1,00	1.741,23	1.741,23
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	3,00	253,03	759,09
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	2,00	188,30	376,60
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	287,14	287,14
P6CD.1100.16	ud Carrete desmontaje virola acero inox. PN16 DN 1100 Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	3.385,65	3.385,65

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	4.193,90	4.193,90
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1,00	7.057,71	7.057,71
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1,00	13.496,06	13.496,06
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	712,92	1.425,84
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	1,00	1.341,59	1.341,59
P6VM.1300.16M	ud Válvula mariposa motorizada PN 16 Ø1300 I Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	1,00	39.920,89	39.920,89
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	1,00	3.503,59	3.503,59
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	1,00	13.910,46	13.910,46
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	1,00	3.199,43	3.199,43
TOTAL 03.05.05.02.....				156.822,42
03.05.05.03	LOSA Y ANCLAJES (TOMA-21)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	43,50	49,22	2.141,07
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	181,35	80,88	14.667,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	26,40	16,26	429,26
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	130,35	26,85	3.499,90
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	21.450,17	1,35	28.957,73
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	11,00	4,88	53,68
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	44,00	5,26	231,44
TOTAL 03.05.05.03.....				49.980,67
03.05.05.04	PROTECCIÓN Y ENCINTADOS (TOMA-21)			
P4CINT1300	m Encintado anticorrosivo DN1300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	10,50	547,06	5.744,13
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	0,90	147,79	133,01
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	12,90	61,75	796,58
TOTAL 03.05.05.04.....				8.221,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.05.05	OBRA DE DESAGÜE (TOMA-21)			
03.05.05.05.1	ARQUETA ROTURA (TOMA-21)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	90,00	2,77	249,30
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	44,50	2,16	96,12
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,55	49,22	223,95
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	7,80	59,75	466,05
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	13,65	80,88	1.104,01
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	15,05	91,99	1.384,45
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	12,75	16,26	207,32
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	34,42	26,85	924,18
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	4.374,42	1,35	5.905,47

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	45,90	6,15	282,29
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	30,00	2,24	67,20
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda-do . Totalmente terminada y colocada.	10,53	110,88	1.167,57
TOTAL 03.05.05.05.1				12.175,51
03.05.05.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-21)				
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	141,81	87,55	12.415,47
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	4,13	2,77	11,44
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	91,64	16,29	1.492,82
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.	259,28	14,68	3.806,23
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	83,73	61,53	5.151,91
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	466,45	2,16	1.007,53
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	5,13	80,88	414,91

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,42	91,99	222,62
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	10,26	16,26	166,83
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	10,94	26,85	293,74
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	442,45	1,35	597,31
P5ARQP-1.2A	ud Arq. pref DN=1.2 m H=3.0m+tapa fundición DN600 +pates UD de Arqueta prefabricada, altura variable hasta 3.0m de tipo pozo de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltos en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base. Unidad totalmente terminada.	4,00	840,48	3.361,92
P5ARQP-1.2B	ud Arq. pref DN=1.2 m resalto H=3.5m+tapa fundición DN600 +pates UD de pozo de resalto de altura variable hasta 3,5m de 1200mm de diámetro formada por: solera de hormigón de 20 cm de espesor HM-20 y base prefabricada de apoyo de hormigón de sección circular espesor 30 cm de HA-30 y armadura B-500S, sobre el que apoyan anillos prefabricados de hormigón armado, provistos de resaltos para su acoplamiento, entre otras piezas, mediante juntas de goma, de 100 cm. de diámetro interior y 50-100 cm. de altura útil cada anillo, con pates de polipropileno montados en fábrica y cierre superior de pozo de registro formado por un cono asimétrico 1000/600 mm, prefabricado de hormigón armado, de altura útil 100 cm., provisto de pates de polipropileno montados en fábrica y resaltos en el borde para alojamiento de junta de goma, aro de nivelación, también de hormigón armado prefabricado, de 60 cm. de diámetro, colocado sobre la anterior, recibido con mortero de cemento, y sobre éste dispositivo de cierre, compuesto de cerco y tapa de fundición tipo calzada 40Tn, todo ello para colocar directamente sobre el anillo superior, de 100 cm. de diámetro, incluida excavación localizada y rellenos necesarios. Adicionalmente se incluye los pasamuros de los tubos y formación de cuna en base. Unidad totalmente terminada.	1,00	1.116,15	1.116,15
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	141,81	0,32	45,38
TOTAL 03.05.05.05.2.....				30.104,26

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.05.03 MOVIMIENTO DE TIERRAS (TOMA-21)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	1.206,00	0,37	446,22
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	1.206,00	0,40	482,40
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	941,51	2,77	2.607,98
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	69,33	1,78	123,41
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	22,55	29,11	656,43
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	45,10	1,89	85,24
TOTAL 03.05.05.03.....				4.401,68
TOTAL 03.05.05.05.....				46.681,45
03.05.05.06 ESTRUCTURA METÁLICA Y VARIOS (TOMA-21)				
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera, enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	12,20	49,09	598,90
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm, barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante, incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	3,20	111,07	355,42
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	3,00	151,16	453,48

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroxexpansivo, según detalle de planos. Totalmente instalada.	1,00	41,67	41,67
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m ² 700 g/m ² . Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	591,30	2,98	1.762,07
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje, incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	1,00	1.993,93	1.993,93
TOTAL 03.05.05.06.....				5.205,47
03.05.05.07	URBANIZACIÓN (TOMA-21)			
03.05.05.07.1	PAVIMENTOS (T21)			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	403,33	20,14	8.123,07
TOTAL 03.05.05.07.1.....				8.123,07
03.05.05.07.2	CERRAMIENTOS (T21)			
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	1,00	160,67	160,67
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o giratoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	1,00	638,04	638,04
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeo de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	141,00	96,52	13.609,32
TOTAL 03.05.05.07.2.....				14.408,03

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.05.07.3 DRENAJES (T21)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	53,00	4,11	217,83
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	5,00	14,41	72,05
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	8,50	63,27	537,80
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	1,00	22,61	22,61
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	4,00	29,11	116,44
TOTAL 03.05.05.07.3.....				966,73
TOTAL 03.05.05.07.....				23.497,83
TOTAL 03.05.05.....				298.941,85
03.05.06 TOMA-16				
03.05.06.01 MOVIMIENTO DE TIERRAS (TOMA-16)				
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.524,21	2,77	4.222,06
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	840,00	4,97	4.174,80
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1.306,91	1,78	2.326,30

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	217,30	2,16	469,37
TOTAL 03.05.06.01				11.192,53
03.05.06.02	CALDERERÍA Y VALVULERÍA (TOMA-16)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	46.464,86	2,98	138.465,28
P1BRID1300.25	ud Brida ciega PN 25 Ø1300 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1300 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas	3,00	4.016,63	12.049,89
P1BRID1100.25	ud Brida ciega PN 25 Ø1100 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas	1,00	3.295,23	3.295,23
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	2,00	1.741,23	3.482,46
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	3,00	253,03	759,09
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	188,30	753,20
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	287,14	287,14
P6CD.1100.16	ud Carrete desmontaje virola acero inox. PN16 DN 1100 Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	3.385,65	3.385,65

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	4.193,90	4.193,90
P6CD.1600.16	ud Carrete desmontaje virola acero inox. PN16 DN1600 Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	5.121,93	5.121,93
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	7.057,71	14.115,42
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1,00	13.496,06	13.496,06
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	4,00	712,92	2.851,68
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	2,00	1.341,59	2.683,18
P6VM.1300.16M	ud Válvula mariposa motorizada PN 16 Ø1300 I Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	1,00	39.920,89	39.920,89
P6VM.1600.16M	ud Válvula mariposa motorizada PN 16 Ø1600 I Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	1,00	52.694,95	52.694,95
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	1,00	3.503,59	3.503,59
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	1,00	13.910,46	13.910,46
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	2,00	3.199,43	6.398,86
TOTAL 03.05.06.02.....				321.368,86

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.06.03	LOSA Y ANCLAJES (TOMA-16)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	69,38	49,22	3.414,88
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	501,08	80,88	40.527,35
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	31,80	16,26	517,07
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	534,85	26,85	14.360,72
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	46.562,17	1,35	62.858,93
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	35,00	4,88	170,80
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	53,00	5,26	278,78
TOTAL 03.05.06.03.....				122.128,53
03.05.06.04	PROTECCIÓN Y ENCINTADOS (TOMA-16)			
P4CINT1800	m Encintado anticorrosivo DN1800 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1800mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	10,50	744,18	7.813,89
P4CINT1500	m Encintado anticorrosivo DN1500 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1500mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	10,50	626,16	6.574,68
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	0,90	147,79	133,01
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y so-lapes. Unidad totalmente terminada.	49,65	61,75	3.065,89
TOTAL 03.05.06.04.....				19.135,71
03.05.06.05	OBRA DE DESAGÜE (TOMA-16)			
03.05.06.05.1	ARQUETA ROTURA (TOMA-16)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimenta-ciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecáni-cos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cual-quier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	90,00	2,77	249,30
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del ma-terial y la eliminación de tamaños máximos, carga y transporte desde caballón/ aco-pio intermedio, extendido, riego a humedad óptima, compactación y perfilado de ra-santes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente ter-minada.	44,50	2,16	96,12
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás ope-raciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,55	49,22	223,95
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cu-ñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, cura-do y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	7,80	59,75	466,05
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos hori-zontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vi-brado, curado y demás operaciones para su correcta terminación. Según Código Es-tructural. Unidad totalmente terminada.	13,65	80,88	1.104,01
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemen-to estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de adi-tivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bom-beo, vibrado, curado y demás operaciones para su correcta terminación. Según Cód-i-go Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	15,05	91,99	1.384,45
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, pun-tales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de cha-pas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correcta-mente terminada.	12,75	16,26	207,32
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados REC-TOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundi-dad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofran-te y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impi-da las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados locali-zados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correcta-mente terminada.	34,42	26,85	924,18

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	4.374,42	1,35	5.905,47
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	45,90	6,15	282,29
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	30,00	2,24	67,20
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y candado. Totalmente terminada y colocada.	10,53	110,88	1.167,57
TOTAL 03.05.06.05.1.....				12.175,51
03.05.06.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-16)				
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	26,90	122,70	3.300,63
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	121,05	2,77	335,31
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	101,91	61,53	6.270,52
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,75	33,10	24,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,52	80,88	284,70
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,70	91,99	248,37

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	4,00	16,26	65,04
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	9,00	26,85	241,65
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	500,11	1,35	675,15
TOTAL 03.05.06.05.2.....				11.446,20
03.05.06.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-16)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	253,35	0,37	93,74
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	253,35	0,40	101,34
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	190,01	2,77	526,33
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	18,79	29,11	546,98
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	25,00	1,89	47,25
TOTAL 03.05.06.05.3.....				1.315,64
TOTAL 03.05.06.05.....				24.937,35

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.06.06 ESTRUCTURA METÁLICA Y VARIOS (TOMA-16)				
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	24,40	49,09	1.197,80
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	6,40	111,07	710,85
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	6,00	151,16	906,96
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.	2,00	41,67	83,34
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	1.182,60	2,98	3.524,15
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidables, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	1,00	1.993,93	1.993,93
TOTAL 03.05.06.06.....				8.417,03
03.05.06.07 URBANIZACIÓN (TOMA-16)				
03.05.06.07.1 PAVIMENTOS (T16)				
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	590,83	20,14	11.899,32
TOTAL 03.05.06.07.1				11.899,32

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.06.07.2 CERRAMIENTOS (T16)				
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+ pint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	1,00	160,67	160,67
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+ pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitatoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	1,00	638,04	638,04
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeado de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	183,00	96,52	17.663,16
TOTAL 03.05.06.07.2.....				18.461,87
03.05.06.07.3 DRENAJES (T16)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	148,00	4,11	608,28
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	9,00	14,41	129,69
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	9,80	63,27	620,05
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	3,00	122,70	368,10
TOTAL 03.05.06.07.3.....				1.726,12
TOTAL 03.05.06.07.....				32.087,31
TOTAL 03.05.06.....				539.267,32

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.07	TOMA-14 Y 15			
03.05.07.01	MOVIMIENTO DE TIERRAS (TOMA-14/15)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.674,91	2,77	4.639,50
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	1.440,00	4,97	7.156,80
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1.569,21	1,78	2.793,19
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	105,70	2,16	228,31
TOTAL 03.05.07.01				14.817,80
03.05.07.02	CALDERERÍA Y VALVULERÍA (TOMA-14/15)			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	32.943,97	2,98	98.173,03
P1BRID1100.25	ud Brida ciega PN 25 Ø1100 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 1100 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas	1,00	3.295,23	3.295,23
P1BRIDA800.25	ud Brida ciega PN 25 Ø800 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 800 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	1,00	1.741,23	1.741,23

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1BRIDA700.25	ud Brida ciega PN 25 Ø700 Brida ciega de fundición dúctil o acero galvanizado S275, PN 25, DN 700 mm, conforme a norma UNE-EN 545 o UNE-EN 598 y/o según normativa vigente, con revestimiento interior y exterior de resina epoxi, color exterior y marcado CANASA, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable GEOMED o similar A8.8, bridas según norma UNE-EN 1092-2, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instaladas.	1,00	1.341,07	1.341,07
P6PM300INX	ud Carrete pasamuros 300mm AISI316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 300mm de diámetro.	3,00	253,03	759,09
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diámetro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espargos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	2,00	188,30	376,60
P6CD.300.16	ud Carrete desmontaje DN 300 PN16 Carrete de desmontaje de acero de 300 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espargos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	287,14	287,14
P6CD.700.16	ud Carrete desmontaje DN 700 PN16 Carrete de desmontaje de diámetro 700 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espargos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	1.051,41	1.051,41
P6CD900.16	ud Carrete desmontaje virola acero inox. PN16 DN 900 Carrete telescópico autoportante, PN 16 atm, DN 900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	2.383,95	2.383,95
P6CD.1100.16	ud Carrete desmontaje virola acero inox. PN16 DN 1100 Carrete telescópico autoportante, PN 16 atm, DN 1.100 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	3.385,65	3.385,65
P6CD.1300.16	ud Carrete desmontaje virola acero inox. PN16 DN1300 Carrete telescópico autoportante, PN16 atm, DN 1.300 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	1,00	4.193,90	4.193,90
P6VO.200.25	ud Válvula globo PN25 Ø200 multiorificio Válvula de regulación de globo, de paso recto de 200 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	2,00	7.057,71	14.115,42
P6VO.300.25	ud Válvula globo PN25 Ø300 multiorificio Válvula de regulación de globo, de paso recto de 300 mm de diámetro nominal y PN25 con accionamiento con volante externo manual, pistón equilibrado aguas arriba y aguas abajo con cilindro externo multiorificios, incluyendo sistema anticavitación. Unidad colocada y probada.	1,00	13.496,06	13.496,06
P6VM.200.16	ud Válvula mariposa ø 200 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	4,00	712,92	2.851,68

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6VM.300.16	ud Válvula mariposa ø 300 mm, 16 atm, instalada. Manual Válvula de mariposa, DN 300 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, céntrica o excéntrica, con revestimiento epoxi o vitrocerámico, con reductor de accionamiento manual, preparado para acoplar accionamiento motorizado, incluso tornillería de acero inoxidable y juntas elastoméricas de estanquidad. Instalación y pruebas.	1,00	1.341,59	1.341,59
P6VM.900.16M	ud Válvula mariposa motorizada PN 16 Ø900 I Válvula de mariposa, DN 900 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	1,00	15.792,11	15.792,11
P6VM.1300.16M	ud Válvula mariposa motorizada PN 16 Ø1300 I Válvula de mariposa, DN 1300 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	1,00	39.920,89	39.920,89
P6FG.250.16	ud Filtro globo PN 16 Ø250 Filtro colador tipo globo, DN 250, PN 16, con malla de acero inoxidable, incluso tornillería de acero inoxidable, juntas elastoméricas, totalmente colocado y probado.	1,00	3.503,59	3.503,59
P6VP.250.25	ud Válvula alivio sobrepresión pilotada PN25 Ø250 Válvula de seguridad de alivio por sobrepresión, DN 250, PN 25, hidráulica pilotada de diafragma con sistema anticavitación, incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	1,00	13.910,46	13.910,46
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	1,00	3.199,43	3.199,43
TOTAL 03.05.07.02.....				225.119,53
03.05.07.03	LOSA Y ANCLAJES (TOMA-14/15)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	100,05	49,22	4.924,46
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	458,07	80,88	37.048,70
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	38,10	16,26	619,51
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	324,24	26,85	8.705,84

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	50.362,28	1,35	67.989,08
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	12,00	4,88	58,56
P4JTAPVC200	m Junta elastomérica de estanqueidad PVC 200 Junta elastómera de estanqueidad de 200 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	63,50	5,26	334,01
TOTAL 03.05.07.03.....				119.680,16
03.05.07.04	PROTECCIÓN Y ENCINTADOS (TOMA-14/15)			
P4CINT1600	m Encintado anticorrosivo DN1600 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	10,40	667,60	6.943,04
P4CINT300	m Encintado anticorrosivo DN300 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN300mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	0,90	147,79	133,01
P4PCAT01	ud Conjunto protección anticorrosiva en toma Conjunto de elementos de protección anticorrosiva global de las conducciones de la toma incluyendo pletinas de conexión en bridas y elementos, conjunto de cables 16 y 25mm ² Cu, toma tierra independiente Zinc para la losa y otros puntos de conexión de la conducción. Unidad de aplicación total al conjunto de elementos de la toma, incluidas pruebas de medida.	1,00	1.548,24	1.548,24
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	42,96	61,75	2.652,78
TOTAL 03.05.07.04.....				11.277,07
03.05.07.05	OBRA DE DESAGÜE (TOMA-14/15)			
03.05.07.05.1	ARQUETA ROTURA (TOMA-14/15)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	90,00	2,77	249,30
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	44,50	2,16	96,12
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,55	49,22	223,95

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	7,80	59,75	466,05
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	13,65	80,88	1.104,01
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	15,05	91,99	1.384,45
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	12,75	16,26	207,32
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	34,42	26,85	924,18
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	4.374,42	1,35	5.905,47
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	45,90	6,15	282,29
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	30,00	2,24	67,20
P4TAPALG01	m² Chapa galvanizada e =4 mm +estructura soporte Tapa ciega modular extraíble antideslizante galvanizada carga de 1000 kg/ m2 ejecutada con chapa lagrimada 4/6 mm en superficie, chapa lateral perforada de ventilación espesor mínimo 4 mm, anclajes de apoyo desmontables, anclajes de tiro de elevación, estructura de refuerzo y apoyo conformada por perfiles laminados y angulares de acero AISI-316L, aperturas de acceso a interior de arquetas, tiro y canda. Totalmente terminada y colocada.	10,53	110,88	1.167,57
TOTAL 03.05.07.05.1				12.175,51

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.07.05.2 CONDUCCIÓN Y EMBOCADURA (TOMA-14/15)				
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	32,37	122,70	3.971,80
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	145,67	2,77	403,51
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	122,26	61,53	7.522,66
P4HG-002F	m³ Hormigón HNE-150 y/o ciclópeo cruces arroyo Hormigón de limpieza HNE-150 y/o ciclópeo, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	0,75	33,10	24,83
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,52	80,88	284,70
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	2,70	91,99	248,37
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	4,00	16,26	65,04
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	9,00	26,85	241,65
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	500,11	1,35	675,15
TOTAL 03.05.07.05.2.....				13.437,71

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.07.05.3 MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-14/15)				
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	250,05	0,37	92,52
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	250,05	0,40	100,02
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	187,54	2,77	519,49
P1MT08ESC200	m³ Escollera 200 kg careada Escollera careada de peso mínimo 200 kg. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	18,08	29,11	526,31
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	25,00	1,89	47,25
TOTAL 03.05.07.05.3.....				1.285,59
TOTAL 03.05.07.05.....				26.898,81
03.05.07.06 ESTRUCTURA METÁLICA Y VARIOS (TOMA-14/15)				
P41BARAND01	m Barandilla metálica galv.+pintura Barandilla metálica normalizada de altura 1.10 m con pasamanos de 100x50x3 mm y pilastras de 70x30x3 mm cada 200 cm, montante inferior de 70x30x3mm, con placa y perfilera , enmarcado separado 12 cm del pasamanos que encierra montantes verticales cada 12 cm de pletina 50x3mm., todos los perfiles de acero S-275J de 1ª calidad galvanizado en caliente, que será pintado con dos manos. Incluso placas de anclaje a hormigón de 120x120x2, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Unidad totalmente anclada y terminada.	24,40	49,09	1.197,80
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm , barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante , incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	6,40	111,07	710,85
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en en cualquier superficie (>5m2), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	6,00	151,16	906,96
P41CADENA III	m Cadena acero inox 8 mm Cadena seguridad tipo III acero inox AIS-316, con eslabón 8 mm, incluido mosquetón de cierre, anclajes y elementos de unión a pared, con sellador poliuretano hidroexpansivo, según detalle de planos. Totalmente instalada.	2,00	41,67	83,34

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	1.182,60	2,98	3.524,15
P41LV001	ud Línea de vida Línea de vida para acceso a valvulería conformada por perfiles HEB 200 anclados en extremos de macizos de anclaje , incluidas placas y pernos de anclaje de acero galvanizado en caliente, incluido cable de acero inoxidable, y elementos accesorios. Todo ello normalizado y conforme plan de Seguridad y salud. Unidad totalmente instalada.	1,00	1.993,93	1.993,93
TOTAL 03.05.07.06.....				8.417,03
03.05.07.07	URBANIZACIÓN (TOMA-14/15)			
03.05.07.07.1	PAVIMENTOS (T14/15)			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	826,48	20,14	16.645,31
TOTAL 03.05.07.07.1.....				16.645,31
03.05.07.07.2	CERRAMIENTOS (T14/15)			
P5PUERTA1A	ud Puerta metálica 1 hoja 2.1x0.9+paint Puerta metálica 2.35x0.90 galvanizada en caliente pintada color tipo verja, formada por una hoja y marco de tubo rectangular con pestaña, provistas con dispositivo de cierre para candado, i/ acabado color pintura dos manos a determinar, totalmente colocada, incluidas cimentaciones necesarias, soportes laterales. Unidad totalmente instalada.	1,00	160,67	160,67
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+paint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitratória, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candado, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	1,00	638,04	638,04
P5CERRAM1	m Cerramiento tipo-1 malla electrosold+ murete 0.70x0.35+ciment. Cerramiento tipo-1: 2.35m de altura compuesto por malla electrosoldada galvanizada en caliente con bastidores tubulares de acero S-275J de 1ª calidad galvanizado en caliente sobre muro de hormigón 0.95x0.3m de altura (0.7m sobre el terreno) y zapata de 0.7x0.2m en acabado visto de dimensiones definida en planos Incluso placas de anclaje de 120x120x2,mm, remates de esquina, berenjenos de junta, cordón asfáltico en juntas, incluido taladro para su colocación, con pernos de anclaje químicos de diámetro 6 mm y 120 mm de profundidad. Operaciones de cajeo de cimentación y posteriores rellenos localizados Unidad totalmente anclada y terminada. (incluye hormigonados y zapatas)	200,00	96,52	19.304,00
TOTAL 03.05.07.07.2.....				20.102,71

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.05.07.07.3 DRENAJES (T14/15)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	185,00	4,11	760,35
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	9,00	14,41	129,69
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	17,50	63,27	1.107,23
TOTAL 03.05.07.07.3.....				1.997,27
TOTAL 03.05.07.07.....				38.745,29
TOTAL 03.05.07.....				444.955,69
TOTAL 03.05.....				4.047.271,60
03.06 HINCAS (DC-T21 y DC-T14/15)				
03.06.01 HINCA NA-160				
03.06.01.01 TRABAJOS PREPARATORIOS+MT (HINCA NA-160)				
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	12.384,69	2,77	34.305,59
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	88,50	20,14	1.782,39
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	310,00	4,11	1.274,10
TOTAL 03.06.01.01.....				37.362,08

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.06.01.02	ESTRUCTURA (HINCA NA-160)			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	20,40	49,22	1.004,09
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	17,50	61,53	1.076,78
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	81,60	80,88	6.599,81
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	84,90	91,99	7.809,95
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.411,60	1,35	7.305,66
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	332,00	26,85	8.914,20
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	18,84	100,81	1.899,26
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	36,72	52,84	1.940,28
TOTAL 03.06.01.02.....				36.550,03

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.06.01.03	HINCA(HINCA NA-160)			
P6HINCA2000B1	ud Implantación equipo escudo abierto hinca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo abierto, para hinca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.	1,00	4.028,00	4.028,00
P6HINCA2000B3	ud Retirada de equipos esc. abierto+ traslado+imp. interior de obra Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hinca, mano de obra para descarga, montaje y puesta a punto.	1,00	2.650,00	2.650,00
P6HINCA2000B	m Tubería hincada hormigón armado DN 2000 escudo abierto Tubería hincada de DN 2.000 mm de diámetro interior, de hormigón armado, con vira metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de corriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	80,00	2.333,34	186.667,20
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	80,00	90,10	7.208,00
TOTAL 03.06.01.03.....				200.553,20
03.06.01.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA NA-160)			
03.06.01.04.1	TRATAMIENTO (HINCA NA-160)			
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	333,12	79,21	26.386,44
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	200,00	56,49	11.298,00
TOTAL 03.06.01.04.1.....				37.684,44
03.06.01.04.2	AUSCULTACIÓN (HINCA NA-160)			
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	20,00	18,53	370,60
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada, excavaciones, rellenos y gravilla incluidos.	20,00	18,49	369,80
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	4.821,98	4.821,98
TOTAL 03.06.01.04.2.....				5.562,38
TOTAL 03.06.01.04.....				43.246,82

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 03.06.01.....				317.712,13
03.06.02	HINCA N-113			
03.06.02.01	TRABAJOS PREPARATORIOS+MT (HINCA N-113)			
P1MT03B1	m ³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.330,93	2,77	3.686,68
P1MT03C1	m ³ Excavación loc. +agotam+recintos tablest/apan Excavación localizada en recinto confinado de tablestacas/ apantallados con medios mecánicos en cualquier clase de terreno, con extracción de los productos a superficie mediante contenedor u otros necesarios, carga y transporte a acopio y/o vertedero autorizado, incluidos medios auxiliares, grúas, contenedor, sistema de agotamientos continuados de rebaje - achique de filtraciones y freático (pozos filtrantes, conducciones, ...), transportes necesarios, canon de vertido y operaciones de reperfilado. Unidad totalmente terminada medido sobre perfil teórico.	1.298,28	12,72	16.514,12
P1MT08BASEZA1	m ³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	166,80	20,14	3.359,35
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	260,00	4,11	1.068,60
TOTAL 03.06.02.01.....				24.628,75
03.06.02.02	PANTALLA Y ESTRUCTURA (HINCA N-113)			
P5PANT01	ud Transporte y montaje equipos ejec. pantallas Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	1,00	11.719,12	11.719,12
P5PANT03	ud Desmontaje/ desplazamiento equipos pantallas a fábricas Desmontaje final de pantallas y transporte a punto de origen. Unidad completa.	1,00	11.719,12	11.719,12
PAPANT04	m Murete guía para muro pantalla Murete guía para muro pantalla de dimensión 0.8x0.48, realizado con hormigón armado HA-25/F/20/XC4, incluso parte proporcional de excavación en zanja, encofrado de los muretes, acero B500S s/ planos, hormigonado y demolición de los mismos, retirada de escombros y trabajos auxiliares. Totalmente terminado.	88,40	106,73	9.434,93

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4PANT1.0A1	m² Muro pantalla e=1.0 m. HA30 SIN ACERO+vigas puntal Muro pantalla de 1.0 m. de espesor en cualquier tipo de terreno (incluso roca) con hormigón HA-30/F/15/ XC2, Incluido: -Replanteo de trabajos. -Preparación de plataforma de trabajo y material de plataforma de trabajo horizontal para establecimiento de maquinaria. -Excavación de pantalla por módulos adecuados para geometría especificada, incluyendo módulos de unión y esquina de longitudes según necesidad. -Perforación o perforación de pantalla incluyendo el consumo de bentonita. -Pantalla hormigonada o amoterada con suministro y colocación del hormigón y exceso por pérdidas. -Hormigonado HA-30, puesta en obra y curado, incluidos excesos de hormigón por pérdidas de sobreexcavaciones. -Empleo de lodos bentoníticos y/o tixotrópicos. -Excavación en roca meteorizada y sanos mediante trépanos para demolición de zonas duras. -Excavación con hidrofresadora en roca sana. -Vigas puntales y codales conformado por perfiles HEB-500, HEB-300 -Obturadores para sellado de uniones entre pantallas. -Reperforación de tubos o junta entre paños. -Junta de pantalla resina poliuretano hidroexpansiva mediante inyección de la misma en los obturadores. -Preparación de encuentros con vigas cadena, saneado de hormigón y armaduras. -Demolición de protuberancias. -Partida de espesamiento de lodos finales con transporte a vertedero. -Riostras. Viga de hormigón según dimensiones definidas en Anejo de estructuras. -Desmontaje, retirada de maquinaria y limpieza final. Incluida demolición de muros guía. Unidad totalmente terminada, medida en su eje longitud según plano, adecuando la longitud de módulos finales y de unión.	1.414,40	245,82	347.687,81
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	10,20	49,22	502,04
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	40,80	80,88	3.299,90
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	133,21	91,99	12.253,99
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	16.837,58	1,35	22.730,73
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	16,15	161,50
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	9,47	94,70
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	436,00	8,07	3.518,52

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	5,27	52,70
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	317,84	26,85	8.534,00
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	43,60	7,25	316,10
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	7,54	100,81	760,11
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	39,44	52,84	2.084,01
TOTAL 03.06.02.02.....				434.869,28
03.06.02.03	HINCA (HINCA N-113)			
P6HINCA2000A1	ud Implantación equipo escudo cerrado hinca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo cerrado, para hinca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.	1,00	40.280,00	40.280,00
P6HINCA2000A2	ud Retirada equipo escudo cerrado hinca DN 2.000-2500 a fábrica Retirada completa de obra y transporte a punto de origen de proveedor de equipo perforador de escudo cerrado, para hinca de tubería de hormigón armado de diámetro interior entre 2.000-2.500 mm, incluso mano de obra para carga y desmontaje.	1,00	40.280,00	40.280,00
P6HINCA2500A	m Tubería hincada hormigón armado DN 2500 escudo cerrado Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con vrola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo cerrado, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de anillo de estanqueidad, estación intermedia c/ 65m o según necesidad, juntas de estanqueidad, inyecciones bentoníticas, elementos auxiliares, elementos de empuje , vigas de guía, gatos hidráulicos, generador y consumibles 500 Kw y cableado de corriente, grúas necesarias para la puesta en obra de los tubos , demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos) . Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	50,00	4.183,69	209.184,50
P6HINCATUB01	m Sobre coste tubería int. hinca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hinca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas , operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	50,00	90,10	4.505,00
TOTAL 03.06.02.03.....				294.249,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.06.02.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA N-113)			
03.06.02.04.1	TRATAMIENTO (HINCA N-113)			
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	128,60	79,21	10.186,41
TOTAL 03.06.02.04.1				10.186,41
03.06.02.04.2	AUSCULTACIÓN (HINCA N-113)			
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	6,00	18,53	111,18
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada , excavaciones, rellenos y gravilla incluidos.	6,00	18,49	110,94
P6HINCA04	ud Equipo auscultación túnel / hinca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	4.821,98	4.821,98
TOTAL 03.06.02.04.2				5.044,10
TOTAL 03.06.02.04				15.230,51
TOTAL 03.06.02				768.978,04
TOTAL 03.06				1.086.690,17
03.07	CAMINOS DE SERVICIO (DC-T21 y DC-T14/15)			
03.07.01	MOVIMIENTO DE TIERRAS Y PAVIMENTOS (DC-T21; T14)			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	7.854,76	2,77	21.757,69
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	3.518,85	1,78	6.263,55
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	6.089,80	20,14	122.648,57
P4HG-004A2H	m³ Hormigón HA-30/B/20/XC2+XA2-SR soleras, cimentaciones, forjados Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	57,00	80,88	4.610,16

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	108,70	1,35	146,75
TOTAL 03.07.01.....				155.426,72
03.07.02	DRENAJE TRANSVERSAL(DC-T21; T14)			
03.07.02.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	153,33	2,77	424,72
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	155,31	3,89	604,16
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	24,33	61,53	1.497,02
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	129,00	22,61	2.916,69
TOTAL 03.07.02.01.....				5.442,59
03.07.02.02	OBRAS DE FÁBRICA			
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5, incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.	21,30	48,13	1.025,17
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	316,50	63,27	20.024,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	40,55	122,70	4.975,49
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	70,35	78,03	5.489,41
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	114,30	16,26	1.858,52
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	100,42	26,85	2.696,28
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.978,91	1,35	8.071,53
P4IMPASF	m² Imperm. muros 0.7 Kg/ m2 Impermeabilización asfáltica de trasdós de estructuras mediante aplicación de pintura asfáltica betún modificado 0.7 Kg/m2, incluida preparación. Unidad totalmente terminada.	60,78	2,24	136,15
P3LAM1	m² Imperm. muros+Lámina dren PE+Geotex 200 g Drenaje de muros con lámina nodular con marcado CE de polietileno virgen con geotextil incorporado y doble nódulo de 12 mm. de altura nod, capacidad de drenaje 1,2 l / s y resistencia a compresión de 90 kn/m2. Delta Drain o similar, p.p. de fijación al soporte con taco espiga de polipropileno, a razón de 3 uds / m2 y sellado de solapes de anchura de 10 cm. con banda autoadhesiva a dos caras de caucho butilo Delta Fix, incluso impermeabilización del paramento de hormigón con dos manos de emulsión bituminosa modificada 0.7kg/m2 , según CTE/DB-HS 1. Unidad totalmente terminada, incluso remate de conexión a dren.	66,84	12,53	837,51
P3DREN160PVC	m Tubo dren PVC 160 mm corrugado+zanja+geotextil Tubo dren de PVC corrugado poroso, D= 160 mm, incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas de 0,40 cm. de ancho y 0,60 cm. de profundidad, revestido de geotextil 295gr/m2 y relleno perimetral con material filtrante grava 40-80 hasta 25 cm, retirada y transporte a vertedero de los productos sobrantes de la excavación, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	88,80	9,54	847,15
TOTAL 03.07.02.02.....				45.962,17
TOTAL 03.07.02.....				51.404,76

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.07.03	DRENAJE LONGITUDINAL(DC-T21; T14)			
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	108,57	14,41	1.564,49
TOTAL 03.07.03.....				1.564,49
TOTAL 03.07				208.395,97
03.08	PROTECCIÓN CATÓDICA (DC-T21 y DC-T14/15)			
P2CAT002	ud Rectificador 70V-25A en armario intemperie. Rectificador 70V-25A en armario intemperie. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	7.169,46	14.338,92
P2CAT004	ud Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2 Ánodos Ti-MMO 1.500x20x3mm, con 3m de cable KYNAR 1x10mm2. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	18,00	769,00	13.842,00
P2CAT005	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vía Conexión encapsulada en resina Epoxi tipo "Torpedos" de tres vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	16,00	39,32	629,12
P2CAT006	ud Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías Conexión encapsulada en resina Epoxi tipo "Torpedos" de dos vías. Unidad completa, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	37,00	148,00
P2CAT007	m Cable anódico tipo RV-K de sección 1x25mm2 Cable anódico tipo RV-K de sección 1x25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	240,00	8,51	2.042,40
P2CAT008	Kg Coque petróleo calcinado Coque petróleo calcinado	8.400,00	2,67	22.428,00
P2CAT009	m Manguera perforada Manguera perforada	108,00	7,07	763,56
P2CAT010	ud Arqueta riego protección catódica Arqueta riego ide protección catódica incluidos p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	716,14	2.864,56
P2CAT012	ud Caja de conexionado 10 ánodos IP.55 y prensaestopas. Caja de conexionado 10 ánodos IP.55 y prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	577,49	1.154,98
P2CAT013	ud Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0. Electrodo de referencia permanente Cu/CuSO4 con 30 m cable RV 0.6/1 KV 1 x 6 mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	226,42	452,84
P2CAT014	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 6mm2 (cantidad estimada) y Handy cap, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	131,02	524,08
P2CAT015	ud Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm Teja de acero 70 x 70 x 3 mm con 30 m cable RV 0.6/1 KV 1 x 25mm2, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	277,30	1.109,20
P2CAT016C	ud Obra civil, mont.conex EPC+TP+TPEs+ P.Func (DC-T14/15 Y DC-T21) Obra civil, montaje y conexionado EPC, y material en línea de TP y TPEs en todo el conjunto del subtramo (DC-T14/15 Y DC-T21) Incluye los estudios, informes, pruebas de la protección catódica del conjunto y puesta en funcionamiento.	7,00	7.950,00	55.650,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P2CAT017	ud Caja toma de potencial de policarbonato con prensaestopas Caja toma de potencial de policarbonato con prensaestopas, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	6,00	69,32	415,92
P2CAT018	ud Caja toma de potencial TPE (200 X 200) con poste acero galvaniza Caja toma de potencial TPE (200 X 200) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	3,00	438,84	1.316,52
P2CAT019	ud Caja toma de potencial TPE (320 x 320) con poste acero galvaniza Caja toma de potencial TPE (320 x 320) con poste acero galvanizado diámetro 2" y 2 m, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	7,00	786,10	5.502,70
P2CAT022	ud Electrodo probeta estándar Electrodo probeta estándar, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	14,00	136,45	1.910,30
P2CAT025	ud Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados Ánodos de magnesio tipo R-09 de 4,1 Kg de peso neto, ensacados con mezcla activadora y 5 m de cable (Protección catódica provisional), incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	126,00	104,05	13.110,30
P2CAT026	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable R Teja de acero 70 x 70 x 3 mm o pletina taladrada con 5 m cable RV 0.6/1 KV 1 x 6 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	16,00	62,33	997,28
P2CAT027	ud Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable Teja de acero 70 x 70 x 3 mm o pletina taladrada con 20 m cable RV 0.6/1 KV 1 x 25 mm2 con Handy-cap., incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	32,00	207,34	6.634,88
P2CAT028	ud Cable acero galvanizado 12 mm Cable acero galvanizado 12 mm, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	105,00	7,63	801,15
P5ELEM1X25TT	m Manguera eléctrica 1 x 25 mm2 Cu Manguera eléctrica de 1 x 25 mm2 , aislamiento 0.6/1 kv, Cobre flexible XL-PE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	70,00	9,46	662,20
P2CAT029	ud Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente Empalme encapsulado cable 1 x 25 mm2 picas / cable gradiente, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	28,00	11,45	320,60
P2CAT030	ud Picas de zinc 1000 mm ensacada Picas de zinc 1000 mm ensacada, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	28,00	184,44	5.164,32
P2CAT031	ud Vías de chispas con cable y pletina para conexión Vías de chispas con cable y pletina para conexión, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	24,00	456,65	10.959,60
P2CAT035A	ud Junta aislante embridada DN 1800 mm PN16 Junta aislante embridada DN 1800 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	3,00	3.637,92	10.913,76
P2CAT036	ud Junta aislante embridada DN 1600 mm PN16 Junta aislante embridada DN 1600 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	6,00	3.101,14	18.606,84

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P2CAT037	ud Junta aislante embridada DN 1500 mm PN16 Junta aislante embridada DN 1500 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	4,00	2.733,53	10.934,12
P2CAT038	ud Junta aislante embridada DN 1300 mm PN16 Junta aislante embridada DN 1300 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	5,00	2.428,25	12.141,25
P2CAT039	ud Junta aislante embridada DN 1100 mm PN16 Junta aislante embridada DN 1100 mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	2.013,58	4.027,16
P2CAT041	ud Junta aislante embridada DN 800mm PN16 Junta aislante embridada DN 800mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	1,00	1.285,99	1.285,99
P2CAT043	ud Junta aislante embridada DN 700mm PN16 Junta aislante embridada DN 700mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	2,00	1.126,99	2.253,98
P2CAT045	ud Junta aislante embridada DN 300mm PN16 Junta aislante embridada DN 300mm PN16, incluida p.p. medios auxiliares, obra civil, montaje y conexionado, estudios e informes de la protección catódica del conjunto y puesta en funcionamiento.	9,00	573,67	5.163,03
TOTAL 03.08				229.069,56
03.09	INSTALACIONES ELÉCTRICAS (DC-T21 y DC-T14/15)			
03.09.01	TOMA-17 (FOTOV)			
03.09.01.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-17)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafa Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 03.09.01.01				15.371,26

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.01.02	FOTOVOLTAICA (TOMA-17)			
P5ELEF001	ud Panel Cel. fotovoltaicas 400w Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 % Datos eléctricos de CA - Modelo de inversor: IQ 7A A 230 V CA - Potencia máxima de salida 366 VA - Máx. potencia de salida continua 349 VA - Rango/Tensión nom. (LN) 219 264 V - Máx. corriente de salida continua 1,52 A - Máx. unidades por circuito derivado de 20 A (LN) 10 - Eficiencia ponderada 10 96,5 % - Frecuencia nominal 50 Hz - Rango de frecuencia ampliado 45-55 Hz - Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo Datos de alimentación de CC - Potencia nominal 11 (Pnom) 400 W - Tol. de potencia +5/0 % - Eficiencia del módulo 21,5 % - Coef. temp. (Potencia) -0,29 %/°C Datos mecánicos - Células solares 66 células monocristalinas Maxeon Generación 5 - Cristal frontal - Cristal templado antirreflejos de gran transmisividad - Clasificación ambiental Microinversor con clasificación para exteriores - IP67 - (UL: NEMA tipo 6) - Marco Anodizado negro de clase 1 Caja de conexiones: IP65. Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión . Unidad totalmente instalada y operativa	14,00	734,58	10.284,12
P5ELEF002	ud Regulador 12/24/48V 208V 15 Amp Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp. Unidad totalmente instalada y operativa	1,00	1.119,36	1.119,36
P5ELEF003	ud Baterías de gel 20OPZV2500 o similar Baterías de gel 20OPZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora. Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento. Unidad totalmente instalada y probada.	1,00	9.094,80	9.094,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEF004	ud Inversor-cargador 8.000w Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo electrógeno). Cumplirá: - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretemperatura en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. Características técnicas - Entrada DC o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal; 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. Unidad totalmente instalada y probada.	1,00	3.031,60	3.031,60
P5ELEF005	ud Convertidor CC/CC Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobrecalentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.	1,00	349,80	349,80
P5ELEF006	ud Estructura aluminio y hormigón soporte de placas fotovoltaicas Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.	14,00	338,14	4.733,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	105,00	8,25	866,25
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	1,00	98,29	98,29
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	6,00	12,58	75,48
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	1,00	69,95	69,95
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	1,00	232,13	232,13
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	20,00	10,99	219,80
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	40,00	5,78	231,20
TOTAL 03.09.01.02.....				30.503,90
03.09.01.03	CUADROS ELÉCTRICOS (TOMA-17)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3.3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano, lamas de ventilación cubiertas y resto de elementos. Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexión y funcionamiento. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECGBT17	ud CGBT Toma-17 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-17 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	10.132,99	10.132,99
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	5,00	101,69	508,45
TOTAL 03.09.01.03.....				26.188,42
03.09.01.04	CANALIZACIONES (TOMA-17)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	78,00	55,53	4.331,34
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	25,00	6,68	167,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	31,00	18,35	568,85
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	11,00	281,22	3.093,42
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	9,00	31,90	287,10
TOTAL 03.09.01.04.....				9.440,69
03.09.01.05	LÍNEAS DE BT (TOMA-17)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	943,00	6,26	5.903,18
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	50,00	6,78	339,00
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	245,00	6,59	1.614,55

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	40,00	11,30	452,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 03.09.01.05.....				9.073,86
03.09.01.06	TOMA TIERRA (TOMA-17)			
P5ELETRA4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	6,00	98,29	589,74
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	6,00	69,95	419,70
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	138,00	7,88	1.087,44
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	5,00	10,99	54,95
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 03.09.01.06.....				5.346,23

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.01.07	MECANISMOS (TOMA-17)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 03.09.01.07				381,92
03.09.01.08	ALUMBRADO (TOMA-17)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 03.09.01.08				1.191,29
TOTAL 03.09.01				97.497,57

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.02	TOMA-18 (FOTOV)			
03.09.02.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-18)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexiones, arranques y mantenimiento, posterior operación de desconexiones, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiones a trafo Operación de conexionado y desconexión de LMT.	1,00	365,62	365,62
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 03.09.02.01				15.371,26
03.09.02.02	FOTOVOLTAICA (TOMA-18)			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEF001	ud Panel Cel. fotovoltaicas 400w Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 % Datos eléctricos de CA - Modelo de inversor: IQ 7A A 230 V CA - Potencia máxima de salida 366 VA - Máx. potencia de salida continua 349 VA - Rango/Tensión nom. (LN) 219 264 V - Máx. corriente de salida continua 1,52 A - Máx. unidades por circuito derivado de 20 A (LN) 10 - Eficiencia ponderada 10 96,5 % - Frecuencia nominal 50 Hz - Rango de frecuencia ampliado 45-55 Hz - Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo Datos de alimentación de CC - Potencia nominal 11 (Pnom) 400 W - Tol. de potencia +5/0 % - Eficiencia del módulo 21,5 % - Coef. temp. (Potencia) -0,29 %/°C Datos mecánicos - Células solares 66 células monocristalinas Maxeon Generación 5 - Cristal frontal - Cristal templado antirreflejos de gran transmisividad - Clasificación ambiental Microinversor con clasificación para exteriores - IP67 (UL: NEMA tipo 6) - Marco Anodizado negro de clase 1 Caja de conexiones: IP65. Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión . Unidad totalmente instalada y operativa	14,00	734,58	10.284,12
P5ELEF002	ud Regulador 12/24/48V 208V 15 Amp Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp. Unidad totalmente instalada y operativa	1,00	1.119,36	1.119,36
P5ELEF003	ud Baterías de gel 200PZV2500 o similar Baterías de gel 200PZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora. Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento. Unidad totalmente instalada y probada.	1,00	9.094,80	9.094,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEF004	ud Inversor-cargador 8.000w Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo electrógeno). Cumplirá: - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretemperatura en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. Características técnicas - Entrada DC o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal; 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. Unidad totalmente instalada y probada.	1,00	3.031,60	3.031,60
P5ELEF005	ud Convertidor CC/CC Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobrecalentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.	1,00	349,80	349,80
P5ELEF006	ud Estructura aluminio y hormigón soporte de placas fotovoltaicas Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.	14,00	338,14	4.733,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	105,00	8,25	866,25
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	1,00	98,29	98,29
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	6,00	12,58	75,48
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	1,00	69,95	69,95
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	1,00	232,13	232,13
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	20,00	10,99	219,80
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	40,00	5,78	231,20
TOTAL 03.09.02.02.....				30.503,90
03.09.02.03	CUADROS ELÉCTRICOS (TOMA-18)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3.3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano, lamas de ventilación cubiertas y resto de elementos. Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECGBT18	ud CGBT Toma-18 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-18 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	8.491,34	8.491,34
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	4,00	101,69	406,76
TOTAL 03.09.02.03.....				24.445,08
03.09.02.04	CANALIZACIONES (TOMA-18)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	85,00	55,53	4.720,05
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	25,00	6,68	167,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	34,00	18,35	623,90
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	10,00	281,22	2.812,20
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	9,00	31,90	287,10
TOTAL 03.09.02.04.....				9.603,23
03.09.02.05	LÍNEAS DE BT (TOMA-18)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	938,00	6,26	5.871,88
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X4TT	m Manguera eléctrica 2 x 4 + TT4 mm2 Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	6,11	24,44
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	60,00	6,78	406,80
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	7,17	28,68
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	145,00	6,59	955,55
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	35,00	11,30	395,50
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 03.09.02.05.....				8.447,98
03.09.02.06	TOMA TIERRA (TOMA-18)			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	6,00	98,29	589,74
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	6,00	69,95	419,70
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	138,00	7,88	1.087,44
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	5,00	10,99	54,95
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 03.09.02.06.....				5.346,23

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.02.07	MECANISMOS (TOMA-18)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 03.09.02.07				381,92
03.09.02.08	ALUMBRADO (TOMA-18)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 03.09.02.08				1.191,29
TOTAL 03.09.02.....				95.290,89

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.03	TOMA-19 (FOTOV)			
03.09.03.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-19)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexiones, arranques y mantenimiento, posterior operación de desconexiones, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiones a trafo Operación de conexionado y desconexión de LMT.	1,00	365,62	365,62
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 03.09.03.01				15.371,26
03.09.03.02	FOTOVOLTAICA (TOMA-19)			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEF001	ud Panel Cel. fotovoltaicas 400w Células fotovoltaicas Maxeon 5AC (Sun power) O SIMILAR 240/250w células monocristalinas con las siguientes características: Potencia: 400 415 W EFICIENCIA: Hasta un 22,2 % Datos eléctricos de CA - Modelo de inversor: IQ 7A A 230 V CA - Potencia máxima de salida 366 VA - Máx. potencia de salida continua 349 VA - Rango/Tensión nom. (LN) 219 264 V - Máx. corriente de salida continua 1,52 A - Máx. unidades por circuito derivado de 20 A (LN) 10 - Eficiencia ponderada 10 96,5 % - Frecuencia nominal 50 Hz - Rango de frecuencia ampliado 45-55 Hz - Corriente de fallo de cortocircuito de CA durante 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo 3 ciclos 5,8 A rms - Puerto de CA de clase de sobretensión III - Corriente de retroalimentación del puerto de CA 18 mA - Ajuste del factor de potencia 1,0 - Factor de potencia (ajustable) 0,8 adelanto/0,8 retardo Datos de alimentación de CC - Potencia nominal 11 (Pnom) 400 W - Tol. de potencia +5/0 % - Eficiencia del módulo 21,5 % - Coef. temp. (Potencia) -0,29 %/°C Datos mecánicos - Células solares 66 células monocristalinas Maxeon Generación 5 - Cristal frontal - Cristal templado antirreflejos de gran transmisividad - Clasificación ambiental Microinversor con clasificación para exteriores - IP67 (UL: NEMA tipo 6) - Marco Anodizado negro de clase 1 Caja de conexiones: IP65. Marco de aluminio 15 micras resistente a la corrosión, resistente a cargas de viento y de nieve, con perforaciones para instalación, cableado de conexión . Unidad totalmente instalada y operativa	14,00	734,58	10.284,12
P5ELEF002	ud Regulador 12/24/48V 208V 15 Amp Regulador de instalación fotovoltaica de 12/24/36/48 Volt, 15/ Amp. Unidad totalmente instalada y operativa	1,00	1.119,36	1.119,36
P5ELEF003	ud Baterías de gel 200PZV2500 o similar Baterías de gel 200PZV2500 O SIMILAR (2.500 Ah) incluidos elementos de soporte, conectores, cubas, etc, para instalación normalizadas según legislación vigente. Las baterías han de ser capaces de suministrar suficiente intensidad en las puntas de consumo solicitadas por el inversor y dotar de una capacidad mínima de almacenamiento de 5 días con carga /descarga de un 15% por hora. Incorporará display, panel de control y comunicaciones con pantalla LCD que permita verificar su estado en todo momento. Unidad totalmente instalada y probada.	1,00	9.094,80	9.094,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEF004	ud Inversor-cargador 8.000w Inversor Cargador de 8.000w de onda senoidal pura, equipado con display, fusibles DC accesibles, sistemas de seguridad, apagado por cortocircuito, apagado por sobrecarga, apagado por calentamiento. El inversor fotovoltaico tendrá dos entradas de fuerza: una del regulador de placas (continua) y otra monofásica de la fuente de socorro (grupo electrógeno). Cumplirá: - Protecciones eléctricas integradas (fallos de frecuencia, cortocircuitos y sobrecargas a la salida, fallos de aislamiento y sobretensión en el equipo). - Cumplen con todos los requisitos de seguridad descritos en el RD 1699/143 y RD 661/2007. - En el caso de que la red de distribución se quede sin tensión la instalación fotovoltaica, y especialmente el inversor, no mantendrá la tensión en la línea de distribución (protección Anti-isla con desconexión automática) - Seccionador de potencia de corriente continua integrado. - Posibilidad de desconexión manual de la red. - Pantalla LCD en el frontal del equipo. - Grado de protección IP 65. - Comunicación. Características técnicas - Entrada DC o Rango de tensión: 240 a 800 Vcc o Máxima tensión: 1000 Vcc o Potencia máxima: 8.000 W o Máxima corriente en cada MPP: 33 A y 27A. o Número de entradas MPP: 2 o Número de conexiones de cada MPP: 3. o Seccionador de potencia de corriente continua integrado. - Salida (AC) o Potencia nominal: 8.000W. o Potencia máxima: 8.000 W. o Corriente máxima de salida: 20A. o Tensión, Frec. Nominal; 3 AC 400 V + N, 50Hz. o Coseno de Phi: 1 o THD<=2%. Unidad totalmente instalada y probada.	1,00	3.031,60	3.031,60
P5ELEF005	ud Convertidor CC/CC Convertidor CC/CC. Estabilidad de la tensión de salida 2% (12/24-10: + 0% / - 5%) Tolerancia de la tensión de salida 3% Nivel de ruido < 50mV rms Consumo en off < 25mA (convertidores aislados) Eficiencia No aislado: aprox. 92% Aislado: aprox. 85% Aislamiento > 400Vrms entre entrada, salida y carcasa (sólo productos aislados) Temperatura de funcionamiento - 20 a + 40°C (0 a 100°F). Reducción de corriente lineal hasta 0A a 70°C (160°F) Humedad relativa Máx. 95% sin condensación Carcasa Aluminio anodizado Conexiones Conectores a presión planos de 6,3mm (2,5 pulgadas). Protección: Sobre corriente Sobrecalentamiento Conexión con polaridad inversa Sobretensión A prueba de cortocircuitos Reducción de la tensión de salida Fusible y diodo con conexión invertida a través de la entrada Varistor (también protege contra descargas) Unidad totalmente instalada y probada.	1,00	349,80	349,80
P5ELEF006	ud Estructura aluminio y hormigón soporte de placas fotovoltaicas Estructura de aluminio y hormigón (de tipo lastre) para soporte de placas fotovoltaicas (8 Ud), incluido anclajes, soportes, presillas, tornillería de acero inoxidable y medios necesarios para su instalación completa incluidos contrapesos. Unidad totalmente instalada y probada.	14,00	338,14	4.733,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	105,00	8,25	866,25
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	1,00	98,29	98,29
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	6,00	12,58	75,48
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	1,00	69,95	69,95
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	1,00	232,13	232,13
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	20,00	10,99	219,80
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	40,00	5,78	231,20
TOTAL 03.09.03.02.....				30.503,90
03.09.03.03	CUADROS ELÉCTRICOS (TOMA-19)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3.3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano, lamas de ventilación cubiertas y resto de elementos. Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECGBT19	ud CGBT Toma-19 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-19 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	8.491,34	8.491,34
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	4,00	101,69	406,76
TOTAL 03.09.03.03.....				24.445,08
03.09.03.04	CANALIZACIONES (TOMA-19)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	58,00	55,53	3.220,74
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	25,00	6,68	167,00
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	27,00	18,35	495,45
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	10,00	281,22	2.812,20
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	7,00	31,90	223,30
TOTAL 03.09.03.04.....				7.911,67
03.09.03.05	LÍNEAS DE BT (TOMA-19)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	938,00	6,26	5.871,88
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X4TT	m Manguera eléctrica 2 x 4 + TT4 mm2 Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	6,11	24,44
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	60,00	6,78	406,80
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	7,17	28,68
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	145,00	6,59	955,55
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	35,00	11,30	395,50
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 03.09.03.05.....				8.447,98
03.09.03.06	TOMA TIERRA (TOMA-19)			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	6,00	98,29	589,74
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	6,00	69,95	419,70
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	138,00	7,88	1.087,44
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	5,00	10,99	54,95
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 03.09.03.06.....				5.346,23

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.03.07	MECANISMOS (TOMA-19)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 03.09.03.07				381,92
03.09.03.08	ALUMBRADO (TOMA-19)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 03.09.03.08				1.191,29
TOTAL 03.09.03.....				93.599,33

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.04	TOMA-20+EPC			
03.09.04.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-20)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62
P5ELEC1M1T20	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-20 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-20	1,00	18.589,75	18.589,75
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 03.09.04.01				37.005,21
03.09.04.02	LÍNEA DE MEDIA TENSIÓN (TOMA-20)			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	26,40	8,23	217,27
TOTAL 03.09.04.02.....				6.269,95
03.09.04.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-20)			
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 03.09.04.03.....				9.684,05
03.09.04.04	CUADROS ELÉCTRICOS (TOMA-20)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano, lamas de ventilación cubiertas y resto de elementos. Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm ² ., 1 bloque de bornas de 2,5 mm ² . y 1 bloque de bornas de 25 mm ² . para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm ² . para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm ² . para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexiónado.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50
P5ELEGBT20	ud CGBT Toma-20 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-20 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexiónado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantera, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	8.491,34	8.491,34
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC.p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	3,00	101,69	305,07
TOTAL 03.09.04.04.....				24.343,39
03.09.04.05	CANALIZACIONES (TOMA-20)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexiónado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexiónado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	63,00	55,53	3.498,39

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	6,00	68,11	408,66
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, Acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	105,00	45,45	4.772,25
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	15,00	6,68	100,20
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	24,00	18,35	440,40
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	10,00	281,22	2.812,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ARQPPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	5,00	264,89	1.324,45
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	1,00	20,25	20,25
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	1,00	30,86	30,86
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	7,00	31,90	223,30
TOTAL 03.09.04.05.....				14.623,94
03.09.04.06	LÍNEAS DE BT (TOMA-20)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	938,00	6,26	5.871,88
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X4TT	m Manguera eléctrica 2 x 4 + TT4 mm2 Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	6,11	24,44
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	65,00	6,78	440,70
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	7,17	28,68
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	120,00	6,59	790,80
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	35,00	11,30	395,50
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 03.09.04.06.....				8.317,13
03.09.04.07	TOMA TIERRA (TOMA-20)			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	5,00	98,29	491,45
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	5,00	69,95	349,75
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	144,00	7,88	1.134,72
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada	5,00	7,08	35,40
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	5,00	10,99	54,95
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm ² * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 03.09.04.07				5.260,67
03.09.04.08	MECANISMOS (TOMA-20)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 03.09.04.08				381,92
03.09.04.09	ALUMBRADO (TOMA-20)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 03.09.04.09.....				1.191,29
TOTAL 03.09.04.....				107.077,55
03.09.05	TOMA-21			
03.09.05.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-21)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62
P5ELEC1M1T21	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-21 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma -21.	1,00	14.993,70	14.993,70
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 03.09.05.01.....				33.409,16
03.09.05.02	LÍNEA DE MEDIA TENSIÓN (TOMA-21)			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	7,00	4.165,13	29.155,91
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	1.079,60	8,23	8.885,11
TOTAL 03.09.05.02.....				44.093,70
03.09.05.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-21)			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de canon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 03.09.05.03.....				9.684,05
03.09.05.04	CUADROS ELÉCTRICOS (TOMA-21)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELECGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexión y funcionamiento. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECGBT21	ud CGBT Toma-21 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-21 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interrupor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	8.491,34	8.491,34
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	3,00	101,69	305,07
TOTAL 03.09.05.04.....				24.343,39
03.09.05.05	CANALIZACIONES (TOMA-21)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	63,00	55,53	3.498,39
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	6,00	68,11	408,66
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	105,00	45,45	4.772,25
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	15,00	6,68	100,20
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	24,00	18,35	440,40
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	10,00	281,22	2.812,20
P5ARQPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	5,00	264,89	1.324,45
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	1,00	20,25	20,25
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	1,00	30,86	30,86
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	7,00	31,90	223,30
TOTAL 03.09.05.05.....				14.623,94

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.05.06	LÍNEAS DE BT (TOMA-21)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	938,00	6,26	5.871,88
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X4TT	m Manguera eléctrica 2 x 4 + TT4 mm2 Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	6,11	24,44
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	60,00	6,78	406,80
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	7,17	28,68
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	120,00	6,59	790,80
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	35,00	11,30	395,50
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 03.09.05.06.....				8.283,23

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.05.07	TOMA TIERRA (TOMA-21)			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	5,00	98,29	491,45
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	5,00	69,95	349,75
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	92,00	7,88	724,96
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada	5,00	7,08	35,40
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	5,00	10,99	54,95
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 03.09.05.07				4.850,91
03.09.05.08	MECANISMOS (TOMA-21)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 03.09.05.08.....				381,92
03.09.05.09	ALUMBRADO (TOMA-21)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 03.09.05.09.....				1.191,29
TOTAL 03.09.05.....				140.861,59
03.09.06	TOMA-16+EPC			
03.09.06.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-16)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	l Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEC10003	ud Operación de conexionado y desconexión a trafo Operación de conexionado y desconexión de LMT.	1,00	365,62	365,62
P5ELEC1M1T16	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-16 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma-16.	1,00	22.996,44	22.996,44
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 03.09.06.01				41.411,90

03.09.06.02 LÍNEA DE MEDIA TENSIÓN (TOMA-16)

P5ELEC1M2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68
------------	--	------	----------	----------

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	32,00	4.165,13	133.284,16
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolidión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	7.224,10	8,23	59.454,34
TOTAL 03.09.06.02.....				198.791,18
03.09.06.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-16)			
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 03.09.06.03.....				9.684,05
03.09.06.04	CUADROS ELÉCTRICOS (TOMA-16)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4,88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano, lamas de ventilación cubiertas y resto de elementos. Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm ² ., 1 bloque de bornas de 2,5 mm ² . y 1 bloque de bornas de 25 mm ² . para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm ² . para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm ² . para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexiónado.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50
P5ELEGBT16	ud CGBT Toma-16 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-14/15 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexiónado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsanería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	8.491,34	8.491,34
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC.p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	3,00	101,69	305,07
TOTAL 03.09.06.04.....				24.343,39
03.09.06.05	CANALIZACIONES (TOMA-16)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexiónado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexiónado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	33,00	55,53	1.832,49

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	18,00	68,11	1.225,98
P5ELE110X2H	m Can. horm. PVC 110 mm x2 (calzadas) 0.4x1.0m (Zanja tipo7B) Canalización hormigonada de 2x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	45,00	45,45	2.045,25
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	15,00	6,68	100,20
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	24,00	18,35	440,40
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	8,00	281,22	2.249,76

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ARQPPREF2.A1	ud Arqueta BT prefabricada inst. elect. A1 (90X81) con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-1 de 90,5x81,5 cm de medidas interiores y 62,5x53,5 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapa de fundición dúctil, de 72x62x8 cm, para arqueta de conexión eléctrica tipo A-1, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	3,00	264,89	794,67
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	1,00	20,25	20,25
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	1,00	30,86	30,86
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	7,00	31,90	223,30
TOTAL 03.09.06.05.....				9.956,14
03.09.06.06	LÍNEAS DE BT (TOMA-16)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	938,00	6,26	5.871,88
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X4TT	m Manguera eléctrica 2 x 4 + TT4 mm2 Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	6,11	24,44
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	65,00	6,78	440,70
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	7,17	28,68
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	120,00	6,59	790,80
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	35,00	11,30	395,50
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 03.09.06.06.....				8.317,13
03.09.06.07	TOMA TIERRA (TOMA-16)			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	5,00	98,29	491,45
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	5,00	69,95	349,75
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	114,00	7,88	898,32
P5ELETT5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada	5,00	7,08	35,40
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	5,00	10,99	54,95
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm ² * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 03.09.06.07				5.024,27
03.09.06.08	MECANISMOS (TOMA-16)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 03.09.06.08				381,92
03.09.06.09	ALUMBRADO (TOMA-16)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 03.09.06.09.....				1.191,29
TOTAL 03.09.06.....				299.101,27
03.09.07	TOMA-14/15			
03.09.07.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-14/15)			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62
P5ELEC1M1T21	ud Conex. LMTS+ refuerzos+adaptación línea TOMA-21 Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Toma -21.	1,00	14.993,70	14.993,70
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	1,00	3.044,20	3.044,20
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 03.09.07.01.....				33.409,16
03.09.07.02	LÍNEA DE MEDIA TENSIÓN (TOMA-14/15)			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	8,00	4.165,13	33.321,04
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticolisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	1.085,11	8,23	8.930,46
TOTAL 03.09.07.02.....				48.304,18
03.09.07.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-14/15)			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg -Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 03.09.07.03.....				9.684,05
03.09.07.04	CUADROS ELÉCTRICOS (TOMA-14/15)			
P5ELECAS01A	ud Caseta pref. modular (3,1X4,75X3.3m) Caseta modular prefabricada normalizada de dimensión mínima interior de 2.74m ancho x 4.88m largo y 3,3m alto exterior con compartimento para tendido de mangueras eléctricas, zocalo de apoyo de cuadros, puertas de acceso de dimensión especificadas en plano , lamas de ventilación cubiertas y resto de elementos . Unidad totalmente instalada.	1,00	7.519,40	7.519,40
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEGGBT14	ud CGBT Toma-14/15 incl. cabina y aparamenta Suministro y montaje de módulo de alimentación, control y protección de Toma-14/15 en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD, Pulsantería, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	8.491,34	8.491,34
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	3,00	101,69	305,07
TOTAL 03.09.07.04.....				24.343,39
03.09.07.05	CANALIZACIONES (TOMA-14/15)			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	3,00	74,49	223,47
P5ELE160X2HT1	m Can. horm. PVC160x2 +3x63mm (aceras+r) 0.6x1.0m (Zanja tipo-4a) Canalización hormigonada en aceras y zonas rústicas 2x160mm PVC normalizado instalación eléctrica instalación eléctrica,y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho y 1.0 m. de profundidad mínima, acopio de material o carga, prisma de hormigón HM20 (0.6x0.4m), relleno con suelo seleccionado procedentes de prestamos compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	55,00	55,53	3.054,15
P5ELE160X4HT2	m Can. horm. PVC160x4 +3x63mm (calzada) 0.6x1.3m (zanja 6b) Canalización tipo-2 hormigonada bajo calzada de 4x160mm PVC normalizado instalación eléctrica y tritubo 3x63 mm de polietileno para comunicaciones en cualquier tipo de terreno, , incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 m. de ancho por 1,3 m. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 hasta calzada, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	6,00	68,11	408,66
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	3,00	5,78	17,34
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	15,00	6,68	100,20
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelle, taladros. Unidad totalmente instalada.	24,00	18,35	440,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	35,00	8,87	310,45
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,35	3,38
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	2,50	1,62	4,05
P5ELE160PVC	m Tubo PVC 160 mm liso adosado o embebido Canalización de tubo de PVC liso D= 160 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	4,00	6,30	25,20
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	11,00	281,22	3.093,42
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñido interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	1,00	87,49	87,49
P5ELECAJA3	ud Cajas de distribución 125 x 125 x 75 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 125 x 125 x 75 mm.	1,00	20,25	20,25
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	1,00	30,86	30,86
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	7,00	31,90	223,30
TOTAL 03.09.07.05.....				8.364,22
03.09.07.06	LÍNEAS DE BT (TOMA-14/15)			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	938,00	6,26	5.871,88
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM2X4TT	m Manguera eléctrica 2 x 4 + TT4 mm2 Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	6,11	24,44
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	60,00	6,78	406,80
P5ELEM2X4T2	m Manguera eléctrica 2 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 4+TT4 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	4,00	7,17	28,68
P5ELEM2X6T2	m Manguera eléctrica 2 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 6 mm2 más conductor de tierra misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	8,25	41,25
P5ELEM3X6TT	m Manguera eléctrica 3 x 6 + TT mm2 Manguera eléctrica de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	3,00	6,05	18,15
P5ELEM4X2.5TT	m Manguera eléctrica 4 x 2.5 + TT2.5 mm2 Cu Manguera eléctrica de 4 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	145,00	6,59	955,55
P5ELEM4X6T2	m Manguera eléctrica 4 x 6 + TT 6mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	35,00	11,46	401,10
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 03.09.07.06.....				8.453,58
03.09.07.07	TOMA TIERRA (TOMA-14/15)			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	5,00	98,29	491,45
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	8,00	12,58	100,64
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	5,00	69,95	349,75

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELET9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELET4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	134,00	7,88	1.055,92
P5ELET5A	m Cab. cobre des. 1x35 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x35 mm2, en tubería 25 mm PVC. Unidad totalmente instalada	5,00	7,08	35,40
P5ELET5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	5,00	10,99	54,95
P5ELECT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 03.09.07.07				5.181,87
03.09.07.08	MECANISMOS (TOMA-14/15)			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	13,14	13,14
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	10,29	10,29
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	144,43	144,43
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 03.09.07.08.....				381,92

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.09.07.09	ALUMBRADO (TOMA-14/15)			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65 Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	180,71	722,84
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	2,00	65,09	130,18
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
TOTAL 03.09.07.09.....				1.191,29
TOTAL 03.09.07.....				139.313,66
TOTAL 03.09.....				972.741,86
03.10	CONTROL Y AUTOMATISMO (DC-T21 y DC-T14/15)			
03.10.01	INGENIERÍA Y FORMACIÓN (DC-T21 y DC-T14/15)			
P7ING003	ud Ingeniería PLC's y comunicaciones (DC-T21 y DC-T14/15) Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	1,00	9.547,63	9.547,63
P73COMSCADA3	ud Ingeniería adecuación SCADA, control y supervisión (DC-T21/T14 Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	1,00	6.640,19	6.640,19

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P73COMPUESTA3	ud Pruebas y puesta en marcha de instalaciones Balsa Tudela	1,00	4.879,90	4.879,90
	Control de Calidad de señales y Pruebas Funcionales de la instalación de la Balsa Tudela incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.			
P73COMFORMA	ud Formación y documentación	1,00	1.829,96	1.829,96
	Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la ·1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.			
TOTAL 03.10.01.....				22.897,68
03.10.02	SISTEMA DE CONTROL Y COMUNICACIONES (DC-T21 y DC-T14/15)			
P7COMARM01	ud Armario de control 2000 x 800 x 600mm	7,00	3.286,67	23.006,69
	Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de autómatas y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de calefacción y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc., incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexionados y probados.			
P7COMNODO1	ud Nodo comunicaciones GSM/GPRS G3-5. incl.cuadro protec.	7,00	3.812,76	26.689,32
	Ud Suministro e instalación equipo de comunicaciones bidireccional compuesto de alimentación autónomo de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y modem de comunicaciones, armario IP65, armario mural de 19", 12 U y 600 mm de profundidad. , RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C), 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°C A 80°C contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica), electrificación cuadro (magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMNODO2	ud Nodo comunicaciones radiofrecuencia. incl.cuadro protec. Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio modem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.	7,00	2.877,15	20.140,05
P7COMP005	ud Bastidor Automata Suministro de bastidor para autómata de 10 slots, tipo 1756-A10 de Allen Bradley o similar.	7,00	349,15	2.444,05
P7COMPLC02	ud PLC proglamable integrable (ED:128 SD:32 EA:16 SA:8) PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje	3,00	4.787,50	14.362,50
P7COMPLCT12	ud PLC proglamable integrable (ED:96 SD:32; EA:8 SA:8) PLC centralizador de todos los sistemas (ED:96 SD:32; EA:8 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.	4,00	4.465,68	17.862,72
P7COMP011	ud Módulos conexión cableado E/D (IB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según referencias (V8 INPUT PLC V8/FLK14/IN - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	24,00	634,34	15.224,16
P7COMP012	ud Módulos conexión cableado S/D (OB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, según referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	7,00	710,76	4.975,32
P7COMP013	ud Módulos conexión cableado E/A (IF16) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC - FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	7,00	500,04	3.500,28
P7COMP014	ud Módulos conexión cableado S/A (OF8) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC - FLK14/EZ-DR/300/CONFEC (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	7,00	469,47	3.286,29
P7COMPLC1C	ud Pantallas gráficas HMI 15" táctil+cableado conex. Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado numérico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instalación y conexionado de unidad; Configuración Remota, Pruebas y Puesta en Servicio.	7,00	432,03	3.024,21

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMPLC1B	ud Cuadro, protecciones electricas y pantalla PLC Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión.	7,00	2.723,65	19.065,55
P7COMP001	ud Protección contra sobretensiones equipos 230 Vca Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.	7,00	142,84	999,88
P7COMP002	ud Protección contra sobretensiones analógicas Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); dobles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.	7,00	359,24	2.514,68
P7COMP003	ud Protección contra sobretensiones 24Vcc Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&-TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.	7,00	283,97	1.987,79
P7COMP006	ud Fuente de alimentación automática 24 Vcc 10 A Suministro e instalación de fuente de alimentación para automático programable para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar	7,00	346,21	2.423,47
P71COMSAH11	ud Sistema alimentación ininterrumpido-com 24 VDC Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.	7,00	484,78	3.393,46
P71COMSAH12	ud Sistema alimentación ininterrumpido 2500w Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y bypass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación: 1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min 1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para bypass manual del SAI 1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos 1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI 1.00 Protección Magnetotérmica II 10A 6kA. Protección foma de enchufe e instrumentación 4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación. Totalmente instalado, conexionado y funcionando. Unidad totalmente instalada	7,00	1.790,50	12.533,50
P7COMP004	ud CPU automática L72 memoria 4 Mb con memoria SD Suministro e instalación de CPU para automático programable con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 611131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.	7,00	4.582,20	32.075,40
P7COMP015	ud Tarjeta comunicaciones Ethernet/IP Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.	7,00	1.327,37	9.291,59
P7COMP016	ud Tarjeta Ethernet/IP 2-PORT CLX HI-CAP ENET/P BRIDG o similar Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.	7,00	1.774,82	12.423,74

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMP017	ud Tarjeta comunicaciones Modbus Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.	7,00	1.869,68	13.087,76
P7COMP018	ud Pasarela comunicaciones POWELOGIC EGX 100 o similar Suministro y montaje de pasarela de comunicaciones POWERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexionada.	7,00	601,31	4.209,17
P7COMP022	ud Puente de diodos Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.	7,00	149,06	1.043,42
TOTAL 03.10.02.....				249.565,00
03.10.03	INSTRUMENTACIÓN (DC-T21 y DC-T14/15)			
P6VALV1	ud Valv bola y conexionados Válvulas de tipo bola de 1", piezas T y conexiones, totalmente instalado y probado.	7,00	45,00	315,00
P6SENS01	ud Sensor humedad e inundación caseta Suministro, instalación y puesta en servicio de sensor de humedad e inundación, alimentación eléctrica a 24Vcc, incluso 15 m de tubo PVC y cable de conexión, totalmente instalado y probado.	7,00	390,26	2.731,82
P6MAN01	ud Manómetro en baño de glicerina Suministro, instalación y puesta en servicio de manómetro en baño de glicerina, escala 0-6 y 0-10 kg/cm2, sistema de medida Bourdon, diámetro 100 mm 1/2" montado y probado .	17,00	70,08	1.191,36
P6PRES01	ud Transductor presión 0,1 % Analógico Suministro, instalación y puesta en servicio de Transductor de presión con salida analógica, alimentación eléctrica a 24Vcc, con técnica de 2 ó 4 hilos, con precisión mejor del 0,1%, IP 67, indicación digital de medida en frontal del equipo, señal de salida 4-20 mA, totalmente instalado y probado.	34,00	385,59	13.110,06
P6Q700.16	ud Caudalímetro ultrasónico PN 16 Ø700 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 700 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	1,00	5.061,30	5.061,30
P6Q800.16	ud Caudalímetro ultrasónico PN 16 Ø800 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 800 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	1,00	5.180,53	5.180,53
P6Q900.16	ud Caudalímetro ultrasónico PN 16 Ø900 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 900 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	1,00	6.163,15	6.163,15
P6Q1100.16	ud Caudalímetro ultrasónico PN 16 Ø1100 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.100 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	3,00	7.441,86	22.325,58

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6Q1300.16	ud Caudalímetro ultrasónico PN 16 Ø1300 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos haces, sobre tubería DN 1.300 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, sondas, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certificados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio.	2,00	11.443,09	22.886,18
TOTAL 03.10.03.....				78.964,98
03.10.04	CANALIZACIÓN Y CABLEADOS (DC-T21 y DC-T14/15)			
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antiroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.	14,00	14,87	208,18
P7COMCABL2	m Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (Rj45), tendido y conectorizado. Unidad totalmente instalada.	35,00	3,34	116,90
P5COMCBL001A	m Cable multihilo coms. VHOV-K y VOV-K apantall.8x0,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	1.400,00	3,53	4.942,00
P5COMCBL001B	m Cable multihilo com. VHOV-K y VOV-K apantall. 8x1,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	140,00	4,44	621,60
P5COMCBL001C	m Cable multihilo comunicaciones señales digitales interior 19p Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.	1.262,00	11,25	14.197,50
P5COMCBL001D	m Cable multihilo comunicaciones señales analógica interior 19p Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.	1.900,00	11,54	21.926,00
P5COMCBL004	m Cable comunicaciones RS232 Cable comunicaciones RS232. Unidad totalmente instalada.	140,00	5,85	819,00
P5COMCBL005	m Cable comunicaciones RS485 multipar Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.	140,00	5,91	827,40
P5COMCBL007	m Cable comunicaciones RJ45 Cable comunicaciones RS45 .Unidad totalmente instalada.	140,00	4,96	694,40
P5COMCBL006	m Cable profibus Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.	140,00	7,48	1.047,20
P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, con gestión comunic Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100BAsE-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.	7,00	2.387,34	16.711,38
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	34,00	5,36	182,24
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	48,00	6,68	320,64
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	175,00	18,35	3.211,25
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	140,00	8,87	1.241,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE25PVC	m Tubo. electricidad Polímero term libre de halógenos ríg M25 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	21,00	1,62	34,02
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	56,00	1,62	90,72
P5ELE50PVC	m tubo. electricidad Polímero term libre de halógenos ríg M50 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	21,00	1,93	40,53
P5ELE75PVC	m Tubo PVC 75 mm liso adosado o embebido Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	7,00	3,94	27,58
P5ELECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	65,00	30,86	2.005,90
TOTAL 03.10.04.....				69.266,24
03.10.05	INTRUSISMO (DC-T21 y DC-T14/15)			
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antirroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometría, Unidad totalmente instalada.	210,00	14,87	3.122,70
P7COMSEG1	ud Sistema de Alarma-Intrusionismo Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS, incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expansor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.	7,00	3.477,60	24.343,20
P7COMCCTV6	m Inst. +Cable RG59 + tubo PVC32+cajasc/50m CCTV Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2, repetidor de señal cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexionado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.	35,00	8,11	283,85
P7COMCABL1B	m Cable de fibra óptica 8F+fusiones+cajas Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua, elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antirroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro. Según EN 60794. Incluidas cajas de empalme para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.	210,00	13,26	2.784,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMCCTV5	ud Cámara visión nocturna IP-66+carcasa+columna y cimentación CCTV Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcasas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenes de máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Vídeo, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0 Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad: Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.	7,00	727,59	5.093,13
P7COMCCTV9	ud Switch 3 puertos RJ45 para video IP y cámaras Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30. Switch gestionable para la red de video y seguridad de diversos elementos.	7,00	574,07	4.018,49
P7COMCCTV12	ud Columna 8m+ soporte CCTV Ud. báculo de 8 m. de altura troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; anclaje a dado de hormigón, puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión, tubo de unión, incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3, operaciones de excavación y rellenos.	7,00	741,92	5.193,44
P7COMCCTV1	Ud Hardware de control CCTV Hardware para gestión y control de CCTV en centro de control compuesto por: Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 píxeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.	1,00	800,66	800,66
P7COMCCTV2	ud Software gestión CCTV intrusivo Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player," "Site builder", e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCADA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.	1,00	4.629,50	4.629,50
P7COMCCTV3	ud Sistema de instalación configuración in situ videocam seguridad Servicios de instalación, configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores).	1,00	791,24	791,24
P7COMCCTV4	ud Servidor CCTV Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8 TeraBytes. Unidad totalmente instalada y probada.	1,00	2.982,72	2.982,72
P7COMCCTV8	ud Formación y manuales sistema CCTV Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias.	1,00	787,10	787,10
TOTAL 03.10.05.....				54.830,63
TOTAL 03.10				475.524,53

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.11	SERVICIOS AFECTADOS (DC-T21 y DC-T14/15)			
03.11.01	R.S.PAVIMENTOS (DC-T21/T14-15)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	18,30	52,84	966,97
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa	92,64	16,48	1.526,71
P1MT06C	m² Demolición pavimento hormigón o acerado 40 cm espesor+tte+canon Demolición de pavimento hidráulico de hormigón, base de hormigón o acerado hasta 40 cm de espesor, con corte de junta con hilo diamante o radial, retirada de bordillos y elementos lineales, i retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	790,00	7,43	5.869,70
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	7,50	2,77	20,78
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	96,00	4,11	394,56
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	72,00	21,35	1.537,20
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y perfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	5,00	63,27	316,35
P5PAVFRES	m²cmFresado pavimentos+trabajos preparatorios Metro cuadrado por centímetro de espesor, de fresado de pavimento asfáltico con máquina fresadora o levantapavimentos, incluso precorte previo y carga de productos y limpieza, así como trabajos preparatorios para extendido de MB, incluido transporte a vertedero autorizado y canon de vertido.	1.120,00	0,71	795,20
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	772,00	6,51	5.025,72
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	824,00	6,87	5.660,88

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	261,60	20,14	5.268,62
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	162,00	59,75	9.679,50
P5BORD2	m Bordillo granito 15x25x120 cm Bordillo de granito gris (similar al existente en caso de reposición) de dimensiones 15x25x120 cms., asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	30,00	34,26	1.027,80
P6SÑL-001	ud Desmontaje y reposición de señal con poste nuevo+placa Desmontaje, carga y transporte a acopio y posterior reposición de señal de señalización vertical de cualquier sección (circular, triangular, ...) con aprovechamiento completo de la misma y aporte de nuevo poste galvanizado de sustentación normalizada y placa de anclaje o cimentación, totalmente colocada.	7,00	64,56	451,92
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	430,00	1,46	627,80
TOTAL 03.11.01.....				39.169,71
03.11.02	R.S. CAMINOS (DC-T21/T14-15)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	136,40	52,84	7.207,38
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	1,50	34,25	51,38
P1MT08BASEZA2	m² Escarificado camino +30%Zahorra artificial 95%PM Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.	8.559,50	2,79	23.881,01
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	2.355,80	20,14	47.445,81
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	1.575,00	4,11	6.473,25
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	117,00	63,27	7.402,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	17,00	122,70	2.085,90
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	749,60	2,77	2.076,39
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	6,80	16,29	110,77
P1MT04A	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	285,46	6,58	1.878,33
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	180,00	1,78	320,40
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	4,80	49,22	236,26
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	24,00	91,99	2.207,76
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	2.040,00	1,35	2.754,00
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	80,00	26,85	2.148,00
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	8,00	16,26	130,08
TOTAL 03.11.02.....				106.409,31

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.11.03	R.S. ABASTECIMIENTO (DC-T21/T14-15)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1,00	269,01	269,01
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	1,00	977,21	977,21
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.	1,00	1.225,40	1.225,40
P4RSS1B	m Dem, desmont y retirada tubería DN =<1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento y/o saneamiento o pluviales de DN =<1000mm, incluyendo operaciones asociadas a la demolición , carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	60,00	13,33	799,80
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	144,00	2,77	398,88
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	14,40	16,29	234,58
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	50,40	3,89	196,06
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	79,20	2,16	171,07
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	60,00	0,32	19,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TUB.FD.200A	m Tubería de FD DN 200 C40+pp piezas+J. Flex Tubería de fundición dúctil de diámetro nominal 200 mm con junta flexible automática, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones, tes, reductoras, conos,...), carga, transporte y distribución en obra, instalación en zanja y pruebas según pliego. Unidad totalmente terminada.	60,00	35,96	2.157,60
TOTAL 03.11.03.....				6.448,81
03.11.04	R.S. RED RIEGO (DC-T21/T14-15)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	4,00	269,01	1.076,04
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	3,00	977,21	2.931,63
P4RSV1B	ud Sostenimiento cruce serv. grandes: LMT y tub.DN>500 y/o LMT sub Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente (conducción DN>500 mm, prismas de MT, ...), consistente en labores de localización mediante gravimetría y cala con excavación manual y/o mecánica a su alrededor, macizado de hormigón HM-20 y operaciones de sostenimiento con vigas y perfiles laminados, excavación en mina para paso de las conducciones bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	1,00	3.828,30	3.828,30
P4RSV2	ud Corte programado servicio aguas Corte programa del servicio de agua para conexión con red existente, consistente en las gestiones con la empresa concesionaria de aguas, localización de tubería, corte del suministro, pago de tasas e indemnizaciones, bypass durante la ejecución del mismo (si procede) y agotamiento de agua.	4,00	1.225,40	4.901,60
P4RSACEQ01	m Reposición acequia+excav+rellenos Reposición de acequia de riego prefabricada o ejecutada in situ de sección trapezoidal variable junta machiembreada, incluidas juntas polobreal o similar ejecutada sobre base rasanteada y solera de hormigón nivelado, incluidas operaciones de excavación y relleno localizado, incl. bypass durante la ejecución de las obras (si fuera necesario) para mantenimiento de servicio. Unidad totalmente instalada.	235,00	45,86	10.777,10
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1.5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.	160,00	6,22	995,20
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	10,00	63,27	632,70

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4RSSFIBC1	m Demolición y gest. residuos conduc. fibrocemento DN<1200 Demolición y gestión de residuos de conducciones de fibrocemento de DN<1200mm, desmontaje manual por personal especializado y medios auxiliares necesarios, paletizado, flejado y etiquetado a pie de obra, carga, transporte y gestión de residuos a cargo de empresa registrada R.E.R.A., incluso redacción de plan de trabajo y unidad de descontaminación, carga y transporte a vertedero, canon de vertido, tratamiento si procede de aspiración con filtros adecuados y pulverización con líquido encapsulante adecuado, según mediciones exigidas por ley, transporte autorizado, desplazamiento de equipos de desamiantado con esclusas de descontaminación en los compartimentos que sean necesarios, equipos de protección EPI's P3, coordinado con el al Plan de Seguridad y Salud. Unidad completa incluso colocación de bridas ciegas en T.	165,00	53,83	8.881,95
P4RSS1C	m Dem, desmont y retirada tubería DN >1000 Localización, demolición, desmontaje programado y retirada de tubería de abastecimiento/riego y/o saneamiento/ pluviales de DN >1000mm, incluyendo operaciones asociadas a la demolición, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	30,00	18,39	551,70
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	46,75	52,84	2.470,27
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	858,00	2,77	2.376,66
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	55,00	1,78	97,90
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena sílicea para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	50,10	16,29	816,13
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	208,35	3,89	810,48
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	242,55	2,16	523,91
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	195,00	0,32	62,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ARQPREF1	ud Arqueta prefabricada 1.0x1.0x2,5+ tapa FD+pates+rellenos Arqueta prefabricada de hormigón armado de dimensiones 1,0x1,0m y altura de de 1,5-2,5m, compuesta por módulos de 1.0x1.0x1.0 y piezas especiales , pieza tapa con apertura DN600 mm, huecos preformados para conexión de tuberías de diámetro múltiple apoyada sobre fondo de caja excavado y compactado, ejecución de 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y precerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado. Unidad totalmente colocada.	1,00	754,16	754,16
P6PM250INX	ud Carrete pasamuros 250mm AISI 316 brida-brida Carrete pasamuros con placa de estanqueidad, extremos brida - brida de acero inoxidable de 250 mm de diámetro.	2,00	217,13	434,26
P6VENT.080.16	ud Ventosa trifuncional DN80 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 80 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	1,00	397,39	397,39
TUB.FD.200A	m Tubería de FD DN 200 C40+pp piezas+J. Flex Tubería de fundicion ductil de diametro nominal 200 mm con junta flexible automatica, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de cinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribucion en obra, instalacion en zanja y pruebas segun pliego. unidad totalmente terminada.	110,00	35,96	3.955,60
TUB.FD.250A	m Tubería de FD DN250 C40+pp piezas+J. Flex Tubería de fundicion ductil de diametro nominal 250 mm con junta flexible automatica, clase C40, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN-545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribucion en obra, instalacion en zanja y pruebas segun pliego. unidad totalmente terminada.	30,00	66,97	2.009,10
TUB.FD.600A	m Tubería de FD DN600 C30+pp piezas+J. Flex Tubería de fundicion ductil de diametro nominal 600 mm con junta flexible automatica, clase C30, el revestimiento interior es de mortero de cemento, con recubrimiento exterior a base de capa de zinc y aluminio metálico acabado mediante pintura epoxi según norma EN 545, y especificaciones s/ PPTP. Incluyendo el material, codos, piezas especiales, (uniones , tes, reductoras, conos,...),carga, transporte y distribucion en obra, instalacion en zanja y pruebas segun pliego. unidad totalmente terminada.	55,00	239,72	13.184,60
TOTAL 03.11.04.....				62.469,08
03.11.05	R.S. DRENAJE Y ARROYOS (DC-T21/T14-15)			
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	36,00	52,84	1.902,24
P1MT06B	m³ Demolición muro en masa o mamposteria+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	1,50	34,25	51,38
P3CUN-002	m Cuneta o azarbe de tierras secc. trapezoidal var. 0.5-1.2x1.5 Reposición de azarbe o cuneta trapezoidal de sección variable similar a existente con base de 0.5-1.2m de ancho y altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, incluyendo excavación en cualquier tipo de terreno, aplicación puntual de martillo, carga y transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas/azarbes existentes y red de drenaje existente. Unidad totalmente terminada.	5.577,00	6,22	34.688,94

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	67,50	20,14	1.359,45
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizadora de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5, incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.	5,00	48,13	240,65
P3SCDN500	m Salvacuneta dn=500 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 500 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.5 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja de 0.8 m de ancho de base, taludes 1H/3V hasta una altura de 1.5m, transporte a vertedero de material sobrante, relleno posterior con suelo procedente de excavación hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura en una longitud de 5.0m, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles de acero S-275JR compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5. Unidad totalmente terminada según se define en planos.	51,00	63,27	3.226,77
P4TUB100HA135	m Tubería hormigón armado junta elastomérica 135 Ø1000 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.000 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	12,00	122,70	1.472,40
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	15.185,45	2,77	42.063,70
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	4,80	16,29	78,19
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	321,78	3,89	1.251,72
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	2.909,00	1,78	5.178,02
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	2,40	49,22	118,13

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-004A2V	m³ Hormigón HA-30/B/20/XC2+XA2-SR muros, alzados, pilares y vigas Hormigón para armar HA-30/B/20/XC2+XA2-SR puesto en obra en cualquier elemento estructural vertical (muros, alzados, pilares, y vigas), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.. Unidad totalmente terminada.	14,50	91,99	1.333,86
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores colapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	1.207,50	1,35	1.630,13
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	56,67	26,85	1.521,59
TOTAL 03.11.05.....				96.117,17
03.11.06	R.S. ELECTRICIDAD (DC-T21/T14-15)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1,00	269,01	269,01
TOTAL 03.11.06.....				269,01
03.11.07	R.S. COMUNICACIONES (DC-T21/T14-15)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	2,00	269,01	538,02
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	2,00	977,21	1.954,42
P5ELEZ110X6H	m Can. horm PVC 110 mm x6 Ud cualq. terreno + zanja+rell. Canalización hormigonada de 4x110mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 60 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de préstamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes0. Unidad totalmente instalada y terminada.	190,00	53,55	10.174,50
P5ARQPREF1.0R	ud Arqueta tipo 2P comunicaciones 100x100x150 cm con tapa FD Arqueta tipo 2P comunicaciones ejecutada in situ o prefabricada de hormigón armado normalizada de dimensiones 1x1x1.5 m, con paso de 3-6-12 tubos de diámetros varios (según uso), empotrada solera de hormigón de 0.15 m de espesor, con tapa de fundición 1.0x1.0 m, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos. Unidad totalmente instalada.	4,00	375,80	1.503,20

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5COM12F	m Cable 12 fibras monomodo Suministro e instalación de cable de 12 fibras ópticas en Mono-modo 9/125, con aislamiento PEAP, bajo canalización de tritubo según especificaciones , incluso parte proporcional de empalmes, fusionado y conectorización, probado y certificado.	190,00	2,47	469,30
P5COMREP64F	ud Repartidor 64 FO Suministro e instalación de repartidor de 64 fibras ópticas para un total de 64 adaptadores de tipo FC-FC y sus correspondientes 64 pig-tail de monomodos, todos fusionados y comprobados con equipo ODTR.	2,00	997,11	1.994,22
P5COMCAJA64F	ud Caja empalme 64 FO Suministro e instalación de cajas de empalme estanca para 64 fibras ópticas de tipo monomodo, ejecutados por fusión, con p/p de verificación de tipo ODTR.	4,00	103,46	413,84
TOTAL 03.11.07.....				17.047,50
03.11.08	R.S. GAS (DC-T21/T14-15)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1,00	269,01	269,01
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	1,00	977,21	977,21
P4RSV2B	ud Corte programado servicio GAS pequeño diam. Corte programa del servicio de GAS en conducciones de distribución.	1,00	1.203,69	1.203,69
P4RSGPE160	m Reposición tub. DN160mm PE-SDR11+arq+valv.+excav+rellenos GAS Localización, desmontaje programado, y reposición de tubería de gas DN160 mm PE,SDR11 arquetas y valvulería asociada, incluyendo operaciones de localización mediante calas y/o sistemas de microgravimetría con técnico cualificado, programación de corte y rotura con empresa de servicios, gestión y pago de canon y tasas requeridas, demolición, carga y retirada de conducciones, arquetas y elementos asociados, transporte a vertedero autorizado, pago de canon de vertido, reposición de servicio mediante retranqueo, con excavación en zanja de ancho especificado en planos mínimo 0.8m, con base de apoyo de cama de arena de 15 cm, relleno conarena hasta 30 cm sobre clave de tubería, posterior relleno localizado con suelo seleccionado procedente de préstamo tamaño máximo 100 mm, relleno con zahorra artificial hasta sección de pavimento, lámina PVC señalizadora de servicio normalizada, losa de protección en pavimentos de 0.15m de espesor con al menos 1.20m de ancho, conexiones de elementos, juntas especiales, p.p. de arquetas normalizadas con tapa de fundición C-400, según detalle definido en planos con base y anclaje de hormigón en caso de valvulerías, arquetas en cambios de dirección, conexiones y puntos de ubicación de valvulería. Unidad totalmente ejecutada.	50,00	89,17	4.458,50
TOTAL 03.11.08.....				6.908,41
03.11.09	R.S. HIDROCARBUROS (DC-T21/T14-15)			
P4RSV0A	ud Localización de servicio Localización de servicio afectado de abastecimiento, saneamiento, electricidad, comunicaciones, gas, hidrocarburos y otros enterrados mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, señalización del servicio, tramitación y gestión de autorización.	1,00	269,01	269,01

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4RSV1A	ud Sostenimiento cruce serv. afectado menor DN=<500, coms, LBT Localización de servicio afectado, tramitación y gestión de autorización y operación de cruce de infraestructura existente de tamaño pequeño o medio (conducción (DN =<500mm), canalización de electricidad (LBT), canalización telefónica, comunicaciones general o fibra óptica ...), consistente en labores de localización mediante microgravimetría y/o cala con excavación manual y/o mecánica a su alrededor, operaciones de sostenimiento con vigas y perfiles laminados, refuerzo de líneas del servicio, excavación en mina para paso de conducción bajo servicio, sostenimiento y apuntalamiento del servicio durante la operación, carga y transporte de material a vertedero autorizado, posterior relleno con hormigón, relleno seleccionado manual y compactado. Unidad totalmente terminada de sostenimiento, mantenimiento y reposición de servicio.	1,00	977,21	977,21
TOTAL 03.11.09.....				1.246,22
03.11.10	R.S. CERRAMIENTOS (DC-T21/T14-15)			
P1MT06K	m² Demolición muro bloque o ladrillo Demolición de muro bloque o ladrillo hormigón con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	90,00	6,42	577,80
P1MT06B	m³ Demolición muro en masa o mampostería+tte+canon Demolición de hormigón en masa de espesor variable, muros de bloques, muros de escollera o mampostería, con retromartillo rompedor, incluso retirada de escombros a pie de carga, maquinaria auxiliar de obra, carga y transporte a vertedero, incluido canon de vertido.	9,00	34,25	308,25
P5CERRAM0D	m Reposición de cerramiento muro mampuesto Reposición de muro bancal de espesor medio 0,5 m , altura variable hasta 1,5 m y longitud 4 m. incluyendo retirada de muro existente, acopio y posterior reconstrucción mediante aporte de mampuestos, ripios, perfectamente alineado, aplomado, con excavación y preparación de la superficie de asiento (20 cm de HM-20), completamente terminado. incluyendo las operaciones de acopio,recolocación de la piedra original y/o reposición de otra de características similares a la original.	15,00	68,42	1.026,30
P5CERRAM0A	m Desmontaje de cerramiento metálico, vallado y barandillas. Retirada y desmontaje de barandillas, verjas, cerramientos, vallados o puertas de acceso de doble torsión, o similar , existente de cualquier dimensión, incluido acopio para posterior uso, o la carga y transporte a vertedero autorizado, rellenos de huecos abiertos y sellado de los mismos.	60,00	4,83	289,80
P5CERRAM2	m Cerramiento tipo-2 Valla de D/T metálica Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, sin incluir puerta de acceso.	60,00	28,97	1.738,20
P5CERRAM4	m Cerramiento tipo-4 ganadero Cerramiento ganadero a base de postes de hormigón de 17x12x170 cm y 1,40 m o metálicos sobre el terreno a 7 m separación media, empotrados y anclados en el terreno 30 cm y guarnecido con un malla 100x8x15 mm y dos hiladas superiores de alambre, doble hilo 13x15, tensado en tramos de 50 m, y con dos riostras cada 100 m. Unidad completamente terminada.	120,00	7,87	944,40
P3EDIF012B	m² Fab. Bloq. split 40x20x20 dos caras color Fábrica de bloques de hormigón Mod. Split de medidas 40x20x20 cm., color, ejecutado a dos caras vistas, i/relleno de hormigón H-200/20 y armadura en zona según normativa y recibido con mortero de cemento y arena de río M 5 según UNE-EN 998-2, i/p.p. de piezas especiales, roturas, nivelados, aplomados, llagueados y limpieza todo ello según CTE/ DB-SE-F.Unidad totalmente terminada	270,00	41,79	11.283,30
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	37,50	59,75	2.240,63
P5PUERTA1B	ud Puerta metálica 2 hoja x2,0x2.5m acero galvanizado+pint Puerta metálica dos hojas de 2,0x2,5m con apertura deslizante lateral o gitatoria, galvanizada en caliente y pintada, tipo verja, formada por marco de tubo rectangular con pestaña, montantes tubulares, provistas con dispositivo de cierre para candaño, i/ acabado pintura de color a especificar, totalmente colocada, incluidas cimentaciones necesarias y carriles de rodadura, postes perimetrales de apoyo. Unidad totalmente terminada.	2,00	638,04	1.276,08

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4RSS1A	m Dem, desmont y retirada tubería riego varios diám. DN<200 Localización, demolición, desmontaje programado y retirada de tubería de riego de varios diámetros menores a 200 mm, incluyendo arquetas y desmontaje de válvulas, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	500,00	3,41	1.705,00
TOTAL 03.11.10.....				21.389,76
03.11.11	R.R.VARIOS (DC-R21/T14-15)			
P5ARQLD2	ud Arqueta de registro 80x80x100 1/2 tapa FD Arqueta de registro de dimensiones interiores 80x80x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 80x80 normalizada D-400. Unidad totalmente terminada.	3,00	266,22	798,66
P4RSS1A	m Dem, desmont y retirada tubería riego varios diám. DN<200 Localización, demolición, desmontaje programado y retirada de tubería de riego de varios diámetros menores a 200 mm, incluyendo arquetas y desmontaje de válvulas, carga y transporte a vertedero de sobrantes, canon de vertido y operaciones auxiliares de bypass provisional para mantenimiento de servicio durante las operaciones de conexionado. Unidad totalmente terminada.	500,00	3,41	1.705,00
P5ARQR001	ud Arqueta riego+elem. aux.+valv. Arqueta riego incluida compuerta y p.p. medios auxiliares, 0.2m de hormigón en masa HM-20 de base y apoyo, incluida tapa fundición DN 600 mm D-400, cerco y pre-cerco, unión entre módulos de cordón impermeabilizante de polisulfuro entre elementos prefabricados, relleno de estanqueidad en unión de tubos, incluso sobre excavación necesaria para la colocación de la arqueta, y posterior relleno de la misma con suelo procedente de excavación seleccionado y/o cribado con tamaño máximo de árido 10 mm. Unidad totalmente colocada.	3,00	979,13	2.937,39
TOTAL 03.11.11.....				5.441,05
03.11.12	R.R. DESV. TRAFICO (DC-R21/T14-15)			
03.11.12.01	DESVÍO NA-6900			
03.11.12.01.1	DRENAJES (DESVÍO NA-6900)			
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm, embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizadora de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y reperfilado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5, incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.	34,50	48,13	1.660,49
P4RSV2D	m Demolición y retirada de tubería de hormigón < 500 mm Demolición y retirada de tuberías de hormigón en masa, salvacunetas y conducciones, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.	34,50	4,88	168,36
TOTAL 03.11.12.01.1.....				1.828,85
03.11.12.01.2	PAVIMENTOS (DESVÍO NA-6900)			
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa	274,32	16,48	4.520,79
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	2.286,00	6,51	14.881,86

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	2.286,00	6,87	15.704,82
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	838,20	20,14	16.881,35
TOTAL 03.11.12.01.2.....				51.988,82
03.11.12.01.3 SEÑALIZACIÓN (DESVÍO NA-6900)				
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA Ml. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	1.425,00	0,66	940,50
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final	1.275,00	1,57	2.001,75
P6SÑL-PINTS	m² Simbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.	30,00	10,26	307,80
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm Ml. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	475,00	1,19	565,25
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	950,00	1,46	1.387,00
P6SÑL-020	m Banda sonora 90cmx50cmx5cm Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada.	14,00	125,35	1.754,90
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.	145,00	6,06	878,70
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	33,52	134,08
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	16,00	27,16	434,56
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	29,28	117,12
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.	8,00	10,73	85,84
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.	90,00	57,44	5.169,60
P6SÑL-110	ud Semáforo portátil en desvíos de tráfico Semáforo portátil con mutado. Desvíos de obra	2,00	741,17	1.482,34

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señálica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.	1,00	3.815,36	3.815,36
TOTAL 03.11.12.01.3.....				19.074,80
TOTAL 03.11.12.01.....				72.892,47
03.11.12.02	DESVÍO N-121			
03.11.12.02.1	MOV. TIERRAS (DESVÍO N-121)			
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	3.900,00	1,25	4.875,00
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	3.900,00	0,37	1.443,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	3.900,00	0,40	1.560,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	7.462,00	2,77	20.669,74
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	5.070,00	1,78	9.024,60
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendidora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, perfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	43,50	20,14	876,09
TOTAL 03.11.12.02.1.....				38.448,43
03.11.12.02.2	DRENAJES (DESVÍO N-121)			
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	275,00	4,11	1.130,25

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3SCDN300	m Salvacuneta dn=300 HA incl. arqueta + zanja+relleno HM-20 Salvacuneta en caminos, mediante ejecución e instalación de tubo de hormigón de diámetro 300 mm, macizado de hormigón HM-20 en su cobertura de al menos 0.3 cm , embocadura de hormigón con aletas según planos de detalle, encofrado y desencofrado de los mismos, incluso excavación de zanja localizada de 0.6m de ancho de base, taludes 1H/3V hasta una altura de hasta 1.5m, transporte a vertedero de material sobrante, relleno posterior hasta cota de terreno natural y repavimentado de nueva cuneta a embocadura, colocación de rejilla de protección de anegamiento de salvacunetas conformado por perfiles S-275J compuesto por perfiles tubulares de 12 mm c/ 10 cm, sobre marco L-50-5 , incluso perfil angula L-50-7 e apoyo de rejilla. Unidad totalmente terminada.	32,00	48,13	1.540,16
P4RSV2D	m Demolición y retirada de tubería de hormigón < 500 mm Demolición y retirada de tuberías de hormigón en masa, salvacunetas y conducciones, incluida demolición de arquetas, cuadros y elementos asociados, carga y transporte a vertedero autorizado, pago de canon de vertido y tratamiento de residuos, operaciones de desconexión. Unidad totalmente terminada.	32,00	4,88	156,16
TOTAL 03.11.12.02.2.....				2.826,57
03.11.12.02.3 PAVIMENTOS (DESVÍO N-121)				
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa	274,32	16,48	4.520,79
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	2.286,00	6,51	14.881,86
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	2.286,00	6,87	15.704,82
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	838,20	20,14	16.881,35
TOTAL 03.11.12.02.3.....				51.988,82
03.11.12.02.4 SEÑALIZACIÓN (DESVÍO N-121)				
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA Ml. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	900,00	0,66	594,00
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final	105,00	1,57	164,85
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.	12,00	10,26	123,12
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm Ml. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	300,00	1,19	357,00
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	600,00	1,46	876,00
P6SÑL-020	m Banda sonora 90cmx50cmx5cm Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada.	14,00	125,35	1.754,90

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.	227,00	6,06	1.375,62
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	12,00	33,52	402,24
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	10,00	27,16	271,60
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ...) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	29,28	117,12
P6SÑL-060	ud Señal advertencia e indicatoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	45,18	180,72
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.	22,00	10,73	236,06
P6SÑL-092	ud Lámpara luminosa intermitente en trípode Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.	2,00	14,97	29,94
P6SÑL-004	ud Señal octogonal normal L=60 cm Nivel1 Señal octogonal de lado 60 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación y cimentación, colocada.	1,00	119,59	119,59
P6SÑL-100	m Barrera New Jersey plástico. desv. tráfico Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco las-trable, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico	169,00	29,95	5.061,55
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.	41,00	57,44	2.355,04
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señalítica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.	1,00	3.815,36	3.815,36
TOTAL 03.11.12.02.4.....				17.834,71
TOTAL 03.11.12.02.....				111.098,53

03.11.12.03 DESVÍO NA-3042

03.11.12.03.1 MOV. TIERRAS (DESVÍO NA-3042)

P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	1.800,00	1,25	2.250,00
---------	---	----------	------	----------

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	1.800,00	0,37	666,00
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	1.800,00	0,40	720,00
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	3.444,00	2,77	9.539,88
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	2.340,00	1,78	4.165,20
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	15,00	20,14	302,10
TOTAL 03.11.12.03.1				17.643,18
03.11.12.03.2 DRENAJES (DESVÍO NA-3042)				
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	130,00	4,11	534,30
TOTAL 03.11.12.03.2				534,30
03.11.12.03.3 PAVIMENTOS (DESVÍO NA-3042)				
P1MT06D	m³ Demolición pavimento de mezcla bituminosa+tte+canon Demolición de pavimento de mezcla bituminosa, por medios mecánicos incluso corte de juntas, carga y transporte de los productos a vertedero y canon de vertido. Unidad completa	129,60	16,48	2.135,81
P5MBS12.5	m² MB 5cm AC16 surf D BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 5 cm de AC16 suf D BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	1.080,00	6,51	7.030,80
P5MBS20.7	m² MB 7cm AC22 bin S BC60/70 + emulsión ECI o ECR 100kg/m2 Pavimento con una sección de firme compuesta por 7 cm de AC22 bin S BC 60/70, incluidas operaciones de imprimación con ECR o ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, corte de juntas, barridos previos y posteriores, limpiezas, cuñas de peralte sobre losa, emulsión asfáltica. Unidad totalmente terminada.	1.080,00	6,87	7.419,60
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	396,00	20,14	7.975,44
TOTAL 03.11.12.03.3				24.561,65

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.11.12.03.4 SEÑALIZACIÓN (DESVÍO NA-3042)				
P6SÑL-PINT10B	m Marca vial continua y/o discontinua 10 cm OBRA Ml. Marca vial reflectante TB-12, de 10 cm de ancho, provisional de obra en color naranja, continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	1.920,00	0,66	1.267,20
P6SÑL-PINT10C	m Borrado marca vial y/o señalización horizontal Eliminación de marca vial longitudinal continua, de pintura, mediante fresadora manual. Incluso p/p de replanteo y limpieza final	1.560,00	1,57	2.449,20
P6SÑL-PINTS	m² Símbolos y cebreados marcas viales Estarcido en símbolos, flechas, palabras, pasos de peatones, pasos de cebra, marcas transversales de detención, etc., con pintura con pintura reflectante y microesferas de vidrio, medido por metro cuadrado realmente pintado.	38,00	10,26	389,88
P6SÑL-PINT10	m Marca vial continua y/o discontinua 10 cm Ml. Marca vial reflexiva de 10 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	640,00	1,19	761,60
P6SÑL-PINT15	m Marca vial continua y/o discontinua 15 cm Ml. Marca vial reflexiva de 15 cm continua y/o discontinua con pintura reflectante y microesferas de vidrio, con máquina autopropulsada, incluido premarcaje.	1.280,00	1,46	1.868,80
P6SÑL-020	m Banda sonora 90cmx50cmx5cm Banda sonora reductor 90x50x5 cm con fijación 5 tornillos con taco plástico. Unidad completamente terminada.	14,00	125,35	1.754,90
P6SÑL-080	ud Cono balizamiento 75 cm. Desv. traf. Mult. usos Ud. de cono balizamiento reflectante de plástico 75 cm. Múltiples usos en desvío de tráfico. Incluida goma de contrapeso, incluida instalación, colocación y desmontaje.	320,00	6,06	1.939,20
P6SÑL-030	ud Panel direccional TB1 y TB3 . Desv. tráfico Suministro y colocación de panel direccional provisional reflectante TB1 y / o TB3 sobre soportes con base en T, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	16,00	33,52	536,32
P6SÑL-040	ud Señal circular TR con soporte . Desv. tráfico Suministro y colocación de señal circular (reglamentación y prioridad de obra, velocidad, giro, adelantamiento, ...) metálica con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	9,00	27,16	244,44
P6SÑL-050	ud Señal triangular TR peligro obras con soporte Suministro y colocación de señal triangular provisional de peligro de obras (obras, estrechamientos, ..) con soporte metálico, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	29,28	117,12
P6SÑL-060	ud Señal advertencia e indicadoras TS con soporte Suministro y colocación de señal de seguridad metálica tipo advertencia de 45x33 cm con soporte metálico de 50 mm de diámetro, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico.	4,00	45,18	180,72
P6SÑL-090	ud Lámpara intermitente con celula fotoeléctrica Lámpara destellante amarilla con carcasa de plástico y soporte de anclaje, con célula fotoeléctrica y pilas, i/colocación y desmontaje, (amortizable en diez usos). s/ R.D. 485/97.	48,00	10,73	515,04
P6SÑL-092	ud Lámpara luminosa intermitente en trípode Suministro y colocación de lámpara intermitente con célula fotoeléctrica sin pilas sobre trípode de acero galvanizado, valorada en función del número óptimo de utilizaciones.	4,00	14,97	59,88
P6SÑL-100	m Barrera New Jersey plástico. desv. tráfico Barrera tipo New Jersey ensamblable de 100x80x40 de material plástico hueco las-trable, incluso p.p. de montaje y desmontaje, valorada en función del número óptimo de utilizaciones en desvíos de tráfico	20,00	29,95	599,00
P6SÑL-102	m Barrera pref. hormigón. Desv. tráfico Barrera prefabricada de hormigón, tipo BHDPJ2/0A (New Jersey o equivalente) con perfil en las dos caras, en módulos de 2 m, dimensiones, incluido transporte a obra, montaje, desmontaje y múltiples usos en desvíos de tráfico.	60,00	57,44	3.446,40
P6DT001	ud Reposición y mantenimiento de desvío de tráfico Reposición y mantenimiento señalítica, balizamiento y elementos de seguridad vial correspondiente al desvío de tráfico en todas sus fases, conformado por brigada de supervisión y mantenimiento, señalista y otros necesarios. Unidad completa en la duración del desvío de tráfico.	1,00	3.815,36	3.815,36

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
	TOTAL 03.11.12.03.4.....			19.945,06
	TOTAL 03.11.12.03.....			62.684,19
	TOTAL 03.11.12.....			246.675,19
	TOTAL 03.11			609.591,22
03.12	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (DC-T21 y DC-T14/15)			
03.12.01	MEDIDAS PROTECTORAS, CORRECTORAS (DC-T21;T14)			
03.12.01.01	ATMÓSFERA (DC-T21;T14)			
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora	18,00	2.488,07	44.785,26
	Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.			
	TOTAL 03.12.01.01.....			44.785,26
03.12.01.02	SUELO (DC-T21;T14)			
P-101AMB-MP03	m Jalonamiento de protección malla	4.100,00	1,74	7.134,00
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.			
P-101AMB-MP09	m Jalonamiento de protección cinta	41.000,00	0,52	21.320,00
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.			
P1MT08GTX-003	m² Geomalla refuerzo taludes	1.800,00	6,14	11.052,00
	Suministro y colocación de geomalla de refuerzo DLT Grid en taludes incluso enrejado con alambre galvanizado de Ø 2,00 mm y malla hexagonal 8x10-16 anclado al terreno con barras corrugadas de acero B 500 S, para protección de taludes, medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 1.5m) entre paños y mermas. Unidad totalmente terminada.			
P1MTMR001	m Fajina retención rollizo 0.5m altura	360,00	23,73	8.542,80
	ml de fajinada formada por estacas de pino de 1 m de longitud y 8 cm de diámetro, hincados en el suelo 50 cm, entre los que se entrelazan una fajina construida con ramas, hasta formar una pantalla de 50 cm de altura, construida para reducir la escorrentía superficial. Incluso herramientas y medios auxiliares.			
P-102AMBPL001	m² Hidrosiembra incluso rastrillado y tapado	1.800,00	1,64	2.952,00
	Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.			
	TOTAL 03.12.01.02.....			51.000,80
03.12.01.03	HIDROLOGIA (DC-T21;T14)			
P-101AMB-MP05	m Barrera de retención sedimentos	1.120,00	5,54	6.204,80
	Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.			
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones	15,00	806,83	12.102,45
	Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.			
	TOTAL 03.12.01.03.....			18.307,25

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.12.01.04 FAUNA Y FLORA (DC-T21;T14)				
P-101AMB-MP03	m Jalonamiento de protección malla Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.	2.050,00	1,74	3.567,00
P-101AMB-MP09	m Jalonamiento de protección cinta Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.	6.150,00	0,52	3.198,00
P-101AMB-MP10	ud Protector de fauna Protector de fauna: Instalación de vallas plásticas y elementos necesarios.	110,00	13,08	1.438,80
TOTAL 03.12.01.04.....				8.203,80
TOTAL 03.12.01.....				122.297,11
03.12.02 SEGUIMIENTO ARQUEOLÓGICO (DC-T21;T14)				
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.	1,00	3.193,57	3.193,57
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz. Informe arqueológico previo incluidas tramitaciones y tasas.	1,00	1.856,27	1.856,27
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual	34,00	2.404,67	81.758,78
P-103AMBAR02B	día Seguimiento intensivo arqueológico de las obras+informe Día de control y seguimiento arqueológico de carácter intensivo realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluida maquinaria de desbroce y excavación, medios auxiliares necesarios y presencia permanente de técnicos, generación de informe de seguimiento	60,00	626,29	37.577,40
P-103AMBAR-03	km² Prospección arqueológica detallada, análisis y trabajo de campo Prospección arqueológica intensiva de cobertura total en una superficie afectada de 1Km2, incluyendo excavaciones, sondeos arqueológicos, medios humanos, maquinaria, material auxiliar necesario, análisis documental, proyecto de actuación arqueológica y trabajo de campo. Unidad completa	10,00	6.023,60	60.236,00
TOTAL 03.12.02.....				184.622,02
03.12.03 PROGRAMA VIGILANCIA AMBIENTAL (DC-T21;T14)				
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación	1,00	975,28	975,28
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento.	36,00	1.879,04	67.645,44
P-104AMBVA02A	mes Seguimiento acústico (ruido ambiental) Medida de niveles de ruido en zona de obra. Desarrollada la medición a lo largo de una jornada laboral, con toma de datos en diversos puntos de la obra, y elaboración de informes periódicos posteriores por especialista cualificado, incluidos materiales y elementos auxiliares. Unidad totalmente terminada.	36,00	616,11	22.179,96
P-104AMBVA03A	ud Informe especializado de flora Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina.	1,00	3.965,50	3.965,50
P-104AMBVA04A	ud Informe especializado de fauna Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe.	1,00	2.882,01	2.882,01

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P-104AMBVA05	ud Informe y analítica de muestra de aguas Informe y analítica de muestras de agua en puntos de cruce singulares. unidad total-mente ejecutada.	12,00	295,13	3.541,56
TOTAL 03.12.03.....				101.189,75
03.12.04	INTEGRACIÓN PAISAJÍSTICA (DC-T21;T14)			
P-102AMB-PL06	Pie Apeo árboles ø >20-<=30 cm densidad <=750 pies/ha c/mat (R.E.A.) Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y den-sidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la inten-sidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, in-cluido canon de vertido, herramientas y medios auxiliares.	808,80	150,73	121.910,42
P-102AMBPL08	mes Mantenimiento de plantaciones, riego y reposición extraordinaria Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de ma-ras, realización de podas de realce necesarias y otras operaciones de mantenimien-to. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande rea-lizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, inclu-yendo la escarda y mezcla con el sustrato de malas hierbas, herramientas y me-dios auxiliares.	36,00	928,33	33.419,88
P-102AMBPL38B	ud Plantación de Crataegus monogyna de 0,6-0,8 m en contenedor Plantación de Crataegus monogyna 0,6-0,8 m de altura en contenedor, incluso aper-tura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relle-no de hoyo, alcorcado y riego de implantación.	13,00	4,12	53,56
P-102AMBPL03B	ud Plantación de Pinus halepensis de 1,0-1,5 m en contenedor Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso aper-tura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación.	2.003,00	9,33	18.687,99
P-102AMBPL31A	ud Plantación de Quercus coccifera 1,8-2,0m alt. CEP. Quercus ilex de 1,8-2,0m alt. de perímetro de tronco, suministrado en cepellón y plantación en hoyo de 1x1x1 m., incluso apertura del mismo con los medios indica-dos, abonado, formación de alcorque, tutor y primer riego.	3.225,00	19,63	63.306,75
P-102AMBPL34E	ud Plantación de Rosa canina 20-30 cm. CONT. Rosa canina de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,6x0,6x0,6 m., incluso apertura del mismo a mano, abonado, formación de alcorque y primer riego.	189,00	2,46	464,94
P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m en contenedor Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acopla-da a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	2.118,00	2,22	4.701,96
P-102AMBPL17I	ud Plantación de Rubus ulmifolius 0,3-0,5m en contenedor Plantación de Rubus ulmifolius extensa de 0,3-0,50m de altura en contenedor inclu-so apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena aco-plada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abo-no, relleno de hoyo, alcorcado y riego de implantación.	302,00	1,60	483,20
P-102AMBPL39	ud Plantación de Salix alba de 1,0-1,5 m en cepellón Plantación de Salix alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x0,6 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiér-col y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, rie-go de implantación y colocación de protector de 120 cm de alto	26,00	6,60	171,60
P-102AMBPL18	ud Plantación de Salix atrocinerea de 0,50-0,75 m en contenedor Ud. Suministro y plantación de Salix atrocinerea (Sarga negra) de 0,50 a 0,75 m. de altura, suministrado en contenedor, y plantación en hoyo de 0,4 x 0,4 x 0,4 m., inclu-so apertura manual del mismo, abonado, formación de alcorque y primer riego.	34,00	2,45	83,30
P-102AMBPL36	ud Plantación de Salvia officinalis 20-30cm. CONT. Salvia officinalis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contene-dor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, for-mación de alcorque y primer riego.	2.118,00	2,64	5.591,52
P-102AMBPL37	ud Plantación de Thymus vulgaris de 0,2-0,4 m en envase forestal Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso aper-tura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a mi-niexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	3.250,00	2,04	6.630,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P-102AMBPL12B	m² Formación de pasto gramíneas y leguminosas Formación de pasto por siembra de una mezcla de especies gramíneas y leguminosas, a determinar por la Dirección de Obra, incluso la limpieza del terreno, laboreo con dos pases de motocultor cruzados y abonado de fondo, rastrillado y retirada de todo material de tamaño superior a 2 cm., distribución de la semilla.	99.612,02	0,19	18.926,28
P-102AMBPL40	ud Tutor árbol Entutorado de árbol con 1 tutor vertical de rollizo de pino torneado, de 3 m de longitud y 8 cm de diámetro con punta en un extremo y baquetón en el otro, tanalizado en autoclave, hincado en el fondo del hoyo de plantación, retacado con la tierra de plantación, y sujeción del tronco con cincha textil no degradable, de 3-4 cm de anchura y tornillos galvanizados.	2.003,00	4,56	9.133,68
P-102AMBPL01	ud Plantación de Genista scorpius 0.3-0.5m en contenedor Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	4.651,00	1,49	6.929,99
P-102AMBPL003	ud Plantación de Artemisia herba-alba 0,2-0,5m en contenedor Plantación de Artemisia herba-alba 0,2-0,5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	2.533,00	2,37	6.003,21
P-102AMBPL004	ud Plantación de Juniperus oxycedrus 0,1-0,2m en contenedor Plantación de Juniperus oxycedrus 0,1-0,2m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	3.225,00	1,81	5.837,25
TOTAL 03.12.04.....				302.335,53
TOTAL 03.12				710.444,41
03.13	GESTIÓN DE RESIDUOS (DC-T21 y DC-T14/15)			
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un encachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.	12,00	2.506,13	30.073,56
PGESRES180C	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (DC-T21;T14) Carga , transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15.	1,00	14.877,63	14.877,63
PGESRES150C	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (DC-T21;T14) Carga , transporte y deposición de residuos tipo II de naturaleza pétrea, incluida :selección, carga , transporte, descarga y canón de gestión en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15	1,00	21.489,91	21.489,91
PGESRES200C	ud Carga, transporte y depos.de Res. peligrosos (DC-T21;T14) Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos , así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en los tramos DC-T17, T17-T18, T18-T19, T19-T20, T20-T21, DC-T16, T16-T14/15.	1,00	11.570,64	11.570,64
TOTAL 03.13				78.011,74

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
03.14	VARIOS (DC-T21 y DC-T14/15)			
P90VAR4	ud Difusión y comunicación actuación del tramo	1,00	28.959,20	28.959,20
	Difusión y comunicación de las obras del tramo consistente en : a)-Emisión de 2 anuncios en periódico de gran tirada, b)-2 anuncios publicitarios en medio de radiodifusión , c)-edición de 200 folletos explicativos tipo tríptico de alta calidad, d)-desarrollo de WEB informativa y de seguimiento de las obras con el volcado informativo del avance de obra, estado f)-Reportaje fotográfico de evolución de obra g)-CD video divulgativo h)-Presentación y actos varios i)-Monolito actuación			
	TOTAL 03.14			28.959,20
03.15	SEGURIDAD Y SALUD (DC-T21 y DC-T14/15)			
PSEGSAL.03	ud Seguridad y Salud.Subtramo D.C.-T21 Y DC-T14/15	1,00	290.850,77	290.850,77
	Seguridad y salud en el Subtramo D.C.-T21 Y DC-T14/15 , (según valoración realizada en el Anejo nº20 del proyecto).			
	TOTAL 03.15			290.850,77
	TOTAL 03 SUBTRAMO D.C.-T21 y DC-T14/15.....			31.758.440,70

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04	BALSA DE TUDELA			
04.01	CUERPO DE BALSA			
04.01.01	TERRAPLÉN DE PRUEBA			
04.01.01.01	TERRAPLÉN DE PRUEBA NÚCLEO			
PTU-001	ud Terraplén de prueba núcleo Terraplén de prueba para material del núcleo de balsa, de acuerdo con las especificaciones del pliego o, en su caso, del director de prueba, incluso ensayos previos y posteriores e informe con recomendaciones.	1,00	6.036,70	6.036,70
PTU-002	m² Preparación terreno para terraplén Preparación de plataforma para realizar terraplén de prueba, según especificaciones del pliego, en su caso, directrices del Director de Obra, totalmente terminado.	1.200,00	9,76	11.712,00
TOTAL 04.01.01.01				17.748,70
04.01.01.02	TERRAPLÉN DE PRUEBA TODO-UNO			
PTU-002	m² Preparación terreno para terraplén Preparación de plataforma para realizar terraplén de prueba, según especificaciones del pliego, en su caso, directrices del Director de Obra, totalmente terminado.	960,00	9,76	9.369,60
PTU-003	ud Terraplén de prueba para todo-uno Terraplén de prueba para material todo uno en espaldón de balsa, de acuerdo con las especificaciones del pliego o, en su caso, del director de prueba, incluso ensayos previos y posteriores e informe con recomendaciones.	1,00	5.155,67	5.155,67
TOTAL 04.01.01.02				14.525,27
TOTAL 04.01.01				32.273,97
04.01.02	MOVIMIENTO DE TIERRAS			
04.01.02.01	DESBROCES			
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	6.213,17	1,25	7.766,46
PTU-020	m³ Desbroce y excavación de tierra vegetal en balsa Desbroce y excavación de tierra vegetal de espesor medio de 50 cm, en balsa de Tudela y balsa de Mostrakas incluso carga, transporte a cualquier distancia a acopio intermedio no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa.	69.035,21	1,90	131.166,90
TOTAL 04.01.02.01				138.933,36
04.01.02.02	MOVIMIENTO DE TIERRAS			
PTU-004	m³ Excavación de cimiento de núcleo de balsa Excavación de terreno no clasificado en cimiento de núcleo balsa, con medios mecánicos y taqueos puntuales, incluso refino, con carga y transporte a acopio intermedio o vertedero, incluso canon de vertido, mantenimiento y restauración de vertedero.	51.175,10	4,65	237.964,22
PTU-006	m³ Excavación de terreno no clasificado en explanaciones Excavación de terreno no clasificado en explanaciones con medios mecánicos y taqueos puntuales incluso, refino de taludes y fondo de excavación, carga y transporte a vertedero, acopio o lugar de uso, incluso canon de vertido, mantenimiento y restauración del vertedero.	396.941,68	4,04	1.603.644,39

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PTU-008	m² Regularización de fondos de excavación en núcleo de balsa Regularización de la superficie de excavación en apoyo de cimientto de núcleo de balsa de Tudela incluyendo tratamiento y relleno con mortero de diacclasas de espesor inferior a 3 cm, según P.C.T con carga y transporte de productos sobrantes a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero.	10.182,90	2,95	30.039,56
PTU-009	m² Excavación en refino de cimientto de espaldones de balsa Excavación en refino de fondos de excavación en terciaro alterado en cimientto de presa con medios mecánicos y taqueos puntuales, con carga y transporte a vertedero o lugar de uso, incluso cánon de vertido, mantenimiento y restauración de vertedero.	117.956,42	0,73	86.108,19
PTU-022	m² Hormigón proyectado HM-35/B/20/X0, de 5 cm. de espesor reforzado Hormigon proyectado HM-35/B/20/X0, de 5 cm. de espesor reforzado con fibras de acero, con 700 j de energía de absorcion, en tratamiento de desmonte, incluso aditivos y rechazo, puesto en obra	4.364,10	9,52	41.546,23
TOTAL 04.01.02.02.....				1.999.302,59
04.01.02.03	DESBROCES EN PRÉSTAMOS			
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	46.298,66	1,25	57.873,33
PTU-020	m³ Desbroce y excavación de tierra vegetal en balsa Desbroce y excavación de tierra vegetal de espesor medio de 50 cm, en balsa de Tudela y balsa de Mostrakas incluso carga, transporte a cualquier distancia a acopio intermedio no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa.	197.964,18	1,90	376.131,94
TOTAL 04.01.02.03.....				434.005,27
TOTAL 04.01.02.....				2.572.241,22
04.01.03	RELLENOS DEL CUERPO DE BALSA			
PTU-010	m³ Material limo - arcilloso, extendido en el núcleo de balsa Material "limo-arcilloso" en núcleo de balsa, procedente de la excavación de los suelos aluviales de los fondos de valle del vaso del embalse o préstamos próximos, carga, transporte, extendido, humectado y compactado según prescripciones técnicas del pliego o según condiciones extraídas del terraplén de prueba, incluso acopios intermedios y trabajos en acopio.	435.170,43	3,48	1.514.393,10
PTU-011	m³ Material "todouno" en espaldones procedente de excavaciones Material "todouno" en espaldones procedente de excavaciones efectuadas en el vaso del embalse o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones o según puesta en obra deducida de los terraplenes de prueba.	1.287.077,49	4,47	5.753.236,38
PTU-012	m³ Material tipo grava proc de la terraza aluvial en espaldones Material tipo gravas en espaldones procedente de la terraza aluvial superior al embalse, incluida su excavación mediante medios mecánicos, incluso taqueos puntuales, selección y troceado, carga, transporte, extendido, humectado y compactado en las condiciones indicadas en el pliego, incluso aciopios intermedios y trabajos en acopio.	457.208,82	4,34	1.984.286,28
PTU-013	m³ Material procedente de costra calcarea en espaldón balsa Material procedente de la costra calcárea en espaldon de aguas abajo procedente de la terraza aluvial superior al embalse, incluida su excavacin mediante medios mecánicos, incluso taqueos puntuales, selección y troceado, carga, transporte, extendido, humectado y compactado en las condiciones indicadas en el pliego, incluso aciopios intermedios y trabajos en acopio.	261.671,70	3,84	1.004.819,33

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PTU-014	m³ Material granular para filtro, extendido y compactado balsa Material granular para filtro procedente de gravera o préstamos cercanos, incluye excavación y selección de la roca con resistencia a compresión simple superior a 15 Mpa, fabricación en planta de machaqueo y cribado hasta la obtención de la granulometría exigida en el Pliego, extendido y compactado junto a núcleo o en drenes horizontales de presa.	55.965,25	21,96	1.228.996,89
PTU-015	m³ Material granular de transición, colocado y compactado Material granular de transición procedente de préstamo de gravas en terraza superior del embalses, incluye carga, transporte, selección del material y resto de operacionex asociadas según prescripciones del pliego, extendido y compactado en espaldón de presa. Unidad totalmente terminada en balsa.	37.852,14	8,96	339.155,17
PTU-016	m³ Material granular tipo dren, extendido y compactado junto a núcleo Material granular para dren procedente de gravera o préstamos, incluye excavación y selección de la roca con resistencia a compresión simple superior a 15 Mpa, fabricación en planta de machaqueo y cribado hasta la obtención de la granulometría exigida en el Pliego, extendido y compactado junto a núcleo o en drenes horizontales de balsa.	64.467,70	20,06	1.293.222,06
PTU-017	m³ Pedraplén extendido y compactado en relleno de pie de balsa y espaldones Pedraplén en relleno de pie de balsa y espaldones procedente del vaso del embalse o préstamos próximos, incluida su excavación mediante voladura, selección y troceado, carga, transporte, extendido, humectación y compactación en tongadas de 0,80 m de espesor y granulometría según lo especificado en el Pliego.	8.583,89	29,96	257.173,34
PTU-018	m³ Material grueso (rip-rap) de cantera en balsa Material grueso (rip-rap) para protección de espaldón procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto, vertida en cualquier tipo de paramento de balsa, incluso suministro, transporte, colocación y compactación, medido sobre perfil teórico, según planos.	88.268,00	31,94	2.819.279,92
TOTAL 04.01.03.....				16.194.562,47
04.01.04	CORONACIÓN DE Balsa			
PBATU003	m² Repaso+comp.explanada,m.mec.,95%PM Repaso y compactado de explanada ejecutada, con medios mecánicos y compactación del 95 % PM. Incluye material de refino en caso de ser necesario.	5.729,44	1,56	8.937,93
PBATU001	m³ Relleno con material filtrante, con grava de cantera 20-40 Relleno localizado de material filtrante (grava 20-40) procedente de cantera, extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	814,80	11,77	9.590,20
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	1.918,60	20,14	38.640,60
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.	6.731,00	3,65	24.568,15
PGF21M911	m Barrera con tubo de acero galvanizado, de 130 mm de diámetro y esp. 2mm Barrera con tubo de acero galvanizado, de 130 mm de diámetro y 2 mm de espesor, incluido fijación a dado de hormigón con placa y tornillos, cualquier material auxiliar así como totalmente colocada en recta o curva de cualquier radio, incluido soldaduras necesarias, todo según planos.	1.788,93	51,21	91.611,11
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	64,17	59,75	3.834,16

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	9,00	49,22	442,98
P4ETT-004C-E2	m² Encof/desenc. muros y paramentos CURVOS y VISTOS Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	157,63	30,49	4.806,14
PPIL12.004	ud Pilona prefabricada de hormigón Pilona prefabricada de hormigón blanco, de sección cuadrada de 18 cm de lado y 80 cm de altura según planos, con los bordes en chaflán y rematada en punta, totalmente colocada.	417,00	33,70	14.052,90
P5ELE110PVC	m Tubo PVC 110 mm liso adosado o embebido Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D= 110 mm, e=3,2 mm. embebido en hormigón o adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	300,00	5,66	1.698,00
TOTAL 04.01.04.....				198.182,17
04.01.05	TRATAMIENTO DEL CIMENTO			
04.01.05.01	PANTALLA DE IMPERMEABILIZACIÓN			
PINY001	ud Estudio de inyección Estudio de optimización la mezcla de la inyección incluso ensayos previos de mezcla, propuesta de dosificación, parámetros GIN, incluso informe.	1,00	6.508,99	6.508,99
PINY002	ud Transporte, montaje y desmontaje de equipos de inyección Transporte, montaje y desmontaje de equipos de inyección.	1,00	7.950,00	7.950,00
PINY003	ud Desplazamiento equipo de un punto a otro Desplazamiento del equipo de perforación entre puntos de emplazamiento.	16,00	127,20	2.035,20
PINY004	m Perforación de taladro a rotoperCUSión para inyección entre 0 y 30° Perforación de taladro a rotoperCUSión para inyección con cualquier inclinación entre 10 y 30 con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.	428,00	102,71	43.959,88
PINY005	ud Posicionamiento de cada obturador Posicionamiento de cada obturador.	98,00	10,07	986,86
PINY006	t Materia seca de inyección Materia seca de inyección de cemento en lechada realmente inyectada con dosificación C/A entre 0,5 y 2 en función del as admisiones, incluso aditivo entre 50 y 75 kg, incluso instalación centralizada de inyección compuesta por silo báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	1,07	516,29	552,43
PINY007	t Materia seca de inyección de microcemento A-12 Materia seca de inyección de microcemento A-12 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	8,56	1.436,27	12.294,47
PINY008	t Materia seca de inyección de microcemento A-6 Materia seca de inyección de microcemento A-6 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	2,14	2.181,05	4.667,45
PENSLU001	ud Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de prof Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de profundidad, incluidas obturaciones y apoyo técnico.	3,00	249,21	747,63
TOTAL 04.01.05.01.....				79.702,91

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.01.05.02	PRUEBA DE CONSOLIDACIÓN			
PINY003	ud Desplazamiento equipo de un punto a otro Desplazamiento del equipo de perforación entre puntos de emplazamiento.	8,00	127,20	1.017,60
PINY004-B	m Perforación de taladro a rotopercusión para inyección entre 0-10° Perforación de taladro a rotopercusión para inyección con cualquier inclinación entre 0° y 10° con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.	90,00	76,43	6.878,70
PINY007	t Materia seca de inyección de microcemento A-12 Materia seca de inyección de microcemento A-12 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	1,80	1.436,27	2.585,29
PENSLU001	ud Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de prof Unidad de ensayo de permeabilidad tipo Lugeon hasta 50 m de profundidad, incluidas obturaciones y apoyo técnico.	2,00	249,21	498,42
TOTAL 04.01.05.02.....				10.980,01
04.01.05.03	TRATAMIENTO DE CONSOLIDACIÓN			
PINY003	ud Desplazamiento equipo de un punto a otro Desplazamiento del equipo de perforación entre puntos de emplazamiento.	472,00	127,20	60.038,40
PINY004-B	m Perforación de taladro a rotopercusión para inyección entre 0-10° Perforación de taladro a rotopercusión para inyección con cualquier inclinación entre 0° y 10° con diámetro comprendido entre 76 y 110 mm, incluso medios auxiliares, totalmente terminado.	4.730,00	76,43	361.513,90
PINY005	ud Posicionamiento de cada obturador Posicionamiento de cada obturador.	946,00	10,07	9.526,22
PINY006	t Materia seca de inyección Materia seca de inyección de cemento en lechada realmente inyectada con dosificación C/A entre 0,5 y 2 en función de las admisiones, incluso aditivo entre 50 y 75 kg, incluso instalación centralizada de inyección compuesta por silo báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	11,83	516,29	6.107,71
PINY007	t Materia seca de inyección de microcemento A-12 Materia seca de inyección de microcemento A-12 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	94,60	1.436,27	135.871,14
PINY008	t Materia seca de inyección de microcemento A-6 Materia seca de inyección de microcemento A-6 en lechada realmente inyectada, incluso aditivo necesario e instalación centralizada de inyección compuesta por silo, báscula, balderos y bomba de impulsión, con capacidad de suministro de 500 l/min de lechada con otros aditivos, equipada con los correspondientes equipos complementarios y con el correspondiente utillaje para la puesta en obra.	1,18	2.181,05	2.573,64
TOTAL 04.01.05.03.....				575.631,01
TOTAL 04.01.05.....				666.313,93
04.01.06	RECOGIDA DE FILTRACIONES			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.01.06.01 DREN				
PTUDREB250	m Tubería PVC 250 ranurada Tubo dren de PVC corrugado poroso, D= 250 mm, puesta en zanja, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	5,00	12,92	64,60
PTUB250PVC	m Tubería PVC D=250 mm SN-8 Tubería de PVC diámetro Nominal 250 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.	257,00	33,42	8.588,94
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.697,56	2,77	4.702,24
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	110,51	59,75	6.602,97
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	1.574,24	2,16	3.400,36
TOTAL 04.01.06.01				23.359,11
04.01.06.02 ARQUETAS Y AFORADORES				
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	114,96	16,26	1.869,25
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	86,40	26,85	2.319,84
P4HG-001A	m³ Hormigón HM-12.5/B/20/X0 Hormigón en masa HM-12.5/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación, p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	25,98	43,42	1.128,05
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	34,16	90,51	3.091,82

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	2.998,77	1,35	4.048,34
P41ESC2	m Escalera vertical fija acero inox-tipo barco AISI 316L Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaída y elementos extensibles. Unidad totalmente terminada.	8,84	183,55	1.622,58
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	114,96	8,81	1.012,80
P4LOSA003	m² Losa prefabricada con entrada de hombre Losas prefabricadas de hormigón en tapas de grandes arquetas con entrada de hombre practicable dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.	28,68	100,76	2.889,80
P41LAG004	ud Entrada de hombre con chapa lagrimada de 1,00x100 Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.	3,00	135,15	405,45
TOTAL 04.01.06.02.....				18.387,93
TOTAL 04.01.06.....				41.747,04
04.01.07	CUNETA PIE DE Balsa			
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	946,00	21,35	20.197,10
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	270,00	14,41	3.890,70
P4TUB500PVC	m Tubería PVC D=500 mm SN-8 Tubería de PVC diámetro Nominal 500 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.	295,00	45,35	13.378,25
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	3.262,15	2,77	9.036,16
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, curas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	404,15	59,75	24.147,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	3.725,11	2,16	8.046,24
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	22,93	16,26	372,84
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	8,27	26,85	222,05
P4HG-001A	m³ Hormigón HM-12.5/B/20/X0 Hormigón en masa HM-12.5/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación, p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	3,92	43,42	170,21
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	315,00	61,53	19.381,95
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	4,64	90,51	419,97
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	416,70	1,35	562,55
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	22,93	8,81	202,01
TOTAL 04.01.07.....				100.027,99
TOTAL 04.01				19.805.348,79

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.02	CAMARA DE COMPUERTAS DEL DESAGÜE DE FONDO			
04.02.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.850,30	2,77	5.125,33
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	745,50	2,16	1.610,28
TOTAL 04.02.01.....				6.735,61
04.02.02	OBRA DE FABRICA			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	15,26	49,22	751,10
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	1.531,29	90,51	138.597,06
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	214.162,63	1,35	289.119,55
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	70,56	16,26	1.147,31
P4ETT-004C-E2	m² Encof/desenc. muros y paramentos CURVOS y VISTOS Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	439,89	30,49	13.412,25
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	753,46	26,85	20.230,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4JTAPVC400	m Junta elastomérica de estanqueidad PVC 400 Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	50,40	15,74	793,30
PIMPEXT3	m² Impermeabilización exterior de la cámara mediante mortero elástico Impermeabilización exterior de la cámara de compuertas mediante mortero elástico. Incluye los siguientes trabajos: - Preparación del soporte mediante medios manuales o mecánicos: limpieza de la superficie con agua a presión con el fin de eliminar la suciedad, restos de desencofran-tes, etc. para conseguir una correcta adherencia. - Suministro y aplicación de mortero elástico Masterseal 6100 FX,o SIMILAR en el exterior de la cámara con una dotación aproximada de 3 kg/m2 y 3,0-3,5 mm de espe-sor medio. La aplicación se realizará de forma manual o proyectada en dos capas y sobre el soporte húmedo y limpio. Una vez aplicadas las dos capas formará una membrana superficial adherida al soporte que impide totalmente el paso del agua y de las humedades, en ambos sentidos, siendo un material que está homologado pa-ra agua potable y es compatible con hormigones y cemento Pórtland.	764,90	31,06	23.757,79
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubu-lares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y co-locación; unidad totalmente terminada.	953,86	23,03	21.967,40
P41MRE002	m² Aplicación de resina epoxy Aplicación de resina epoxy en obras de fábrica. Unidad completa incluidas operacio-nes de tratamiento y limpieza.	48,42	11,03	534,07
TOTAL 04.02.02.....				510.310,23
04.02.03	CONDUCCIONES Y ELEMENTOS SINGULARES			
P1T2232.20.E	m Tubería acero helic. L275, Ø2232 esp. 16,0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a nor-ma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2232 mm y espesor mínimo de 16,0 mm, con extremo de tubería abocardado ci-líndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	8,60	1.119,78	9.630,11
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para cal-derería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyec-to, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.	1.224,60	4,90	6.000,54
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos vertica-les, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y de-más operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.	34,73	102,92	3.574,41
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, pun-tales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de cha-pas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correcta-mente terminada.	138,53	16,26	2.252,50
TOTAL 04.02.03.....				21.457,56

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.02.04	ELEMENTOS HIDROMECAÑICOS Y ELECTROMECAÑICOS			
P6COMPBU_E	ud Compuerta Bureau 1700x2200 - PN10 -95 mca Compuerta Bureau con las siguientes características: Accionamiento: HIDRAULICO Cuerpo: S275JR + 304 Obturador: S275JR+304+BRONCE Cierre: INOX-BRONCE Brida: PN 10 Anchura: 1700 Altura: 2200 : Presión trabajo real: 95 mca Presión diseño: 95 mca Presión prueba cuerpo: 142,5 mca Presión prueba cierre: 104,5 mca La compuerta incluye lo siguiente: - By-pass DN 150 compuesto por 2 válvulas de compuerta. - Sistema de aireación DN 300 compuesto por 2 válvulas de compuertas + 2 válvulas de ventosa. - Grupo hidráulico (1 para 2 compuertas BU). - Panel de control (1 para 2 compuertas BU). - Repuestos recomendados. Totalmente colocada.	2,00	330.854,89	661.709,78
PCOMO010	m Embebidos metálicos en 1ª y 2ª fase Embebidos metálicos en primera y segunda fase de hormigonado, en ranuras de elementos hidromecánicos, totalmente colocados.	21,20	181,68	3.851,62
PREJ001	m² Reja formada por pletinas metálicas Reja formada por pletinas metálicas.	10,56	138,85	1.466,26
TOTAL 04.02.04.....				667.027,66
04.02.05	ESTRUCTURA METÁLICA			
P41ESC4	m Escalera peldaño inclinada PRFV 1.0m ancho Suministro e instalación de escalera inclinada de PRFV, de 1000 mm de ancho y peldaños antideslizantes cada 230 mm, incluyendo pasamanos, montantes, rodapié y listones intermedios, estructura de soporte y resto de elementos. Las piezas de PRFV se fabricarán mediante pultrusión, con resina ISOFTÁLICA en espacios sin agresión química y con VINILESTER en espacios confinados con agresión química, con las siguientes características: - Resistencia UV 5 en la escala de grises conforme a norma UNE-EN ISO 4892-parte 2 y/o según normativa vigente - Resistencia al fuego M-1 (ASTM-E84) - Resistencia al humo F-1 (ASTM-E84) - Pigmentación mediante resina tintada incluso p.p. de elementos de sujeción en acero inoxidable austenítico AISI 316.	6,19	312,44	1.934,00
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	11,10	119,36	1.324,90
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	1.249,28	2,07	2.586,01
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6 Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.	7,70	44,47	342,42

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41BARAND05	m Barandilla de acero en plataforma de tramex Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por perfilera metálica y tubos metálicos 42,2x6 mm, montada en plataforma de tramex o elementos metálicos por soldadura, incluso parte proporcional de soldaduras, totalmente colocada y terminada.	7,40	38,11	282,01
TOTAL 04.02.05.....				6.469,34
TOTAL 04.02				1.212.000,40
04.03	GALERÍA DEL DESAGÜE DE FONDO			
04.03.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	30.431,70	2,77	84.295,81
PTU-021	m³ Material de espaldón en relleno de excavación localizada Material "todouno" en espaldones procedente de excavaciones efectuadas en el vaso del embalse o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones o según puesta en obra deducida de los terraplenes de prueba.	27.342,29	5,37	146.828,10
TOTAL 04.03.01.....				231.123,91
04.03.02	OBRA DE FABRICA			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	304,20	49,22	14.972,72
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	13.814,09	90,51	1.250.313,29
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	901,40	61,53	55.463,14
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	2.321.841,25	1,35	3.134.485,69
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	4.382,22	16,26	71.254,90

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	9.307,48	26,85	249.905,84
P4ETT-004C-E2	m² Encof/desenc. muros y paramentos CURVOS y VISTOS Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	6.070,88	30,49	185.101,13
P4JTAPVC400	m Junta elastomérica de estanqueidad PVC 400 Junta elastómera de estanqueidad de 400 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	1.360,00	15,74	21.406,40
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	1.795,60	7,25	13.018,10
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.	12.176,25	23,03	280.419,04
PSELLSEXTG	m Sellado elástico exterior de las juntas de la galería mediante banda elastomérica Sellado elástico exterior de las juntas de la galería mediante banda elastomérica. Incluye los siguientes trabajos: - Preparación geométrica de la superficie portante de la junta mediante abujardado. Limpieza y saneo de ambos lados de la junta. - Aplicación de resina epoxi, Masterflex 3000 o similar adhesivo o similar. - Colocación en forma de omega invertida de la banda elastomérica Masterflex 3000 de alta resistencia de 20 cm de ancho o similar. - Aplicación de una segunda capa resina epoxi, Masterflex 3000 adhesivo o similar. - Una vez seca la resina se protegerá los lados de la junta mediante relleno de mortero de reparación Emaco S 88 o similar hasta igualar en altura con la superficie de la bóveda. - Por último y como protección de la junta se colocará de forma longitudinal una geomalla Hate X P 50 de polietileno de alta resistencia y 50 cm de ancho o similar.	607,04	140,65	85.380,18
P4MOR-001_E	m³ Mortero de nivelación Formación de capa de mortero de nivelación.	566,28	26,54	15.029,07
P3ACA001	m Formación de acanaladura con pendiente Formación de acanaladura con pendiente uniforme longitudinal mediante empleo de encofrado emtálico perdido con una anchura de 20 cm y una altura de 10 cm, totalmente finalizada.	468,00	29,99	14.035,32
TOTAL 04.03.02.....				5.390.784,82
04.03.03	CONDUCCIONES			
P1T2232.20.E	m Tubería acero helic. L275, Ø2232 esp. 16,0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2232 mm y espesor mínimo de 16,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	468,00	1.119,78	524.057,04

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	97.968,00	2,98	291.944,64
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.	34,73	102,92	3.574,41
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	277,06	16,26	4.505,00
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	92,66	61,75	5.721,76
TOTAL 04.03.03.....				829.802,85
04.03.04	ACCESORIOS			
PCANDRE	m Canaleta de drenaje en galería Canaleta para recogida de agua en galería.	466,00	15,19	7.078,54
PTAP600_E	ud Tapa acceso 600 x 600 Tapa de fundición dúctil para acceso a canal de descarga del aliviadero de dimensiones 0,600 x 0,600 m incluyendo cerco, mano de obra y colocación.	5,00	174,55	872,75
PPOL2000.4VI	ud Polipasto eléctrico, trans. Eléctrica, carga = 2000 kg Polipasto con las siguientes características - Versión : carro eléctrico - Altura de elevación : 4 m - Voltaje: 400 V.50 Hz - Velocidad elevación : 4/1 m/min - Velocidad translación : 20/5 m/min - Potencia de elevación : 1,7 y 0,4 kw - Potencia del carro : 0,34 kw con variador - Incluye botonera a baja tensión suspendida del polipasto con 3 m de cable de mando y carro tomacorrientes Totalmente colocado.	2,00	4.695,22	9.390,44
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grúa de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	13.178,48	2,07	27.279,45
P5ELEBAND1	m Bandeja PVC 300x60mm Bandeja de PVC de dimensiones 300x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	233,00	27,81	6.479,73
TOTAL 04.03.04.....				51.100,91

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.03.05	ELECTRICIDAD			
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+lp68 Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de polycarbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	24,00	199,70	4.792,80
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	274,00	8,87	2.430,38
P5ELEM3X1.5TT	m Manguera eléctrica 3 x 1.5 + TT1.5 mm2 Manguera eléctrica de 3 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Co-bre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	300,00	5,84	1.752,00
TOTAL 04.03.05.....				8.975,18
TOTAL 04.03				6.511.787,67
04.04	ARQUETA Y EDIFICIO DE TOMAS			
04.04.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	4.101,20	2,77	11.360,32
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	663,17	3,89	2.579,73
TOTAL 04.04.01.....				13.940,05
04.04.02	OBRA DE FABRICA			
04.04.02.01	ARQUETA INFERIOR			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	70,45	49,22	3.467,55
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.	999,87	102,92	102.906,62
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	374,73	16,26	6.093,11

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004C-E2	m² Encof/desenc. muros y paramentos CURVOS y VISTOS Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	54,48	30,49	1.661,10
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	1.267,40	26,85	34.029,69
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.	436,22	23,03	10.046,15
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	140.459,05	1,35	189.619,72
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	297,55	6,15	1.829,93
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	633,72	8,81	5.583,07
TOTAL 04.04.02.01				355.236,94
04.04.02.02	LOSA DE PASO Y ACCESO A GALERÍA			
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.	60,35	102,92	6.211,22
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	125,30	26,85	3.364,31
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.	311,61	23,03	7.176,38
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	10.892,37	1,35	14.704,70

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4JTAHIDROF2	m Junta cordón unión prefabricado a hormigón in situ Junta de estanqueidad en unión arquetas prefabricadas a hormigón de base ejecutado in situ, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	17,00	4,53	77,01
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	13,60	20,14	273,90
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6 Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.	7,40	44,47	329,08
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.	2,00	77,91	155,82
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.	2,10	98,65	207,17
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grúa de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	1.249,28	2,07	2.586,01
TOTAL 04.04.02.02.....				35.085,60
04.04.02.03	ESTRUCTURA SUPERIOR			
PVPREFTVT25	m Viga prefabricada tubular correas tipo VT-25 Viga prefabricada tubular correas tipo VT-25 en cubierta, incluso transporte y colocación.	415,10	86,25	35.802,38
PVPREDEL182	m Viga prefabricada tipo Delta G182 T 10 Viga prefabricada tipo Delta G182 T 10, colocada con ayuda de grúa automóvil para montaje y apeos necesarios. Según CODIGO ESTRUCTURAL y CTE.	75,00	345,74	25.930,50
PVPREDEL136	m Viga prefabricada tipo Delta G136 T 2 Viga prefabricada tipo Delta G136 T 2, colocada con ayuda de grúa automóvil para montaje y apeos necesarios. Según CODIGO ESTRUCTURAL y CTE.	47,25	320,87	15.161,11
PVPREHAH	m Viga prefabricada HA portacanal tipo H Viga prefabricada HA portacanal tipo H, para recogida de aguas en cubierta, incluso pp de transporte y colocación.	69,50	327,65	22.771,68

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PPILP5060	m. Pilar prefabricado de HA 50x60cm Pilar prefabricado de hormigón armado, HA-35/B/16/XC4, de sección 50x60 cm., de altura máxima 15 m. , incluso p.p. de encofrado, desencofrado, vertido, vibrado, curado y armaduras, con ayuda de grúa telescópica sobre camión para montaje, aplomado, relleno del nudo de enlace con hormigón HA-35/B/16/XC4 para montaje y apeos necesarios, totalmente terminado.	173,00	384,18	66.463,14
PVIGJAC4040	m Viga jacena prefabricada de HA 40x40 cm Viga jacena prefabricada de hormigón armado de sección 40x40 cm., con armadura s/ cálculo y con la sección necesaria en cada nudo para acoplamiento de piezas de la estructura, incluso parte proporcional de apoyo, montaje con autogrúa, totalmente instalado.	119,60	420,37	50.276,25
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	18,15	49,22	893,34
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.	44,83	102,92	4.613,90
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	30,02	16,26	488,13
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formacion de armaduras incluyendo suministro del material a pie de obra, corte, elaboracion, colocacion en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	1.686,00	1,35	2.276,10
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	6.421,80	2,07	13.293,13
TOTAL 04.04.02.03.....				237.969,66
TOTAL 04.04.02.....				628.292,20
04.04.03	ARQUITECTURA			
04.04.03.01	FACHADA Y CUBIERTA			
PCUBSAND	m² Cubierta panel sandwich e= 30 mm Cubierta formada por panel de chapa de acero en perfil comercial, prelacada de 0,6 mm con núcleo de espuma de poliuretano de 40 kg/m3 con un espesor total de 30 mm sobre correas metálicas, i/p.p. de solapes, instalado, incluso medios auxiliares y elementos de seguridad, según normativa vigente.	704,50	80,41	56.648,85
PCUBPLAPOL	m² Cubierta placas de policarbonato Suministro y montaje de placas translúcidas planas de policarbonato, con una pendiente mayor del 10%, PC Celular "ONDULINE" o similar, de 10 mm de espesor, con una transmisión de luminosidad del 90%, fijadas mecánicamente a cualquier tipo de correa estructural (no incluida en este precio). Incluso p/p de elementos de fijación, accesorios, juntas, remates perimetrales y otras piezas de remate para la resolución de puntos singulares.	120,00	36,18	4.341,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PEP1017	m² Fábrica bloques hueco hormigón estriado visto 40x20x20 cm. Fábrica de bloque hueco de hormigón estriado a cara vista, color blanco, dimensiones 40x20x20 cm, recibida con mortero M-250 de cemento BL 22,5 incluso rejuntado, limpieza de paños y piezas especiales, según normativa vigente.	908,96	47,91	43.548,27
PEP1020	m Trasdosado de chapa de acero galvanizado Trasdosado de chapa mediante chapa plegada de acero, con acabado galvanizado, de 0,8 mm de espesor, colocado con fijaciones mecánicas. Incluso junta de estanqueidad.	119,60	17,78	2.126,49
PEP1021	m Albardilla metálica de acero galvanizado Suministro y colocación de albardilla metálica para cubrición de muros, de chapa plegada de acero galvanizado, con goterón, espesor 0,8 mm, sobre una capa de regularización de mortero de cemento, industrial, con aditivo hidrófugo, M-5, de 4 cm de espesor, creando una pendiente suficiente para evacuar el agua, sobre la que se aplica el adhesivo bituminoso de aplicación en frío para chapas metálicas, que sirve de base al perfil de chapa de acero y sellado de las juntas entre piezas y, en su caso, de las uniones con los muros con adhesivo especial para metales. Incluso p/p de replanteo, cortes y limpieza final. Incluye: Preparación de la superficie de apoyo. Preparación de la base y de los medios de fijación. Ejecución de la base de apoyo de mortero. Replanteo de las piezas. Aplicación del adhesivo. Colocación y fijación de las piezas metálicas niveladas y aplomadas. Sellado de juntas y limpieza. Criterio de medición de proyecto: Longitud medida a ejes, según documentación gráfica de Proyecto. Criterio de medición de obra: Se medirá, a ejes, la longitud realmente ejecutada según especificaciones de Proyecto.	119,60	26,01	3.110,80
PCAN1022	m Canalón de acero galvanizado Canalón de acero galvanizado, de desarrollo 250 mm, para recogida de aguas, formado por piezas preformadas, fijadas con soportes colocados cada 50 cm, con una pendiente mínima del 0,5%. Incluso soportes, esquinas, tapas, remates finales, piezas de conexión a bajantes y piezas especiales.	69,50	31,44	2.185,08
PBPVC110	m Bajante PVC Ø 110 mm. Bajante con tubería de PVC de 110 mm de diámetro, incluso p.p. de piezas especiales, elementos de fijación y medios auxiliares para su ejecución, según normativa vigente.	60,80	12,86	781,89
PEP1024	ud Arqueta de registro 50x50x60 1/2 tapa horm. Arqueta de registro de dimensiones interiores 50x50x60 cm, realizada con fábrica de ladrillo perforado tosco de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón HM-20/P/40/I de 20 cm de espesor, enfoscada y bruñida interiormente, con cerco y tapa de hormigón prefabricada, totalmente terminada, incluso p.p. de medios auxiliares.	8,00	112,54	900,32
PMANG110	m Manguetón de PVC flexible de 110 mm en conexión a bajantes Manguetón de PVC flexible de 110 mm en conexión a bajantes. Totalmente terminado.	800,00	15,39	12.312,00
TOTAL 04.04.03.01				125.955,30
04.04.03.02	CARPINTERÍA			
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.	22,40	77,91	1.745,18
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.	35,20	98,65	3.472,48

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PALP1026	m Alfeizar de piedra artificial, de color blanco, de 30x5 cm. Alfeizar de piedra artificial, de color blanco, de 30x5 cm, recibido con mortero M-250 de cemento CEM-II/32,5 ó BLL 22,5 con goterón, incluso pulido y abrillantado.	28,00	29,16	816,48
PCAPMET	m² Carpintería metálica con perfiles de acero conf. frío en vent. Carpintería metálica con perfiles de acero conformado en frío, en ventanas o puertas abatibles, ejecutada con perfiles de tubo hueco de acero laminado en frío, esmaltados al horno, de 1,5 mm ó 2 mm de espesor, junquillos de 30x15 mm, con bulones a presión, perfil vierteaguas, herrajes de colgar y seguridad, patillas para anclaje i/corte, preparación y soldadura de perfiles en taller, ajuste y montaje en obra, i/ vidrio, recibido en obra.	44,80	240,72	10.784,26
PDOBACRAIS	m² Doble acristalamiento aislante 4/6/4 Doble acristalamiento aislante formado por dos lunas incoloras de 4 mm y cámara de aire deshidratado de 6 mm con perfil separador de aluminio y doble sellado perimetral, fijación sobre carpintería e incluso cortes de vidrio y colocación de junquillos, según normativa vigente.	44,80	20,57	921,54
PCARG3	m Cargadero huecos luz= 3 m Cargadero para huecos de hasta 3 m de luz formado por viguetas prefabricadas de hormigón armado de 20 cm de canto, incluso recibido y colocación totalmente terminado.	64,80	17,59	1.139,83
TOTAL 04.04.03.02.....				18.879,77
TOTAL 04.04.03.....				144.835,07

04.04.04 CONDUCCIONES Y VALVULERÍA

04.04.04.01 CONDUCCIONES Y VALVULERIA

P1T1900.13.OA	m Tubería acero helic. L275, Ø1930 esp. 13.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.930 mm y espesor mínimo de 13.0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	12,20	869,38	10.606,44
P1T1600.10.OA	m Tubería acero helic. L275, Ø1626 esp. 10.0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 1.626 mm y espesor mínimo de 10,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	43,90	567,43	24.910,18
P1T2232.20.E	m Tubería acero helic. L275, Ø2232 esp. 16,0 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2232 mm y espesor mínimo de 16,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	39,40	1.119,78	44.119,33

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T762.6.E	m Tubería acero helic. L275, Ø762 esp 6 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 762 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	16,40	154,70	2.537,08
P1T600.6.E	m Tubería acero helic. L275, Ø600 esp 6 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 600 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	2,60	146,96	382,10
P6VM.2200.16M	ud Válvula mariposa motorizada PN 16 Ø2200 Válvula de mariposa, DN 2200 mm, PN 16, conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	80.404,84	160.809,68
P6CD.2200.16	ud Carrete desmontaje virola acero inox. PN16 DN2200 Carrete telescópico autoportante, PN 25 atm, DN2.200 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	6.991,09	13.982,18
P6VM.1900.16M	ud Válvula mariposa motorizada PN 16 Ø1900 I Válvula de mariposa, DN 1900 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	2,00	67.608,94	135.217,88
P6CD.1900.25	ud Carrete desmontaje virola acero inox. PN25 DN 1900 Carrete telescópico autoportante, PN 25 atm, DN 1.900 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	2,00	12.646,21	25.292,42
P6VM.1600.16M	ud Válvula mariposa motorizada PN 16 Ø1600 I Válvula de mariposa, DN 1600 mm, PN 16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado , incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	4,00	52.694,95	210.779,80
P6CD.1600.16	ud Carrete desmontaje virola acero inox. PN16 DN1600 Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	4,00	5.121,93	20.487,72
P6CD.700.16	ud Carrete desmontaje DN 700 PN16 Carrete de desmontaje de diametro 700 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	4,00	1.051,41	4.205,64

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P6VM.700.16M	ud Válvula mariposa motorizada PN 16 Ø700 I Válvula de mariposa, DN 700 mm, PN16, serie 14 conforme a norma UNE-EN 558 y/o según normativa vigente, excéntrica, con unión mediante bridas, revestimiento de epoxi o vitrocerámico y reductor y actuador motorizado, incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento.	4,00	11.272,06	45.088,24
P6VREG750	ud Válvula reguladora de control PN16 Ø750 Válvula de control de operación hidráulica (no eléctrica) y accionada por diafragma modelo WW- 30"-M5L-753-66-55-18-G-C-16-EV-NN-JU o similar, DN750 (30") PN16, limitadora de caudal dinámica con doble solenoide de circuito de 3 vías (sin pérdida de carga adicional a la válvula (no orificio calibrado) especialmente diseñada para limitar un caudal dinámica, independientemente de las variaciones de la presión de entrada con solenoide extra para cambio a circuito hidráulico mantenedor de presión y control de nivel de balsa por piloto de altitud.Incluso actuador	2,00	131.195,37	262.390,74
P6VENT.200.16	ud Ventosa trifuncional DN200 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 200 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	9,00	3.199,43	28.794,87
P6VENT.150.16	ud Ventosa trifuncional DN150 mm PN16+Valv corte+carrete Suministro e instalación de ventosa trifuncional, DN 150 mm PN16, con un orificio de purga capaz de expulsar al menos el 2% del aire ocluido y capacidad de admisión de aire según el PPTP, unión mediante bridas y revestimiento de epoxi o vitrocerámico según Especificación Técnica incluso juntas elastoméricas de estanquidad, tornillería de acero inoxidable, instalación y pruebas necesarias para su correcto funcionamiento. Incluye válvula de corte de mismo diámetro y timbraje.	4,00	1.071,95	4.287,80
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.	6.367,92	4,90	31.202,81
PVHW600	ud Válvula Howell-Bunger DN 600 mm Suministro y montaje de válvula Howell-Bunger de 600 mm de diámetro, con carrete deflector de chorro incorporado a la válvula, construida en acero inoxidable, con accionamiento por cilindros oleohidráulicos, con indicador de posición electrónico digital con lectura en pupitre de mando. Unidad totalmente instalada y probada.	2,00	57.051,93	114.103,86
P1T200	m Tubería de acero Ø200 esp 6,3 sin soldadura Suministro e instalación de tubería de acero de calidad ST 37.0 según DIN-1629 y ASTM-A 53, de diámetro nominal DN 219.1 mm y espesor mínimo de 6,3 mm, medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	44,00	49,09	2.159,96
P6CD.200.16	ud Carrete desmontaje DN200 PN16 Carrete de desmontaje de diametro 200 mm y PN16 at., autoportante, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente,con recorrido maximo de 50 mm, tornilleria formada por esparragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	11,00	188,30	2.071,30
P6VC.200.16	ud Válvula compuerta ø200 mm, 16 atm Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 200 mm, instalada.	11,00	660,87	7.269,57
P4CINT1900	m Encintado anticorrosivo DN1900 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1900mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	1,60	783,11	1.252,98
P4CINT1600	m Encintado anticorrosivo DN1600 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	1,60	667,60	1.068,16

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1T0400.4B	m Tubería de acero heli. L335 Ø400 esp 4,0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	63,15	118,93	7.510,43
P1T300	m Tubería de acero Ø300 esp 4,0 sin soldadura Suministro e instalación de tubería de acero calidad ST 37.0 según DIN-1629 y ASTM- A-53 de diámetro nominal DN 308 y espesor mínimo de 4 mm. medios auxiliares y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	55,23	57,46	3.173,52
P6VC300.16	ud Válvula compuerta Ø300 mm, 16 atm Válvula de compuerta con lenteja de asiento elástico, eje de acero inoxidable compri-mido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embridada con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 300 mm instalada.	1,00	858,24	858,24
P6VP.400.25	ud Válvula alivio sobrepresión pilotada PN25 DN400 Válvula de seguridad de alivio por sobrepresión, DN 400, PN 25, hidráulica pilotada de diafragma con sistema anticavitación , incluyendo tornillería de acero inoxidable, juntas de bridas, elastómeros de estanquidad, elementos de medición y pilotos de regulación. Con instalación y pruebas.	1,00	26.725,82	26.725,82
TOTAL 04.04.04.01				1.191.288,75
04.04.04.02	APOYOS			
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvaniza-ción de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m2 700 g/m2. Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a tempera-tura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	8.645,48	2,98	25.763,53
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protec-ción en ambientes húmedos y agresivos (totalmente montado para masividades com-prendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regulariza-ción y resto de operaciones necesarias para su terminación completa.	1.029,20	2,07	2.130,44
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para cal-derería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyec-to, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.	1,00	4,90	4,90
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos vertica-les, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y de-más operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.	19,61	102,92	2.018,26
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, pun-tales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de cha-pas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correcta-mente terminada.	91,01	16,26	1.479,82

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	784,40	1,35	1.058,94
P4NEOP2	m² Banda EPDM y neopreno apoyo tuberías Neopreno 10 mm de espesor para apoyo tuberías, incluso elementos de atado y solapes. Unidad totalmente terminada.	19,94	61,75	1.231,30
TOTAL 04.04.04.02.....				33.687,19
TOTAL 04.04.04.....				1.224.975,94
04.04.05 ESTRUCTURA METÁLICA DE ACCESO				
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm, barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante, incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	16,80	111,07	1.865,98
P41TRAM_003	m² Tramex AISI-316L 50x50x5(1000kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 50x50x5 mm., con uniones electrosoldadas carga mínima 1000Kg/m2 en cualquier superficie (>5m²), incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	120,42	151,16	18.202,69
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm², unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grúa de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	17.089,29	2,07	35.374,83
P41ESC2	m Escalera vertical fija acero inox-tipo barco AISI 316L Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaída y elementos extensibles. Unidad totalmente terminada.	13,50	183,55	2.477,93
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6 Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.	18,90	44,47	840,48
P41BARAND05	m Barandilla de acero en plataforma de tramex Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por perfilera metálica y tubos metálicos 42,2x6 mm, montada en plataforma de tramex o elementos metálicos por soldadura, incluso parte proporcional de soldaduras, totalmente colocada y terminada.	115,55	38,11	4.403,61
TOTAL 04.04.05.....				63.165,52

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.04.06	ELEMENTOS VARIOS			
PPUENGR2000	ud Puente grúa monorriel 5.000 kg	1,00	19.399,00	19.399,00
	Puente grúa monorriel de 5.000 Kg y 14,05 m. de luz. Características detalladas en el documento de especificaciones técnicas. Incluido fabricación, transporte a obra, montaje, conexionado y puesta en marcha.			
TOTAL 04.04.06.....				19.399,00
04.04.07	ARQUETA DE CAUDALÍMETROS			
04.04.07.01	OBRA DE FÁBRICA			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero	1.164,60	2,77	3.225,94
	Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.			
PGRAV512	m³ Relleno con gravilla de tamaño 5-12 mm	132,59	32,60	4.322,43
	Gravilla de 5-12 mm de tamaño para la conformación del relleno de trasdós, incluido transporte y relleno.			
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN	884,76	3,89	3.441,72
	Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales	32,56	49,22	1.602,60
	Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.			
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados	58,94	90,51	5.334,66
	Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.			
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS	152,24	16,26	2.475,42
	Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.			
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS	82,56	26,85	2.216,74
	Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.			
P4ETT-002	kg Acero B-500-S	6.203,90	1,35	8.375,27
	Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para para- mentos enterrados de obras de fábrica, totalmente instalada.	152,24	8,81	1.341,23
P4LOSA003	m² Losa prefabricada con entrada de hombre Losas prefabricadas de hormigón en tapas de grandes arquetas con entrada de hom- bre practicable dimensionada para carga peatonal, cuantía mínima 95kg/m3, homolo- gada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos pe- rimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmen- te terminada.	31,97	100,76	3.221,30
P41LAG004	ud Entrada de hombre con chapa lagrimada de 1,00x100 Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero gal- vanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, ce- rradura y elementos de asiento, totalmente instalada.	1,00	135,15	135,15
TOTAL 04.04.07.01				35.692,46
04.04.07.02	EQUIPOS Y ELEMENTOS METÁLICOS			
P41LAG004	ud Entrada de hombre con chapa lagrimada de 1,00x100 Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero gal- vanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, ce- rradura y elementos de asiento, totalmente instalada.	3,00	135,15	405,45
P41ESC1	m Escalera vertical telescópica acero inox. tipo barco AISI-316L Escalera de seguridad y protección telescópica de acero inoxidable extensible en tra- mos de 50 cm. anchura 60 cm, longitud 5.0 m, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro in- terior 0.8m. totalmente instalada, incluso pernos de anclaje y tacos de resina de epo- xi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Uni- dad totalmente terminada.	12,54	182,62	2.290,05
PTOO300.10	m Tubería de PP 300 mm PN10 Tubería de PP masivo (Polipropileno Homopolimero), para aireación, de 300 mm de diámetro exterior, con junta colada, incluida la soportería en acero inoxidable, uniones, juntas y codos. Totalmente instalada.	1,30	207,36	269,57
P6CD.1600.16	ud Carrete desmontaje virola acero inox. PN16 DN1600 Carrete telescópico autoportante, PN 16 atm, DN 1.600 mm, formada por bridas de acero al carbono y virolas de acero inoxidable, con revestimiento interior y exterior de resina epoxi, color exterior y marcado, incluso colocación, juntas elastoméricas de estanquidad en EPDM, tornillería de acero inoxidable, medios auxiliares y prue- bas necesarias para su correcto funcionamiento.	2,00	5.121,93	10.243,86
P6Q1600.16	ud Caudalímetro ultrasónico PN 16 Ø1600 Suministro, instalación y puesta en servicio de caudalímetro ultrasónico, de dos ha- ces, sobre tubería DN 1.600 mm, con principio de medida en función del Tiempo de Tránsito, incluso carrete PN 16, toma DN 3/4 " y llave de corte, portasondas, son- das, 20 m de cable coaxial, grado de protección IP68, alimentación eléctrica a 24 Vcc, precisión mejor del 1 %, con recubrimiento interno del tubo de medida, con certi- ficados de calidad de materiales, construcción y alineación de sondas, según ficha técnica, electrónica, instalación eléctrica, montaje, totalmente instalado, probado y puesto en servicio	2,00	16.237,29	32.474,58
P4CINT1600	m Encintado anticorrosivo DN1600 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN1600mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormi- gón, armaduras y elementos asociados. Unidad totalmente instalada.	2,00	667,60	1.335,20
TOTAL 04.04.07.02				47.018,71
TOTAL 04.04.07				82.711,17

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.04.08	URBANIZACIÓN			
PENC1016	m² Encachado en caja para base de solera. Encachado en caja para base de solera de 20 cm de espesor, mediante relleno y extendido en tongadas de espesor no superior a 20 cm de gravas procedentes de cantera caliza de 40/80 mm; y posterior compactación mediante equipo manual con bandeja vibrante, sobre la explanada homogénea y nivelada.	119,60	9,23	1.103,91
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, curas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	17,94	59,75	1.071,92
P5PAV1A	m² Pav. solado acerado baldosa 20x20+10 HM20 Solado de baldosas de hidráulicas de 20 x 20 gris o color (a criterio de la Dirección Facultativa), colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	119,60	29,57	3.536,57
P5BORD3	m Bordillo prefabricado hormigón bicapa 9-10x20 Bordillo de hormigón bicapa, achaflanado, de 9-10x20 cm. colocado sobre solera de hormigón HM-15/P/40, de 10 cm. de espesor, i/excavación necesaria, rejuntado y limpieza.	119,60	12,93	1.546,43
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial, incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas. Unidad totalmente terminada.	3.045,45	3,65	11.115,89
TOTAL 04.04.08.....				18.374,72
TOTAL 04.04				2.195.693,67
04.05	ELEMENTOS DE ROTURA DE CARGA			
04.05.01	MOVIMIENTO DE TIERRAS			
P1MT03A1	m³ Excavación localizadas roca-ripable+agotam+Tte acopio o verted. Excavación en zanja y localizada localizada para conducciones, arquetas, pozos y cimentaciones, con sección trapezoidal y/o recintos entibados, en terreno duro y roca (areniscas, lutitas, yesos, ...) ejecutado con ripper y aplicación localizada de martillo, incluyendo prezanjas, pozos de achique y agotamientos para cualquier caudal, carga y transporte a acopios intermedios y/o vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido, así como operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.636,60	4,24	11.179,18
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arborea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arborea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	375,00	0,21	78,75
TOTAL 04.05.01.....				11.257,93
04.05.02	OBRA DE FÁBRICA			
04.05.02.01	CUENCO DEFLECTOR			
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales Hormigón para armar HA-35/B/20/XC2+XA3, puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.	444,40	102,92	45.737,65
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	12,41	49,22	610,82

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	69.886,42	1,35	94.346,67
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	4.049,28	26,85	108.723,17
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	134,47	16,26	2.186,48
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	134,47	8,81	1.184,68
TOTAL 04.05.02.01				252.789,47
04.05.02.02	CUENCO DE AMORTIGUACIÓN			
PHA351031	m³ Hormigón HA-35/B/20/XC2+XA3 horizontales y verticales Hormigón para armar HA-35/B/20/XC2+XA3 , puesto en obra en elementos verticales, vigas, pilares y otros, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según CODIGO ESTRUCTURAL. Unidad totalmente terminada.	151,25	102,92	15.566,65
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	12,18	49,22	599,50
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	10.333,99	1,35	13.950,89
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	135,43	16,26	2.202,09
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	10,00	8,81	88,10
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	17,28	6,15	106,27
TOTAL 04.05.02.02				32.513,50
TOTAL 04.05.02				285.302,97
TOTAL 04.05				296.560,90

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.06	CANAL DE DESCARGA AL PULGUER			
04.06.01	MOVIMIENTO DE TIERRAS			
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	4.350,00	0,21	913,50
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	4.350,00	0,37	1.609,50
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	27.091,90	2,77	75.044,56
TOTAL 04.06.01.....				77.567,56
04.06.02	SECCIONES TIPO			
PTU-019	m³ Escollera procedente de préstamo 500 kg balsas Escollera colocada de 500 kg procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto en el entorno de la balsa de Tudela y de la balsa de Mostrakas, colocada en cualquier tipo de paramento, incluso suministro, transporte, medido sobre perfil teórico, según planos.	2.504,07	35,37	88.568,96
TOTAL 04.06.02.....				88.568,96
04.06.03	SALTOS			
PTU-019	m³ Escollera procedente de préstamo 500 kg balsas Escollera colocada de 500 kg procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto en el entorno de la balsa de Tudela y de la balsa de Mostrakas, colocada en cualquier tipo de paramento, incluso suministro, transporte, medido sobre perfil teórico, según planos.	577,02	35,37	20.409,20
TOTAL 04.06.03.....				20.409,20
04.06.04	HINCA BAJO NA-160			
04.06.04.01	TRABAJOS PREPARATORIOS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.944,00	2,77	5.384,88
P1MT04G	m³ Rellenos localizado con encachado roca mejora terreno Relleno localizado para mejora de la capacidad portante del terreno a base de bolos y/o bloques de roca tamaño mínimo 200 mm procedente de excavación, préstamo y/o cantera, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máxima de 25 cm, hasta un asiento residual de 1 mm, incluido el material granular de relleno de huecos, herramientas y medios auxiliares. Unidad totalmente terminada.	58,50	4,97	290,75

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	220,00	4,11	904,20
TOTAL 04.06.04.01				6.579,83
04.06.04.02	ESTRUCTURA DE HINCA			
P5PANT01	ud Transporte y montaje equipos ejec. pantallas Transporte inicial a obra, desmontaje y posterior retirada de equipos de ejecución de pantallas Incluye implantación y posterior retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	4,00	11.719,12	46.876,48
P5PANT02	ud Desmontaje/ desplazamiento/ montaje equipos pantalla en obra Desmontaje, transporte y montaje de equipos pantalla en interior de obra. Incluye operaciones de retirada de todos los elementos, excavaciones y operaciones de demolición si procede. Unidad completa.	1,00	3.324,51	3.324,51
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	21,45	49,22	1.055,77
P4HG-004AHV	m³ Hormigón HA-30/B/20/XC4 horizontales y verticales Hormigón para armar HA-30/B/20/XC4 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	69,76	78,03	5.443,37
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	7.324,80	1,35	9.888,48
P4PERN32	ud Barra de anclaje acero Ø32 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 32mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	16,15	161,50
P4PERN20	ud Barra de anclaje acero Ø20 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 20mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	9,47	94,70
P4PERN16	ud Barra de anclaje acero Ø16 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 16mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	560,00	8,07	4.519,20
P4PERN12	ud Barra de anclaje acero Ø12 mm.fij. res. epoxy Ud. Barra para anclaje en estructura de hormigón armado Ø 12mm B500S de 1m de longitud total.Totalmente colocado, incluso perforación de taladro y fijación con resina epoxy, retirada de sobrante.	10,00	5,27	52,70
P4JTAHIDROF	m Junta cordón poliuretano hidroexpansivo Junta poliuretano hidroexpansivo con interior hueco, incluso p.p.de colocación, nivelación, solapes, mermas y medios auxiliares. Unidad totalmente terminada.	56,00	7,25	406,00
P1MT06F	m³ Demolición +corte junta de diamante +apertura de hueco Demolición con corte con junta de diamante incluidas pre-perforaciones y posterior demolición de hormigón armado de espesor con retromartillo rompedor, formación de taladros, retirada de escombros a pie de carga, corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido. Incluso p.p. de operaciones de remate del hormigón visto con mortero sulforresistente sin retracción.	18,84	100,81	1.899,26
P1MT06A	m³ Demolición muro o losa hormigón armado+tte+canon Demolición de muro o losa de hormigón armado de espesor variable con retromartillo rompedor, i/retirada de escombros a pie de carga, precorte y corte de armaduras con disco, maquinaria auxiliar de obra, carga y transporte a vertedero, incluso canon de vertido.	71,50	52,84	3.778,06

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 04.06.04.02.....				77.500,03
04.06.04.03 HINCA				
P6HINCA2000B1	ud Implantación equipo escudo abierto hınca DN 2000-2500 desde fáb. Implantación y transporte de equipo perforador de escudo abierto, para hınca de tubería de hormigón armado de diámetro interior 2.000 y 2500 mm, incluso mano de obra para descarga, montaje y puesta a punto.	1,00	4.028,00	4.028,00
P6HINCA2000B3	ud Retirada de equipos esc. abierto+ traslado+imp. interior de obra Retirada y desmontaje de equipos esc. abierto con transporte y traslado interior de obra, incluyendo posterior instalación en nuevo punto de hınca, mano de obra para descarga, montaje y puesta a punto.	1,00	2.650,00	2.650,00
P6HINCA2500B	m Tubería hincada hormigón armado DN 2500 escudo abierto Tubería hincada de DN 2.500 mm de diámetro interior, de hormigón armado, con vñrola metálica conforme a la norma UNE-EN 1916 y UNE-EN 127916, y/o normativa vigente, en cualquier clase de terreno incluso roca, con equipo de escudo abierto, corte integral, extracción de los productos procedentes de la excavación, y colocada por guía mediante láser, incluso p.p. de juntas de estanqueidad, inyecciones bentoníticas, inyecciones de mortero de cemento u otras para rellenos del gap, elementos auxiliares, elementos de empuje, vigas de guía, gatos hidráulicos, generador y cableado de coriente, grúas necesarias para la puesta en obra de los tubos, demolición posterior de muros, arrastre, incluso extracción de sobrantes, tratamiento y desecado, carga y transporte a vertedero de excedentes y material de extracción (tierras, fangos y lodos). Se incluye la instalación de un pórtico grúa para la descarga y bajada de los tubos al pozo, la ejecución de las zapatas de apoyo y la colocación de las placas de anclaje. Unidad totalmente terminada, incluida toda la obra civil asociada, mano de obra, materiales, maquinaria y medios auxiliares. Medido sobre perfil.	64,31	2.703,81	173.882,02
P6HINCATUB01	m Sobre coste tubería int. hınca Sobrecoste de instalación de tubería de acero helicoidal de diámetros DN 2.000 mm a 1.600 mm en el interior de hınca de DN 2.000 y 2.500 mm recta o curva, mediante intalación de patines, pasantes, operaciones de soldadura, revestimientos de juntas, operaciones de empuje y tiro-arrastre, p.p. de anillo de estanqueidad. Unidad totalmente instalada.	64,61	90,10	5.821,36
TOTAL 04.06.04.03.....				186.381,38
04.06.04.04 TRATAMIENTOS Y AUSCULTACIÓN				
P6HINC.T01	m³ Lechada cemento tratamientos Mortero de cemento CEM-I/32,5 SR y/o inyección de lechada de cemento para tratamientos del terreno para ejecución del túnel, incluidas operaciones bombeo, obturación, etc. Unidad completa.(no incluye rellenos del gap, ya incluidos en la propia ejecución del túnel).	131,88	79,21	10.446,21
P4GUN.20	m² Hormigón gunitado SR e=15 cm+ 10x10 A Ø 5-5 B500T 8x20/20 Hormigón proyectado gunitado HMP- 35/F/12/XC2+XA3 SR de 15 cm de espesor y fraguado rápido con doble malla electrosoldada ME 10x10, y 5mm de diam., acero B500T 8x2,20, conforme a norma UNE 36092 y/o según normativa vigente. Unidad completa incluido tubos drenantes y anclajes.	200,00	56,49	11.298,00
P6HINCA01	ud Cabeza de referencia topográfica inoxidable para nivelación de p Cabeza de referencia topográfica inoxidable para nivelación de precisión. Unidad totalmente instalada	8,00	18,53	148,24
P6HINCA02	ud Suministro de varilla de acero de 12 mm de diámetro para referen Suministro de varilla de acero de 12 mm de diámetro para referencia topográfica de hasta 1 metro de longitud, incluyendo vaina de pvc de revestimiento de la varilla. Unidad totalmente instalada, excavaciones, rellenos y gravilla incluidos.	8,00	18,49	147,92
P6HINCA04	ud Equipo auscultación túnel / hınca carretera/ FFCC de long <100m Equipo de auscultación de seguimiento de túnel río de longitud inferior a 100m compuesto por técnico y auxiliar, incluida la realización de lecturas, seguimiento de nivelaciones, control de subsidencias y generación de informes.Todo conforme Plan de Auscultación y requerimientos de Organismo.	1,00	4.821,98	4.821,98
TOTAL 04.06.04.04.....				26.862,35
TOTAL 04.06.04.....				297.323,59
TOTAL 04.06				483.869,31

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.07	ALIVIADERO			
04.07.01	OBRA DE FÁBRICA			
P4HG-005A3H_E	m³ Hormigón HA-35/B/20/XC2+XA3-SR soleras, cimentaciones, forjados Hormigón para armar HA-35/B/20/XC2+XA3-SR puesto en obra en elementos horizontales (cimentaciones, losas, forjados, ...), incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	199,10	90,51	18.020,54
P4ETT-004C-E2	m² Encof/desenc. muros y paramentos CURVOS y VISTOS Encofrado y desencofrado, colocado en paramentos CURVOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	49,76	30,49	1.517,18
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	26.168,35	1,35	35.327,27
TOTAL 04.07.01.....				54.864,99
04.07.02	ELEMENTOS METÁLICOS			
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.	36.820,56	4,90	180.420,74
TOTAL 04.07.02.....				180.420,74
04.07.03	VARIOS			
PBOY01	m Barrera protectora de boyas y cuerdas en zona de aliviadero Barrera protectora de boyas y cuerdas en zona de aliviadero	102,00	22,22	2.266,44
TOTAL 04.07.03.....				2.266,44
TOTAL 04.07				237.552,17
04.08	AUSCULTACIÓN E INSTRUMENTACIÓN			
04.08.01	SENSORES Y EQUIPOS			
PGQIN0A01	ud Piezómetro de cuerda vibrante para control de presiones intersti Piezómetro de cuerda vibrante para control de presiones intersticiales en el cimiento y cuerpo de presa, con rango de 0-10 Kg/cm², precisión 0,1% del rango y sensibilidad 0,025 % del rango , completamente instalado, incluido embalaje, transporte, carga y descarga, material de montaje, incluso obra civil, sin cableado de señal.	66,00	595,01	39.270,66
PGQIN0A02	ud Célula de presión total de cuerda vibrante para control de pres Célula de presión total de cuerda vibrante para control de presiones totales en el núcleo y contactos con el cimiento, de rango entre 0 y 17,5 Kg/cm² y precisión 0,1% del rango, con salida eléctrica para las lecturas, completamente instalada, incluido embalaje, transporte, carga y descarga, además del pequeño material necesario para el montaje, incluso obra civil, sin cableado de señal.	9,00	613,79	5.524,11
PGQIN0A03	m Cable de 2 conductores x 1 mm², apantallado y con malla de acero Cable de 2 conductores x 1 mm², apantallado y con malla de acero, con recubrimiento de protección en PVC, conectado a cada sensor con señal eléctrica y colocado por la presa hasta las cajas de centralización, incluso zanjas, instalado y comprobado.	18.750,00	3,03	56.812,50
PGQIN0A04	ud Empalme de resina, tipo SCOTCH o similar Empalme de resina, tipo SCOTCH o similar, para la unión de cables en el interior del terreno asegurando la continuidad de la señal, colocado y comprobado.	75,00	20,46	1.534,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PGQIN0A05	ud Punto de centralización y lectura manual para los sensores con señal elec. Punto de centralización y lectura manual para los sensores con señal eléctrica (piezómetros y células de cuerda vibrante) instalados en la presa, colocado en el interior de un armario de poliéster prensado con protección IP-55, frontal serigrafiado con identificación de cada sensor y conmutador o interruptores para selección del sensor a leer, incluyendo tarjetas de conexionado, canaletas, bornas y material de montaje, completamente colocado en casetas incluyendo conexionado de cables	75,00	54,98	4.123,50
PGQIN0A06	ud Suministro del equipo portátil de lectura para sensores de cuerda vibrante Suministro del equipo portátil de lectura para sensores de cuerda vibrante, con frecuencia seleccionable, display digital de 5 dígitos, alojado en caja resistente de material plástico, baterías recargables con cargador incorporado, indicador de carga de batería, una resolución de 0,1 microsegundo e incluyendo cable de conexión y de carga y manual de utilización.	1,00	1.722,50	1.722,50
PGQIN0A07	ud Célula hidráulica para el control de asientos en el interior del Célula hidráulica para el control de asientos en el interior del terreno, fabricada en PVC y con tubos interiores metálicos, completamente instalada en cuerpo de presa, incluyendo encofrado, hormigonado, zanjas y tubos.	45,00	107,18	4.823,10
PGQIN0A08	m Tubo triple para conexión de células hidráulicas y paneles de lectura Tubo triple para conexión de células hidráulicas y paneles de lectura, recubierto de polietileno para protección ante roturas, completamente colocado en zanjas por el cuerpo de presa, incluso la ejecución de éstas y tubos de protección.	5.625,00	5,98	33.637,50
PGQIN0A09	ud Juego de racores metálicos de empalme Juego de racores metálicos de empalme para longitudes largas del tubo triple de las células, de 12x10, 8x6 y 6x4, de latón y con anillo de apriete, colocado.	45,00	7,81	351,45
PGQIN0A10	ud Panel de lectura para un punto de conexión de célula hidráulica Panel de lectura para un punto de conexión de célula hidráulica, fabricado en metacrilato negro, de 1,5 m. de longitud, con escala graduada de lectura, serigrafiada, con 1 mm. de apreciación, incluyendo soportes y piezas de conexión de los tubos, completamente instalado en casetas al efecto incluyendo conexionado de tubos y la obra civil de casetas.	45,00	417,64	18.793,80
PGQIN0A11	ud Suministro de equipo de desaireación para las células hidráulica Suministro de equipo de desaireación para las células hidráulicas de una caseta (uno por caseta), incluyendo bomba de presión de accionamiento manual.	10,00	708,79	7.087,90
PGQIN0A20	ud Base fija para estacionamiento del taquímetro de precisión Base fija para estacionamiento del taquímetro de precisión en las lecturas topográficas, fabricada en acero inoxidable, con sistema de centraje, placa base y tapa de protección antivandalismo, completamente instalada, empotrada sobre pilar cilíndrico de hormigón armado y zapata anclada al terreno, con las dimensiones adecuadas para estacionar el equipo de lectura, incluyendo todos los materiales y la ejecución de la obra civil de construcción de zapata y pilar, terminado.	3,00	796,88	2.390,64
PGQIN0A22	ud Base para nivelación de precisión con apoyo semiesférico para la Base para nivelación de precisión con apoyo semiesférico para la mira, contenida en arqueta cilíndrica de acero inoxidable con tapa roscada, completamente colocada empotrada en huecos preparados al efecto por la coronación y bermas de la presa, incluyendo la pequeña obra civil accesoria y la fijación al cuerpo de presa, terminada.	24,00	162,79	3.906,96
PGQIN0A23	ud Señal de referencia fija para cerrar los itinerarios de nivelaci Señal de referencia fija para cerrar los itinerarios de nivelación, consistente en un clavo de acero inoxidable con apoyo semiesférico en cabeza para la mira, completamente colocado empotrado en roca firme del terreno natural de los estribos de la presa o en un dado de hormigón preparado al efecto, instalado incluyendo la pequeña obra civil accesoria y materiales.	10,00	116,04	1.160,40
PGQIN0A24	ud Aforador de filtraciones compuesto por un vertedero triangular o Aforador de filtraciones compuesto por un vertedero triangular o rectangular de pared delgada, de acero inoxidable, preparado para instalar en canaletas de recogida del agua de filtraciones en galerías y/o aguas abajo de la presa, fabricado a medida de la canaleta (hasta 400 x 400 mm), incluyendo regilla graduada para lectura, de 200 mm. de rango, con 1 mm de apreciación, de acero inoxidable sobre placa de metacrilato, completamente instalado en canaletas, sin incluir la obra civil necesaria para recogida del agua en cada punto ni protecciones de los equipos.	2,00	300,51	601,02

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PGQIN0A25	ud Equipo para medida del nivel del embalse en las balsas Equipo para medida del nivel del embalse en las balsas, consistente en una balanza o telimnómetro de muy alta precisión, con toma de presión hidrostática mediante sensor de cuarzo, con la electrónica de indicación de cota contenida en caja estanca de metal ligero, con puerta acristalada. Con indicador digital de 6 cifras para la cota, rango hasta 60 m., precisión 0,015 % del rango, alimentación eléctrica por línea independiente de 220 Vac., y protección de sobretensiones; salida eléctrica en código opcional (automatizable) desde emisor digital. completamente instalada y conectada a una toma de presión hidroestática situada por debajo de la cota mínima a medir, en un lugar protegido, sin incluir la obra civil de ejecución de la toma hidroestática pero incluyendo los tubos de inoxidable y válvula de corte para conexión al sensor y la alimentación eléctrica del equipo.	1,00	21.848,67	21.848,67
PGQIN0A26	ud Estación Meteorológica con sistema automático de adquisición de Estación Meteorológica con sistema automático de adquisición de datos, incluyendo los siguientes sensores: pluviómetro de balancin, termómetro de ambiente, anemómetro y veleta, barómetro, higrómetro con protector de radiación solar y evaporímetro con tanque de acero inoxidable o fibra de vidrio, homologado, y sensor de medida del nivel, con torreta metálica de 6 m y soportes metálicos fabricados a medida para cada uno de los equipos y sensores, además de la Estación automática con memoria para registro de datos, display y teclado de configuración, en caja con protección de intemperie a fijar sobre soporte, con programas de adquisición de datos y puerto RS-232 para conexión a ordenador, módulo de alimentación eléctrica con baterías para autonomía de una semana y cargador para conexión a red o panel fotovoltaico (no incluidos), además del cableado de conexión entre sensores y Estación, todo completamente instalado y comprobado, sin incluir obra civil de vallado y acondicionamiento del recinto.	1,00	7.239,04	7.239,04
PGQIN0A27	ud Sensor para medida automática del nivel de agua en la canaleta Sensor para medida automática del nivel de agua en la canaleta junto a un aforador totalizador de filtraciones, del tipo ultrasonidos, con electrónica de tratamiento de la señal y display indicador de nivel, alimentación a 24 Vcc, rango hasta 5 m, protección IP-68, precisión 0,2% del rango, resolución 1 mm, salida 4-20 mA, protección de interferencias, completamente instalado y calibrado, incluyendo el soporte de fijación de acero galvanizado y el sistema de alimentación eléctrica desde algún cuadro cercano.	2,00	853,11	1.706,22
PGQIN0A47	ud Ternas de base en juntas Ternas de base de elongómetro en juntas en obras de fábrica, totalmente instaladas.	19,00	279,14	5.303,66
PGQIN0A48	ud Elongómetro digital Elongómetro digital con rango de medida de 27 mm, con precisión de +/- 1 centésima de mm, incluso base de calibración y maletín de protección y transporte.	1,00	344,61	344,61
TOTAL 04.08.01.....				218.182,74
04.08.02	SISTEMA AUTOMATIZADO DE ADQUISICIÓN DE DATOS			
PGQIN0A28	m Cable multihilo de 11 pares trenzados y calibre 0,91 mm Cable multihilo de 11 pares trenzados y calibre 0,91 mm., para llevar la señal entre cajas de centralización de los piezómetros y células, el equipo de nivel del embalse y los aforadores hasta las Estaciones automáticas de Adquisición de datos, de tipo telefónico EAPSP, con pantalla de acero y recubrimiento de protección, incluso zanjaz, arquetas, sin tubos metálicos de protección.	1.000,00	3,63	3.630,00
PGQIN0A29	m Tubo metálico de acero galvanizado, para canalización de cables Tubo metálico de acero galvanizado, para canalización de cables, métrica 50, instalado por zanja o en paramento y otras zonas expuestas de la presa, incluyendo elementos de sujeción y obra civil de zanjaz o arquetas.	450,00	8,59	3.865,50
PGQIN0A30	m Tubo de material plástico reforzado, para canalización de cables Tubo de material plástico reforzado, para canalización de cables, métrica 63, instalado por zanja o en paramento y otras zonas de la presa, incluyendo elementos de sujeción y obra civil de zanjaz o arquetas.	550,00	4,48	2.464,00
PGQIN0A31	ud Estación Automática de Adquisición y registro de datos Estación Automática de Adquisición y registro de datos de los equipos de instrumentación, instalada en caseta junto a la presa y compuesta por: microprocesador, reloj, memorias RAM y ROM, teclado y display, fuente, conversor A/D, interface serie, armario con protección IP-55 y puerta acristalada, frontal serigrafiado con teclado y display, 8 placas acondicionadoras de señal de los sensores y protecciones. Completamente instalada incluyendo conexionado de cables.	3,00	9.373,74	28.121,22
PGQIN0A32	m Cable de comunicaciones de seis conductores (3x2x0,64) tipo FEAP Cable de comunicaciones de seis conductores (3x2x0,64) tipo FEAP, aislamiento del conductor en polietileno, cableado por pares, pantalla de aluminio, cubierta de polietileno y baja capacidad, para conexión entre las Estaciones de Adquisición, colocado y comprobado, incluso obra civil.	680,00	19,78	13.450,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PGQIN0A33	ud Convertidor optoelectrico y caja de empalmes específica para con Convertidor optoelectrico y caja de empalmes específica para conexión del cable de fibra óptica y paso a RS-485, instalada junto a la última Estación de Adquisición y junto al ordenador en las oficinas, incluyendo conexionado de cables.	5,00	1.200,60	6.003,00
PGQIN0A34	m Cable de fibra óptica para comunicaciones Cable de fibra óptica para comunicaciones desde la última Estación automática hasta el ordenador de las oficinas de la presa, colocado en la zona exterior en el interior de tubos de protección en zanja y con arquetas intermedias, incluso obra civil.	850,00	7,10	6.035,00
PGQIN0A35	ud Estación Central para el control del Sistema Automático de Adqui Estación Central para el control del Sistema Automático de Adquisición de datos de auscultación de las balsas de Tudela y Mostrakas, compuesta por: ordenador con disco duro, CDROM, teclado y ratón, tarjetas gráfica y de sonido, modem telefónico, monitor color 15" TFT, impresora color de inyección de tinta, licencias sistema operativo y Office. Todo instalado y comprobado en oficinas de la presa, incluyendo pruebas de comunicaciones.	1,00	4.045,62	4.045,62
PGQIN0A36	ud Equipo SAI con autonomía de 10 minutos para protección de los eq Equipo SAI con autonomía de 10 minutos para protección de los equipos informáticos ante descargas y sobretensiones.	1,00	1.012,60	1.012,60
PGQIN0A37	m Cable tipo RFV 06/1 KV, de 3 x 1,5 mm2 para alimentación Cable tipo RFV 06/1 KV, de 3 x 1,5 mm2 para alimentación eléctrica de las Estaciones Automáticas de adquisición y de los aforadores de ultrasonidos, convertidores, equipos informáticos y otros equipos que lo requieran, instalado por la presa, incluso obra civil.	500,00	2,24	1.120,00
PGQIN0A38	ud Caja para derivación de la linea de alimentación eléctrica de lo Caja para derivación de la linea de alimentación eléctrica de los equipos de auscultación, protección IP-55, tapa practicable, instalada y comprobada incluyendo bornas, prensaestopas y conexionado de cables.	10,00	29,37	293,70
PGQIN0A39	ud Equipo para protección ante descargas y sobretensiones Equipo para protección ante descargas y sobretensiones de la línea de alimentación específica de los equipos de auscultación, tomada de alguno de los cuadros eléctricos de la presa, compuesto por descargadores de sobretensiones con el rango adecuado, fuente de alimentación, fusibles y magnetotérmico, con diferencial rearmable, todo ello colocado en el interior de un armario de poliester reforzado con fibra de vidrio, con grado de protección IP-66, enchufe frontal y puerta practicable, todo instalado y puesto a tierra en lugar protegido.	1,00	1.029,32	1.029,32
PGQIN0A40	ud Toma de tierra de 4 electrodos, instalada junto a las oficinas de la presa Toma de tierra de 4 electrodos, instalada junto a las oficinas de la presa para proteger los equipos informáticos de la Estación Central, incluyendo cuatro picas de tierra de 2 m. de longitud, de acero cobreizado y diámetro 14,6 mm. con grapas de unión al cable de tierra, 30 m de cable de cobre desnudo de 35 mm2 de sección, caja de registro para la centralización de tierras, instalada y dotada de puente comprobador y una arqueta para registro y comprobación de la toma de tierra, prefabricada y con tapa en poliester reforzado con fibra de vidrio, todo instalado y comprobado junto a las oficinas de la presa.	1,00	405,69	405,69
PGQIN0A41	ud Suministro de la partida de repuestos de las placas Suministro de la partida de repuestos de las placas acondicionadoras para las Estaciones de Adquisición, incluyendo: 1 tarjeta de microprocesador; 1 tarjeta de comunicaciones; 1 tarjeta de alimentación; 2 tarjetas de cuerda vibrante; 1 tarjeta de entradas 4-20 mA.	1,00	1.394,96	1.394,96
PGQIN0A42	ud Módulo de programa desarrollado para el control de auscultación Módulo de programa desarrollado para el control de auscultación de presas, diseñado para la adquisición, registro, tratamiento y presentación de los valores obtenidos con los sensores, además de gestionar las comunicaciones con las estaciones automáticas. Desarrollado en entorno Windows y completamente instalado en un ordenador compatible de las oficinas de la presa, incluyendo licencia de uso.	1,00	4.645,79	4.645,79
P7GQIN0A39	ud Ampliación del Programa de presas Ampliación del Programa de presas con los módulos de aplicaciones gráficas con dibujos de la presa y sensores y el módulo de generación de informes numéricos y gráficos con los valores de auscultación recogidos, todo instalado y comprobado en el ordenador de la presa.	1,00	3.604,21	3.604,21
PGQIN0A44	ud Configuración de Estaciones Automáticas y personalización del programa de presas Configuración de Estaciones Automáticas y personalización del programa de presas para los sensores y equipos de la balsa de Tudela, incluyendo la creación de bases de datos y de gráficos con sensores.	1,00	9.611,23	9.611,23

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PGQIN0A45	ud Calibración y puesta en marcha de sistema de presas Calibración y puesta en marcha del sistema automatizado de control instalado en la presa: un técnico especialista en instrumentación y un técnico informático para la comprobación de comunicaciones y primeras lecturas de los equipos, incluyendo horas de viaje, costes de estancia y horas de trabajo.	1,00	3.781,66	3.781,66
PGQIN0A46	ud Elaboración de la Documentación Final de Instalación Elaboración de la Documentación Final de Instalación tras la realización del montaje, que incluye los esquemas de localización definitiva de todos los equipos, esquemas de conexionado a cajas de centralización y a las Estaciones Automáticas, hojas de calibración, impresos de toma de datos, condiciones y procedimientos de lectura y fórmulas de conversión a unidades de ingeniería, manuales de programas, fichas técnicas y toda la información necesaria para la gestión del sistema de auscultación. Se entregarán tres ejemplares encuadrados y en soporte informático.	1,00	10.072,29	10.072,29
TOTAL 04.08.02.....				104.586,19
04.08.03	INGENIERÍA Y FORMACIÓN BALSA DE TUDELA			
P7ING003EP1	ud Ingeniería PLC's y comunicaciones balsa de Tudela Ingeniería de programación de PLC's , y ampliación (sin límite de variables, operaciones o entradas), para la integración de la automatización, telemando y gestión de todos los parámetros de las tomas, incluyendo cálculo automático de variables de control , incluso documentación técnica con especificaciones funcionales del sistema y manuales de operador y supervisor del sistema de control: planos generales del sistema; esquemas unifilares y cableado de los puntos; posicional de equipos y canalizaciones, cableado y conexionado de los sensores; manual de la aplicación informática; especificaciones técnicas de los equipos.	1,00	10.608,48	10.608,48
P73COMSCADA3E	ud Ingeniería adecuación SCADA, control y supervisión balsa de Tudela Ingeniería de programación y ampliación (sin límite de variables, operaciones o entradas) de SCADA del centro de control para las nuevas variables correspondientes a las tomas del tramo.	1,00	8.231,46	8.231,46
P73COMPUESTA3	ud Pruebas y puesta en marcha de instalaciones Balsa Tudela Control de Calidad de señales y Pruebas Funcionales de la instalación de la Balsa Tudela incluyendo: - Pruebas en taller (previa a instalación en campo) de funcionamiento del PLC, pantalla táctil y verificación de conexiones de los cuadros de todas las instalaciones, realizada por un Técnico. - Verificación de señales entre campo y PLC. - Redacción y cumplimentación de protocolo de pruebas. - Verificación de señales en CPC. - Pruebas de señales entre campo y CPC, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - Pruebas funcionales desde Centro de Control, previendo, como mínimo, la participación de un Técnico en Software y un Técnico de Programación y operario especializado en electricidad e instrumentación en campo durante la duración de las pruebas o hasta tanto lo determine la Dirección de Obra. - En cualquier caso quedará verificado el funcionamiento de la instalación en todos los posibles modos de funcionamiento (Local, Automático y Remotos), así como todas las posibles combinaciones en los modos de función y casuísticas que puedan darse. Unidad completa.	1,00	4.879,90	4.879,90
P73COMFORMA	ud Formación y documentación Documentación de las instalaciones y curso de Formación correspondiente de 21 horas totales (2 días a 7h/día), para operadores, dirección y mantenimiento. Para manejo de la instalación (Operadores), mantenimiento general y producción. Como documentación se tendrá el documento funcional de la ·1,00 Conj. de manuales para un total de 4 personas. Fotocopias de documento funcional y puesta en marcha de sistema de Supervisión.	1,00	1.829,96	1.829,96
TOTAL 04.08.03.....				25.549,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.08.04	SISTEMA DE CONTROL Y COMUNICACIONES Balsa de Tudela			
P7COMARM01	ud Armario de control 2000 x 800 x 600mm Suministro e instalación de armario de Teletransmisión tipo OLN de 2000x800x600 con puerta transparente color RAL5012, para alojamiento de equipos de autómata y equipos de comunicaciones de compuesto en su interior por: Bandeja para equipos, cuadro sinóptico, conjunto de iluminación accionado por puerta, ventilación por extractor controlado por termostato, filtro para entrada de aire, resistencia de calefacción y termostatos, protecciones eléctricas a equipos, equipo de conmutación de alimentación de 24 V, protecciones contra sobretensiones, rearme, switch, placa de montaje con equipos y borneros instalados, regleteros de entrada salida, entradas y salidas digitales aisladas a través de bornas relés, protección de señal y alimentación, separadores galvánicos, barra de fijación de cables, bandeja para módem ethernet, entrada de cables por pasamuros de goma semipartida, prensas, etc.,... incluso mecanizado y bancada, con todos los equipos que contiene totalmente montados, cableados, conexionados y probados.	1,00	3.286,67	3.286,67
P7COMNODO1	ud Nodo comunicaciones GSM/GPRS G3-5. incl.cuadro protec. Ud Suministro e instalación equipo de comunicaciones bidireccional compuesto de alimentación autónomo de batería de bajo mantenimiento, conexión y cuadro eléctrico, cableado a toma, CPU, memoria flash, módem GSM/GPRS/G3-5 y modem de comunicaciones, armario IP65, armario mural de 19", 12 U y 600 mm de profundidad. , RAL 7035, IP66 alta resistencia a golpes IK10 (5Kg a 40cm de altura), resistente a agentes químicos y radiación solar, -25°C a 100°C, resistencia al fuego, Soportes para fijación 750°C), 100% reciclable, Placa de montaje metálica ciega mural, Resistencia calefactora 40W a 0°C y 6W a 40°C; Termostato -10°C a 80°C contacto; Ventilador con filtro IP54, 23m3/h, con filtro de 105x105mm; Kit de rejilla+filtro aire de 105x105mm; Protecciones eléctricas para acometida eléctrica (diferencial+magnetotérmica), salida SAI(diferencial+magnetotérmica), electrificación cuadro (magnetotérmica), protecciones fuentes (magnetotérmico por cada fuente), equipos (magnetotérmico por cada equipo); Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI; Protección Magnetotérmica II10A 6kA. Protección forma de enchufe e instrumentación; Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos; Protección contra sobretensión fuente de 24Vcc, con protección fina (700A), salto a 31Vcc, protección individual por cada línea de tarjetas de E/S; Rearme automático de cuadro eléctrico; Picas de protección o conexión a picas existentes, incluido cable de protección; módulos de expansión de señales de entrada y salida, parametrizables mediante la herramienta de programación y con distintas densidades de señal.; Incluyendo ingeniería de detalle, calibración y cualquier otra medida auxiliar para la correcta instalación y funcionamiento de la unidad. Unidad totalmente terminada y operativa.	1,00	3.812,76	3.812,76
P7COMNODO2	ud Nodo comunicaciones radiofrecuencia. incl.cuadro protec. Ud Suministro e instalación equipo de comunicaciones compuesto por equipo radio modem half duplex en la banda de los 380-470 mhz 2400 baudios. incluso antena direccional en la banda 380-470 mhz de 6-12 dbi de ganancia, cable rf de baja pérdida y elementos necesarios para la correcta instalación y montaje. totalmente instalado y probado.	1,00	2.877,15	2.877,15
P7COMP005	ud Bastidor Autómata Suministro de bastidor para autómata de 10 slots, tipo 1756-A10 de Allen Bradley o similar.	1,00	349,15	349,15
P7COMPLC01EP	ud PLC proglamable integrable (ED:192 SD:96 EA:72 SA:32) PLC centralizador de todos los sistemas (EA:128 SD:32 EA:16 SA:8) SIEMENS o similar, programable incluidos módulos de ampliación necesarios. Incluye programación del autómata, instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión. Toda la unidad completa, instalada y probada según PPTP, incluyendo pequeño material, montaje, documentación, embalaje y transporte a planta (Canaletas, carril DIN, bornas,...); mano de obra montaje.	1,00	16.506,51	16.506,51
P7COMP011	ud Módulos conexión cableado E/D (IB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de E/D digitales (IB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar según referencias (V8 INPUT PLC V8/FLK14/IN - FLK50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relees (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	6,00	634,34	3.806,04

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMP012	ud Módulos conexión cableado S/D (OB32) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de S/D digitales (OB32) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, 4 adaptadores para 8 interfaces PLC (6,2 mm) y 32 bornas con relés enchufables 24 Vdc 6 A, marca PHOENIX CONTACT o similar, según referencias (V8 INPUT PLC V8/FLK14/OUT - FLKM50-PA-AB/1756/IN/EXTC - FLK50/4X14/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, 32 relés (PLC-RSP-24UC/1/S/H) y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	3,00	710,76	2.132,28
P7COMP013	ud Módulos conexión cableado E/A (IF16) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de e/a analógicas (IF16) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/FLK50/AB-1756 - FLKM50-PA-AB/1756/EXTC - FLK50/EZ-DR/200/KONFEK). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	9,00	500,04	4.500,36
P7COMP014	ud Módulos conexión cableado S/A (OF8) Suministro, montaje y conexionado de módulos de conexión para cableado de enlace de s/a analógicas (OF8) a autómata formado por: adaptador frontal para tarjeta de PLC, cable preconfeccionado con conectores, marca PHOENIX CONTACT o similar, según referencias (VIP 2/SC/2FLK14/AB-1756 - FLKM14-PA-AB/1756/EXTC - FLK14/EZ-DR/300/CONFEC (X2)). Incluyendo terminales, conductores de conexión, canaletas, relés y resto de elementos. Incluso accesorios necesarios para una correcta instalación. Totalmente instalados, conexionados y en servicio.	4,00	469,47	1.877,88
P7COMPLC1C	ud Pantallas gráficas HMI 15" táctil+cableado conex. Panel sinóptico de operador con pantalla gráfica y teclado numérico/funcional. Pantalla de 15" táctil HMI Teclado numérico y 10 teclas funcionales. 20MB de memoria para aplicaciones. Reloj en tiempo real. 1 puerto de comunicaciones RS232/422/485 con protocolo MODBUS y otros ;Cable PLC-Pantalla; Programación Pantalla local; Instalación Instalación y conexionado de unidad; Configuración Remota, Pruebas y Puesta en Servicio.	1,00	432,03	432,03
P7COMPLC1B	ud Cuadro, protecciones electricas y pantalla PLC Cuadro de PLC instalado y probado, batería, fuentes de alimentación, protecciones eléctricas, cableado y protecciones de sobretensión.	1,00	2.723,65	2.723,65
P7COMP001	ud Protección contra sobretensiones equipos 230 Vca Suministro e instalación en cuadro de protección fina Tipo 3 contra sobretensiones para alimentación de equipos a 230 Vca., marca PHOENIX CONTACT o similar. Incluyendo bornas fusibles, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para su correcta instalación. Totalmente instalado y conexionado.	1,00	142,84	142,84
P7COMP002	ud Protección contra sobretensiones analógicas Suministro e instalación en cuadro de protección fina contra sobretensiones para señales analógicas, según especificaciones en pliego, marca PHOENIX CONTACT o similar, consta por circuito de: Separadores galvánicos necesarios (PHOENIX CONTACT MACX MCR-UI-UI-SP-NC (2811556) ó Wago 857.411); protección de señal por c/analógica tipo (PT 1X2-24DC/FM-ST zocalo PT 1X2-BE/FM); dobles bornas fusibles con prueba en c/analógica (ZFK6-DREHSI 5x20). Totalmente instalado y conexionado.	1,00	359,24	359,24
P7COMP003	ud Protección contra sobretensiones 24Vcc Suministro e instalación en cuadro de protección fina contra sobretensiones, marca PHOENIX CONTACT o similar, consta por circuito de: bornas temomagnéticas (UT&-TMC M) y protección (PT2/-PE/S-24AC-ST zocalo PT-BE/FM) y fusibles 5x20. Totalmente instalado y conexionado.	1,00	283,97	283,97
P7COMP006	ud Fuente de alimentación automática 24 Vcc 10 A Suministro e instalación de fuente de alimentación para autómata programable para montaje en bastidor, de 24 Vcc 10 A, tipo 1756-PB72 de ALLEN BRADLEY o similar	1,00	346,21	346,21
P71COMSAH11	ud Sistema alimentación ininterrumpido-com 24 VDC Fuente de alimentación industrial ininterrumpida SAI a 24 VDC 2,0 Ah para la unidad de control principal, los sensores pasivos y los elementos de telecomunicación. Viene protegida con un fusible a la salida de las baterías y con fusibles internos tanto a la entrada de tensión como a la salida de la tensión convertida. Incorpora además una función de protección contra la descarga de las baterías, cortando de forma automática el suministro de las mismas una vez descargadas. . Unidad totalmente instalada.	1,00	484,78	484,78

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P71COMSAH12	ud Sistema alimentación ininterrumpido 2500w Ud. Sistema de Alimentación Ininterrumpido ON-LINE con separación galvánica y by-pass estático de 2500W 2 horas, con amplio rango de tensión de entrada, salida senoidal baja en armónicos, para alimentación del equipo de control y la instrumentación. Incluso selector de 2 posiciones para SAI y Red. Incluso protecciones eléctricas SAI y salida a Instrumentación: 1.00 UD. Sistema de alimentación Ininterrumpido ON-LINE 2.500VA 120min 1.00 Instalación y puesta en servicio . Selector de 4 posiciones SAI-RED, para by-pass manual del SAI 1.00 Sel Selector de dos posiciones hasta 16A 250Vac 2 contactos 1.00 Protección COMBINADA Magnetotérmica+Diferencial I+N 16A 6kA, 300mA. Protección acometida cuadro, y salida SAI 1.00 Protección Magnetotérmica II 10A 6kA. Protección foma de enchufe e instrumentación 4.00 Protección Magnetotérmica I 10A 6kA. Protección fuentes y equipos Incluyendo fusibles, terminales, bornas, conductores de conexión, canaletas y resto de elementos y accesorios necesarios para una correcta instalación. Totalmente instalado, conexionado y funcionando. Unidad totalmente instalada	1,00	1.790,50	1.790,50
P7COMP004	ud CPU autómatas L72 memoria 4 Mb con memoria SD Suministro e instalación de CPU para autómatas programable con capacidad mínima de memoria de 4 Mb de memoria no volátil compatible con comunicaciones, Device Net, Ethernet/IP y serie con protocolo DF1, para montaje en bastidor, programable conforme norma IEC 61131, tipo ALLEN BRADLEY 1756-L72 o similar. Incluye memoria SD.	1,00	4.582,20	4.582,20
P7COMP015	ud Tarjeta comunicaciones Ethernet/IP Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-ENTB de ALLEN BRADLEY o similar.	1,00	1.327,37	1.327,37
P7COMP016	ud Tarjeta Ethernet/IP 2-PORT CLX HI-CAP ENET/P BRIDG o similar Suministro, montaje y conexionado de tarjeta de comunicaciones Ethernet/IP, modelo 1756-EN2TR de ALLEN BRADLEY o similar.	1,00	1.774,82	1.774,82
P7COMP017	ud Tarjeta comunicaciones Modbus Suministro, montaje y conexionado de tarjeta de comunicaciones Modbus MVI56E-MNET de ALLEN BRADLEY o similar.	1,00	1.869,68	1.869,68
P7COMP018	ud Pasarela comunicaciones POWERLOGIC EGX 100 o similar Suministro y montaje de pasarela de comunicaciones POWERLOGIC EGX 100 de Schneider o similar entre equipos Ethernet - modbus TCP/IP y serie. Soportando los siguientes protocolos: modbus TCP/IP; HTTP; FTP; SNMP; ARP. Totalmente instalada y conexionada.	1,00	601,31	601,31
P7COMP022	ud Puente de diodos Suministro e instalación de puente de diodos para alimentación auxiliar, tipo RS 400-4977 de 100a 400V ADD-A-PAK de VISHAY o similar.	1,00	149,06	149,06
TOTAL 04.08.04.....				56.016,46
04.08.05	CANALIZACIÓN Y CABLEADOS			
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antioedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.	50,00	14,87	743,50
P7COMCABL2	m Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 Par trenzado red Ethernet, categoría 6+ apantallado, conexión 10 BaseT x (Rj45), tendido y conectorizado. Unidad totalmente instalada.	150,00	3,34	501,00
P5COMCBL001A	m Cable multihilo coms. VHOV-K y VOV-K apantall.8x0,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	100,00	3,53	353,00
P5COMCBL001B	m Cable multihilo com. VHOV-K y VOV-K apantall. 8x1,5mm2 Cable de instrumentación y comunicaciones VHOV-K y VOV-K trenzado multihilo hasta 8 pares, 0,5 mm2, 06/1 KV aislamiento PVC categoría 6+ apantallado tendido y conectorizado. Unidad totalmente instalada.	50,00	4,44	222,00
P5COMCBL001C	m Cable multihilo comunicaciones señales digitales interior 19p Cable instrumentación señales digitales comunicaciones trenzado multihilo hasta 19 pares tendido y conectorizado con aislamiento RZ1-K. Unidad totalmente instalada conforme especificaciones.	50,00	11,25	562,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5COMCBL001D	m Cable multihilo comunicaciones señales analógica interior 19p Cable instrumentación señales analógicas comunicaciones interiores apantallado trenzado multihilo hasta 19 pares tendido y conectorizado Z1C4Z1-K. Unidad totalmente instalada conforme especificaciones.	50,00	11,54	577,00
P5COMCBL004	m Cable comunicaciones RS232 Cable comunicaciones RS232. Unidad totalmente instalada.	80,00	5,85	468,00
P5COMCBL005	m Cable comunicaciones RS485 multipar Cable comunicaciones RS485 pantallado. Unidad totalmente instalada.	80,00	5,91	472,80
P5COMCBL007	m Cable comunicaciones RJ45 Cable comunicaciones RS45 .Unidad totalmente instalada.	80,00	4,96	396,80
P5COMCBL006	m Cable profibus Cable comunicaciones profibus ET 3008. Unidad totalmente instalada.	80,00	7,48	598,40
P7COMSCADA3	ud Switch industrial Fast Ethernet 10/100 Mbps, con gestión comunic Switch industrial Fast Ethernet 10/100 Mbps, 2 puertos GPS/GPRS/, 2 puertos F.O. multimodo 100BASE-FX, full duplex con conectores SC y 5 canales FastEthernet 100Base-TX (RJ45 apantallado), para montaje sobre carril DIN, instalado.	2,00	2.387,34	4.774,68
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	120,00	6,68	801,60
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	120,00	8,87	1.064,40
P5ELE25PVC	m Tubo. electricidad Polímero term libre de halógenos ríg M25 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=25 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	300,00	1,62	486,00
P5ELE32PVC	m tubo. electricidad Polímero term libre de halógenos ríg M32 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=32 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	250,00	1,62	405,00
P5ELE50PVC	m tubo. electricidad Polímero term libre de halógenos ríg M50 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=50 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada	200,00	1,93	386,00
P5ELE75PVC	m Tubo PVC 75 mm liso adosado o embebido Canalización de tubo de PVC liso D= 75 mm normalizado para instalación eléctrica, adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	250,00	3,94	985,00
P5ELE125PVC	m Tubo PVC 125 mm liso adosado o embebido Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D=125 mm, e=3,2 mm. adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	250,00	5,48	1.370,00
P5LECAJA4	ud Cajas de distribución 175 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 de dimensiones 175 x 175 x 95mm.	40,00	30,86	1.234,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 04.08.05.....				16.723,68
04.08.06	INTRUSISMO Balsa de Tudela			
P7COMCABL1	m Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de Cable de fibra óptica de cuatro fibras 62,5/125, para montaje de exterior con pantalla metálica antiroedores, totalmente instalado, incluyendo tubo de protección, conectorización y reflectometrías, Unidad totalmente instalada.	450,00	14,87	6.691,50
P7COMSEG1	ud Sistema de Alarma-Intrusionismo Central microprocesada de seguridad conformado por 2 detectores volumétricos, 1 Ud de contacto, interiores y exteriores, 1 Ud detectores de apertura de puerta, sirena y desconector, cableado a puntos de control, estación remota de control mediante GSM/GPRS, incluso baterías de autonomía de 24 h, teclado de control LCD G3, módulos de comunicaciones redundantes RTB y GPRS. Se incluye fuente de alimentación con cargador y baterías 12VDC 18Ah para líneas principales, así como fuente de alimentación adicional inteligente RIO-FA G3 con modulo expensor de zonas y Salidas, así como baterías de 12VDC 18Ah para dar cumpliendo al grado de Seguridad completamente instalado y probado. Pruebas y Puesta en Servicio.	2,00	3.477,60	6.955,20
P7COMCCTV6	m Inst. +Cable RG59 + tubo PVC32+cajasc/50m CCTV Canalización prevista para línea de videovigilancia realizada con tubo rígido curvable PVC D= 23, M 32/gp7 anclada en muros o forjados, guía de alambre galvanizado, incluyendo cajas de registro normalizada cada 50m de PVC 0.4x0.4x0.2, cable coaxial RG59, RJ11, RJ45, cable múltiple de datos apantallado 2x1 mm2, repetidor de señal cada 100 m, empalme múltiple, anclaje a paramento, i/ el sangrado y conexiónado, pequeño material, grúa soporte y mano de obra. Unidad totalmente instalada.	20,00	8,11	162,20
P7COMCABL1B	m Cable de fibra óptica 8F+fusiones+cajas Cable de fibra óptica para exteriores de 8 fibras ópticas monomodo en tubos activos holgados y tubos pasivos cableados cubiertos con material blanqueante del agua, elemento de refuerzo, cubierta interior de polietileno, cabos de fibra de vidrio como elemento de protección antiroedores y refuerzo a la tracción y cubierta exterior de polietileno de 13.6 mm de diámetro. Según EN 60794. Incluidas cajas de empalmen para fibra, las fusiones y conectorizaciones. Unidad totalmente instalada y probada.	450,00	13,26	5.967,00
P7COMCCTV5	ud Cámara visión nocturna IP-66+carcasa+columna y cimentación CCTV Cámara de alta generación a utilizar mediante IP instaladas en soportes y protegidas mediante carcasas exteriores calefactadas y estancas, con IP 67, estas cámaras serán móviles y de visión nocturna con zoom motorizado. Alimentación eléctrica Las características de la cámara seleccionada cumplirá: Sensibilidad IR, para una calidad de imagen superior en condiciones de poca luz; El barrido progresivo proporciona imágenes de máxima resolución de objetos en movimiento y sin distorsiones; Alimentación a través de Ethernet (IEEE 802.3af); Hasta 45 imágenes por segundo en resolución VGA 640 x 480; Detección de movimiento multiventana; Vídeo: Velocidad de captura en vídeo digital: 45 fps / Resolución máxima: 640 x 480 Píxeles; Vídeo, modalidad de compresión: MJPEG, MPEG-4 Motion simultáneos; Características de la lente: Longitud focal: 3 - 8 mm Enfocar: 1.0 Sensor de imagen: Tipo de sensor: CCD; Tamaño del sensor óptico: 1/3 " Conectividad: Puertos de entrada y salida (E/S): RS-232, RS-485/422 Seguridad: Características físicas: Multi-level password, IP address filtering, HTTPS encryption. control de contraluz WDR, vídeo sensor de movimiento por área o cuadrícula, con alimentación DC12 V / AC24 V. Incluso: soportes necesarios, caja de conexión y protección, cable interior, pica de tierra, cableado interior coaxial RG-59, guías y pequeño material. Unidad totalmente funcionando con emisión de imágenes y datos vía GSM/GPRS.	2,00	727,59	1.455,18
P7COMCCTV9	ud Switch 3 puertos RJ45 para video IP y cámaras Switch industrial 3 puertos 100 Base T (RJ45) + dos puertos 100 Base FX (ST), para montaje en carril DIN, con carcasa de aluminio IP 30. Switch gestionable para la red de video y seguridad de diversos elementos.	2,00	574,07	1.148,14
P7COMCCTV12	ud Columna 8m+ soporte CCTV Ud. báculo de 8 m. de altura troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; anclaje a dado de hormigón, puesta a tierra, replanteo, montaje, pequeño material y conexiónado, replanteo, montaje, cableado de unión, tubo de unión, incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pie revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra de cada báculo compuesto por placa de 500x500x2 mm y/o pica 200/14.3, operaciones de excavación y rellenos.	2,00	741,92	1.483,84

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P7COMCCTV1	Ud Hardware de control CCTV Hardware para gestión y control de CCTV en centro de control compuesto por : Micro torre - disco duro Dynamic Video Memory Technology - Gigabit Ethernet Vista Business / degradación a XP Professional - pre-installed Monitor 24" resolución de hasta 1920x1200 pixeles, equipo SAI 15 minutos, incluso pequeño material y cableado. Unidad totalmente instalada y operativa.	1,00	800,66	800,66
P7COMCCTV2	ud Software gestión CCTV intrusivo Suministro, instalación y configuración de gestión de CCTV, incluso, software de aplicación de gestión individual y de servidor, licencia para 5 usuarios/ administrador, aplicaciones de control supervisión, investigación, administración, "player,"Site builder",e incluso servidor hardware. Unidad totalmente comprobada y en funcionamiento en centro de control. Conexiones internet utilizando encaminadores más módem ADSL o tecnología móvil, desde un punto centralizado. El servidor de vídeo vigilancia permite accionar las cámaras IP, en local o en remoto a través de internet o SCA-DA en centro de control, mediante un encaminador (router) y la monitorización y vigilancia desde cualquier ordenador de la LAN, así como aviso a los usuarios mediante e-mail. Incluso p.p. de programación, configuración y legalización conforme a normativa vigente. Unidad totalmente instalada, probada y verificada.	1,00	4.629,50	4.629,50
P7COMCCTV3	ud Sistema de instalación configuración in situ videocam seguridad Servicios de instalación , configuración in situ, NVR o similar (recorder), AMS (Application Management recorder), puesto de usuarios hasta 5 Ud, puestos de administrador, alta de cámaras por grabador contemplando la totalidad de elementos de control. i/ p.p. de material de conexionado (cables y conectores).	1,00	791,24	791,24
P7COMCCTV4	ud Servidor CCTV Servidor NVR o similar, soporte total de hasta 70 cámaras, frecuencia 12ips, 4CIF resolución, 15 días de almacenamiento, ancho de banda por cámara 1536 Kbps, almacenamiento de 1.8TeraBytes. Unidad totalmente instalada y probada.	1,00	2.982,72	2.982,72
P7COMCCTV8	ud Formación y manuales sistema CCTV Curso de formación para el manejo de sistemas de comunicaciones y videovigilancia. Hasta 60h. Documentación y manuales con 15 copias.	1,00	787,10	787,10
TOTAL 04.08.06.....				33.854,28
TOTAL 04.08				454.913,15
04.09	ACCESOS			
04.09.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	6.090,06	2,77	16.869,47
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	1.546,09	1,78	2.752,04
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	2.997,00	20,14	60.359,58
TOTAL 04.09.01.....				79.981,09

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.09.03	DRENAJE LONGITUDINAL Y TRANSVERSAL			
P6CUN-09_E	m Cuneta guarda o pie de talud sin revestir V h=30 Cuneta triangular de altura variable según perfil longitudinal de altura entre 0.3 m a 0.5, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	3.450,00	3,03	10.453,50
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	205,44	2,77	569,07
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	24,00	87,55	2.101,20
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	81,12	59,75	4.846,92
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	136,08	3,89	529,35
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	27,00	22,61	610,47
PEMB800	ud Embocadura de hormigón prefabricado con aletas de DN 800 Embocadura de hormigón prefabricado con aletas de DN 800.	6,00	816,45	4.898,70
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	326,41	1,35	440,65
TOTAL 04.09.03.....				24.449,86
04.09.04	SEÑALIZACIÓN			
P6SÑL-002A	ud Señal triangular normal L=90 cm. Nivel1 Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.	1,00	92,53	92,53
TOTAL 04.09.04.....				92,53
TOTAL 04.09				104.523,48

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.10	EDIFICIO DE CONTROL			
04.10.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	100,50	2,77	278,39
TOTAL 04.10.01.....				278,39
04.10.02	CIMIENTOS Y ESTRUCTURA			
PENC1016	m² Encachado en caja para base de solera. Encachado en caja para base de solera de 20 cm de espesor, mediante relleno y extendido en tongadas de espesor no superior a 20 cm de gravas procedentes de cantera caliza de 40/80 mm; y posterior compactación mediante equipo manual con bandeja vibrante, sobre la explanada homogénea y nivelada.	52,50	9,23	484,58
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	6,96	49,22	342,57
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	97,13	62,64	6.084,22
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	161,60	16,26	2.627,62
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	58,86	26,85	1.580,39
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.	34,83	23,03	802,13
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	10.360,13	1,35	13.986,18
TOTAL 04.10.02.....				25.907,69

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.10.03	ARQUITECTURA			
04.10.03.01	FACHADAS Y CUBIERTAS			
PFORJ2555	m² Forjado viguetas prefabricadas 25+5 cm. Forjado 25 + 5 cm. Formado por doble vigueta autorresistente de hormigón pretensado, separadas entre sí 60 cm, entrevigado de bloque de hormigón y capa de compresión de 5 cm., de hormigón HA 25/B/20/XC2, de Central, incluso armadura (4,50 Kg/m2), terminado (carga total 1.000 Kg/m2).	105,00	70,90	7.444,50
PTABPAL1	m² Formación de tabique palomero Formación de cubierta inclinada realizada con formación de pendientes mediante tabiquillos palomeros de ladrillo hueco doble, tablero de rasillón cerámico, capa de mortero de cemento de 2 cm de espesor, incluso p.p. de piezas especiales y medios auxiliares.	105,00	71,33	7.489,65
PCUBTEJ	m² Cubierta de teja cerámica curva de 40x19 cm Cubierta de teja cerámica curva de 40x19 cm, incluso preparación de la superficie, mortero de agarre, medios auxiliares, y p.p. de piezas especiales, según normativa vigente.	105,00	46,61	4.894,05
PFABLAD1P	m² Fábrica de ladrillo cara vista 24x11,5x6,8 cm, 1 pie de esp. Fábrica de ladrillo cara vista 24x11,5x6,8 cm, de 1 pie de espesor, recibido con mortero de cemento CEM II/B-P 32,5 N y arena tipo M-5, para revestir en alzados, conforme a norma UNE-EN 998-1 y/o según normativa vigente y medida deduciendo huecos superiores a 1 m2.	93,19	101,64	9.471,83
PIEGR0810	m² Chapado de piedra granítica irregular de 8/10 cm de espesor Chapado de piedra granítica irregular de 8/10 cm de espesor recibido con mortero de cemento y arena de río 1/4 rejuntado y limpieza, según normativa vigente.	23,65	109,49	2.589,44
PFABLAD05P	m² Fábrica de ladrillo perforado 24x11,5x7 cm, 1/2 pie de esp. Fábrica de ladrillo perforado 24x11,5x7 cm, de 1/2 pie de espesor, recibido con mortero de cemento CEM II/B-P 32,5 N y arena tipo M-5, para revestir en alzados, conforme a norma UNE-EN 998-1 y/o según normativa vigente y medida deduciendo huecos superiores a 1 m2.	79,99	32,48	2.598,08
PENFPARV	m² Enfoscado maestreado en paramentos verticales Enfoscado maestreado en paramentos verticales con mortero M-350 de cemento CEM-I/32,5, incluso pañeado, acabado fratasado y medios auxiliares para su aplicación según normativa vigente.	61,33	26,30	1.612,98
PGUARNNEG	m² Guarnecido yeso negro verticales Guarnecido con yeso negro en paramentos verticales de 12 mm. de espesor, formación de rincones guarnecido de huecos y remates con pavimento, i/p.p. de guardavivos de chapa galvanizada y colocación de andamios (hasta 3m de altura), medido deduciendo huecos superiores a 2 m2.	270,84	8,37	2.266,93
PENLYESV	m² Enlucido de yeso en paramentos verticales pasta de yeso Y-25-F Enlucido de yeso en paramentos verticales con pasta de yeso Y-25 F, incluso limpieza, humedecido y medios auxiliares para su aplicación.	270,84	4,71	1.275,66
PPINTPLASHV	m² Pintura plástica en paramentos horizontales y verticales Pintura plástica en paramentos horizontales y verticales, dos manos de color, incluso preparación de base y medios auxiliares para su aplicación.	332,17	5,55	1.843,54
PAZ1042	m² Alicatado con azulejo blanco 15x15 cm. Alicatado con azulejo blanco 15x15 cm de primera calidad, recibido con mortero (M-350), de cemento CEM-I/32,5, incluso rejuntado, limpieza, p.p. de piezas especiales, lechada de cemento blanco y medios auxiliares para su ejecución.	40,98	36,49	1.495,36
PPAVUSOIND	m² Pavimento para uso industrial Pavimento para uso industrial incluyendo: limpieza, fresado o chorreado superficial del pavimento base, impregnación, sellado y recubrimiento, con aplicación de resinas sintéticas mezcladas con arena de cuarzo, materiales, mano de obra, elementos y medios auxiliares necesarios, totalmente acabado.	35,20	44,38	1.562,18
PPAVBALTEGM	m² Pavimento con baldosas de terrazo grano medio de 40x40 cm. Pavimento con baldosas de terrazo grano medio de 40x40 cm pulido en obra, color a elegir tomado con mortero (M-250) de cemento CEM-I/32,5, incluso nivelado de arena y mortero, corte de piezas, enlechado con pasta de cemento, pulido y limpieza.	53,49	45,92	2.456,26

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PCAN1022	m Canalón de acero galvanizado Canalón de acero galvanizado, de desarrollo 250 mm, para recogida de aguas, formado por piezas preformadas, fijadas con soportes colocados cada 50 cm, con una pendiente mínima del 0,5%. Incluso soportes, esquinas, tapas, remates finales, piezas de conexión a bajantes y piezas especiales.	28,00	31,44	880,32
PBPVC110	m Bajante PVC Ø 110 mm. Bajante con tubería de PVC de 110 mm de diámetro, incluso p.p. de piezas especiales, elementos de fijación y medios auxiliares para su ejecución, según normativa vigente.	6,20	12,86	79,73
PEP1024	ud Arqueta de registro 50x50x60 1/2 tapa horm. Arqueta de registro de dimensiones interiores 50x50x60 cm, realizada con fábrica de ladrillo perforado tosco de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón HM-20/P/40/I de 20 cm de espesor, enfoscada y bruñida interiormente, con cerco y tapa de hormigón prefabricada, totalmente terminada, incluso p.p. de medios auxiliares.	2,00	112,54	225,08
PMANG110	m Manguetón de PVC flexible de 110 mm en conexión a bajantes Manguetón de PVC flexible de 110 mm en conexión a bajantes. Totalmente terminado.	100,00	15,39	1.539,00
TOTAL 04.10.03.01.....				49.724,59
04.10.03.02	CARPINTERÍA			
P3EDIF004A	m² Puerta carp. metálica doble chapa lisa de acero de 2mm. espesor Puerta de carpintería metálica basculantes, correderas ó plegables, incluso guías y herrajes de colgar, de seguridad antiincendios RF-60 de doble chapa de acero galvanizada en caliente de 2 mm. de espesor, engatillada, realizada en una o varias hojas según disposición, con lamas de ventilación 0.5x1.0, rigidizadores de tubo rectangular, i/patillas para recibir en fábricas, cerco, contracerco, y herrajes de colgar y seguridad, herrajes de tiro, correderas o practicables, totalmente pintada color verde carruaje dos manos. El sistema de cierre está compuesto por una cerradura con caja de acero, embutida en la hoja, con cierre a punto. Se completa el conjunto con el cilindro de latón de 35 x 35 y sus llaves en cada cierre. (para los casos de puertas de dimensiones superiores a 6m2, se incluye la p.p. de puerta de acceso peatonal. Para los casos de puertas de acceso peatonal, dispondrá de medidas normalizadas. Totalmente instalada y acabada.	10,96	98,65	1.081,20
PALP1026	m Alfeizar de piedra artificial, de color blanco, de 30x5 cm. Alfeizar de piedra artificial, de color blanco, de 30x5 cm, recibido con mortero M-250 de cemento CEM-I/32,5 ó BLL 22,5 con goterón, incluso pulido y abrillantado.	10,00	29,16	291,60
PDOBACRAIS	m² Doble acristalamiento aislante 4/6/4 Doble acristalamiento aislante formado por dos lunas incoloras de 4 mm y cámara de aire deshidratado de 6 mm con perfil separador de aluminio y doble sellado perimetral, fijación sobre carpintería e incluso cortes de vidrio y colocación de junquillos, según normativa vigente.	12,00	20,57	246,84
PCARG3	m Cargadero huecos luz= 3 m Cargadero para huecos de hasta 3 m de luz formado por viguetas prefabricadas de hormigón armado de 20 cm de canto, incluso recibido y colocación totalmente terminado.	15,00	17,59	263,85
PCARMATAL	m² Carpintería metálica de aluminio anodizado mate, practicable. Carpintería metálica de aluminio anodizado mate, en ventanas o puertas practicable, para acristalar, compuesta por cerco, hojas y herrajes de colgar y seguridad, recibido en fábrica, instalada sobre precerco de aluminio, sellado de juntas y limpieza, pintura. Totalmente instalada. p.p. de medios auxiliares. s/NTE-FCL-3.	12,00	422,00	5.064,00
PCAPIN1046	m² Carpintería de madera en interiores para barnizar en puertas Carpintería de madera en interiores para barnizar en puertas, incluso herrajes de colgar y seguridad, recibido en fábrica. Totalmente terminada.	10,50	139,38	1.463,49
TOTAL 04.10.03.02.....				8.410,98
TOTAL 04.10.03.....				58.135,57

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.10.04	INSTALACIONES			
04.10.04.01	SANEAMIENTO			
PINSTDES	ud Instalación de desagüe	1,00	1.804,97	1.804,97
	Instalación de desagüe en los distintos aparatos sanitarios, hasta su unión con las bajantes, en PVC, totalmente terminada.			
TOTAL 04.10.04.01.....				1.804,97
04.10.04.02	FONTANERIA			
PINSTRGA	ud Instalación de red general de agua	1,00	3.182,97	3.182,97
	Instalación de red general de agua fría y caliente a los diversos aparatos sanitarios, totalmente terminada.			
TOTAL 04.10.04.02.....				3.182,97
04.10.04.03	ELECTRICIDAD E ILUMINACIÓN			
PELEILU	ud Electricidad e iluminación	1,00	10.070,00	10.070,00
	Instalación de electricidad e iluminación, totalmente terminada.			
TOTAL 04.10.04.03.....				10.070,00
04.10.04.04	CLIMATIZACIÓN Y VENTILACIÓN			
PINSAIREAC	ud Instalación de aire acondicionado	1,00	3.182,97	3.182,97
	Instalación de aire acondicionado en edificio de control, totalmente terminado.			
PINSTCAL	ud Instalación de calefacción	1,00	1.804,97	1.804,97
	Instalación de calefacción en edificio de control, totalmente terminado.			
TOTAL 04.10.04.04.....				4.987,94
04.10.04.05	CONTRAINCENDIOS			
PSÑLPOL	ud Señal poliestireno 297x297mm.Fotolum.	7,00	4,49	31,43
	Señalización de equipos contra incendios fotoluminiscente, de riesgo diverso, advertencia de peligro, prohibición, evacuación y salvamento, en poliestireno de 1,5 mm fotoluminiscente, de dimensiones 297x297 mm, s. CTE.			
PEXTPOLV6	ud Extintor polvo ABC 6 kg.Pr.Inc	1,00	68,82	68,82
	Extintor de polvo químico ABC polivalente antibrasa, de eficacia 34A/183B, de 6 kg. de agente extintor, con soporte, manómetro comprobable y manguera con difusor, según Norma UNE, certificado AENOR, s. CTE.			
PEXTCO25	ud Extintor CO2 5 kg.	2,00	152,82	305,64
	Extintor de nieve carbónica CO2, de eficacia 89B, de 5 kg. de agente extintor, construido en acero, con soporte y manguera con difusor, según Norma UNE. Equipo con certificación AENOR, s. CTE.			
TOTAL 04.10.04.05.....				405,89
04.10.04.06	TELECOMUNICACIONES			
PTELECTT01	ud Toma de teléfono.	6,00	23,03	138,18
	Toma de teléfono en Edificio de Control bajo tubo aislante empotrado en la pared, incluso p.p. de cajas, mecanismo y guía, totalmente terminado.			
PTELEM01	ud Terminal telefónico	6,00	58,04	348,24
	Terminal de teléfono analógico.			
PACOMTEF	ud Acometida telefonía	1,00	561,82	561,82
	Acometida de Telefonía.			
PPORTAUT	ud Portero automático de 1 llamada.	2,00	401,09	802,18
	Portero automático con placa de calle de una llamada, para comunicación entre entrada y Edificio de Control, con p.p. de canalización, cableado, alimentador y accesorios necesarios, totalmente instalado.			
TOTAL 04.10.04.06.....				1.850,42
TOTAL 04.10.04.....				22.302,19

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.10.05 MOBILIARIO				
PLAVPED7055	ud Lavabo pedestal de 70x55 cm de porcelana vitrif. color blanco Lavabo pedestal de 70x55 cm de porcelana vitrificada color blanco, incluso grifería e instalación.	1,00	243,44	243,44
PDUC7070	ud Ducha completa de 70x70 cm de porcelana vitrificada color blanco Ducha completa de 70x70 cm de porcelana vitrificada color blanco, incluso grifería e instalación.	1,00	219,14	219,14
PIND504040	ud Inodoro de 50x40x40 cm de porcelana vitrificada color blanco Inodoro de 50x40x40 cm de porcelana vitrificada color blanco, con depósito de descarga bajo, incluso mecanismo, asiento e instalación.	1,00	235,01	235,01
PU08070070	ud Bote sifónico cilíndrico de 110 mm de diámetro, de P.V.C. Bote sifónico cilíndrico de 110 mm de diámetro, de P.V.C., incluso conexión e instalación.	2,00	29,32	58,64
PACCEBA	ud Conjunto accesorios baño Conjunto accesorios baño, compuesto de portarrollos, jabonera, toallero y agarradera en color, incluso instalación.	1,00	173,16	173,16
PMOBILTE	ud Termo eléctrico 200 l. Termo eléctrico de 200 l., i/lámpara de control, termómetro, termostato exterior regulable de 35° a 60°, válvula de seguridad instalado con llaves de corte y latiguillos, sin incluir conexión eléctrica.	1,00	834,29	834,29
PSILDESP	ud Silla despacho Silla giratoria con asiento y respaldo contrachapado con poliuretano de gran elasticidad. Soporte de asiento y respaldo en acero, revestimiento en polvo epoxi. Tapicería en flor de piel de vacuno, teñida, tratada y pigmentada. Con piel de cabra teñida en profundidad, con superficie natural.	5,00	165,00	825,00
PMESADESP	ud Mesa despacho Mesa escritorio para despacho de medidas 150x75x74 cm formado por tablero de abedul, marco de contrachapado y patas/frente de abedul macizo. Consta de balda extraíble para teclado y cajón con tres huecos. Totalmente instalado.	4,00	170,41	681,64
PMESATALL	ud Mesa taller 715 x 205 Mesa taller 715 x 205.	3,00	113,03	339,09
PPERCH	ud Perchero Perchero.	4,00	31,80	127,20
PPAPELE	ud Papelera Papelera.	4,00	15,90	63,60
PMOBTQA	ud Taquilla para ropa Taquilla para ropa de 0.50 x 0.50 x 1.80 metálicas.	2,00	93,74	187,48
TOTAL 04.10.05.....				3.987,69
04.10.06 URBANIZACIÓN				
PENC1016	m² Encachado en caja para base de solera. Encachado en caja para base de solera de 20 cm de espesor, mediante relleno y extendido en tongadas de espesor no superior a 20 cm de gravas procedentes de cantera caliza de 40/80 mm; y posterior compactación mediante equipo manual con bandeja vibrante, sobre la explanada homogénea y nivelada.	6,45	9,23	59,53
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	6,45	59,75	385,39
P5PAV1A	m² Pav. solado acerado baldosa 20x20+10 HM20 Solado de baldosas de hidráulicas de 20 x 20 gris o color (a criterio de la Dirección Facultativa), colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	43,00	29,57	1.271,51

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5BORD3	m Bordillo prefabricado hormigón bicapa 9-10x20 Bordillo de hormigón bicapa, achaflanado, de 9-10x20 cm. colocado sobre solera de hormigón HM-15/P/40, de 10 cm. de espesor, i/excavación necesaria, rejuntado y limpieza.	43,00	12,93	555,99
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial , incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas . Unidad totalmente terminada.	987,39	3,65	3.603,97
TOTAL 04.10.06.....				5.876,39
TOTAL 04.10				116.487,92
04.11	CERRAMIENTOS			
P5CERRAMPU	m Cerramiento tipo-2 Valla de D/T metálica, con pp puerta acceso Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino,incluyendo parte proporcional de puerta de acceso.	4.310,00	28,97	124.860,70
TOTAL 04.11				124.860,70
04.12	INSTALACIONES ELECTRICAS			
04.12.01	LINEA ELECTRICA DE MEDIA TENSIÓN			
P5ELECLMT2C	ud Apoyo inicio+seccionadores XS+pararrayos Apoyo inicio de línea con seccionadores normalizado por empresa suministradora, constituido por: -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Materila auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	6.052,68	6.052,68

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	13,00	4.165,13	54.146,69
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexionar el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas, elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	858,00	8,23	7.061,34
P5ARQPREF2.A2	ud Arqueta BT prefabricada inst. elect. A2 (145X90)con tapa FD Ud. de Suministro y montaje de arqueta de conexión eléctrica prefabricada de hormigón, sin fondo, registrable, troncopiramidal, tipo A-2, de 145x90 cm de medidas interiores y 117x62 cm en la boca, con paredes rebajadas para la entrada de hasta 4 tubos por cara de diámetro exterior máximo de 205 mm, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-16B, con marco de acero y tapas de fundición dúctil, de 72x62x6,5 cm, para arqueta de conexión eléctrica tipo A-2, capaz de soportar una carga de 400 kN, según norma ONSE 01.01-14C. Incluso excavación mecánica y relleno del trasdós con material granular, conexiones de tubos y remates. Completamente terminada.	1,00	343,73	343,73
TOTAL 04.12.01.....				76.291,82

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.12.02	LÍNEAS DE BT			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	440,00	6,26	2.754,40
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	5,00	5,89	29,45
P5ELEM2X4TT	m Manguera eléctrica 2 x 4 + TT4 mm2 Manguera eléctrica de 2 x 6 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	200,00	6,11	1.222,00
P5ELEM2X2.5T2	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	280,00	6,78	1.898,40
P5ELEM3X2.5T2	m Manguera eléctrica 3 x 2.5 + TT 2.5mm2 Cu Apantallado Manguera eléctrica apantallada de 3 x 2.5 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	340,00	6,93	2.356,20
P5ELEM3X4TT2	m Manguera eléctrica 3 x 4 + TT 4mm2 Cu Apantallado Manguera eléctrica apantallada de 3 x 4 mm2 más conductor de tierra de misma sección, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	60,00	7,02	421,20
P5ELEM4X10T2	m Manguera eléctrica 4 x 10 + TT 10mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 10 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	400,00	11,30	4.520,00
P5ELEM4X25T2	m Manguera eléctrica 4 x 25 + TT 25mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 25 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	50,00	17,98	899,00
P5ELEM4X50T2	m Manguera eléctrica 4 x 50 + TT 50 mm2 Cu Apantallado Manguera eléctrica apantallada de 4 x 50 mm2 más conductor de tierra, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	150,00	41,46	6.219,00
P5ELEM1X16TT	m Manguera eléctrica 1 x 16 mm2 Cu Manguera eléctrica de 1 x 16 mm2, aislamiento 0.6/1 kv,Cobre flexible flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	1.000,00	7,30	7.300,00
P5ELEM1X35TT	m Manguera eléctrica 1 x 35 mm2 Cu Manguera eléctrica de 1 x 35 mm2 , aislamiento 0.6/1 kv,Cobre flexible XLPE+Pol,RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	2.100,00	8,50	17.850,00

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEM1X70-2	m Manguera eléctrica 1 x 70 mm2 Cu Apantallado Manguera eléctrica apantallada de 1 x 70 mm2, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	50,00	14,84	742,00
P5ELEM1X95-2	m Manguera eléctrica 1 x 95 mm2 Cu Apantallado Manguera eléctrica apantallada de 1 x 95 mm2, aislamiento 0.6/1 kv, Cobre flexible flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	60,00	19,85	1.191,00
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	6,00	676,28	4.057,68
TOTAL 04.12.02.....				51.460,33
04.12.03	TRANSFORMACIÓN Y GENERACION			
P5ELECLMT2B	ud Apoyo fin línea+ transformador aéreo de 50 KVA Transformador aéreo y apoyo final de línea normalizado por empresa suministradora, constituido por: -Suministro y montaje de centro de transformación intemperie, trifásico, en baño de aceite, unesa 5201-d, según normas une 20.138, de 50 kva de potencia para una tensión nominal de 13,2-20 kv/420v, -Apoyo metálico galvanizado c-2000-10, 14 o 16 según el caso de IMEDEXA o similar, de al menos 2.039 kg de esfuerzo útil, hasta 15.0 m de altura útil y 869 kg de peso, con funciones de fin de línea, armado e izado. -Bastidor metálico para soporte trafo hasta 50 kva -Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias -Base fusible XS 24 kv-100a instalada, -Cadenas de 3 aisladores U70AB45P, pararrayos autoválvula de 10 ka-15kv, -Armario de distribución para dos salidas de 160 a para protección de trafo BT con cortacircuitos de 100 a -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 10 picas de 2.0 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conexión el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna - Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	1,00	8.687,38	8.687,38
P5ELEARQ1X1TF	ud Arqueta estanca 1.0x1.0x1.5+ tapa función recogida de ace Arqueta prefabricada estanca para recogida de aceites de dimensiones 1,0x1,0m y altura de hasta 1.5m, tapa de fundición 600x600 mm, cerco y precerco, conectada a conductor de recogida, incluidos pasamuros y tuberías de conexión. Unidad totalmente colocada.	2,00	979,09	1.958,18

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEGGEN125	ud Generador eléctrico 125kVA supersilencioso+cuadro elec+conmutado Generador eléctrico silencioso móvil de 125kVA/96kW según especificaciones técnicas definidas en el PPTP, incluido cuadro eléctrico, control y automatización. Motor: Motor diesel 4 tiempos Refrigerado por agua; Arranque eléctrico 24V; Radiador con ventilador sopla; Filtro decantador (nivel no visible); Regulación electrónica; o Bulbos de ATA; Bulbos de BPA; Filtro de aire en seco; Protecciones de partes calientes; Protecciones de partes móviles;; Sensor de nivel agua radiador Alternador: Autoexcitado y autorregulado; Protección IP23; Aislamiento clase H; Sistema Eléctrico; Cuadro eléctrico de control y potencia, con aparatos de medida y central de control ; Protección magnetotérmica tetrapola; Protección diferencial regulable (tiempo y sensibilidad) y con protección magnetotérmica; Cargador de batería (incluido en grupos con cuadro de versión automática); Resistencia de caldeo (de serie en grupos con cuadro de versión automática); Alternador de carga de baterías con toma de tierra; Batería/s de arranque instaladas (incluye/n cables y soporte); Instalación eléctrica de toma de tierra, con conexión prevista para pica de tierra ; Desconector de batería/s; Conmutador: Armario IP55; Central; Parada de emergencia; Módulo de medida; Llave para conmutación manual; Conmutador motorizado; Conexión a tierra; Zócalo para armarios >800A Cuadro Automático AS5 CEM 7 o similar y cuadro de conmutación con central CC2 o similar con contactores Cuadros - Reloj programador: Informa a la central de la fecha y hora actual. Permite la programación semanal de: - Arranques programados - Bloqueos programados - Test de motor y mantenimientos programados - Ampliación del histórico de errores en + 100 - Contadores de energía (día, mes, año) Cuadros - Teleseñal: Placa que dispone de comunicación CAN y 12 relés. - Relés: 4 de contacto conmutado y 8 de contacto simple - Permite activar elementos de señalización remotos - Permite la programación de los relés en función de las diferentes variables. Otros elementos: Chasis Acero ; Kit de extracción de aceite del cárter; Versatilidad para el montaje de chasis de gran capacidad con depósito metálico; Amortiguadores antivibratorios; Tanque de combustible integrado en el chasis; Aforador de nivel de combustible; Pulsador parada de emergencia; Carrocería fabricada con chapa de alta calidad; Alta resistencia mecánica; o Bajo nivel de emisiones sonoras; Insonorización a base de lana de roca volcánica de alta densidad;; Acabado superficial a base de polvo de poliéster epoxídico (ensayo de niebla salina superior a 1000h); Total acceso a mantenimientos (agua, aceite y filtros sin desmontar capot); Gancho de izado reforzado para elevación con grúa; Chasis estanco (hace función de doble pared retención líquidos); Tapón drenaje depósito; Tapón drenaje chasis; Chasis predispuesto para instalación de kit móvil; Silencioso residencial de acero de -35db(A); Válvula de 3 vías para trasiego de combustible (disponible con conexiones de 1/2" y de 3/8"); Bomba de trasiego de combustible Unidad totalmente instalada y probada	1,00	15.877,32	15.877,32
P5ELECBATC36	ud Batería de condensadores (36 KVAR) Módulo metálico para corrección automática del factor de potencia 36 KVAR Compuesta de: condensadores sobredimensionados en tensión a 440 V, base fusibles y fusibles, regulador electrónico, contactores e interruptor general, Condensador CLZ , Contactores con bloque de preinserción y resistencia de descarga rápida, Protección en cabecera por fusibles con alto, poder de corte (APR). Serie NH-00, regulador de energía reactiva serie computer m con indicación digital y salidas de relé; Interruptor manual en cabecera de batería; Interruptor automático en cabecera de batería; Interruptor automático + Protección diferencial en cabecera de batería; Unidad de ventilación forzada + termostato; Placa de policarbonato contra contactos directos; Autotransformador 400/230 V. Totalmente instalada en armario metálico.	1,00	1.503,90	1.503,90
P5ELETRAF13	ud Cuadro de alarmas y señalización de defectos del centro de trans Cuadro de alarmas y señalización de defectos del centros de transformación formado por armario metálico en chapa de acero. Conteniendo: 8 relés auxiliares. 1 fuente de alimentación normal-socorro 230/48 Vcc. con acumuladores Ni-Cd de 21 Ah, intensidad nominal 5 A. Automáticos de protección, bornas canaletas y pequeño material de montaje.	1,00	2.411,12	2.411,12
P5ELETRAF5A	ud Conjunto material de protección y señalización transformador Conjunto de material de protección y señalización transformador. Normalizado.	1,00	130,03	130,03
P5ELETRAF9	ud Armario mural contadores de medida+comunicación remota Armario mural contadores de medida, según normas de compañía conteniendo 1 contador eléctrico combinado, multifunción, para red trifásica de 4 hilos. Comunicación remota vía RS-232, 4 salidas y dos entradas de impulsos configurables. Unidad totalmente instalado y aprobado.	1,00	899,51	899,51

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELETRAF11	ud Puesta en servicio del telecontrol de LMT Puesta en servicio del telecontrol, incluyendo: - Integración de la instalación en cada uno de los sistemas de concesionario eléctrico implicados en el procesode todas las funcionalidades del Telecontrol, Control local y Automatismos del Centro de Seccionamiento - Configuración, parametrización y puesta en servicio de Terminal Remoto de Telecontrol, equipos de c/c., Relés de detección de Paso de Falta y demás elementos de la instalación - Generación de configuraciones, telecarga y comprobaciones de cada una de las bases de datos: históricas, cronológicas, de alarmas, de eventos y de medidas analógicas en el Terminal Remoto de Telecontrol, en el C.S. así como en las unidades centrales	1,00	4.197,60	4.197,60
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62
P5ELETRAF12	ud Verificación de trabajos instalación de transformadores Verificación de trabajos, incluyendo: - Comprobación de la instalación, en lo que al telemando se refiere, de acuerdo al proyecto y documentación técnica aprobados - Supervisión del correcto conexionado de T/is y/o detectores de Paso de FALTA, Presencia de Tensión, etc en celdas de MT - Comprobación del esquema unifilar y rótulos para el telemando - Recepción de la Documentación de Adaptación al Telemando	1,00	331,53	331,53
P5ELETRAF4D	ud Puesta a tierra del Centro de Transformación Redes de puesta a tierra de protección general y servicio para el neutro, en centro de transformación, de acuerdo con lo indicado en la MIE-RAT-13, y normas de Cía Suministradora, formada la primera de ellas por cable de cobre desnudo de 50 mm2. de sección y la segunda por cable de cobre aislado, tipo RVde 0,6/1 kV, y 50 mm2 de sección y picas de tierra de acero cobrizado de 2 m.de longitud y 14 mm. de diámetro. Incluso material de conexión y fijación.	1,00	1.194,27	1.194,27
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
PELESAI	ud SAI 10 KVA SAI 10 KVA.	1,00	3.537,22	3.537,22
TOTAL 04.12.03.....				42.339,16
04.12.04	CUADROS			
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puertas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimentación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instrucciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceas para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	1,93	16,29	31,44
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	9,60	2,77	26,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2,74	2,16	5,92
P4HG-003A	m³ Hormigón HA-25/B/20/XC2 Hormigón para armar HA-25/B/20/XC2, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	3,85	62,64	241,16
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	157,85	1,35	213,10
P5BORD1	m Bordillo hormigón 17x30 Bordillo prefabricado de doble capa de hormigón H-400 achaflanado, de 17 cm de base y hasta 30 cm de altura, asentado sobre base de hormigón HM-20 kg/cm2 (20 N/mm2), incluso p.p. de rejuntado con mortero (1:1). totalmente terminado.	24,00	16,91	405,84
P5PAV1B	m² Pav. solado acerado baldosa 33x33x4+10 HM20 Solado de baldosas de hidráulicas de 33x33x4 gris, blanco o color (a criterio de la Dirección Facultativa) conformando figura poligonal estética en acerados multicolores, colocadas sobre cama de arena de 2.50cm de espesor tomadas con mortero de cemento, incluso rejuntado con lechada y limpieza de la superficie, y base de 10 cm de HM-20, unidad totalmente terminada.	20,00	30,06	601,20
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. suministradora, formado por: módulo superior de medida y protección, en poliéster reforzado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vidrio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policarbonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y conexión.	1,00	467,80	467,80
P5ELEGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conteniendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos necesarios. Debidamente montado, i/ material y medios auxiliares, conexiónado y funcionando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	5,00	360,50	1.802,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PSELECGBT40	ud CGBT Arqueta de tomas Tudela	1,00	11.261,29	11.261,29
	<p>Suministro y montaje de módulo de alimentación, control y protección de Arqueta de Tomas en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD,</p> <p>Pulsantería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>			
PSELECGBT41	ud CGBT AUX	4,00	6.168,90	24.675,60
	<p>Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre para posibles ampliaciones debidamente montado y conexionado. Incluyendo:</p> <p>Interruptor general automático, interruptores automáticos (I, III, IV), protección diferencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatismo y cuadro de intrusionismo.</p> <p>Comunicación de aparellaje con sistema de control mediante bus Profibus DP, analizador de redes con pantalla LCD,</p> <p>Pulsantería, selectores, pilotos luminosos en frontal.</p> <p>El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, embarrados de circuitos, cableados internos.</p> <p>Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.</p>			
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia	21,00	101,69	2.135,49
	<p>Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tubo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción.</p> <p>Unidad totalmente instalada.</p>			
TOTAL 04.12.04.....				47.541,96
04.12.05	ALUMBRADO			
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+Ip68	12,00	199,70	2.396,40
	<p>Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de polycarbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.</p>			
P5ELEIL1X61LE	ud Lum. lineal 1x60W.LED Ip65	107,00	180,71	19.335,97
	<p>Pantalla led estanca de superficie de 60W LED, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 65 clase I. Cuerpo de chapa de acero prelacada en blanco bornes de conexión. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.</p>			
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm	15,00	65,09	976,35
	<p>Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector construidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.</p>			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40°C Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	3,00	338,27	1.014,81
P5ELECFA06	ud Columna 8m + brazo 200w led Ud. báculo de 8 m. de altura con luminaria cerrada con lámpara 200 w. LED compuesta de: báculo troncocónico construida en chapa de acero de 3 mm. de espesor galvanizado, i/ placa de anclaje; luminaria con reflector de aluminio tratado contra la corrosión, con equipo eléctrico incorporado, cierre de policarbonato; acoplamiento a poste en fundición de aluminio inyectado, IP-65; i/ lámpara . portalámparas, anclaje a dado de hormigón , puesta a tierra, replanteo, montaje, pequeño material y conexionado, replanteo, montaje, cableado de unión , tubo de unión,incluso construcción de pedestales de apoyo de dimensiones mínimas 0.8x0.8x1.2m HM-20, arqueta de acometida normalizada 60x60x60 cm con tapa de fundición ejecutada de fábrica de ladrillo macizo M-250 de 1/2 pié revestida interiormente con enfoscado M-45 o arqueta prefabricada de hormigón, instalación de toma tierra d compuesto por placa de 500x500x2 mm y/o pica 200/14.3 , con unión de cable a siguiente báculo de 10m de cable desnudo de 16 mm2, y uniones de 35 mm2 a báculo según normativa vigente y planos de detalle y conexionado a red de alumbrado, , cableado interior 4x6mm2 +TT, conexionado a tendido eléctrico, operaciones de excavacion y rellenos. Unidad totalmente instalada y probada, con emisión de certificado de luminosidad.	40,00	1.389,91	55.596,40
P5ELECCGB1	ud Centro de mando alumbrado público+protecciones+TT+tramitac. Centro de mando de alumbrado público, hasta 6 salidas, de dimensiones 1.25x1.25x0.3m según detalle de planos, incluidas pletinas de acometida entre separadores de cobre, bases portafus, interruptor de corte 4p hasta 125 A, contador electrónico con mirilla, bornas de salida de módulo de medida de 16 mm2, Prensa-estopas, automático gebneral de 4 polos caja molde a 25 KA, intensidad ajustable hasta 100 A, Diferencial mando, automático protección enchufe 2x10A, Automático protección célula reloj, Reloj astronómico programable, célula fotoeléctrica para accionamiento automático, Tomas de corriente 2P+T 16A conectada a tierra, Bornas de reparto 95 mm2, Base portafusibles, automáticos 4 polos para protección salidas, Relés diferenciales, conmutador salidas, contactor salidas 4 polos, Clemas de conexión, Diversas bornas de salida, entrada, mando, ..., Cajas modulares de medida independiente, de mando y protección IP55, cierre triple acción, Puertas con toma tierra, armario de chapa de acero 3 mm galvanizado caliente IK-10, rejillas , incluida obra civil, cimentación y toma tierra con placa cobre 500x500x2. Todo según planos de detalle. Unidad Totalmente ejecutada y operativa, incluida tramitación de conexionado, pago de tasas y proyecto de industria para tramitación de alumbrado.	1,00	1.120,90	1.120,90
TOTAL 04.12.05.....				80.440,83
04.12.06	ACOMETIDA Y LEGALIZACIÓN ARQUETA DE TOMAS			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	500,00	1,05	525,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55
P5ELEC10003	ud Operación de conexionado y desconexiónados a trafo Operación de conexionado y desconexiónado de LMT.	1,00	365,62	365,62

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PSELECLMATUD	ud Conex LMTS+refuerzos+adapt.línea Trabajos de adecuación, refuerzo o reforma de LMT existente, incluyendo sustitución de apoyo por celosía, montaje de apoyo a cruceta de derivación, seccionador loadbuster, construcción de acera equipotencial, izado, tensado y conexionado a nueva derivación, incluyendo derechos de supervisión, trabajos de adecuación de instalaciones existentes, tasas, y permisos necesarios para la acometida eléctrica. Unidad totalmente terminada y aprobada para el adecuado funcionamiento de las instalaciones conforme los requerimientos de empresa operadora en Balsa de Mostrakas	2,00	19.235,82	38.471,64
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	2,00	3.495,74	6.991,48
P5ELECMT	ud Legalización inst eléct.LAT+OCA Legalización de la instalación de Alta Tensión, según la legislación vigente que le sea de aplicación, incluso proyecto técnico, suscrito por técnico titulado competente y visado por el Colegio Oficial correspondiente, Certificado de dirección y terminación de obra, Certificado de una Entidad de Inspección y Control Industrial, abono de tasas oficiales y cualquier otra documentación y gestión necesaria ante Organismos competentes para la Autorización y puesta en servicio de la instalación.	2,00	3.044,20	6.088,40
P5ELEBTALUMB	ud Legalización de alumbrado público+OCA's Unidad de legalización de alumbrado público en el conjunto de la actuación, incluyendo línea de baja tensión, incluyendo redacción de proyecto de baja tensión, visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización.	1,00	495,90	495,90
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	2,00	2.767,45	5.534,90
TOTAL 04.12.06.....				66.690,39
04.12.07	CANALIZACIONES			
P5ELEZ160X2H	m Can. horm. PVC 160 mm x2 (calzadas) 0.6x1.0m (Zanja tipo-3b) Canalización hormigonada de 2x160mm PVC liso serie B (UNE-EN 1329-1) normalizado instalación eléctrica, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 0,60 cm. de ancho por 1.0 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.6x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación eléctrica de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada.	50,00	74,49	3.724,50
P5ELE110X4H	m Can. horm. PVC 110 mm x4 (calzadas) 0.4x1.0m (Zanja tipo-8B) Canalización hormigonada de 4x110mm PVC normalizado instalación, en cualquier tipo de terreno, acerados y/o pavimentos, incluso excavación en zanja en cualquier tipo de terreno de dimensiones mínimas 40 cm. de ancho por 100 cm. de profundidad, acopio de material o carga, transporte a vertedero, prisma de hormigón HM20 (0.4x0.4m) relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. Unidad totalmente instalada y terminada	500,00	49,50	24.750,00
P35RALUM02	m Canaliz alumbrado conducto Ø90 mm+tendido línea elec.4x6mm2+TT Canalización PVC corrugado de 90 mm. de diámetro en cualquier tipo de terreno, acerados y/o pavimentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexionados multiples. Unidad totalmente terminada.	1.000,00	24,84	24.840,00
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	60,00	5,36	321,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELE25GALV	m Tubo galvanizado estanco 25 mm Tubo galvanizado estanco 25mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	50,00	5,78	289,00
P5ELE32GALV	m Tubo galvanizado estanco 32 mm Tubo galvanizado estanco 32 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	40,00	6,68	267,20
P5ELEBAND2	m Bandeja PVC 200x60mm Bandeja de PVC de dimensiones 200x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	100,00	18,35	1.835,00
P5ELEBAND3	m Bandeja PVC 100x60mm Bandeja de PVC de dimensiones 100x60 mm , incluso piezas especiales de cuelgue, taladros. Unidad totalmente instalada.	50,00	8,87	443,50
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	400,00	1,35	540,00
P5ELECROZA	m Roza en ladrillo macizo, bloque hormigón Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.	60,00	7,64	458,40
P5ARQPPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	15,00	281,22	4.218,30
P5ARQLD4	ud Arqueta de registro 60x60x100 1/2 tapa FD Arqueta de registro de dimensiones interiores 60x60x100 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 60x60 normalizada D-400. Unidad totalmente terminada.	40,00	213,97	8.558,80
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	4,00	87,49	349,96
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	78,00	31,90	2.488,20
TOTAL 04.12.07.....				73.084,46
04.12.08	TOMA TIERRA			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	2,00	1.148,32	2.296,64
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	12,00	98,29	1.179,48
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	12,00	12,58	150,96

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	12,00	69,95	839,40
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	10,00	232,13	2.321,30
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	2,00	258,71	517,42
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	300,00	7,88	2.364,00
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	20,00	10,99	219,80
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	4,00	97,16	388,64
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	2,00	1.492,41	2.984,82
TOTAL 04.12.08.....				13.262,46

04.12.09 MECANISMOS

P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	8,00	7,52	60,16
P5ELEC02	ud Interruptor bipolar Interruptor bipolar, gama básica Ip 67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	2,00	13,14	26,28
P5ELEC03	ud Conmutador serie básica Conmutador, serie básica IP67 estanco, con tecla de color blanco y tapa con marco embellecedor de color blanco.	1,00	7,52	7,52
P5ELEC05	ud Doble interruptor Doble interruptor, gama básica IP67 estanco antideflagrante, con tecla de color blanco y tapa con marco embellecedor de color blanco.	2,00	10,29	20,58
P5ELEC08	ud Base de enchufe 16A monofásica Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.	18,00	24,54	441,72
P5ELEC09	ud Base de enchufe trifásica 16A Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.	6,00	72,04	432,24
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	18,00	144,43	2.599,74

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	6,00	199,02	1.194,12
TOTAL 04.12.09.....				4.782,36
TOTAL 04.12				455.893,77
04.13	SERVICIOS AFECTADOS			
04.13.01	REPOSICIÓN DE LINEAS ELÉCTRICAS			
P5ELECLMT2	ud Apoyo de entronque, derivación o final de línea +P.Tierra+Ciment Ud apoyo de entronque, derivación o de ángulo normalizado por empresa suministradora, constituido por: - Poste metálico galvanizado o prefabricado de hormigón de hasta 14 m de altura Y 4500 kg de esfuerzo en punta - Armado realizado en angular de hierro galvanizado o refuerzo en piezas prefabricadas (según el caso) - Cruceta de hierro galvanizado normalizado recto o abovedado de longitud establecida hasta 2.5m, con carga de 4500 Kg - Cadenas de amarre necesarias - Aisladores U70AB45SP S/ UNE-EN 62217 para aisladores poliméricos, necesarios, incluidas piezas de conexión, 6 cadenas poliméricas, 1 cadena polimérica suspensión para cable LA-56, -Cimentación ejecutada in situ según dimensiones especificadas en planos y normalizado según compañía suministradora, -Excavaciones necesarias para la ejecución de la cimentación, con transporte y carga de material a vertedero autorizado, incluso pago de cánon, preparación de accesos - Sistema de puesta a tierra del apoyo normalizado (constituida por 8 picas de 1,5 metros de longitud y 14 mm. de diámetro, galvanizada, llevando una borna de unión para conector el conductor de unión mediante tornillería. Conductor de unión entre la pica y la torre de una sección equivalente o superior a 50 mm2. de cobre, y resto de material necesario), Material auxiliar - Nivel de aislamiento 24 kV, planchas señalizadoras y protección antiescalo, señalización de peligro y medida acifauna Elementos de protección de derivación en conexión con línea existente. Unidad totalmente instalada.	9,00	4.165,13	37.486,17
P5ELECLMT3	m Conductor Aluminio Acero LA-56 Suministro, Instalación, izado, montaje y tesado de conductor 47-AL1/8ST1A (LA 56) según especificaciones técnicas normalizadas , elementos y herrajes y pequeño material, incluidos material, elementos de protección y señalización anticollisión y protección avifauna ambiental normalizado. Unidad totalmente terminada, colocada y probada.	3.656,00	8,23	30.088,88
TOTAL 04.13.01.....				67.575,05
TOTAL 04.13				67.575,05
04.14	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (BT)			
04.14.01	MEDIDAS PROTECTORAS, CORRECTORAS (BT)			
04.14.01.01	ATMÓSFERA (BT)			
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.	18,00	2.488,07	44.785,26
TOTAL 04.14.01.01.....				44.785,26

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.14.01.02 SUELO (BT)				
P-101AMB-MP03	m Jalonamiento de protección malla Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.	900,00	1,74	1.566,00
P-101AMB-MP09	m Jalonamiento de protección cinta Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.	8.400,00	0,52	4.368,00
TOTAL 04.14.01.02.....				5.934,00
04.14.01.03 HIDROLOGIA (BT)				
P-101AMB-MP05	m Barrera de retención sedimentos Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.	260,00	5,54	1.440,40
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.	12,00	806,83	9.681,96
TOTAL 04.14.01.03.....				11.122,36
04.14.01.04 FAUNA Y FLORA (BT)				
P-101AMB-MP03	m Jalonamiento de protección malla Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.	2.000,00	1,74	3.480,00
P-101AMB-MP09	m Jalonamiento de protección cinta Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.	4.000,00	0,52	2.080,00
TOTAL 04.14.01.04.....				5.560,00
TOTAL 04.14.01.....				67.401,62
04.14.02 SEGUIMIENTO ARQUEOLÓGICO (BT)				
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.	1,00	3.193,57	3.193,57
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz. Informe arqueológico previo incluidas tramitaciones y tasas.	1,00	1.856,27	1.856,27
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual	36,00	2.404,67	86.568,12
TOTAL 04.14.02.....				91.617,96
04.14.03 PROGRAMA VIGILANCIA AMBIENTAL (BT)				
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación	1,00	975,28	975,28
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento.	36,00	1.879,04	67.645,44
P-104AMBVA03A	ud Informe especializado de flora Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina.	1,00	3.965,50	3.965,50

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P-104AMBVA04A	ud Informe especializado de fauna Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe.	1,00	2.882,01	2.882,01
P-104AMBVA06	ud Informe de prevención acústica Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio. Unidad completa.	1,00	2.009,53	2.009,53
TOTAL 04.14.03.....				77.477,76
04.14.04	INTEGRACIÓN PAISAJÍSTICA (BT)			
P-102AMB-PL01	m² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.	222.321,39	0,12	26.678,57
PTU-023	m³ Extendido de tierra veg. proc excav/acopio 50 cm(medio) balsas Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado en balsas.	266.999,37	0,56	149.519,65
P-102AMBPL001	m² Hidrosiembra incluso rastrillado y tapado Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.	52.686,62	1,64	86.406,06
P-102AMB-PL06	Pie Apeo árboles ø >20-<=30 cm densidad <=750 pies/ha c/mat (R.E.A.) Corta manual de pies, con un diámetro normal superior a 20 cm, con matorral y densidad inicial menor o igual a 750 pies/ha. En el caso de que se corten menos de 200 pies/ha, se deberá presupuestar estimando el rendimiento correspondiente a la intensidad de corte. Incluyendo carga y transporte de residuos a vertedero autorizado, incluido canon de vertido, herramientas y medios auxiliares.	15,00	150,73	2.260,95
P-102AMBPL08	mes Mantenimiento de plantaciones, riego y reposición extraordinaria Mantenimiento de plantaciones, mediante a aplicación de riego, reposición de marras, realización de podas de realce necesarias y otras operaciones de mantenimiento. Ud de remoción y aireación de sustrato de alcorque de árbol y arbusto grande realizado de forma manual, hasta 1m2 de superficie y una profundidad de 50 cm, incluyendo la escarda y mezcla con el sustrato de malas hierbas, herramientas y medios auxiliares.	36,00	928,33	33.419,88
P-102AMBPL03B	ud Plantación de Pinus halepensis de 1,0-1,5 m en contenedor Plantación de Pinus halepensis de 1,0-1,5 m de altura en contenedor, incluso apertura de hoyo de 40x40x40 cm con miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, tutor, alcorcado y riego de implantación.	5.032,00	9,33	46.948,56
P-102AMBPRY	ud Proyecto de restauración ambiental Balsa Tudela Proyecto de restauración ambiental en la zona de extracción de gravas de la Balsa de Tudela, con medidas específicas para dar continuidad al enclave forestal de las laderas repobladas en el emplazamiento de la Balsa; otras medidas de revegetación específicas para la conservación de la fauna del Área de Importancia para la Conservación de la Avifauna Esteparia del Entorno del Pulguer y medidas adicionales para el cumplimiento de los requisitos establecidos en el Área de Especial Protección por Conectividad Territorial del Plan de Ordenación Territorial de Navarra (POT-5); incluida la implantación de medidas adicionales propuestas por el Gobierno de Navarra.	1,00	95.400,00	95.400,00
P-102AMBPL34E	ud Plantación de Rosa canina 20-30 cm. CONT. Rosa canina de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,6x0,6x0,6 m., incluso apertura del mismo a mano, abonado, formación de alcorque y primer riego.	1.365,00	2,46	3.357,90
P-102AMBPL22	ud Plantación de Rosmarinus officinalis de 0,2-0,3 m en contenedor Plantación de Rosmarinus officinalis de 0,2-0,3 m de altura en contenedor, incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	1.023,00	2,22	2.271,06

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P-102AMBPL171	ud Plantación de Rubus ulmifolius 0,3-0,5m en contenedor Plantación de Rubus ulmifolius extensa de 0,3-0,50m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	2.184,00	1,60	3.494,40
P-102AMBPL39	ud Plantación de Salix alba de 1,0-1,5 m en cepellón Plantación de Salix alba de 1-2 savias de 1,0-1,5 m en cepellón en hoyo de 0,6x0,6x6,0 m abierto con retroexcavadora incluso apertura de hoyo, aporte de estiércol y abono, suministro y colocación de planta, relleno de hoyo, tutor, alcorcado, riego de implantación y colocación de protector de 120 cm de alto	187,00	6,60	1.234,20
P-102AMBPL18	ud Plantación de Salix atrocinerea de 0,50-0,75 m en contenedor Ud. Suministro y plantación de Salix atrocinerea (Sarga negra) de 0,50 a 0,75 m. de altura, suministrado en contenedor, y plantación en hoyo de 0,4 x 0,4 x 0,4 m., incluso apertura manual del mismo, abonado, formación de alcorque y primer riego.	245,00	2,45	600,25
P-102AMBPL36	ud Plantación de Salvia officinalis 20-30cm. CONT. Salvia officinalis (Salvia común) de 0,20 a 0,30 m. de altura, suministrado en contenedor y plantación en hoyo de 0,3x0,3x0,3 m. con los medios indicados, abonado, formación de alcorque y primer riego.	1.023,00	2,64	2.700,72
P-102AMBPL37	ud Plantación de Thymus vulgaris de 0,2-0,4 m en envase forestal Plantación de Thymus vulgaris 0,2-0,4 m de altura en envase forestal, incluso apertura de hoyo de 30 cm de diámetro y 30 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	1.023,00	2,04	2.086,92
P-102AMBPL01	ud Plantación de Genista scorpius 0.3-0.5m en contenedor Plantación de Genista scorpius 0.3-0.5m de altura en contenedor incluso apertura de hoyo de 40 cm de diámetro y 40 cm de profundidad con barrena acoplada a miniexcavadora, suministro y colocación de planta, aporte de estiércol y abono, relleno de hoyo, alcorcado y riego de implantación.	1.023,00	1,49	1.524,27
TOTAL 04.14.04.....				457.903,39
TOTAL 04.14				694.400,73
04.15	GESTIÓN DE RESIDUOS (BT)			
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un encachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). Inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.	1,00	2.506,13	2.506,13
PGESRES180D	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (BT) Carga, transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.	1,00	20.663,38	20.663,38
PGESRES150D	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (BT) Carga, transporte y deposición de residuos tipo II de naturaleza pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.	1,00	23.969,52	23.969,52
PGESRES200D	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (BT) Carga, transporte y deposición de residuos tipo II de naturaleza pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Tudela.	1,00	13.796,64	13.796,64
TOTAL 04.15				60.935,67

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
04.16	SEGURIDAD Y SALUD			
PSEGSAL.04	ud Seguridad y Salud.Balsa de Tudela Seguridad y salud según estudio de seguridad del proyecto en la Balsa de Tudela (según valoración realizada en el Anejo nº20 del proyecto).	1,00	372.076,30	372.076,30
TOTAL 04.16				372.076,30
TOTAL 04 BALSA DE TUDELA				33.194.479,68

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05	BALSA DE MOSTRAKAS			
05.01	BALSA			
05.01.01	EXCAVACIONES Y DESMONTES			
05.01.01.01	DESBROCES			
P1MT01B	m² Desbroce y limpieza con med mec.(alta densidad arbórea)	260,35	1,25	325,44
	Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como alta densidad de porte medio o grande, incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, canon de vertido, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.			
PTU-020	m³ Desbroce y excavación de tierra vegetal en balsa	17.654,95	1,90	33.544,41
	Desbroce y excavación de tierra vegetal de espesor medio de 50 cm, en balsa de Tudela y balsa de Mostrakas incluso carga, transporte a cualquier distancia a acopio intermedio no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa.			
TOTAL 05.01.01.01				33.869,85
05.01.02.02	MOVIMIENTO DE TIERRAS			
PTU-006	m³ Excavación de terreno no clasificado en explanaciones	124.587,50	4,04	503.333,50
	Excavación de terreno no clasificado en explanaciones con medios mecánicos y taqueos puntuales incluso, refino de taludes y fondo de excavación, carga y transporte a vertedero, acopio o lugar de uso, incluso canon de vertido, mantenimiento y restauración del vertedero.			
PTU-009	m² Excavación en refino de cimientto de espaldones de balsa	13.738,20	0,73	10.028,89
	Excavación en refino de fondos de excavación en terciario alterado en cimiento de presa con medios mecánicos y taqueos puntuales, con carga y transporte a vertedero o lugar de uso, incluso canon de vertido, mantenimiento y restauración de vertedero.			
PTU-024	m² Refino y regularización de excavación en taludes	7.095,00	2,64	18.730,80
	Regularización y refino de la superficie de excavación en taludes de balsa incluyendo tratamiento y relleno con mortero de diaclasas de espesor inferior a 3 cm, según P.C.T con carga y transporte de productos sobrantes a vertedero o lugar de uso, incluso canon de vertido, mantenimiento y restauración de vertedero.			
PTU-025	m³ Suplemento por transporte de sobrantes a vertedero	56.372,00	0,45	25.367,40
TOTAL 05.01.02.02				557.460,59
TOTAL 05.01.01				591.330,44
05.01.02	RELLENO DE CUERPO DE BALSA			
PMO-001	m³ Material "todo-uno" en dique procedente de excavaciones	68.215,50	4,69	319.930,70
	Material "todo-uno" en dique y rellenos procedente de excavaciones efectuadas en el vaso de la balsa o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y troceado del material y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones.			
PMO-002	m³ Material predominantemente arcillo-limoso	10.907,34	5,15	56.172,80
	Material predominantemente arcillo-limoso procedente de la excavación efectuadas en el vaso de la balsa o en zonas próximas según indicaciones del proyecto, incluso acopios intermedios y trabajo en acopio, incluso selección y transporte al lugar de empleo, extendido, humectado y compactado según prescripciones del pliego de condiciones.			
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15	1.064,25	14,68	15.623,19
	Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.			

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
PTU-019	m³ Escollera procedente de préstamo 500 kg balsas Escollera colocada de 500 kg procedente de cantera incluida en el proyecto o cualquier otra a distancia similar a la máxima de las incluidas en proyecto en el entorno de la balsa de Tudela y de la balsa de Mostrakas, colocada en cualquier tipo de paramento, incluso suministro, transporte, medido sobre perfil teórico, según planos.	393,30	35,37	13.911,02
TOTAL 05.01.02.....				405.637,11
05.01.03	CORONACIÓN DE BALSA			
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	741,95	16,26	12.064,11
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, curas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	170,65	59,75	10.196,34
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	624,94	20,14	12.586,29
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial, incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas. Unidad totalmente terminada.	3.764,70	3,65	13.741,16
P3CUN-004	m Cuneta guarda revestida de hormigón trapezoidal 0.75x1-1.5 Cuneta trapezoidal hormigonada de ancho de base 0.75m y altura variable entre 0.75-1.5m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, carga y transporte de material sobrante a vertedero o punto de uso. Unidad totalmente terminada.	355,45	21,35	7.588,86
P5ELE110PVC	m Tubo PVC 110 mm liso adosado o embebido Canalización de tubo de PVC liso serie B (UNE-EN 1329-1), D= 110 mm, e=3,2 mm. embebido en hormigón o adosado techo y paredes mediante pletinas y abrazaderas de acero inoxidable cada metro, incluso perforaciones y atados necesarios, elementos de unión y piezas especiales. Unidad totalmente terminada y colocada.	1.483,90	5,66	8.398,87
PBARR-06	ud Barrera tipo New Jersey Barrera de seguridad rígida tipo New Jersey prefabricada de hormigón, de 2,00x0,80x0,60 m.	371,00	134,34	49.840,14
TOTAL 05.01.03.....				114.415,77
05.01.04	IMPERMEABILIZACIÓN			
P1MT08PE-001	m² Lámina PEAD de 1,5 mm. de espesor, con uniones por termofusión Lámina de PEAD de 1,5 mm. de espesor, tipo GSE o equivalente, con las uniones por termofusión con doble cordón de soldadura, incluso parte proporcional de pérdidas por solapes y uniones a las obras de fábrica y pasos de tuberías, realizadas con pletinas de acero inoxidable y bridas y contrabridas de acero galvanizado, incluso juntas de neopreno, anclajes y virolas de acero inoxidable, uniones de sellado con masilla de poliuretano monocomponente, tipo SIKa FLEX 11 FC de SIKa o equivalente y todos los materiales para su instalación, completamente instalada y probada, según la normativa vigente.	26.364,71	9,16	241.500,74
P4BORD-001	m Bordillo bicapa de hormigón prefabricado 17x36x100 cm Bordillo bicapa de hormigón prefabricado de dimensiones 17x36x100 cm., colocado en fondo de balsa.	645,40	10,62	6.854,15

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	26.181,96	1,89	49.483,90
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	36,55	76,95	2.812,52
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	16,62	16,26	270,24
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	1.279,25	1,35	1.726,99
TOTAL 05.01.04.....				302.648,54
05.01.05	DRENAJE INTERIOR			
05.01.05.01	CONDUCCIONES DE DRENAJE			
PTUDREB160	m Tubería PVC 160 ranurada Tubo dren de PVC corrugado poroso, D= 160 mm, puesta en zanja, instalada, transporte, montaje. Unidad totalmente instalada y terminada.	2.067,00	8,40	17.362,80
PTUB160PVC	m Tubería de PVC D=160 SN-8 Tubería de PVC diámetro Nominal 160 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada	1.424,00	17,25	24.564,00
P1MTO3X	m³ Excavación en zanja mediante pequeña retro o zanjadora Excavación en zanja de profundidad menor de 1 m y anchura no superior a 0,70 m, mediante retro de neumáticos con cazo pequeño o zanjadora en terreno blando, incluso acopios intermedios para posterior uso y/o transporte a vertedero autorizado a cualquier distancia en caso de su no reutilización en las obras, canon de vertido. Unidad totalmente terminada medido sobre perfil teórico.	805,86	4,59	3.698,90
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	3.499,20	1,89	6.613,49
P1MT04E	m³ Rellenos localizado con grava/gravilla/garbancillo 5/15 Relleno localizado de grava/gravilla/garbancillo 5/15 procedente de excavación o préstamo, incluyendo operaciones de selección, cribado y machaqueo libre de finos, carga y transporte desde caballón/ acopio intermedio / préstamo, extendido de forma manual y mecánica en zanjas y bajo tuberías, compactación por inundación y perfilado de rasantes, por capas de espesor máximo de 25 cm, herramientas y medios auxiliares. Unidad totalmente terminada.	662,87	14,68	9.730,93
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación , bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	89,75	59,75	5.362,56

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	129,00	16,26	2.097,54
TOTAL 05.01.05.01				69.430,22
05.01.05.02	ARQUETAS Y DESAGÜES			
PTUB160PVC	m Tubería de PVC D=160 SN-8 Tubería de PVC diámetro Nominal 160 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada	480,00	17,25	8.280,00
P1MT08GTX-002	m² Geotextil Geotesant-295gr/m2 Suministro y colocación de geotextil no tejido Geotesán NT-30 o similar, de 295 g/m2, a base de filamentos de polipropileno unidos mecánicamente por un proceso de agujeteado con posterior tratamiento térmico, 20,4/19,6 kN/m de resistencia a tracción, 61/66 % de deformación a rotura, 3,3 kN de resistencia CBR a perforación, 12 mm. de resistencia a perforación dinámica por cono, incluso medios auxiliares para su sujeción provisional durante su colocación y p.p de solapes (mínimo 0,30m) entre paños y mermas. Unidad totalmente terminada.	212,80	1,89	402,19
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	49,44	59,75	2.954,04
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	88,35	16,26	1.436,57
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	28,42	26,85	763,08
P4HG-001A	m³ Hormigón HM-12.5/B/20/X0 Hormigón en masa HM-12.5/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación, p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	6,86	43,42	297,86
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	12,19	76,95	938,02
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	961,46	1,35	1.297,97
P4TUB315PVC	m Tubería PVC D=315 mm SN-8 Tubería de PVC diámetro Nominal 315 mm SN8, Incluso p.p juntas de unión doble de alta estanqueidad, de solapes, recortes de juntas, pasamuros, aperturas para pozos de acceso y piezas especiales de diversos ángulos. Unidad totalmente instalada.	15,00	31,98	479,70

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	159,89	2,77	442,90
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	73,25	3,89	284,94
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	40,03	8,81	352,66
P4LOSA003	m² Losa prefabricada con entrada de hombre Losas prefabricadas de hormigón en tapas de grandes arquetas con entrada de hombre practicable dimensionada para carga peatonal, cuantía mínima 95kg/m3, homologada, incluso argollas para levantamiento y p.p. de cerco y contracerco metálicos perimetrales, perfiles de apoyo y juntas de caucho, colocada en obra. Unidad totalmente terminada.	7,67	100,76	772,83
P41LAG004	ud Entrada de hombre con chapa lagrimada de 1,00x100 Entrada de hombre de 1,00x1,00 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.	1,00	135,15	135,15
P41ESC1	m Escalera vertical telescópica acero inox. tipo barco AISI-316L Escalera de seguridad y protección telescópica de acero inoxidable extensible en tramos de 50 cm. anchura 60 cm, longitud 5.0 m, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación de guía de seguridad para accesos. Unidad totalmente terminada.	3,50	182,62	639,17
TOTAL 05.01.05.02.....				19.477,08
TOTAL 05.01.05.....				88.907,30
05.01.06	DRENAJE EXTERIOR			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	4.333,17	2,77	12.002,88
P3CUN-003	m Cuneta guarda revestida de hormigón triangular V Cuneta triangular de altura variable entre 1.0 m y 1.5 m según perfil longitudinal de drenaje, taludes 1H/1V revestida de hormigón Hormigón HL-150/B/20 de espesor 10 cm, con ejecución de juntas cada 2.0, vibrado y curado, incluso excavación de tierras, preparación de la superficie de asiento, regleado y p.p. de encofrado, Unidad totalmente terminada.	415,00	14,41	5.980,15
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	360,46	76,95	27.737,40

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	1.115,94	26,85	29.962,99
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	10.209,72	1,35	13.783,12
TOTAL 05.01.06.....				89.466,54
TOTAL 05.01				1.592.406,30
05.02	CONDUCCIÓN DE ENTRADA Y SALIDA			
05.02.01	ARQUETA EN ALMENARA			
05.02.01.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de perfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	2.577,87	2,77	7.140,70
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	2.247,24	3,89	8.741,76
TOTAL 05.02.01.01.....				15.882,46
05.02.01.02	OBRA DE FÁBRICA			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	3,10	49,22	152,58
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	150,09	76,95	11.549,43
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	13,02	16,26	211,71

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	357,91	26,85	9.609,88
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	21.152,26	1,35	28.555,55
P4JTAPVC300	m Junta elastomérica de estanqueidad PVC 300 Junta elastómera de estanqueidad de 300 mm de ancho, con tubo central, incluso p.p. De colocación, solapes, medios auxiliares. Unidad totalmente terminada.p.p. de junta hidroexpansiva en uniones.	19,95	6,15	122,69
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	152,69	8,81	1.345,20
TOTAL 05.02.01.02.....				51.547,04
05.02.01.03	ELEMENTOS HIDROMECAÑICOS			
PCOMO006	ud Compuerta mural 2750x3100 Compuerta mural 2750x3100, para 10 mca y diseño unidireccional de accionamiento eléctrico, incluyendo actuador, deslizaderas, sellado en cuatro lados, husillo ascendente, capezuza de plástico, totalmente montada en obra.	2,00	72.842,97	145.685,94
PCOMO010	m Embebidos metálicos en 1ª y 2ª fase Embebidos metálicos en primera y segunda fase de hormigonado, en ranuras de elementos hidromecánicos, totalmente colocados.	51,40	181,68	9.338,35
TOTAL 05.02.01.03.....				155.024,29
05.02.01.04	ELEMENTOS ACCESORIOS			
P41BARAND03	m Barandilla de acero inoxidable formada por tubos 42,2x6 Barandilla tipo de acero inoxidable AISI 316, altura 1100 mm. formada por tubos metálicos 42,2x6 mm, incluso parte proporcional de anclajes y/o soldaduras, totalmente colocada y terminada.	21,65	44,47	962,78
TOTAL 05.02.01.04.....				962,78
TOTAL 05.02.01.....				223.416,57
05.02.02	CONDUCCIÓN DE LLENADO VACIADO			
05.02.02.01	MOVIMIENTO DE TIERRAS			
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	156,09	0,21	32,78
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclados con material procedente de excavación (incluso selección de material si fuera necesario), o transporte a vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	156,09	0,37	57,75

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	24.045,92	2,77	66.607,20
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	178,20	2,16	384,91
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	2.252,15	61,53	138.574,79
P1MT04A	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	16.417,82	6,58	108.029,26
TOTAL 05.02.02.01.....				313.686,69
05.02.02.02	CONDUCCIONES			
P1T2500.20.0A	m Tubería acero helic. L275, Ø2500 esp. 20.0 Suministro e instalación de tubería de acero de calidad L275, conforme a norma UNE-EN 10024 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 2.500 mm (nominal) y espesor mínimo de 20,0 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada	680,96	1.726,13	1.175.425,48
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.	3.140,00	4,90	15.386,00
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	680,96	0,32	217,91
TOTAL 05.02.02.02.....				1.191.029,39
TOTAL 05.02.02.....				1.504.716,08
05.02.03	ARQUETA EN BALSA			
05.02.03.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	537,41	2,77	1.488,63

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasanten, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	359,35	3,89	1.397,87
TOTAL 05.02.03.01.....				2.886,50
05.02.03.02	OBRA DE FÁBRICA			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	29,40	49,22	1.447,07
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	67,88	76,95	5.223,37
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	130,60	16,26	2.123,56
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	109,22	26,85	2.932,56
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	0,50	59,75	29,88
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5.543,68	1,35	7.483,97
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.	160,23	23,03	3.690,10
PMOLAM010	m Anclaje de lámina PEAD a obra de fábrica Anclaje de lámina impermeable PEAD a obra de fábrica, incluyendo dado de hormigón en masa, perfiles hidroexpansivos, pletinas metálicas y pequeño material adicional, totalmente terminada	23,68	132,14	3.129,08
TOTAL 05.02.03.02.....				26.059,59

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.02.03.03	ELEMENTOS ACCESORIOS			
P4PATE01	ud Pate polipropileno Pate de polipropileno con alma de acero de 25X31 cm D25 mm totalmente instalado en arqueta, transporte, descarga y montaje incluido. Unidad totalmente terminada.	20,00	4,88	97,60
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífuga y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	3.343,85	2,07	6.921,77
P41TRAM_001A	m² Tramex AISI-316L 30x30x3 peatonal (400kg/m2) Celosía metálica tipo Tramex de acero inoxidable AISI 316, formada por pletina acero 30x30x3 mm para carga mínima 400kg/m2, con uniones electrosoldadas, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	1,34	119,36	159,94
PREJ001	m² Reja formada por pletinas metálicas Reja formada por pletinas metálicas.	17,01	138,85	2.361,84
TOTAL 05.02.03.03.....				9.541,15
TOTAL 05.02.03.....				38.487,24
TOTAL 05.02				1.766.619,89
05.03	DESAGÜE DE FONDO			
05.03.01	CONDUCCIÓN			
05.03.01.01	MOVIMIENTO DE TIERRAS			
P1MT01A	m² Desbroce y limpieza con med mec.(baja densidad arbórea) Desbroce y limpieza del terreno por medios manuales y mecánicos y roza de zonas definidas como baja densidad (herbáceo y/o arbustivo medio o denso, con baja densidad arbórea), incluyendo preparación de accesos, corte, retirada de arbustos, tala de árboles, arrancado de tocones y raíces, triturado de los restos mediante uso de motodesbrozadora provista de cuchilla picadora, carga y transporte de residuos a vertedero autorizado, herramientas y medios auxiliares. Unidad totalmente terminada, incluso aprovechamiento de podas y residuos.	449,35	0,21	94,36
P1MT02A	m² Excavación de tierra vegetal de 50 cm (medio) en conduc. Excavación de tierra vegetal de espesor medio de 50 cm, incluso carga, transporte a cualquier distancia a acopio intermedio o caballones no mezclado con material procedente de excavación (incluso selección de material si fuera necesario), o transporte vertedero incluido canon de vertido. Unidad completa de aplicación a las conducciones.	449,35	0,37	166,26
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	747,60	2,77	2.070,85
P1MT04F	m³ Construcción cama de arena en tuberías Cama de arena silíceo para apoyo de tubería , extendido, riego por inundación a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo 15 cm, densidad máxima exigida del 95% del Ensayo Proctor Modificado, herramientas y medios auxiliares. Unidad totalmente terminada.	45,60	16,29	742,82

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	103,55	3,89	402,81
P1MT04B	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo adecuado procedente de excavación tamaño máximo 150 mm, incluso operación de desecado, cribado y machacado con selección del material y la eliminación de tamaños máximos, carga y transporte desde caballón/ acopio intermedio, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	586,10	2,16	1.265,98
P1MT02B	m² Extendido tierra veg. proc excav/acopio 50 cm(medio) coduccion Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado. De aplicación a las conducciones.	449,35	0,40	179,74
TOTAL 05.03.01.01				4.922,82
05.03.01.02	CONDUCCIÓN			
P1T0400.4B	m Tubería de acero heli. L335 Ø400 esp 4,0 Suministro e instalación de tubería de acero de calidad mínima L355, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 4 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	95,25	118,93	11.328,08
PACCAR-01_E	kg Acero al carbono S-275/S-355 JR Elaboración y suministro de acero al carbono de calidad S-275 JR/S-355 JR para calderería, pasamuros, tuberías, piezas especiales, etc, con revestimiento según proyecto, incluso p.p. de despuntes, soldaduras, preparación, montaje y pruebas.	452,16	4,90	2.215,58
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3 , puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	2,85	76,95	219,31
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	2,25	16,26	36,59
P4CINT400	m Encintado anticorrosivo DN400 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN400mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	2,25	191,73	431,39
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	2.442,40	1,35	3.297,24
P5BANDA250	m Banda de señalización Ancho: 250 mm PVC M de banda de señalización - Ancho: 250 mm - Material: PVC. Totalmente colocada.	95,25	0,32	30,48
TOTAL 05.03.01.02				17.558,67

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 05.03.01.....				22.481,49
05.03.02	ARQUETA DE VÁLVULAS			
05.03.02.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	257,37	2,77	712,91
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	157,15	3,89	611,31
TOTAL 05.03.02.01.....				1.324,22
05.03.02.02	OBRA DE FÁBRICA			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	27,84	49,22	1.370,28
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	45,28	76,95	3.484,30
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	57,27	16,26	931,21
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	142,14	26,85	3.816,46
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	4.096,60	1,35	5.530,41
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	57,27	8,81	504,55
TOTAL 05.03.02.02.....				15.637,21

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.03.02.03	CONDUCCIÓN Y VÁLVULERÍA			
P1T400.6.E	m Tubería acero helic. L275, Ø400 esp 6 Suministro e instalación de tubería de acero de calidad mínima L275, conforme a norma UNE-EN 10224 y/o según normativa vigente, helicosoldada, de diámetro nominal DN 400 mm y espesor mínimo de 6 mm, con extremo de tubería abocardado cilíndrico o esférico, revestimiento interior de 500 micras de pintura epoxi apta para el contacto con agua para consumo humano APLICACIÓN S/ AWWA C-222 y exterior de 3 mm de polietileno extruido en caliente ó 1.000 micras de poliuretano s/ DIN 30670, previa preparación de ambas superficies a grado SA 2 1/2, incluso p.p. de unión soldada, con manga termorretráctil de protección exterior, pintado interior de las mismas, baberos, alas de refuerzos, medios auxiliares y líquidos penetrantes y pruebas necesarias para su correcto funcionamiento. Unidad totalmente instalada y terminada. Unidad medida en planta.	5,40	121,94	658,48
P6CD.400.16	ud Carrete desmontaje DN 400 PN16 Carrete de desmontaje de acero de 400 mm de diámetro PN16, galvanizado en caliente, con carrete de acero inoxidable y bridas totales de fundición dúctil, revestidos con epoxi tanto interior como exteriormente, con recorrido máximo de 50 mm, tornillería formada por espárragos y tuercas de acero zincadas, junta de e.p.d.m., incluyendo los materiales y montaje en interior de arquetas totalmente terminado.	1,00	416,30	416,30
P6VC.400.16	ud Válvula compuerta ø400 mm, 16 atm Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreadada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 400 mm, instalada.	1,00	934,54	934,54
PVHB400	ud Válvula Howell-Bunger DN 400 mm Suministro y montaje de válvula Howell-Bunger de 400 mm de diámetro, con carrete deflector de chorro incorporado a la válvula, construida en acero inoxidable, con accionamiento por cilindros oleohidráulicos, con indicador de posición electrónico digital con lectura en pupitre de mando.. Unidad totalmente instalada y probada	1,00	39.382,54	39.382,54
P6VC.150.16	ud Válvula compuerta ø 150 mm, 16 atm, instalada Válvula de compuerta con lenteja de asiento elástico, de fundición, eje de acero inoxidable comprimido en frío, tornillería tratada contra corrosión (zincada), pintura Epoxi, embreadada, con juntas tóricas lubricadas, con volante, incluyendo tornillería; presión de trabajo hasta 16 atm, para diámetro de 150 mm, instalada.	2,00	338,98	677,96
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	0,14	76,95	10,77
P4ETT-004A-E2	m² Encofr/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	1,10	26,85	29,54
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	5,60	1,35	7,56
P41ETT-001C	kg Acero galvanizado Acero S275 y S355 estructural y de calderería con protección mediante galvanización de cinc por el método (D) en caliente VH., (D) 100 micrómetros/m² 700 g/m². Comprendiendo: Transporte carga y descarga a taller de galvanización, preparación del material, desengrase eliminando mediante tratamientos preliminares restos de pinturas manchas de grasa etc, decapado superficial de óxidos por inmersión en ácido sulfúrico o clorhídrico diluido, tratamiento con flujo e inmersión en baño de zinc fundido a través de la cubierta de flujo que flota sobre el material fundido, a temperatura de 445-465 °C. Montaje e instalación completa en obra. Unidad totalmente instalada.	62,80	2,98	187,14

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P4CINT400	m Encintado anticorrosivo DN400 mm Encintado para recubrimiento de protección anticorrosiva de tubería de DN400mm según DN30672, EN 12068 y ASTM en zonas de contacto con estructuras de hormigón, armaduras y elementos asociados. Unidad totalmente instalada.	0,40	191,73	76,69
TOTAL 05.03.02.03.....				42.381,52
05.03.02.04	CUBIERTA METÁLICA			
P41ETT-001	kg Acero laminado S-275Jr + pintura epoxy+pintura ignífuga Acero laminado S275 JR en perfiles para elementos estructurales, con una tensión de rotura de 410 n/mm2, unidas entre sí mediante soldadura con electrodo básico i/p.p. despuntes y dos manos de imprimación con pintura de epoxy ignífugo y protección en ambientes húmedos y agresivos (totalmente montado para masividades comprendidas entre aproximadamente 63 y 340 m-1 según une 23-093-89, une 23820:1997 ex y s/cte-db-si. espesor aproximado de 641 micras secas totales), los trabajos serán realizados por soldador cualificado según norma une-en 287-1:1992. incluyendo medios auxiliares y grua de alto tonelaje para el montaje, taladros y epoxy de alta resistencia en placas de apoyo y anclaje, incluso mortero de regularización y resto de operaciones necesarias para su terminación completa.	1.829,31	2,07	3.786,67
P41LAG001	m² Chapa lagrimada 4/6 Chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos auxiliares de apoyo, perfilera acero inox, cercos, taladros de alta resistencia y elementos de unión, totalmente instalada.	32,24	82,26	2.652,06
P41LAG002	ud Entrada de hombre con chapa lagrimada de 0,80x0,80 Entrada de hombre de 0,80x0,80 m fabricada con chapa lagrimada 4/6 de acero galvanizado, calidad S-235-JR, según norma EN 10.025, incluso elementos herrajes, cerradura y elementos de asiento, totalmente instalada.	1,00	106,53	106,53
TOTAL 05.03.02.04.....				6.545,26
05.03.02.05	ELEMENTOS ACCESORIOS			
P3EDIF.010A	m² Lamas para ventilación acero S275JR+pint+mosquitera+filtro Lamas para colocación en huecos de ventilación de locales realizados en Acero S-275J mediante perfiles de 100 mm de ancho y espesor de lama de 5 mm, perfiles L50-5, incluso p.p. de piezas de remate, malla mosquitera, totalmente instalado, soldado e incluyendo pp de transporte, CRG, descarga y acopio en obra, así como todos los elementos auxiliares necesarios. Unidad totalmente terminada en obra incluida protecciones con tratamiento y protección con epoxi con posterior pintura color verde carruaje. Unidad totalmente instalada, incluso pletinas de anclaje. Unidad totalmente instalada.	2,00	77,91	155,82
P41ESC2	m Escalera vertical fija acero inox-tipo barco AISI 316L Escalera fija vertical normalizada de acero inoxidable AIS-316 según planos e incluso compuesta por de aros de protección de acero inoxidable, con protección tipo barco formado por pletinas de acero inoxidable AIS-316 de espesor 7 mm cada 0.5m y diámetro interior 0.8m. totalmente instalada, a base de llanta de 50x12 mm, peldaños hexágonos de 22 mm incluso pernos de anclaje y tacos de resina de epoxi de alta resistencia, incluso incorporación central de guía de seguridad anticaída y elementos extensibles. Unidad totalmente terminada.	4,00	183,55	734,20
P41ESC3	m Escalera inclinada met.galv 1.0m ancho + barandilla+ placas+estr Escalera metálica de 1m de ancho galvanizada en caliente formada por estructura conformada con perfiles IPE-120, UPN 120, L-100 y L-50, largueros en tubo de 30mm, barandillas tubulares normalizadas con separación de huecos 12 cm, perfiles de sujeción y peldaños estriados antideslizante, incluso bridas de sujeción y placa de anclaje al paramento y solado, pernos de anclaje y piezas auxiliares, totalmente colocada.	1,50	111,07	166,61
TOTAL 05.03.02.05.....				1.056,63
TOTAL 05.03.02.....				66.944,84

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.03.03	CUENCO DEFLECTOR			
05.03.03.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	148,13	2,77	410,32
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	120,62	3,89	469,21
TOTAL 05.03.03.01.....				879,53
05.03.03.02	OBRA DE FÁBRICA			
P4HG-002A	m³ Hormigón HL-150/B/20 Elementos horizontales y verticales Hormigón de limpieza HL-150/B/20, puesto en obra en capa de limpieza, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. p.p. de encofrado. Según Código Estructural. Unidad totalmente terminada.	1,10	49,22	54,14
P4HG-004A	m³ Hormigón HA-30/B/20/XC3 y 30/B/12/XC3 Hormigón para armar HA-30/B/20/XC3 y HA-30/B/12/XC3, puesto en obra, incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código estructural. Unidad totalmente terminada.	11,33	76,95	871,84
P4ETT-004E-E1	m² Encof/desenc. Cimientos OCULTOS Encofrado y desencofrado, colocado en cimientos de pozos u obras de fábrica para dejar el hormigón OCULTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza. Unidad totalmente y correctamente terminada.	5,32	16,26	86,50
P4ETT-004A-E2	m² Encof/desenc. muros y paramentos RECTOS y VISTOS Encofrado y desencofrado, colocado en paramentos verticales o inclinados RECTOS de pozos u obras de fábrica para dejar el hormigón VISTO, a cualquier profundidad, incluso p.p. de andamiaje, puntales y sujeciones, elementos auxiliares, tapones estancos para pasamuros de apriete de chapas, berenjenos, producto desencofrante y limpieza, renovación de paneles cuantas veces sea necesario, compensaciones metálicas, recubrimiento con cartón piedra o chapa de zinc para dejar acabado visto y p.p. de sellado de juntas de encofrado con poliuretano, silicona o burlete que impida las pérdidas de lechada durante el hormigonado, incluso p.p. de encofrados localizados especiales de pasamuros, piezas singulares, etc. Unidad totalmente y correctamente terminada.	40,95	26,85	1.099,51
P4CIMBRA	m³ Aparente cimbra Estructura de cimbra espacial para encofrado con acero S 275 JR, con perfiles tubulares, para luces hasta 45 m, con carga máxima de 1 kN/m2 y un altura superior a 5.0m, p.p. de barras, tornillos, nudos y piezas especiales, montaje, desmontaje y colocación; unidad totalmente terminada.	2,33	23,03	53,66
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	2.067,33	1,35	2.790,90
P1MTTU003	m² Geodrén PEAD 200 gr/m2 Lámina drenante de PEAD con geotextil no tejido de al menos 200 gr/m2, para paramentos enterrados de obras de fábrica, totalmente instalada.	5,32	8,81	46,87
TOTAL 05.03.03.02.....				5.003,42

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 05.03.03.....				5.882,95
05.03.04	CANAL DE DESCARGA			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de reperfilado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.094,80	2,77	3.032,60
P1MT08ESC150H	m³ Escollera 50-150 Kg hormigonada con HM20 scollera de peso mínimo 50-150 kg hormigonada con HM-20 y penetración según PPTP. Colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	308,25	33,02	10.178,42
TOTAL 05.03.04.....				13.211,02
TOTAL 05.03				108.520,30
05.04	AUSCULTACIÓN E INSTRUMENTACIÓN			
05.04.01	SENSORES Y EQUIPOS			
PGQIN0A25	ud Equipo para medida del nivel del embalse en las balsas Equipo para medida del nivel del embalse en las balsas, consistente en una balanza o telémetro de muy alta precisión, con toma de presión hidrostática mediante sensor de cuarzo, con la electrónica de indicación de cota contenida en caja estanca de metal ligero, con puerta acristalada. Con indicador digital de 6 cifras para la cota, rango hasta 60 m., precisión 0,015 % del rango, alimentación eléctrica por línea independiente de 220 Vac., y protección de sobretensiones; salida eléctrica en código opcional (automatizable) desde emisor digital. completamente instalada y conectada a una toma de presión hidroestática situada por debajo de la cota mínima a medir, en un lugar protegido, sin incluir la obra civil de ejecución de la toma hidroestática pero incluyendo los tubos de inoxidable y válvula de corte para conexión al sensor y la alimentación eléctrica del equipo.	1,00	21.848,67	21.848,67
PGQIN0A22	ud Base para nivelación de precisión con apoyo semiesférico para la Base para nivelación de precisión con apoyo semiesférico para la mira, contenida en arqueta cilíndrica de acero inoxidable con tapa roscada, completamente colocada empotrada en huecos preparados al efecto por la coronación y bermas de la presa, incluyendo la pequeña obra civil accesoria y la fijación al cuerpo de presa, terminada.	15,00	162,79	2.441,85
PGQIN0A24	ud Aforador de filtraciones compuesto por un vertedero triangular o Aforador de filtraciones compuesto por un vertedero triangular o rectangular de pared delgada, de acero inoxidable, preparado para instalar en canaletas de recogida del agua de filtraciones en galerías y/o aguas abajo de la presa, fabricado a medida de la canaleta (hasta 400 x 400 mm), incluyendo regilla graduada para lectura, de 200 mm. de rango, con 1 mm de apreciación, de acero inoxidable sobre placa de metacrilato, completamente instalado en canaletas, sin incluir la obra civil necesaria para recogida del agua en cada punto ni protecciones de los equipos.	1,00	300,51	300,51
PGQIN0A20	ud Base fija para estacionamiento del taquímetro de precisión Base fija para estacionamiento del taquímetro de precisión en las lecturas topográficas, fabricada en acero inoxidable, con sistema de centraje, placa base y tapa de protección antivandalismo, completamente instalada, empotrada sobre pilar cilíndrico de hormigón armado y zapata anclada al terreno, con las dimensiones adecuadas para estacionar el equipo de lectura, incluyendo todos los materiales y la ejecución de la obra civil de construcción de zapata y pilar, terminado.	3,00	796,88	2.390,64
PGQIN0A27	ud Sensor para medida automática del nivel de agua en la canaleta Sensor para medida automática del nivel de agua en la canaleta junto a un aforador totalizador de filtraciones, del tipo ultrasonidos, con electrónica de tratamiento de la señal y display indicador de nivel, alimentación a 24 Vcc, rango hasta 5 m, protección IP-68, precisión 0,2% del rango, resolución 1 mm, salida 4-20 mA, protección de interferencias, completamente instalado y calibrado, incluyendo el soporte de fijación de acero galvanizado y el sistema de alimentación eléctrica desde algún cuadro cercano.	1,00	853,11	853,11
TOTAL 05.04.01.....				27.834,78

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.04.02	SISTEMA AUTOMATIZADO DE ADQUISICIÓN DE DATOS			
PGQIN0A29	m Tubo metálico de acero galvanizado, para canalización de cables Tubo metálico de acero galvanizado, para canalización de cables, métrica 50, instalado por zanja o en paramento y otras zonas expuestas de la presa, incluyendo elementos de sujeción y obra civil de zanjas o arquetas.	450,00	8,59	3.865,50
PGQIN0A31	ud Estación Automática de Adquisición y registro de datos Estación Automática de Adquisición y registro de datos de los equipos de instrumentación, instalada en caseta junto a la presa y compuesta por: microprocesador, reloj, memorias RAM y ROM, teclado y display, fuente, conversor A/D, interface serie, armario con protección IP-55 y puerta acristalada, frontal serigrafiado con teclado y display, 8 placas acondicionadoras de señal de los sensores y protecciones. Completamente instalada incluyendo conexionado de cables.	1,00	9.373,74	9.373,74
PGQIN0A33	ud Convertidor optoelectrico y caja de empalmes específica para con Convertidor optoelectrico y caja de empalmes específica para conexión del cable de fibra óptica y paso a RS-485, instalada junto a la última Estación de Adquisición y junto al ordenador en las oficinas, incluyendo conexionado de cables.	1,00	1.200,60	1.200,60
PGQIN0A34	m Cable de fibra óptica para comunicaciones Cable de fibra óptica para comunicaciones desde la última Estación automática hasta el ordenador de las oficinas de la presa, colocado en la zona exterior en el interior de tubos de protección en zanja y con arquetas intermedias, incluso obra civil.	450,00	7,10	3.195,00
PGQIN0A35	ud Estación Central para el control del Sistema Automático de Adqui Estación Central para el control del Sistema Automático de Adquisición de datos de auscultación de las balsas de Tudela y Mostrakas, compuesta por: ordenador con disco duro, CDROM, teclado y ratón, tarjetas gráfica y de sonido, modem telefónico, monitor color 15" TFT, impresora color de inyección de tinta, licencias sistema operativo y Office. Todo instalado y comprobado en oficinas de la presa, incluyendo pruebas de comunicaciones.	1,00	4.045,62	4.045,62
PGQIN0A36	ud Equipo SAI con autonomía de 10 minutos para protección de los eq Equipo SAI con autonomía de 10 minutos para protección de los equipos informáticos ante descargas y sobretensiones.	1,00	1.012,60	1.012,60
PGQIN0A41	ud Suministro de la partida de repuestos de las placas Suministro de la partida de repuestos de las placas acondicionadoras para las Estaciones de Adquisición, incluyendo: 1 tarjeta de microprocesador; 1 tarjeta de comunicaciones; 1 tarjeta de alimentación; 2 tarjetas de cuerda vibrante; 1 tarjeta de entradas 4-20 mA.	1,00	1.394,96	1.394,96
PGQIN0A43	ud Ampliación del Programa de presas con los módulos de aplicaciones gráficas Ampliación del Programa de presas con los módulos de aplicaciones gráficas con dibujos de la presa y sensores y el módulo de generación de informes numéricos y gráficos con los valores de auscultación recogidos, todo instalado y comprobado en el ordenador de la presa.	1,00	3.604,21	3.604,21
PGQIN0A44	ud Configuración de Estaciones Automáticas y personalización del programa de presas Configuración de Estaciones Automáticas y personalización del programa de presas para los sensores y equipos de la balsa de Tudela, incluyendo la creación de bases de datos y de gráficos con sensores.	1,00	9.611,23	9.611,23
PGQIN0A45M	ud Configuración de Estaciones Automáticas y personalización del pr Calibración y puesta en marcha del sistema automatizado de control instalado en la presa: un técnico especialista en instrumentación y un técnico informático para la comprobación de comunicaciones y primeras lecturas de los equipos, incluyendo horas de viaje, costes de estancia y horas de trabajo.	1,00	3.781,66	3.781,66
PGQIN0A46	ud Elaboración de la Documentación Final de Instalación Elaboración de la Documentación Final de Instalación tras la realización del montaje, que incluye los esquemas de localización definitiva de todos los equipos, esquemas de conexionado a cajas de centralización y a las Estaciones Automáticas, hojas de calibración, impresos de toma de datos, condiciones y procedimientos de lectura y fórmulas de conversión a unidades de ingeniería, manuales de programas, fichas técnicas y toda la información necesaria para la gestión del sistema de auscultación. Se entregarán tres ejemplares encuadernados y en soporte informático.	1,00	10.072,29	10.072,29
TOTAL 05.04.02.....				51.157,41
TOTAL 05.04				78.992,19

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.05	ACCESOS			
05.05.01	MOVIMIENTO DE TIERRAS			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	1.546,00	2,77	4.282,42
P1MT05C	m³ Formación de terraplén procedente de excavación 95% PN Terraplenado procedente de la propia excavación con suelo adecuado, extendido en tongadas de 30 cm, incl. extendido, compactación 95% del Ensayo Proctor Normal y humectación, y transporte desde cualquier distancia, hasta su terminación, acabado y refinado de taludes incluso cribado o machaqueo si fuera necesario. Medido sobre perfil.	153,60	1,78	273,41
TOTAL 05.05.01.....				4.555,83
05.05.02	FIRMES			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, repavimentado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	749,40	20,14	15.092,92
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial, incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas. Unidad totalmente terminada.	2.131,85	3,65	7.781,25
TOTAL 05.05.02.....				22.874,17
05.05.03	DRENAJE LONGITUDINAL Y TRANSVERSAL			
P1MT03B1	m³ Excavación localizadas medio-duro+agotam+Tte vertedero Excavación localizada en zanja de conducciones, obras de conexión, pozos y cimentaciones, en sección trapezoidal o recintos entibados, ejecutado con medios mecánicos en cualquier clase de terreno blando, medio y duro (aluvial, terciario y transición ripable) con aplicación puntual de martillo, incluyendo extracción de los productos a borde de la excavación, carga y transporte a acopio y/o vertedero autorizado a cualquier distancia, agotamientos necesarios para cualquier caudal, canon de vertido y operaciones de repavimentado necesarias. Unidad totalmente terminada medido sobre perfil teórico.	118,80	2,77	329,08
P4TUB120HA135	m Tubería hormigón armado junta elastomérica 135 Ø1200 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 1.200 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	11,00	162,56	1.788,16
P4HG-002C	m³ Hormigón HM-20/B/20/XA3-SR cama tubos, elem. horiz. vert Hormigón en masa HM-20/B/20/XA3-SR, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales, incluso suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	4,20	61,53	258,43
P1MT04A	m³ Rellenos localizado con suelos proc. préstamo selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de préstamo tamaño máximo 33mm, extendido, riego a humedad óptima, compactación y perfilado de rasantes, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	66,04	6,58	434,54
P3CUN-001	m Cuneta guarda o pie de talud sin revestir V h=0.5m Cuneta triangular de altura variable según perfil longitudinal de altura entre 0,50 m a 1,5m, con taludes 1/1, con transporte de los productos resultantes de la excavación a vertedero o lugar de empleo, incluso refino de taludes, embocadura con cunetas existentes y red de drenaje existente. Unidad totalmente terminada.	412,00	4,11	1.693,32

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P3BADEN001	ud Badén de hormigón en camino Badén de hormigón en camino de 5 m de anchura y de longitud total 10 m, con 4 m de longitud en el plano más bajo y rampas de 3 m, con una altura de 30 cm. Unidad completamente terminada.	2,00	1.519,37	3.038,74
P4TUB80HA135	m Tubería hormigón armado junta elastomérica 135 Ø800 Suministro y colocación de tubería de hormigón armado para saneamiento, conforme a norma UNE-EN 1916 / UNE 127916 y/o según normativa vigente, Clase 135, diámetro nominal DN 800 mm, incluso parte proporcional de junta elastomérica, medios auxiliares y pruebas necesarias para su correcto funcionamiento.	8,00	87,55	700,40
P4HG-002B	m³ Hormigón HM-20/B/20/X0 Elementos horizontales y verticales Hormigón en masa HM-20/B/20/X0, puesto en obra en rellenos de tubo, limpieza, cuñas y otros elementos estructurales incluido suministro de aditivos para puesta en obra, con p.p. de mermas y cargas incompletas, colocación, bombeo, vibrado, curado y demás operaciones para su correcta terminación. Según Código Estructural. Unidad totalmente terminada.	27,04	59,75	1.615,64
P1MT04A2	m³ Rellenos localizado con suelos proc. excav. selec. 33 mm 95%PN Relleno localizado de suelo seleccionado procedente de excavación tamaño máximo 33mm. Incluye operaciones de seleccionado, cribado y machaqueo necesario para su utilización, carga y transporte desde caballón o acopio intermedio hasta punto de descarga, extendido, riego a humedad óptima, compactación y perfilado de rasantés, por capas de espesor máximo de 25 cm, densidad mínima exigida del 95% del Ensayo Proctor Normal, herramientas y medios auxiliares. Unidad totalmente terminada.	45,36	3,89	176,45
P1MT08ESC150	m³ Escollera 50-150 Kg careada Escollera de peso mínimo 50-150 kg careada colocada en solera y alzados, según planos incluido suministro, transporte de préstamo, preparación de la superficie de apoyo, extendido, recebado y rasanteado, unidad totalmente terminada, y medido sobre perfil, incluido operaciones de voladura, permisos y tasas, canon de extracción y mejora ambiental de préstamos si fuera necesaria.	9,00	22,61	203,49
PEMB800	ud Embocadura de hormigón prefabricado con aletas de DN 800 Embocadura de hormigón prefabricado con aletas de DN 800.	2,00	816,45	1.632,90
P4ETT-002	kg Acero B-500-S Acero de dureza natural en barras corrugadas tipo B500S según Código Estructural para formación de armaduras incluyendo suministro del material a pie de obra, corte, elaboración, colocación en lugar de empleo, atado y parte proporcional de solape entre redondos, alambre recocido, despuntes, mermas, separadores normalizados, rigidizadores solapes y anclajes según norma y planos, y piezas especiales para colocación de juntas. Totalmente terminado y medido en peso nominal.	214,62	1,35	289,74
TOTAL 05.05.03.....				12.160,89
TOTAL 05.05				39.590,89
05.06	INSTALACION ELECTRICA			
05.06.01	LINEAS DE BT			
P5ELEM2X1.5T2	m Manguera eléctrica 2 x 1.5 + TT1.5 mm2 apantallado Manguera eléctrica apantallada de 2 x 1.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	40,00	6,26	250,40
P5ELEM2X2.5TT	m Manguera eléctrica 2 x 2.5 + TT 2.5mm2 Manguera eléctrica de 2 x 2.5 mm2 más conductor de tierra, aislamiento 0.6/1 kv, Cobre flexible XLPE+Pol, RF - No propagador incendio y emisión humos y opacidad reducida, resistente al fuego -. Desig. UNE: RZ1-K(AS+) completo, incluso fijaciones, terminales de presión, bornas y demás accesorios, totalmente instalado.	60,00	5,89	353,40
P5ELEM01	ud Conjunto pequeño material líneas BT Conjunto de pequeño material para líneas de BT soportes, fijaciones, abrazaderas racores, etc. Para alimentación a cuadros, etc.	1,00	676,28	676,28
TOTAL 05.06.01.....				1.280,08

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.06.02	TRANSFORMACION Y GENERACION			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	1,00	97,16	97,16
TOTAL 05.06.02.....				1.245,48
05.06.03	CUADROS			
P5ELECAS01B	ud Equipamiento auxiliar caseta Equipamiento auxiliar para caseta comprendiendo los siguientes elementos: -Puer- tas de acero galvanizado -lamas de ventilación - 1 Conjunto de circuitos para alimen- tación a los anteriores equipos. - 1 Cartel de primeros auxilios. - 1 Cartel de instruc- ciones de servicio. - 1 Cartel con las cinco reglas de oro. - 2 Extintor de CO2 de 5 Kg. - Placas de señalización de riesgo eléctrico.	1,00	741,26	741,26
P5ELECGMED	ud Armario Prot/Med/Secc. 1 TRIF.+R Armario de protección, medida, y seccionamiento para intemperie para 1 suministro trifásico con contadores de energía activa y reactiva, según normas de la Cía. sumi- nistradora, formado por: módulo superior de medida y protección, en poliéster refor- zado con fibra de vidrio, equipado con panel de poliéster troquelado para 1 contador trifásico de energía activa, 1 contador trifásico de energía reactiva y reloj, 3 bases cortacircuitos tipo neozed de 100 A., 1 bornas de neutro de 25 mm2., 1 bloque de bornas de 2,5 mm2. y 1 bloque de bornas de 25 mm2. para conexión de salida de abonado; un módulo inferior de seccionamiento en poliéster reforzado con fibra de vi- drio, equipado con 3 bases cortacircuitos tamaño 1, con bornes bimetálicos de 150 mm2. para entrada, neutro amovible tamaño 1 con bornes bimetálicos de 95 mm2. para entrada, salida y derivación de línea, placa transparente precintable de policar- bonato; incluso cableado de todo el conjunto con conductor de cobre tipo H07Z-R, de secciones y colores normalizados. Totalmente instalada, transporte, montaje y co- nexionado.	1,00	467,80	467,80
P5ELECGBT1A	ud Modulo acometida+aparamenta Módulo de acometida Módulo de acometida 400/230 Vca de la alimentación de las instalaciones formado por armario metálico de dimensiones 2000x800x600 conte- niendo en su interior y frente, debidamente instalados, interruptor de In= 1000 A, 50 KA, aparellaje y equipamiento de protección y medida ARE y demás elementos nece- sarios. Debidamente montado, i/ material y medios auxiliares, conexionado y funcio- nando. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra.	1,00	4.932,77	4.932,77
P5ELECDS1	ud Descargador de sobretensiones tipo I+II Descargador de sobretensiones tipo I+II	1,00	360,50	360,50
P5ELECGBT41	ud CGBT AUX Suministro y montaje de módulo de alimentación, control y protección en cabina/s de 2000X800X600mm normalizada contemplando más un 30% de espacio libre pa- ra posibles ampliaciones debidamente montado y conexionado. Incluyendo: Interruptor general automático, interruptores automáticos (I, III, IV), protección dife- rencial bipolar y tetrapolar, magnetotérmicos, Relé, Transformador, Diferenciales Clase AC, Contactor Tripolar y demás elementos necesarios para las protecciones de todos los receptores, elementos y cuadro de comunicaciones-control-automatis- mo y cuadro de intrusionismo. Comunicación de aparellaje con sistema de control mediante bus Profibus DP, anali- zador de redes con pantalla LCD, Pulsaneria, selectores, pilotos luminosos en frontal. El CGBT estará debidamente montado, i/ material y medios auxiliares, carriles, emba- rados de circuitos, cableados internos. Unidad totalmente instalada, operativo y normalizado, incluida toma tierra, analizador de redes y descargador de sobretensiones.	1,00	6.168,90	6.168,90
P5ELE10	ud Caja EEXD con pulsador marcha y emergencia Caja IP67 con pulsador, arranque, parada y emergencia multiple, incluso regletas, tu- bo 16PVC,p.p. de cableado necesario y elementos acero galvanizado para sujeción. Unidad totalmente instalada.	1,00	101,69	101,69
TOTAL 05.06.03.....				12.772,92

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.06.04	ALUMBRADO			
P5ELEIL1X60LE	ud Lum. lineal 1x60W.LED estanca+Ip68 Luminaria lineal de superficie estancas de 60W LED estanca y resistente ambientes agresivos y corrosión modelo FLUO de SMD PLCC o similar, con óptica de aluminio anodizado mate de alta calidad, con reflectores laterales parabólicos y lamas parabólicas, que cumple con las recomendaciones de deslumbramiento CIBSE LG3, categoría 3, con protección IP 68 clase I, tapas laterales y abrazaderas de fijación de acero inoxidable, cuerpo de polipcarbonato. Instalada, incluyendo replanteo, accesorios de anclaje y conexionado.incluido p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Unidad totalmente instalada y completa.	4,00	199,70	798,80
P5ELEILEMERG	ud Bloque auton. de emergencia 70-583 Lúm Bloque autónomo de emergencia IP44 IK 04, de superficie o empotrado, de 100-583 Lúm., con caja de empotrar blanca o negra, o estanca (IP66 IK08), con difusor biplano opal o transparente. Piloto testigo de carga led o incandescente. Autonomía superior a 1 hora. Equipado con batería Ni-Cd estanca de alta temperatura. Base y reflector contruidos en ABS o policarbonato y difusor en SAN tratado contra radiaciones ultravioletas. Construido según normas UNE 20-392-93 y UNE-EN 60598-2-22. Incluso p.p. de cajas, tubos y cableado necesario para la instalación. Unidad totalmente operativa.	1,00	65,09	65,09
P5ELEI400LED	ud Luminaria LEDs de 1x400 W IP67 estanca Proyector industrial les de 85 W cpn un flujo lumínico de 10500 Lm, con lámpara, totalmente instalado,incluso lámpara p.p. de canalización con tubo de PVC, cajas de registro de material aislante y cable. Antideflagrante. Unidad totalmente instalada.	1,00	689,78	689,78
P5ELEI200WEXT	ud Proyector IP 65, 200 W LED Montado sobre fachada+brazo Proyector para instalación adosado a pared de edificio de las siguientes características: Cuerpo robusto de 3mm de espesor, de fundición de aluminio LM6 Protección anticorrosión, pintado en polvo de poliéster gris metalizado RAL 9006. Aletas de refrigeración que permiten alcanzar una tº de 40ºC Cristal templado y estampado de 5mm con junta de silicona que garantiza la estanqueidad hasta un IP65. Soporte de acero galvanizado sujeto con tornillos M10 Reflectores de aluminio pulido y anodizado (99,8%) Lámpara 200W led. incluida Totalmente instalado.	1,00	338,27	338,27
P5ELEI400WX2	ud Columna de 12 m + dos proyectores 400 W LED Columna tronco-cónica de las siguientes características: Longitud: 12 metros Brazo en T para soportación de 2 proyectores. Material: Acero galvanizado Proyectores: 2 Uds Luminaria: Philips Tempo 3 MWF 330. Lámpara: 400W LED. incluida Completamente instalada, incluida obra civil (excavación, rellenos y cimentación)	1,00	1.788,87	1.788,87
TOTAL 05.06.04.....				3.680,81
05.06.05	ACOMETIDA Y LEGALIZACION			
P5ELECING01	ud Ingeniería eléctrica diseño LMT, LBT, arquitectura multifilares Ingeniería eléctrica incluyendo proyecto de acometida y pago de tasas a empresa suministradora cuando proceda, diseño de armario, LBT, arquitectura de bus, programación local de armarios, lista de materiales, conexionado de bornas, lista de mangueras, esquemas , ... La documentación se realizará con el programa EPLAN, en idioma español. Se entregará en formato digital. Incluye pruebas y calibrados. Unidad completa.	1,00	4.648,90	4.648,90
P5ELEC10001	I Gasoil grupo electrógeno provisional 630 KVA Consumible de gasoil en generador eléctrico móvil de 630KVA para mantenimiento instalaciones operativas durante el conexionado. Incluye Toma tierra, celdas, y resto de material auxiliar necesario.	100,00	1,05	105,00
P5ELEC10002	día Generador eléctrico 630 KVA móvil Generador eléctrico silencioso móvil de 630KVA para mantenimiento de instalaciones operativo durante operaciones de conexionado , incluyendo p.p. de trabajos preparativos, obra civil asociada, carga y transporte a punto de ubicación, conexionados, arranques y mantenimiento, posterior operación de desconexiónados, y operaciones necesarias de retirada. Unidad completa	5,00	713,71	3.568,55

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELEBT	ud Legalización inst eléct. LBT+OCA de toma Unidad de legalización completa de instalaciones eléctricas de baja tensión y tomas tierra, incluyendo redacción de proyecto de baja tensión , visado, inspección de OCA, tramites en industria, y demás trabajos necesarios para completa legalización de las instalaciones. Unidad completa.	1,00	3.495,74	3.495,74
P9VAR1	ud Legalización y verificación de requerimientos CTE Unidad OCA, verificación y legalización completa de instalaciones según requerimientos CTE y energéticos.	1,00	2.767,45	2.767,45
TOTAL 05.06.05.....				14.585,64
05.06.06	CANALIZACIONES			
P35RALUM02	m Canaliz alumbrado conducto Ø90 mm+tendido línea elec.4x6mm2+TT Canalización PVC corrugado de 90 mm. de diámetro en cualquier tipo de terreno, Acerados y/o pavimentos incluso excavación en zanja en cualquier tipo de terreno, de dimensiones mínimas 40 cm. x 100 cm. de profundidad, incluso excavación para posterior uso o carga, transporte a vertedero, cama de arena de 30 cm, relleno con suelo seleccionado procedentes de prestamos o de la excavación compactados al 95% del Proctor normal, instalada, transporte, montaje y conexionado a arquetas, incluso cinta indicador de instalación de PVC, cables de acero pasa-guía y corchetes. y p.p. línea eléctrica cobre 4x6 mm2+TT, incluido conexionados multiples. Unidad totalmente terminada.	40,00	24,84	993,60
P5ELE20GALV	m Tubo galvanizado estanco 20 mm Tubo galvanizado estanco 20 mm de diámetro para instalación eléctrica, incluidos anclajes y piezas especiales. Unidad totalmente instalada y normalizada.	10,00	5,36	53,60
P5ELE20PVC	m tubo. electricidad Polímero term libre de halógenos ríg M20 Tubo flexible de PVC corrugado o rígido estanco según punto de instalación, para canalización empotrada o colgada en obra de fábrica (paredes y techos), D=20 mm. Código de clasificación 222122, resistencia a la compresión 320 N, resistencia al impacto 1 julio, temperatura de trabajo -5°C hasta 60°C, propiedades eléctricas: aislante, no propagador de la llama. Conforme a las normas UNE-EN 50086-1, UNE-EN 50086-2-2 y UNE-EN 60423. Incluida p.p. de roza en ladrillo, bloque u hormigón, elementos de anclaje y piezas de cuelgue. Unidad totalmente terminada.	40,00	1,35	54,00
P5ELECROZA	m Roza en ladrillo macizo, bloque hormigón Apertura de rozas de 7x5 cm. en fábrica de ladrillo macizo o fábrica compacta, con rozadora eléctrica, i/replanteo, retirada de escombros, carga y transporte a vertedero, posterior tapado de la roza con mortero de cemento.	20,00	7,64	152,80
P5ARQPREF1.0E	ud Arqueta BT prefabricada inst. elect. 100x100x120 con tapa FD Arqueta prefabricada de hormigón armado para instalación eléctrica normalizada de dimensiones 1x1x1.2 m, con paso de 4 tubos de diámetros varios, empotrada en un material granular de 0.2 m de espesor, con tapa de fundición 625x535 mm, incluso excavación, y rellenos posteriores con material procedente de excavación o préstamos y base de material filtrante 40/80. Unidad totalmente instalada.	1,00	281,22	281,22
P5ARQLD6	ud Arqueta de registro 40x40x50 1/2 tapa FD Arqueta de registro de dimensiones interiores 40x40x50 cm, realizada con fábrica de ladrillo perforado de 1/2 pie de espesor, recibido con mortero de cemento 1:6, sobre solera de hormigón de HM 20/P/20/I de 20 cm de espesor, enfoscado y bruñida interiormente, incluso cerco y tapa de hierro fundido de 40x40 normalizada D-400. Unidad totalmente terminada.	2,00	87,49	174,98
P5ELECAJA5	ud Cajas de distribución 225 x 175 x 95 Cajas de distribución de material termoplástico de alto impacto y alto grado de protección (IP66/IP67) sin tornillos pasantes de la serie 55 dedimensiones 225 x 175 x 95mm estanca	4,00	31,90	127,60
TOTAL 05.06.06.....				1.837,80

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.06.07	TOMA DE TIERRA			
P5ELETRAF4E	ud Puesta a tierra caseta CGBT tomas Conjunto puesta a tierra caseta CGBT, incluyendo la puesta a tierra de servicio y la puesta a tierra de protección, conformado por mallazo #8/15, cableado desnudo 35 mm2 y conjunto de 5 picas, p.p. soldaduras y pequeño material. Unidad completa y normalizada.	1,00	1.148,32	1.148,32
P5ELETT2	ud Toma de tierra independiente con pica 200/14.3 Fe+Cu+arq. visita Toma de tierra independiente con picas de 2.0m acero cobrizado de D= 14,3 mm. y 3m. de longitud, cable de cobre de 35 mm2, unido mediante soldadura aluminotérmica, incluyendo registro de comprobación y puente de prueba.	3,00	98,29	294,87
P5ELETT7	ud Soldadura aluminotérmica Soldadura aluminotérmica en T ó + con cable de cobre 50/35 mm2.	4,00	12,58	50,32
P5ELETT10	ud Arq. polipropileno con tapa registrable Arqueta de polipropileno con tapa registrable de indicación de tomas de tierra, de dimensiones aproximadas 300x300 mm con tapa de registro.	4,00	69,95	279,80
P5ELETT8	ud Conexión red tierras estructura metálica Conexión de red de tierras a estructura metálica, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a la estructura metálica se realizarán mediante soldadura aluminotérmica.	2,00	232,13	464,26
P5ELETT9	ud Conexión red tierras estructura de hormigón Conexión de red de tierras a estructura de hormigón, con apertura de roza o taladro en bancada de hormigón para instalación de un tubo por el que pasará el cable de conexión, restituyendo posteriormente la bancada de hormigón. Los empalmes de cables y la conexión a las placas de la estructura de hormigón se realizará mediante soldadura aluminotérmica.	1,00	258,71	258,71
P5ELETT4A	m Cab. cobre des. 1x35 mm2 grap. muro Cable de cobre desnudo de 1x35 mm2, grapado sobre muro, incluyendo 3 anclajes por metro y abrazaderas.	40,00	7,88	315,20
P5ELETT5B	m Cab. cobre des. 1x50 mm2 en tubo+tubería PVC rig M25 Cable de cobre desnudo de 1x50mm2, en tubería 25 mm PVC. Unidad totalmente instalada.	10,00	10,99	109,90
P5ELECTT0	ud Informe resultados ejecución toma tierra Informe de resultados de ejecución de una toma de tierra, comprendiendo las mediciones, datos de situación, planos, esquemas y cuadro resumen de características.	2,00	97,16	194,32
P5ELEPRAAYOS	ud Pararrayos ionizante - seguidor de campo tipo S/300 R=120 Pararrayos ionizante - seguidor de campo tipo S/300 para niveles de protección 3 y 4 con radio de protección de hasta 120m, instalado, formado por: * Cabeza ionizante no radiactiva tipo S/150-300 * Mástil troncocónico de chapa de acero de 10m de altura * Línea de puesta a tierra en conductor de cobre desnudo de 95mm2 * Sistema de puesta a tierra con tres electrodos de acero cobrizado de 2m de longitud con arquetas * Material auxiliar Unidad completa, incluidas comprobaciones de toma tierra.	1,00	1.492,41	1.492,41
TOTAL 05.06.07.....				4.608,11
05.06.08	MECANISMOS			
P5ELEC01	ud Interruptor monopolar Interruptor monopolar estanco IP67, gama básica, con tecla de color blanco y tapa con marco embellecedor de color blanco.	2,00	7,52	15,04
P5ELEC08	ud Base de enchufe 16A monofásica Base de enchufe estanca de 16 A 2P+T, para instalación en superficie (IP 67), color gris.	2,00	24,54	49,08
P5ELEC09	ud Base de enchufe trifásica 16A Toma de corriente CETACT trifásica 3P+T 32 A 400 V, incluso parte proporcional de material de instalación.	1,00	72,04	72,04

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
P5ELECT1	ud Toma corr. 2P+T 32 A IP-66 Toma de corriente antideflagrante 2P+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	2,00	144,43	288,86
P5ELECT3	ud Toma corr. 3P+N+T 32 A IP-66 Toma de corriente antideflagrante 3P+N+T, para 32 A, IP-66, en aluminio, con tornillería de acero inoxidable, conforme normas CENELEC en 500 14/18/19 CEI 309-3 y/o según normativa vigente.	1,00	199,02	199,02
TOTAL 05.06.08.....				624,04
TOTAL 05.06				40.634,88
05.07	URBANIZACIÓN Y CERRAMIENTOS			
05.07.01	URBANIZACIÓN GENERAL			
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	93,85	20,14	1.890,14
P5MBDTS1	m² Doble tratamiento superficial+emulsión ECI 100kg/m2 Doble tratamiento superficial, incluidas operaciones de imprimación ECI 1Kg/m2 según su aplicación sobre hormigón o zahorra, y posteriores, barridos y limpiezas. Unidad totalmente terminada.	312,84	3,65	1.141,87
PASEÑACC	ud Señalización de accesos y advertencias de seguridad Señalización de accesos y advertencias de seguridad, etc.	1,00	4.478,29	4.478,29
TOTAL 05.07.01.....				7.510,30
05.07.02	CERRAMIENTOS			
P5CERRAMPU	m Cerramiento tipo-2 Valla de D/T metálica, con pp puerta acceso Cerramiento de 2.00 m de altura realizado con malla de doble torsión galvanizada en caliente de trama 40/14 y postes de tubo de acero galvanizado por inmersión de 48 mm de diámetro, p.p. de postes de esquina, jabalcones, tornapuntas, tensores, grupillas y accesorios, montada i/ replanteo y recibido de postes con hormigón en masa, coronada en alambre de espino, incluyendo parte proporcional de puerta de acceso.	1.028,78	28,97	29.803,76
TOTAL 05.07.02.....				29.803,76
TOTAL 05.07				37.314,06
05.08	SERVICIOS AFECTADOS			
P1MT08BASEZA2	m² Escarificado camino +30%Zahorra artificial 95%PM Escarificado de camino existente, oreo del mismo, aportación de humedad, extendido con aportación de 30% de espesor de zahorra artificial procedente del machaqueo extendida y perfilada con pala cargadora de orugas, extendedora niveladora, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo y reperfilado del camino y formación de cunetas laterales. Unidad totalmente terminada.	2.600,00	2,79	7.254,00
P1MT08BASEZA1	m³ Zahorra artificial 95% PM Zahorra artificial procedente del machaqueo, mezclada, extendida y perfilada con extendedora, niveladora o pala cargadora de orugas, regada a la humedad óptima y compactada por tongadas hasta una densidad el 95% del Ensayo Proctor Modificado, incluido cajeo, reperfilado y p.p. cunetas laterales en caso de caminos. Unidad totalmente terminada.	780,00	20,14	15.709,20
P6SÑL-002A	ud Señal triangular normal L=90 cm. Nivel1 Señal triangular de lado 70 cm., norma nivel 1, troquelada, incluso poste galvanizado de sustentación normalizada y cimentación, colocada.	1,00	92,53	92,53
TOTAL 05.08				23.055,73

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.09	GESTIÓN DE RESIDUOS			
PGESRES100	ud Punto limpio en obra para acopio y almacén de los residuos	1,00	2.506,13	2.506,13
	Punto limpio en obra para acopio y almacén de los residuos generados en la construcción. Incluye una zona despejada para el acopio de material no peligroso así como una zona habilitada para materiales peligrosos. esta última se constituye por una estructura de chapa prefabricada de 9x3 m que supone la parte superior del almacenamiento (techo y las paredes), la parte inferior consta de una solera de hormigón, (que actuará como cubeto de retención ante posibles derrames líquidos) lo cual requiere una excavación a máquina previa de 20 cm, para colocar un encachado de piedra y una lámina de plástico, después se realizará la solera de hormigón de 15 cm de espesor con mallazo de acero, para constituir la base del almacén que deberá tener una mínima inclinación para desembocar a un sumidero sifónico de pvc, que se conectará con un tubo de pvc (con una longitud de unos 6 m) a una arqueta prefabricada también de PVC. dicha arqueta requerirá además de una fábrica de ladrillo tosco para proteger dicho elemento. el precio del almacén incluye además un cartel de identificación, un extintor de polvo abc, así como sepiolita para recoger posibles derrames líquidos pastosos (ej. grasas). inclusive la mano de obra necesaria para la colocación del cartel, el extintor, la sepiolita, así como de la lámina de plástico y tornillos que sujeten la estructura prefabricada a la solera de hormigón.			
PGESRES180E	ud Carga, tte. y deposic. RCD'S tipo II (no petreos) (BM)	1,00	16.530,70	16.530,70
	Carga, transporte y deposición de residuos tipo II de naturaleza no pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Mostrakas.			
PGESRES150E	ud Carga, tte. y deposic. RCD'S tipo II (petreos) (BM)	1,00	23.969,52	23.969,52
	Carga, transporte y deposición de residuos tipo II de naturaleza pétrea, incluida selección, carga, transporte, descarga y canon de gestión en obras definidas en la Balsa de Mostrakas.			
PGESRES200E	ud Carga, transporte y depos.de Res. peligrosos (BM)	1,00	10.828,64	10.828,64
	Carga, transporte y deposición controlada en vertedero autorizado de residuos peligrosos, así como los medios auxiliares necesarios. Incluido el canon de vertido en obras definidas en la Balsa de Mostrakas.			
TOTAL 05.09				53.834,99
05.10	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (BM)			
05.10.01	MEDIDAS PROTECTORAS, CORRECTORAS (BM)			
05.10.01.01	ATMÓSFERA (BM)			
P-101AMB-MP01	mes Protección atmosférica antipolvo+barredora	12,00	2.488,07	29.856,84
	Protección atmosférica antipolvo mediante el riego de caminos y accesos con cuba de agua y limpieza mediante barredora con presencia permanente en obra en tramos DC-T21;DC-T14/15.			
TOTAL 05.10.01.01				29.856,84
05.10.01.02	SUELO (BM)			
P-101AMB-MP03	m Jalonamiento de protección malla	440,00	1,74	765,60
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.			
P-101AMB-MP09	m Jalonamiento de protección cinta	3.900,00	0,52	2.028,00
	Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.			
TOTAL 05.10.01.02.....				2.793,60

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
05.10.01.03 HIDROLOGIA (BM)				
P-101AMB-MP05	m Barrera de retención sedimentos Barrera de retención de sedimentos formada por pacas de paja de cereal fijadas al terreno mediante estacas.	120,00	5,54	664,80
P-101AMB-MP06	ud Balsa de decantación provisional zona instalaciones Balsa de decantación provisional para zona de instalaciones incluso excavación, carga y transporte de tierras a vertedero e impermeabilización con lámina de geotextil.	12,00	806,83	9.681,96
TOTAL 05.10.01.03.....				10.346,76
05.10.01.04 FAUNA Y FLORA (BM)				
P-101AMB-MP03	m Jalonamiento de protección malla Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por malla de balizamiento plástica, con posterior reutilización en obra. 4 usos, incluido montaje y desmontaje.	1.800,00	1,74	3.132,00
P-101AMB-MP09	m Jalonamiento de protección cinta Jalonamiento de protección formado por barras de acero corrugado de 2m clavadas al terreno cada 3m, y unidas por una cinta de balizamiento plástica bicolor. Con reutilización en campo hasta 4 usos.	1.700,00	0,52	884,00
TOTAL 05.10.01.04.....				4.016,00
TOTAL 05.10.01.....				47.013,20
05.10.02 SEGUIMIENTO ARQUEOLÓGICO (BM)				
P-103AMBAR01A	ud Proyecto arqueológico incl. tramitaciones Proyecto arqueológico en el ámbito del tramo incluidas tramitaciones y pago de tasas en Organismo.	1,00	3.193,57	3.193,57
P-103AMBAR00A	ud Informe arqueológico previo incl. tramitación autoriz. Informe arqueológico previo incluidas tramitaciones y tasas.	1,00	1.856,27	1.856,27
P-103AMBAR02A	mes Seguimiento básico arqueológico de las obras+informe Mes de control y seguimiento arqueológico de carácter básico con una estimación de visitas media de 1 día/semana en el ámbito del tramo, realizado por equipo de técnicos cualificados en arqueología y paleontología, dotados con medios materiales, vehículos. Incluso generación de informe de seguimiento mensual	24,00	2.404,67	57.712,08
TOTAL 05.10.02.....				62.761,92
05.10.03 PROGRAMA VIGILANCIA AMBIENTAL (BM)				
P-104AMBVA00A	ud Redacción de PVA y PVA y arqueológica Redacción de Plan de Vigilancia Ambiental y Plan de vigilancia Arqueológica en el ámbito de la actuación	1,00	975,28	975,28
P-104AMBVA01A	mes Informe de seguimiento ambiental de las obras Informe mensual de seguimiento del Plan de Vigilancia Ambiental ambiental de las obras incluyendo seguimiento de ISO 14001, etiqueta ecológica y materiales de obra, permisos, tramitaciones a Organismos e informes de seguimiento.	24,00	1.879,04	45.096,96
P-104AMBVA03A	ud Informe especializado de flora Informe especializado ambiental a realizar por técnico competente consistentes en inventario de especies vegetales existente en la zona de actuación de actuación en el ámbito, levantamiento, planos e informe. Incluidos gastos de desplazamiento y material de oficina.	1,00	3.965,50	3.965,50
P-104AMBVA04A	ud Informe especializado de fauna Informe especializado ambiental a realizar por técnico competente consistentes en batida faunística en la zona de actuación en el ámbito de actuación. Incluidos gastos de desplazamiento y material de oficina y redacción de informe.	1,00	2.882,01	2.882,01
P-104AMBVA06	ud Informe de prevención acústica Informe inicial de Prevención Acústica, cuyo alcance se define en la I.T.4 del Decreto 6/2012, de 17 de enero, de los ensayos programados en el Estudio Acústico o sus modificaciones, así como de los ensayos necesarios para la comprobación del cumplimiento de los condicionantes impuestos en materia acústica incluidos en la resolución del procedimiento correspondiente a los instrumentos de prevención y control ambiental previstos en el Art. 16 de la Ley 7/2007, de 9 de julio. Unidad completa.	1,00	2.009,53	2.009,53

PRESUPUESTOS PARCIALES

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CÓDIGO	RESUMEN	CANTIDAD	PRECIO	IMPORTE
TOTAL 05.10.03.....				54.929,28
05.10.04	INTEGRACIÓN PAISAJÍSTICA (BM)			
P-102AMB-PL01	m ² Preparación del terreno y laboreo mecánico Laboreo mecánico de terreno de consistencia media, comprendiendo dos pases cruzados de subsolador a 30 cm. de profundidad y dos pases, también cruzados, de arado de discos o vertedera a 20 cm. de profundidad, i/ remate manual de bordes y zonas especiales.	35.309,90	0,12	4.237,19
PTU-023	m ³ Extendido de tierra veg. proc excav/acopio 50 cm(medio) balsas Extendido de tierra vegetal procedentes de excavación/ acopio, de espesor medio de 50 cm según especificaciones de PPTP, incluso operaciones de carga desde acopio o caballón, transporte a punto de descarga, descarga, extendido y descompactado en balsas.	27.467,64	0,56	15.381,88
P-102AMBPL001	m ² Hidrosiembra incluso rastrillado y tapado Hidrosiembra incluso rastrillado previo de taludes y tapado posterior de la hidrosiembra en una segunda pasada, ejecutado la hidrosiembra y el tapado en la misma jornada, de especies rústicas, herbáceas y arbustivas, incluso estabilizante de suelos, abonos de liberación lenta, mulch, rastrillado de superficie y primeros riegos hasta su total nacimiento o 1ª siega.	7.842,25	1,64	12.861,29
TOTAL 05.10.04.....				32.480,36
TOTAL 05.10				197.184,76
05.11	SEGURIDAD Y SALUD			
PSEGSAL.05	ud Seguridad y Salud.Balsa de Mostrakas y conducción de conexión Seguridad y Salud.Balsa de Mostrakas y conducción de conexión (según valoración realizada en el Anejo nº20 del proyecto).	1,00	95.879,15	95.879,15
TOTAL 05.11				95.879,15
TOTAL 05 Balsa de Mostrakas.....				4.034.033,14
PRESUPUESTO TOTAL DEL ESTUDIO DE SEGURIDAD Y SALUD.....				202.711.262,46

PRESUPUESTO DE EJECUCIÓN MATERIAL

PRESUPUESTO DE EJECUCIÓN MATERIAL

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
01	SUBTRAMO O.T. PIKARANA-T12	68.127.819,91	33,61
02	SUBTRAMO T12-D.C. (Derivación Corella).....	65.596.489,03	32,36
03	SUBTRAMO D.C.-T21 y DC-T14/15	31.758.440,70	15,67
04	BALSA DE TUDELA.....	33.194.479,68	16,38
05	BALSA DE MOSTRAKAS.....	4.034.033,14	1,99
PRESUPUESTO DE EJECUCIÓN MATERIAL		202.711.262,46	

Asciende el Presupuesto de Ejecución Material a la expresada cantidad de:

DOSCIENTOS DOS MILLONES SETECIENTOS ONCE MIL DOSCIENTOS SESENTA Y DOS EUROS CON CUARENTA Y SEIS CÉNTIMOS

Zaragoza, marzo de 2022

El Ingeniero autor del Proyecto



Fdo.:D. Rafael Fernández-Ordóñez Cervera
Ingeniero de Caminos Canales y Puertos
Colegiado Nº 11.444

El Ingeniero autor del Proyecto



Fdo: D.Juan Ortas González
Ingeniero de Caminos, Canales y Puertos
Colegiado nº 10.726

Examinado y conforme.
El Director del proyecto



Fdo.: D. Jose María Serra Llena
Ingeniero de Caminos Canales y Puertos
Colegiado Nº 10.408

PRESUPUESTO BASE DE LICITACIÓN

PRESUPUESTO BASE DE LICITACIÓN

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
01	SUBTRAMO O.T. PIKARANA-T12.....	68.127.819,91	33,61
02	SUBTRAMO T12-D.C. (Derivación Corella)	65.596.489,03	32,36
03	SUBTRAMO D.C.-T21 y DC-T14/15	31.758.440,70	15,67
04	BALSA DE TUDELA	33.194.479,68	16,38
05	BALSA DE MOSTRAKAS	4.034.033,14	1,99

PRESUPUESTO DE EJECUCIÓN MATERIAL **202.711.262,46**

13,00 % Gastos generales.... 26.352.464,12

6,00 % Beneficio industrial.. 12.162.675,75

Suma de G.G. y B.I. 38.515.139,87

VALOR ESTIMADO DE CONTRATO (SIN I.V.A.) **241.226.402,33**

Asciende el VALOR ESTIMADO DE CONTRATO (SIN I.V.A.) a la expresada cantidad de DOSCIENTOS CUARENTA Y UN MILLONES DOSCIENTOS VEINTISEIS MIL CUATROCIENTOS DOS EUROS con TREINTA Y TRES CÉNTIMOS

21% IVA..... 50.657.544,49

PRESUPUESTO BASE DE LICITACIÓN (IVA INCLUIDO) **291.883.946,82**

Asciende el Presupuesto Base de Licitación a la expresada cantidad de:

DOSCIENTOS NOVENTA Y UN MILLONES OCHOCIENTOS OCHENTA Y TRES MIL NOVECIENTOS CUARENTA Y SEIS EUROS CON OCHENTA Y DOS CÉNTIMOS

En Zaragoza, Marzo de 2022

El Ingeniero Autor del Proyecto



D. Rafael Fernández-Ordóñez Cervera.
Ingeniero de Caminos Canales y Puertos.
Colegiado Nº 11.444

El Ingeniero Autor del Proyecto



Fdo: Juan Ortas González
Ingeniero de Caminos, Canales y Puertos
Colegiado nº 10.726

Examinado y conforme.

El Director del proyecto



D. Jose María Serra Llena
Ingeniero de Caminos Canales y Puertos.
Colegiado Nº 10.408

RESUMEN DE PRESUPUESTO

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
01	SUBTRAMO O.T. PIKARANA-T12.....	68.127.819,91	33,61
01.01	OBRA DE TOMA PIKARANA (OT-T12).....	2.243.609,12	
01.01.01	ALMENARA TOMA CANAL DE NAVARRA.....	867.970,57	
01.01.01.01	DEMOLICIONES	35.366,06	
01.01.01.02	MOVIMIENTO DE TIERRAS	16.263,83	
01.01.01.03	OBRA DE FÁBRICA	255.872,11	
01.01.01.04	ESTRUCTURA METÁLICA.....	10.401,91	
01.01.01.05	ELEMENTOS HIDROMECÁNICOS y ACCESORIOS.....	546.781,44	
01.01.01.06	ELEMENTOS ACCESORIOS.....	3.285,22	
01.01.02	ALIVIADERO.....	119.490,17	
01.01.02.01	MOVIMIENTO DE TIERRAS	15.694,61	
01.01.02.02	OBRA DE FÁBRICA	86.170,96	
01.01.02.03	SECCIÓN CANAL DE DESCARGA.....	17.624,60	
01.01.03	CONEXIÓN CON 2ºFASE	14.735,79	
01.01.03.01	OBRA DE FÁBRICA	2.503,53	
01.01.03.02	ELEMENTOS ACCESORIOS.....	12.232,26	
01.01.04	ACCESOS.....	25.662,63	
01.01.04.01	ACCESO POR MARGEN DERECHA	13.319,04	
01.01.04.02	ACCESO POR MARGEN IZQUIERDA	12.343,59	
01.01.05	INSTALACIONES ELECTRICAS ALMENARA PIKARANA	614.218,77	
01.01.05.01	LINEA ELECTRICA DE MT	409.462,49	
01.01.05.02	LINEAS DE BT	11.357,76	
01.01.05.03	TRANSFORMACIÓN Y GENERACIÓN.....	63.696,15	
01.01.05.04	CUADROS.....	25.838,83	
01.01.05.05	ALUMBRADO.....	8.328,58	
01.01.05.06	ACOMETIDA Y LEGALIZACIÓN	67.697,75	
01.01.05.07	CANALIZACIONES.....	17.422,80	
01.01.05.08	TOMA DE TIERRA	7.214,19	
01.01.05.09	MECANISMOS	3.200,22	
01.01.06	INSTALACIONES ELÉCTRICAS ALMENARA 10 Y TOMA DE RIEGO 9.....	575.428,12	
01.01.06.01	LINEA ELECTRICA DE MT	352.089,14	
01.01.06.02	LINEAS DE BT	4.214,56	
01.01.06.03	TRANSFORMACION Y GENERACION.....	90.885,84	
01.01.06.04	CUADROS.....	25.749,22	
01.01.06.05	ALUMBRADO.....	6.163,42	
01.01.06.06	ACOMETIDA Y LEGALIZACION	38.699,62	
01.01.06.07	CANALIZACIONES.....	47.418,72	
01.01.06.08	TOMA DE TIERRA	8.959,52	
01.01.06.09	MECANISMOS	1.248,08	
01.01.07	URBANIZACIÓN Y CERRAMIENTOS.....	26.103,07	
01.01.07.01	URBANIZACIÓN GENERAL	12.052,62	
01.01.07.02	CERRAMIENTOS	14.050,45	
01.02	MOVIMIENTO DE TIERRAS (OT-T12).....	8.653.706,61	
01.03	TUBERÍAS (OT-T12).....	46.029.862,52	
01.04	DESAGÜES (OT-T12).....	507.174,24	
01.04.01	ARQUETA DESAGÜE, VALVULERÍA Y CALDERERÍA (OT-T12).....	370.711,92	
01.04.01.01	MOV. TIERRAS Y DREN (DESAGÜES OT-T12).....	2.023,12	
01.04.01.02	ESTRUCTURA DE HORMIGÓN Y METÁLICA (DESAGÜES OT-T12).....	113.347,03	
01.04.01.03	VÁLVULAS Y CALDERERÍA (DESAGÜES OT-T12)	255.341,77	
01.04.02	CONDUCCIÓN A VERTIDO (OT-T12)	101.357,56	
01.04.03	ARQUETA ROTURA Y VERTIDO A CAUCE (OT-T12).....	35.104,76	
01.05	VENTOSAS (OT-T12)	673.016,55	
01.05.01	MOVIMIENTO DE TIERRAS VENTOSAS (OT-T12)	10.247,64	
01.05.02	OBRAS DE FÁBRICA VENTOSAS (OT-T12).....	145.748,43	
01.05.03	VÁLVULAS Y CALDERERÍA VENTOSAS (OT-T12)	517.020,48	
01.06	TOMAS (OT-T12).....	1.960.356,19	
01.06.01	TOMA-11.....	1.055.356,41	
01.06.01.01	MOVIMIENTO DE TIERRAS (TOMA-11).....	14.575,48	
01.06.01.02	CALDERERÍA Y VALVULERÍA (TOMA-11).....	711.112,38	
01.06.01.03	LOSA Y ANCLAJES (TOMA-11).....	210.548,16	
01.06.01.04	PROTECCIÓN Y ENCINTADOS (TOMA-11).....	39.741,57	
01.06.01.05	OBRA DE DESAGÜE (TOMA-11).....	22.328,75	
01.06.01.05.1	ARQUETA ROTURA (TOMA-11).....	12.828,39	
01.06.01.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-11).....	5.400,45	
01.06.01.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-11)	4.099,91	
01.06.01.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-11)	16.834,05	
01.06.01.07	URBANIZACIÓN (TOMA-11)	40.216,02	
01.06.01.07.1	PAVIMENTOS (T11).....	16.775,21	
01.06.01.07.2	CERRAMIENTOS (T11).....	21.287,50	
01.06.01.07.3	DRENAJES (T11).....	2.153,31	
01.06.02	TOMA-12.....	904.999,78	
01.06.02.01	MOVIMIENTO DE TIERRAS (TOMA-12).....	19.710,37	
01.06.02.02	CALDERERÍA Y VALVULERÍA (TOMA-12).....	571.701,68	
01.06.02.03	LOSA Y ANCLAJES (TOMA-12).....	194.673,18	
01.06.02.04	PROTECCIÓN Y ENCINTADOS (TOMA-12).....	37.286,36	
01.06.02.05	OBRA DE DESAGÜE (TOMA-12).....	22.419,42	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
01.06.02.05.1	ARQUETA ROTURA (TOMA-12).....	15.845,12	
01.06.02.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-12).....	4.456,86	
01.06.02.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-12)	2.117,44	
01.06.02.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-12)	16.834,05	
01.06.02.07	URBANIZACIÓN (TOMA-12)	42.374,72	
01.06.02.07.1	PAVIMENTOS (T12).....	17.470,04	
01.06.02.07.2	CERRAMIENTOS (T12).....	22.638,78	
01.06.02.07.3	DRENAJES (T12)	2.265,90	
01.07	HINCAS (OT-T12)	4.102.712,59	
01.07.01	HINCA RÍO ARAGÓN.....	2.944.428,84	
01.07.01.01	TRABAJOS PREPARATORIOS+MT (HINCA ARAGÓN).....	71.742,22	
01.07.01.02	PANTALLA Y ESTRUCTURA (HINCA ARAGÓN)	1.158.801,93	
01.07.01.03	HINCA(HINCA ARAGÓN).....	1.365.019,74	
01.07.01.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA ARAGÓN)	348.864,95	
01.07.01.04.1	TRATAMIENTO (HINCA ARAGÓN).....	343.887,02	
01.07.01.04.2	AUSCULTACIÓN (HINCA ARAGÓN)	4.977,93	
01.07.02	HINCA NA-128	1.158.283,75	
01.07.02.01	TRABAJOS PREPARATORIOS+MT (HINCA NA-128)	48.805,44	
01.07.02.02	PANTALLA Y ESTRUCTURA (HINCA NA-128).....	700.022,69	
01.07.02.03	HINCA (HINCA NA-128)	373.365,30	
01.07.02.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA NA-128).....	36.090,32	
01.07.02.04.1	TRATAMIENTO (HINCA NA-128).....	30.972,18	
01.07.02.04.2	AUSCULTACIÓN (HINCA NA-128).....	5.118,14	
01.08	MACIZOS DE ANCLAJE (OT-T12).....	361.798,86	
01.09	CAMINOS DE SERVICIO (OT-T12)	229.387,59	
01.09.01	MOVIMIENTO DE TIERRAS Y PAVIMENTOS.....	134.341,13	
01.09.02	DRENAJE TRANSVERSAL	85.227,05	
01.09.02.01	MOVIMIENTO DE TIERRAS	13.177,19	
01.09.02.02	OBRAS DE FÁBRICA	72.049,86	
01.09.03	DRENAJE LONGITUDINAL.....	9.819,41	
01.10	PROTECCIÓN CATÓDICA (OT-T12).....	234.317,11	
01.11	INSTALACIONES ELÉCTRICAS (OT-T12)	757.550,16	
01.11.01	TOMA-11 (FOTOV)	98.090,78	
01.11.01.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-11).....	15.371,26	
01.11.01.02	FOTOVOLTAICA (TOMA-11).....	30.503,90	
01.11.01.03	CUADROS ELÉCTRICOS (TOMA-11).....	26.188,42	
01.11.01.04	CANALIZACIONES (TOMA-11).....	10.033,90	
01.11.01.05	LÍNEAS DE BT (TOMA-11).....	9.073,86	
01.11.01.06	TOMA TIERRA (TOMA-11).....	5.346,23	
01.11.01.07	MECANISMOS (TOMA-11).....	381,92	
01.11.01.08	ALUMBRADO (TOMA-11).....	1.191,29	
01.11.02	TOMA-12	382.398,46	
01.11.02.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-12).....	34.737,87	
01.11.02.02	LÍNEA DE MEDIA TENSIÓN (TOMA-12).....	282.602,01	
01.11.02.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-12)	9.684,05	
01.11.02.04	CUADROS ELÉCTRICOS (TOMA-12).....	26.251,25	
01.11.02.05	CANALIZACIONES(TOMA-12).....	12.588,81	
01.11.02.06	LÍNEAS DE BT (TOMA-12).....	9.882,36	
01.11.02.07	TOMA TIERRA (TOMA-12).....	5.078,90	
01.11.02.08	MECANISMOS (TOMA-12).....	381,92	
01.11.02.09	ALUMBRADO (TOMA-12).....	1.191,29	
01.11.03	EPC02	277.060,92	
01.11.03.01	ACOMETIDA Y LEGALIZACIÓN (EPC02).....	26.320,83	
01.11.03.02	LÍNEA DE MEDIA TENSIÓN (EPC02).....	207.422,40	
01.11.03.03	TRANSFORMACIÓN Y GENERACIÓN(EPC02)	9.684,05	
01.11.03.04	CUADROS ELÉCTRICOS (EPC02).....	16.350,70	
01.11.03.05	CANALIZACIONES(EPC02)	5.270,89	
01.11.03.06	LÍNEAS DE BT (EPC02).....	5.359,94	
01.11.03.07	TOMA TIERRA (EPC02).....	5.078,90	
01.11.03.08	MECANISMOS (EPC02).....	381,92	
01.11.03.09	ALUMBRADO (EPC02).....	1.191,29	
01.12	CONTROL Y AUTOMATISMO (OT-T12).....	195.416,98	
01.12.01	INGENIERÍA Y FORMACIÓN (OT-12).....	15.763,48	
01.12.02	SISTEMA DE CONTROL Y COMUNICACIONES (OT-12)	105.404,96	
01.12.03	INSTRUMENTACIÓN (OT-12).....	23.805,07	
01.12.04	CANALIZACIÓN Y CABLEADOS (OT-12).....	27.640,99	
01.12.05	INTRUSISMO (OT-12).....	22.802,48	
01.13	SERVICIOS AFECTADOS (OT-T12).....	618.373,12	
01.13.01	R.S.PAVIMENTOS (OT-T12).....	13.269,87	
01.13.02	R.S. CAMINOS (OT-T12)	185.274,99	
01.13.03	R.S. ABASTECIMIENTO (OT-T12).....	21.090,82	
01.13.04	R.S. RED RIEGO (OT-T12).....	190.958,39	
01.13.05	R.S. DRENAJE Y ARROYOS (OT-T12)	49.200,15	
01.13.06	R.S. ELECTRICIDAD(OT-T12).....	6.813,33	
01.13.07	R.S. COMUNICACIONES(OT-T12)	1.246,22	
01.13.08	R.S. GAS(OT-T12)	3.088,71	
01.13.09	R.S. CANAL(OT-T12).....	13.792,89	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
01.13.10	R.S. CERRAMIENTOS(OT-T12)	9.921,93	
01.13.11	R.S. VARIOS (OT-T12)	4.813,46	
01.13.12	R.S. DESV. TRAFICO (OT-T12).....	118.902,36	
01.13.12.01	DESVÍO NA-1240	118.902,36	
01.13.12.01.1	MOV. TIERRAS (DESVÍO NA-1240)	37.581,38	
01.13.12.01.2	DRENAJES (DESVÍO NA-1240).....	1.027,50	
01.13.12.01.3	PAVIMENTOS (DESVÍO NA-1240).....	51.988,82	
01.13.12.01.4	SEÑALIZACIÓN (DESVÍO NA-1240).....	28.304,66	
01.14	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (OT-T12).....	771.328,56	
01.14.01	MEDIDAS PROTECTORAS, CORRECTORAS (OT-T12)	163.953,66	
01.14.01.01	ATMÓSFERA (OT-T12).....	44.785,26	
01.14.01.02	SUELO (OT-T12).....	93.112,35	
01.14.01.03	HIDROLOGIA (OT-T12).....	16.756,05	
01.14.01.04	FAUNA Y FLORA (OT-T12).....	9.300,00	
01.14.02	SEGUIMIENTO ARQUEOLÓGICO (OT-T12)	97.641,56	
01.14.03	PROGRAMA VIGILANCIA AMBIENTAL (OT-T12)	103.199,28	
01.14.04	INTEGRACIÓN PAISAJÍSTICA (OT-T12)	406.534,06	
01.15	GESTIÓN DE RESIDUOS (OT-T12)	97.843,62	
01.16	VARIOS (OT-T12)	28.959,20	
01.17	SEGURIDAD Y SALUD (OT-T12).....	662.406,89	
02	SUBTRAMO T12-D.C. (Derivación Corella)	65.596.489,03	32,36
02.01	MOVIMIENTO DE TIERRAS (T12-D.C.).....	10.343.033,96	
02.02	TUBERÍAS (T12-D.C.).....	36.489.747,56	
02.03	DESAGÜES (T12-D.C.).....	265.687,03	
02.03.01	ARQUETA DESAGÜE, VALVULERÍA Y CALDERERÍA (T12-DC)	247.314,15	
02.03.01.01	MOV. TIERRAS Y DREN (DESAGÜES T12-DC)	855,16	
02.03.01.02	ESTRUCTURA DE HORMIGÓN Y METÁLICA (DESAGÜES T12-DC)	77.922,09	
02.03.01.03	VÁLVULAS Y CALDERERÍA (DESAGÜES T12-DC).....	168.536,90	
02.03.02	CONDUCCIÓN A VERTIDO (T12-DC)	2.726,15	
02.03.03	ARQUETA ROTURA Y VERTIDO A CAUCE (T12-DC).....	15.646,73	
02.04	VENTOSAS (T12-D.C.).....	671.152,25	
02.04.01	MOVIMIENTO DE TIERRAS VENTOSAS (T12-DC)	11.326,44	
02.04.02	OBRAS DE FÁBRICA VENTOSAS (T12-DC).....	160.849,64	
02.04.03	VÁLVULAS Y CALDERERÍA VENTOSAS (T12-DC).....	498.976,17	
02.05	TOMAS (T12-D.C.).....	2.129.253,47	
02.05.01	TOMA-13.....	1.059.656,28	
02.05.01.01	MOVIMIENTO DE TIERRAS (TOMA-13).....	19.823,80	
02.05.01.02	CALDERERÍA Y VALVULERÍA (TOMA-13).....	694.985,82	
02.05.01.03	LOSA Y ANCLAJES (TOMA-13).....	222.934,58	
02.05.01.04	PROTECCIÓN Y ENCINTADOS (TOMA-13).....	37.590,79	
02.05.01.05	OBRA DE DESAGÜE (TOMA-13).....	26.426,95	
02.05.01.05.1	ARQUETA ROTURA (TOMA-13).....	15.845,12	
02.05.01.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-13).....	9.540,45	
02.05.01.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-13)	1.041,38	
02.05.01.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-13)	16.834,05	
02.05.01.07	URBANIZACIÓN (TOMA-13)	41.060,29	
02.05.01.07.1	PAVIMENTOS (T13).....	16.539,57	
02.05.01.07.2	CERRAMIENTOS (T13).....	22.156,18	
02.05.01.07.3	DRENAJES (T13).....	2.364,54	
02.05.02	TOMA-13B	123.831,35	
02.05.02.01	MOVIMIENTO DE TIERRAS (TOMA-13B).....	3.525,82	
02.05.02.02	ARQUETAS, VALVULERÍA Y CALDERERÍA (TOMA 13B)	105.460,83	
02.05.02.02.1	MOVIMIENTO DE TIERRAS (T13B).....	1.552,84	
02.05.02.02.2	ESTRUCTURA DE HORMIGÓN Y METÁLICA (T13B)	21.852,66	
02.05.02.02.3	VÁLVULAS Y CALDERERÍA (T13B)	82.055,33	
02.05.02.03	OBRA DE DESAGÜE (TOMA 13B)	4.436,78	
02.05.02.03.1	ARQUETA ROTURA (TOMA 13B).....	4.261,24	
02.05.02.03.2	CONDUCCIÓN Y EMBOCADURA (TOMA 13B).....	175,54	
02.05.02.04	URBANIZACIÓN (TOMA 13B).....	10.407,92	
02.05.02.04.1	PAVIMENTOS (T13B)	2.061,73	
02.05.02.04.2	CERRAMIENTOS (T13B)	7.921,89	
02.05.02.04.3	DRENAJES (T13B).....	424,30	
02.05.03	DERIVACION CORELLA.....	945.765,84	
02.05.03.01	MOVIMIENTO DE TIERRAS (DC).....	19.753,22	
02.05.03.02	CALDERERÍA Y VALVULERÍA (DC)	646.438,99	
02.05.03.03	LOSA Y ANCLAJES (DC).....	175.451,25	
02.05.03.04	PROTECCIÓN Y ENCINTADOS (DC).....	46.136,26	
02.05.03.05	OBRA DE DESAGÜE (DC).....	8.426,11	
02.05.03.05.1	ARQUETA ROTURA (DC).....	908,04	
02.05.03.05.2	CONDUCCIÓN Y EMBOCADURA (DC)	6.753,32	
02.05.03.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (DC).....	764,75	
02.05.03.06	ESTRUCTURA METÁLICA Y VARIOS (DC).....	18.827,98	
02.05.03.07	URBANIZACIÓN (DC)	30.732,03	
02.05.03.07.1	PAVIMENTOS (DC).....	10.482,87	
02.05.03.07.2	CERRAMIENTOS (DC).....	15.759,31	
02.05.03.07.3	DRENAJES(DC).....	4.489,85	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
02.06	HINCAS (T12-D.C.)	10.667.116,96	
02.06.01	HINCA CERRO	1.359.053,07	
02.06.01.01	TRABAJOS PREPARATORIOS+MT (HINCA CERRO)	48.855,13	
02.06.01.02	ESTRUCTURA (HINCA CERRO)	36.550,03	
02.06.01.03	HINCA (HINCA CERRO)	1.124.242,00	
02.06.01.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA CERRO)	149.405,91	
02.06.01.04.1	TRATAMIENTO (HINCA Cerro)	143.238,10	
02.06.01.04.2	AUSCULTACIÓN (HINCA Cerro)	6.167,81	
02.06.02	HINCA NA-134	1.297.518,21	
02.06.02.01	TRABAJOS PREPARATORIOS+MT (HINCA NA-134)	48.271,21	
02.06.02.02	PANTALLA Y ESTRUCTURA (HINCA NA-134)	715.228,82	
02.06.02.03	HINCA (HINCA NA-134)	484.619,00	
02.06.02.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA NA-134)	49.399,18	
02.06.02.04.1	TRATAMIENTO (HINCA NA-134)	44.281,04	
02.06.02.04.2	AUSCULTACIÓN (HINCA NA-134)	5.118,14	
02.06.03	HINCA EBRO	5.948.559,54	
02.06.03.01	TRABAJOS PREPARATORIOS+MT (HINCA Ebro)	55.191,06	
02.06.03.02	PANTALLA Y ESTRUCTURA (HINCA Ebro)	846.142,55	
02.06.03.03	HINCA (HINCA Ebro)	4.307.710,00	
02.06.03.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA Ebro)	739.515,93	
02.06.03.04.1	TRATAMIENTO (HINCA Ebro)	734.389,92	
02.06.03.04.2	AUSCULTACIÓN (HINCA Ebro)	5.126,01	
02.06.04	HINCA FFCC ALSASUA	1.357.967,75	
02.06.04.01	TRABAJOS PREPARATORIOS+MT (HINCA FFCC)	52.452,71	
02.06.04.02	PANTALLA Y ESTRUCTURA (HINCA FFCC)	731.991,85	
02.06.04.03	HINCA (HINCA FFCC)	501.579,00	
02.06.04.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA FFCC)	71.944,19	
02.06.04.04.1	TRATAMIENTO (HINCA FFCC)	54.222,97	
02.06.04.04.2	AUSCULTACIÓN (HINCA FFCC)	17.721,22	
02.06.05	HINCA AP-68	704.018,39	
02.06.05.01	TRABAJOS PREPARATORIOS+MT (HINCA AP-68)	32.279,96	
02.06.05.02	ESTRUCTURA (HINCA AP68)	33.932,12	
02.06.05.03	HINCA (HINCA AP68)	566.719,20	
02.06.05.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA AP68)	71.087,11	
02.06.05.04.1	TRATAMIENTO (HINCA AP68)	58.161,80	
02.06.05.04.2	AUSCULTACIÓN (HINCA AP68)	12.925,31	
02.07	MACIZOS DE ANCLAJE (T12-D.C.)	617.324,07	
02.08	CAMINOS DE SERVICIO (T12-D.C.)	315.669,37	
02.08.01	MOVIMIENTO DE TIERRAS Y PAVIMENTOS (T12-DC)	254.055,02	
02.08.02	DRENAJE TRANSVERSAL (T12-DC)	52.715,74	
02.08.02.01	MOVIMIENTO DE TIERRAS	7.202,85	
02.08.02.02	OBRAS DE FÁBRICA	45.512,89	
02.08.03	DRENAJE LONGITUDINAL (T12-DC)	8.898,61	
02.09	PROTECCIÓN CATÓDICA (T12-D.C.)	762.000,50	
02.10	INSTALACIONES ELÉCTRICAS (T12-D.C.)	711.309,27	
02.10.01	TOMA-13+EPC	399.222,76	
02.10.01.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-13)	26.026,90	
02.10.01.02	LÍNEA DE MEDIA TENSIÓN (TOMA-13)	311.813,04	
02.10.01.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-13)	9.684,05	
02.10.01.04	CUADROS ELÉCTRICOS (TOMA-13)	26.251,25	
02.10.01.05	CANALIZACIONES (TOMA-13)	9.317,03	
02.10.01.06	LÍNEAS DE BT (TOMA-13)	9.506,46	
02.10.01.07	TOMA TIERRA (TOMA-13)	5.050,82	
02.10.01.08	MECANISMOS (TOMA-13)	381,92	
02.10.01.09	ALUMBRADO (TOMA-13)	1.191,29	
02.10.02	TOMA-13b	177.538,80	
02.10.02.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-13b)	37.651,28	
02.10.02.02	LÍNEA DE MEDIA TENSIÓN (TOMA-13b)	85.721,38	
02.10.02.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-13b)	9.684,05	
02.10.02.04	CUADROS ELÉCTRICOS (TOMA-13b)	24.210,43	
02.10.02.05	CANALIZACIONES (TOMA-13b)	6.313,00	
02.10.02.06	LÍNEAS DE BT (TOMA-13b)	8.287,90	
02.10.02.07	TOMA TIERRA (TOMA-13b)	4.097,55	
02.10.02.08	MECANISMOS (TOMA-13b)	381,92	
02.10.02.09	ALUMBRADO (TOMA-13b)	1.191,29	
02.10.03	Derivación Corella	134.547,71	
02.10.03.01	ACOMETIDA Y LEGALIZACIÓN (DC)	31.214,96	
02.10.03.02	LÍNEA DE MEDIA TENSIÓN (DC)	43.967,37	
02.10.03.03	TRANSFORMACIÓN Y GENERACIÓN (DC)	9.684,05	
02.10.03.04	CUADROS ELÉCTRICOS (DC)	26.251,25	
02.10.03.05	CANALIZACIONES (DC)	7.450,08	
02.10.03.06	LÍNEAS DE BT (DC)	9.506,46	
02.10.03.07	TOMA TIERRA (DC)	4.900,33	
02.10.03.08	MECANISMOS (DC)	381,92	
02.10.03.09	ALUMBRADO (Dc)	1.191,29	
02.11	CONTROL Y AUTOMATISMO (T12-D.C.)	208.685,38	
02.11.01	INGENIERÍA Y FORMACIÓN (T12-DC)	20.166,00	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
02.11.02	SISTEMA DE CONTROL Y COMUNICACIONES (T12-DC).....	106.683,24	
02.11.03	INSTRUMENTACIÓN (T12-DC).....	20.811,58	
02.11.04	CANALIZACIÓN Y CABLEADOS (T12-DC).....	31.816,45	
02.11.05	INTRUSISMO (T12-DC).....	29.208,11	
02.12	SERVICIOS AFECTADOS (T12-D.C.).....	906.398,73	
02.12.01	R.S.PAVIMENTOS (T12-DC).....	83.899,33	
02.12.02	R.S. CAMINOS (T12-DC).....	149.028,18	
02.12.03	R.S. ABASTECIMIENTO (T12-DC).....	31.893,15	
02.12.04	R.S. RED RIEGO (T12-DC).....	51.269,22	
02.12.05	R.S. PLUVIALES (T12-DC).....	7.201,26	
02.12.06	R.S. DRENAJE Y ARROYOS (T12-DC).....	240.072,02	
02.12.07	R.S. ALUMBRADO (T12-DC).....	4.476,67	
02.12.08	R.S. ELECTRICIDAD (T12-DC).....	137.139,66	
02.12.09	R.S. COMUNICACIONES (T12-DC).....	26.291,60	
02.12.10	R.S. GAS (T12-DC).....	5.301,00	
02.12.11	R.S. HIDROCARBUROS (T12-DC).....	6.589,75	
02.12.12	R.S. CANAL (T12-DC).....	19.924,44	
02.12.13	R.S. CERRAMIENTOS (T12-DC).....	9.283,89	
02.12.14	R.S. VARIOS (T12-DC).....	11.838,65	
02.12.15	R.S. DESV. TRAFICO (T12-DC).....	122.189,91	
02.12.15.01	DESVÍO NA-8712.....	27.858,72	
02.12.15.02	DESVÍO NA-6830.....	94.331,19	
02.12.15.02.1	MOV. TIERRAS (DESVÍO NA-6830).....	29.055,35	
02.12.15.02.2	DRENAJES (DESVÍO NA-6830).....	2.444,76	
02.12.15.02.3	PAVIMENTOS (DESVÍO NA-6830).....	39.912,68	
02.12.15.02.4	SEÑALIZACIÓN (DESVÍO NA-6830).....	22.918,40	
02.13	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (T12-D.C.).....	813.255,17	
02.13.01	MEDIDAS PROTECTORAS, CORRECTORAS (T12-DC).....	139.398,72	
02.13.01.01	ATMÓSFERA (T12-DC).....	44.785,26	
02.13.01.02	SUELO (T12-DC).....	69.100,40	
02.13.01.03	HIDROLOGÍA (T12-DC).....	15.775,96	
02.13.01.04	FAUNA Y FLORA (T12-DC).....	9.737,10	
02.13.02	SEGUIMIENTO ARQUEOLÓGICO (T12-DC).....	106.796,61	
02.13.03	PROGRAMA VIGILANCIA AMBIENTAL (T12-DC).....	103.199,28	
02.13.04	INTEGRACIÓN PAISAJÍSTICA (T12-DC).....	463.860,56	
02.14	GESTIÓN DE RESIDUOS (T12-D.C.).....	95.115,37	
02.15	VARIOS (T12-D.C.).....	28.959,20	
02.16	SEGURIDAD Y SALUD (T12-D.C.).....	571.780,74	
03	SUBTRAMO D.C.-T21 y DC-T14/15.....	31.758.440,70	15,67
03.01	MOVIMIENTO DE TIERRAS (DC-T21 y DC-T14/15).....	5.592.104,49	
03.02	TUBERÍAS (DC-T21 y DC-T14/15).....	16.880.033,07	
03.03	DESAGÜES (DC-T21 y DC-T14/15).....	222.804,59	
03.03.01	ARQUETA DESAGÜE, VALVULERÍA Y CALDERERÍA (DC-T21 y DC-T14/15).....	185.688,43	
03.03.01.01	MOV. TIERRAS Y DREN (DESAGÜES DC-T21 y T14/15).....	826,91	
03.03.01.02	ESTRUCTURA DE HORMIGÓN Y METÁLICA (DESAGÜES DC-T21 y T14/15).....	46.146,66	
03.03.01.03	VÁLVULAS Y CALDERERÍA (DESAGÜES DC-T21 y T14/15).....	138.714,86	
03.03.02	CONDUCCIÓN A VERTIDO (DC-T21 y DC-T14/15).....	23.638,07	
03.03.03	ARQUETA ROTURA Y VERTIDO A CAUCE (DC-T21 y DC-T14/15).....	13.478,09	
03.04	VENTOSAS (DC-T21;T14).....	325.947,52	
03.04.01	MOVIMIENTO DE TIERRAS VENTOSAS (DC-T21; T14).....	8.053,98	
03.04.02	OBRAS DE FÁBRICA VENTOSAS (DC-T21; T14).....	77.346,50	
03.04.03	VÁLVULAS Y CALDERERÍA VENTOSAS (T12-DC).....	240.547,04	
03.05	TOMAS (DC-T21 y DC-T14/15).....	4.047.271,60	
03.05.01	TOMA-17.....	863.709,02	
03.05.01.01	MOVIMIENTO DE TIERRAS (TOMA-17).....	15.393,14	
03.05.01.02	CALDERERÍA Y VALVULERÍA (TOMA-17).....	544.645,60	
03.05.01.03	LOSA Y ANCLAJES (TOMA-17).....	191.876,15	
03.05.01.04	PROTECCIÓN Y ENCINTADOS (TOMA-17).....	35.678,18	
03.05.01.05	OBRA DE DESAGÜE (TOMA-17).....	21.234,82	
03.05.01.05.1	ARQUETA ROTURA (TOMA-17).....	15.845,12	
03.05.01.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-17).....	3.996,23	
03.05.01.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-17).....	1.393,47	
03.05.01.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-17).....	16.834,05	
03.05.01.07	URBANIZACIÓN (TOMA-17).....	38.047,08	
03.05.01.07.1	PAVIMENTOS (T17).....	15.627,23	
03.05.01.07.2	CERRAMIENTOS (T17).....	20.708,38	
03.05.01.07.3	DRENAJES (T17).....	1.711,47	
03.05.02	TOMA-18.....	804.896,85	
03.05.02.01	MOVIMIENTO DE TIERRAS (TOMA-18).....	29.706,38	
03.05.02.02	CALDERERÍA Y VALVULERÍA (TOMA-18).....	513.645,61	
03.05.02.03	LOSA Y ANCLAJES (TOMA-18).....	151.427,24	
03.05.02.04	PROTECCIÓN Y ENCINTADOS (TOMA-18).....	27.789,32	
03.05.02.05	OBRA DE DESAGÜE (TOMA-18).....	24.289,41	
03.05.02.05.1	ARQUETA ROTURA (TOMA-18).....	13.198,31	
03.05.02.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-18).....	10.520,08	
03.05.02.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-18).....	571,02	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
03.05.02.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-18)	13.622,49	
03.05.02.07	URBANIZACIÓN (TOMA-18)	44.416,40	
03.05.02.07.1	PAVIMENTOS (T18).....	17.089,39	
03.05.02.07.2	CERRAMIENTOS (T18).....	21.866,62	
03.05.02.07.3	DRENAJES (T18).....	5.460,39	
03.05.03	TOMA-19.....	596.903,11	
03.05.03.01	MOVIMIENTO DE TIERRAS (TOMA-19).....	16.466,55	
03.05.03.02	CALDERERÍA Y VALVULERÍA (TOMA-19).....	350.628,61	
03.05.03.03	LOSA Y ANCLAJES (TOMA-19).....	139.007,24	
03.05.03.04	PROTECCIÓN Y ENCINTADOS (TOMA-19).....	19.806,31	
03.05.03.05	OBRA DE DESAGÜE (TOMA-19).....	28.881,54	
03.05.03.05.1	ARQUETA ROTURA (TOMA-19).....	12.176,18	
03.05.03.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-19).....	15.721,88	
03.05.03.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-19)	983,48	
03.05.03.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-19)	8.417,03	
03.05.03.07	URBANIZACIÓN (TOMA-19)	33.695,83	
03.05.03.07.1	PAVIMENTOS (T19).....	14.148,15	
03.05.03.07.2	CERRAMIENTOS (T19).....	17.812,78	
03.05.03.07.3	DRENAJES (T19)	1.734,90	
03.05.04	TOMA-20.....	498.597,76	
03.05.04.01	MOVIMIENTO DE TIERRAS (TOMA-20).....	13.483,75	
03.05.04.02	CALDERERÍA Y VALVULERÍA (TOMA-20).....	277.483,36	
03.05.04.03	LOSA Y ANCLAJES (TOMA 20).....	121.443,57	
03.05.04.04	PROTECCIÓN Y ENCINTADOS (TOMA 20).....	16.014,96	
03.05.04.05	OBRA DE DESAGÜE (TOMA 20).....	24.222,20	
03.05.04.05.1	ARQUETA ROTURA (TOMA-20).....	12.338,01	
03.05.04.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-20).....	9.407,60	
03.05.04.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-20)	2.476,59	
03.05.04.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA 20).....	8.417,03	
03.05.04.07	URBANIZACIÓN (TOMA 20)	37.532,89	
03.05.04.07.1	PAVIMENTOS (T20).....	12.721,03	
03.05.04.07.2	CERRAMIENTOS (T20).....	19.646,66	
03.05.04.07.3	DRENAJES (T20)	5.165,20	
03.05.05	TOMA-21.....	298.941,85	
03.05.05.01	MOVIMIENTO DE TIERRAS (TOMA-21).....	8.532,05	
03.05.05.02	CALDERERÍA Y VALVULERÍA (TOMA-21).....	156.822,42	
03.05.05.03	LOSA Y ANCLAJES (TOMA-21).....	49.980,67	
03.05.05.04	PROTECCIÓN Y ENCINTADOS (TOMA-21).....	8.221,96	
03.05.05.05	OBRA DE DESAGÜE (TOMA-21).....	46.681,45	
03.05.05.05.1	ARQUETA ROTURA (TOMA-21).....	12.175,51	
03.05.05.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-21)	30.104,26	
03.05.05.05.3	MOVIMIENTO DE TIERRAS (TOMA-21).....	4.401,68	
03.05.05.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-21)	5.205,47	
03.05.05.07	URBANIZACIÓN (TOMA-21)	23.497,83	
03.05.05.07.1	PAVIMENTOS (T21).....	8.123,07	
03.05.05.07.2	CERRAMIENTOS (T21).....	14.408,03	
03.05.05.07.3	DRENAJES (T21)	966,73	
03.05.06	TOMA-16.....	539.267,32	
03.05.06.01	MOVIMIENTO DE TIERRAS (TOMA-16).....	11.192,53	
03.05.06.02	CALDERERÍA Y VALVULERÍA (TOMA-16).....	321.368,86	
03.05.06.03	LOSA Y ANCLAJES (TOMA-16).....	122.128,53	
03.05.06.04	PROTECCIÓN Y ENCINTADOS (TOMA-16).....	19.135,71	
03.05.06.05	OBRA DE DESAGÜE (TOMA-16).....	24.937,35	
03.05.06.05.1	ARQUETA ROTURA (TOMA-16).....	12.175,51	
03.05.06.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-16).....	11.446,20	
03.05.06.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-16)	1.315,64	
03.05.06.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-16)	8.417,03	
03.05.06.07	URBANIZACIÓN (TOMA-16)	32.087,31	
03.05.06.07.1	PAVIMENTOS (T16).....	11.899,32	
03.05.06.07.2	CERRAMIENTOS (T16).....	18.461,87	
03.05.06.07.3	DRENAJES (T16)	1.726,12	
03.05.07	TOMA-14 Y 15.....	444.955,69	
03.05.07.01	MOVIMIENTO DE TIERRAS (TOMA-14/15).....	14.817,80	
03.05.07.02	CALDERERÍA Y VALVULERÍA (TOMA-14/15)	225.119,53	
03.05.07.03	LOSA Y ANCLAJES (TOMA-14/15).....	119.680,16	
03.05.07.04	PROTECCIÓN Y ENCINTADOS (TOMA-14/15).....	11.277,07	
03.05.07.05	OBRA DE DESAGÜE (TOMA-14/15).....	26.898,81	
03.05.07.05.1	ARQUETA ROTURA (TOMA-14/15).....	12.175,51	
03.05.07.05.2	CONDUCCIÓN Y EMBOCADURA (TOMA-14/15)	13.437,71	
03.05.07.05.3	MOVIMIENTO DE TIERRAS ENCAUZAMIENTO (TOMA-14/15)	1.285,59	
03.05.07.06	ESTRUCTURA METÁLICA Y VARIOS (TOMA-14/15)	8.417,03	
03.05.07.07	URBANIZACIÓN (TOMA-14/15)	38.745,29	
03.05.07.07.1	PAVIMENTOS (T14/15).....	16.645,31	
03.05.07.07.2	CERRAMIENTOS (T14/15).....	20.102,71	
03.05.07.07.3	DRENAJES (T14/15)	1.997,27	
03.06	HINCAS (DC-T21 y DC-T14/15)	1.086.690,17	
03.06.01	HINCA NA-160	317.712,13	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
03.06.01.01	TRABAJOS PREPARATORIOS+MT (HINCA NA-160)	37.362,08	
03.06.01.02	ESTRUCTURA (HINCA NA-160)	36.550,03	
03.06.01.03	HINCA(HINCA NA-160)	200.553,20	
03.06.01.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA NA-160)	43.246,82	
03.06.01.04.1	TRATAMIENTO (HINCA NA-160)	37.684,44	
03.06.01.04.2	AUSCULTACIÓN (HINCA NA-160)	5.562,38	
03.06.02	HINCA N-113	768.978,04	
03.06.02.01	TRABAJOS PREPARATORIOS+MT (HINCA N-113)	24.628,75	
03.06.02.02	PANTALLA Y ESTRUCTURA (HINCA N-113)	434.869,28	
03.06.02.03	HINCA (HINCA N-113)	294.249,50	
03.06.02.04	TRATAMIENTOS Y AUSCULTACIÓN (HINCA N-113)	15.230,51	
03.06.02.04.1	TRATAMIENTO (HINCA N-113)	10.186,41	
03.06.02.04.2	AUSCULTACIÓN (HINCA N-113)	5.044,10	
03.07	CAMINOS DE SERVICIO (DC-T21 y DC-T14/15)	208.395,97	
03.07.01	MOVIMIENTO DE TIERRAS Y PAVIMENTOS (DC-T21; T14)	155.426,72	
03.07.02	DRENAJE TRANSVERSAL(DC-T21; T14)	51.404,76	
03.07.02.01	MOVIMIENTO DE TIERRAS	5.442,59	
03.07.02.02	OBRAS DE FÁBRICA	45.962,17	
03.07.03	DRENAJE LONGITUDINAL(DC-T21; T14)	1.564,49	
03.08	PROTECCIÓN CATÓDICA (DC-T21 y DC-T14/15)	229.069,56	
03.09	INSTALACIONES ELÉCTRICAS (DC-T21 y DC-T14/15)	972.741,86	
03.09.01	TOMA-17 (FOTOV)	97.497,57	
03.09.01.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-17)	15.371,26	
03.09.01.02	FOTOVOLTAICA (TOMA-17)	30.503,90	
03.09.01.03	CUADROS ELÉCTRICOS (TOMA-17)	26.188,42	
03.09.01.04	CANALIZACIONES (TOMA-17)	9.440,69	
03.09.01.05	LÍNEAS DE BT (TOMA-17)	9.073,86	
03.09.01.06	TOMA TIERRA (TOMA-17)	5.346,23	
03.09.01.07	MECANISMOS (TOMA-17)	381,92	
03.09.01.08	ALUMBRADO (TOMA-17)	1.191,29	
03.09.02	TOMA-18 (FOTOV)	95.290,89	
03.09.02.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-18)	15.371,26	
03.09.02.02	FOTOVOLTAICA (TOMA-18)	30.503,90	
03.09.02.03	CUADROS ELÉCTRICOS (TOMA-18)	24.445,08	
03.09.02.04	CANALIZACIONES (TOMA-18)	9.603,23	
03.09.02.05	LÍNEAS DE BT (TOMA-18)	8.447,98	
03.09.02.06	TOMA TIERRA (TOMA-18)	5.346,23	
03.09.02.07	MECANISMOS (TOMA-18)	381,92	
03.09.02.08	ALUMBRADO (TOMA-18)	1.191,29	
03.09.03	TOMA-19 (FOTOV)	93.599,33	
03.09.03.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-19)	15.371,26	
03.09.03.02	FOTOVOLTAICA (TOMA-19)	30.503,90	
03.09.03.03	CUADROS ELÉCTRICOS (TOMA-19)	24.445,08	
03.09.03.04	CANALIZACIONES (TOMA-19)	7.911,67	
03.09.03.05	LÍNEAS DE BT (TOMA-19)	8.447,98	
03.09.03.06	TOMA TIERRA (TOMA-19)	5.346,23	
03.09.03.07	MECANISMOS (TOMA-19)	381,92	
03.09.03.08	ALUMBRADO (TOMA-19)	1.191,29	
03.09.04	TOMA-20+EPC	107.077,55	
03.09.04.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-20)	37.005,21	
03.09.04.02	LÍNEA DE MEDIA TENSIÓN (TOMA-20)	6.269,95	
03.09.04.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-20)	9.684,05	
03.09.04.04	CUADROS ELÉCTRICOS (TOMA-20)	24.343,39	
03.09.04.05	CANALIZACIONES (TOMA-20)	14.623,94	
03.09.04.06	LÍNEAS DE BT (TOMA-20)	8.317,13	
03.09.04.07	TOMA TIERRA (TOMA-20)	5.260,67	
03.09.04.08	MECANISMOS (TOMA-20)	381,92	
03.09.04.09	ALUMBRADO (TOMA-20)	1.191,29	
03.09.05	TOMA-21	140.861,59	
03.09.05.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-21)	33.409,16	
03.09.05.02	LÍNEA DE MEDIA TENSIÓN (TOMA-21)	44.093,70	
03.09.05.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-21)	9.684,05	
03.09.05.04	CUADROS ELÉCTRICOS (TOMA-21)	24.343,39	
03.09.05.05	CANALIZACIONES (TOMA-21)	14.623,94	
03.09.05.06	LÍNEAS DE BT (TOMA-21)	8.283,23	
03.09.05.07	TOMA TIERRA (TOMA-21)	4.850,91	
03.09.05.08	MECANISMOS (TOMA-21)	381,92	
03.09.05.09	ALUMBRADO (TOMA-21)	1.191,29	
03.09.06	TOMA-16+EPC	299.101,27	
03.09.06.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-16)	41.411,90	
03.09.06.02	LÍNEA DE MEDIA TENSIÓN (TOMA-16)	198.791,18	
03.09.06.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-16)	9.684,05	
03.09.06.04	CUADROS ELÉCTRICOS (TOMA-16)	24.343,39	
03.09.06.05	CANALIZACIONES (TOMA-16)	9.956,14	
03.09.06.06	LÍNEAS DE BT (TOMA-16)	8.317,13	
03.09.06.07	TOMA TIERRA (TOMA-16)	5.024,27	
03.09.06.08	MECANISMOS (TOMA-16)	381,92	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
03.09.06.09	ALUMBRADO (TOMA-16).....	1.191,29	
03.09.07	TOMA-14/15.....	139.313,66	
03.09.07.01	ACOMETIDA Y LEGALIZACIÓN (TOMA-14/15).....	33.409,16	
03.09.07.02	LÍNEA DE MEDIA TENSIÓN (TOMA-14/15).....	48.304,18	
03.09.07.03	TRANSFORMACIÓN Y GENERACIÓN (TOMA-14/15).....	9.684,05	
03.09.07.04	CUADROS ELÉCTRICOS (TOMA-14/15).....	24.343,39	
03.09.07.05	CANALIZACIONES (TOMA-14/15).....	8.364,22	
03.09.07.06	LÍNEAS DE BT (TOMA-14/15).....	8.453,58	
03.09.07.07	TOMA TIERRA (TOMA-14/15).....	5.181,87	
03.09.07.08	MECANISMOS (TOMA-14/15).....	381,92	
03.09.07.09	ALUMBRADO (TOMA-14/15).....	1.191,29	
03.10	CONTROL Y AUTOMATISMO (DC-T21 y DC-T14/15).....	475.524,53	
03.10.01	INGENIERÍA Y FORMACIÓN (DC-T21 y DC-T14/15).....	22.897,68	
03.10.02	SISTEMA DE CONTROL Y COMUNICACIONES (DC-T21 y DC-T14/15).....	249.565,00	
03.10.03	INSTRUMENTACIÓN (DC-T21 y DC-T14/15).....	78.964,98	
03.10.04	CANALIZACIÓN Y CABLEADOS (DC-T21 y DC-T14/15).....	69.266,24	
03.10.05	INTRUSISMO (DC-T21 y DC-T14/15).....	54.830,63	
03.11	SERVICIOS AFECTADOS (DC-T21 y DC-T14/15).....	609.591,22	
03.11.01	R.S.PAVIMENTOS (DC-T21/T14-15).....	39.169,71	
03.11.02	R.S. CAMINOS (DC-T21/T14-15).....	106.409,31	
03.11.03	R.S. ABASTECIMIENTO (DC-T21/T14-15).....	6.448,81	
03.11.04	R.S. RED RIEGO (DC-T21/T14-15).....	62.469,08	
03.11.05	R.S. DRENAJE Y ARROYOS (DC-T21/T14-15).....	96.117,17	
03.11.06	R.S. ELECTRICIDAD (DC-T21/T14-15).....	269,01	
03.11.07	R.S. COMUNICACIONES (DC-T21/T14-15).....	17.047,50	
03.11.08	R.S. GAS (DC-T21/T14-15).....	6.908,41	
03.11.09	R.S. HIDROCARBUROS (DC-T21/T14-15).....	1.246,22	
03.11.10	R.S. CERRAMIENTOS (DC-T21/T14-15).....	21.389,76	
03.11.11	R.R.VARIOS (DC-R21/T14-15).....	5.441,05	
03.11.12	R.R. DESV. TRAFICO (DC-R21/T14-15).....	246.675,19	
03.11.12.01	DESVÍO NA-6900.....	72.892,47	
03.11.12.01.1	DRENAJES (DESVÍO NA-6900).....	1.828,85	
03.11.12.01.2	PAVIMENTOS (DESVÍO NA-6900).....	51.988,82	
03.11.12.01.3	SEÑALIZACIÓN (DESVÍO NA-6900).....	19.074,80	
03.11.12.02	DESVÍO N-121.....	111.098,53	
03.11.12.02.1	MOV. TIERRAS (DESVÍO N-121).....	38.448,43	
03.11.12.02.2	DRENAJES (DESVÍO N-121).....	2.826,57	
03.11.12.02.3	PAVIMENTOS (DESVÍO N-121).....	51.988,82	
03.11.12.02.4	SEÑALIZACIÓN (DESVÍO N-121).....	17.834,71	
03.11.12.03	DESVÍO NA-3042.....	62.684,19	
03.11.12.03.1	MOV. TIERRAS (DESVÍO NA-3042).....	17.643,18	
03.11.12.03.2	DRENAJES (DESVÍO NA-3042).....	534,30	
03.11.12.03.3	PAVIMENTOS (DESVÍO NA-3042).....	24.561,65	
03.11.12.03.4	SEÑALIZACIÓN (DESVÍO NA-3042).....	19.945,06	
03.12	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (DC-T21 y DC-T14/15).....	710.444,41	
03.12.01	MEDIDAS PROTECTORAS, CORRECTORAS (DC-T21;T14).....	122.297,11	
03.12.01.01	ATMÓSFERA (DC-T21;T14).....	44.785,26	
03.12.01.02	SUELO (DC-T21;T14).....	51.000,80	
03.12.01.03	HIDROLOGIA (DC-T21;T14).....	18.307,25	
03.12.01.04	FAUNA Y FLORA (DC-T21;T14).....	8.203,80	
03.12.02	SEGUIMIENTO ARQUEOLÓGICO (DC-T21;T14).....	184.622,02	
03.12.03	PROGRAMA VIGILANCIA AMBIENTAL (DC-T21;T14).....	101.189,75	
03.12.04	INTEGRACIÓN PAISAJÍSTICA (DC-T21;T14).....	302.335,53	
03.13	GESTIÓN DE RESIDUOS (DC-T21 y DC-T14/15).....	78.011,74	
03.14	VARIOS (DC-T21 y DC-T14/15).....	28.959,20	
03.15	SEGURIDAD Y SALUD (DC-T21 y DC-T14/15).....	290.850,77	
04	BALSA DE TUDELA.....	33.194.479,68	16,38
04.01	CUERPO DE BALSA.....	19.805.348,79	
04.01.01	TERRAPLÉN DE PRUEBA.....	32.273,97	
04.01.01.01	TERRAPLÉN DE PRUEBA NÚCLEO.....	17.748,70	
04.01.01.02	TERRAPLÉN DE PRUEBA TODO-UNO.....	14.525,27	
04.01.02	MOVIMIENTO DE TIERRAS.....	2.572.241,22	
04.01.02.01	DESBROCES.....	138.933,36	
04.01.02.02	MOVIMIENTO DE TIERRAS.....	1.999.302,59	
04.01.02.03	DESBROCES EN PRÉSTAMOS.....	434.005,27	
04.01.03	RELLENOS DEL CUERPO DE BALSA.....	16.194.562,47	
04.01.04	CORONACIÓN DE BALSA.....	198.182,17	
04.01.05	TRATAMIENTO DEL CIMIENTO.....	666.313,93	
04.01.05.01	PANTALLA DE IMPERMEABILIZACIÓN.....	79.702,91	
04.01.05.02	PRUEBA DE CONSOLIDACIÓN.....	10.980,01	
04.01.05.03	TRATAMIENTO DE CONSOLIDACIÓN.....	575.631,01	
04.01.06	RECOGIDA DE FILTRACIONES.....	41.747,04	
04.01.06.01	DREN.....	23.359,11	
04.01.06.02	ARQUETAS Y AFORADORES.....	18.387,93	
04.01.07	CUNETAS PIE DE BALSA.....	100.027,99	
04.02	CAMARA DE COMPUERTAS DEL DESAGÜE DE FONDO.....	1.212.000,40	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
04.02.01	MOVIMIENTO DE TIERRAS	6.735,61	
04.02.02	OBRA DE FABRICA	510.310,23	
04.02.03	CONDUCCIONES Y ELEMENTOS SINGULARES	21.457,56	
04.02.04	ELEMENTOS HIDROMECÁNICOS Y ELECTROMECÁNICOS	667.027,66	
04.02.05	ESTRUCTURA METÁLICA	6.469,34	
04.03	GALERÍA DEL DESAGÜE DE FONDO	6.511.787,67	
04.03.01	MOVIMIENTO DE TIERRAS	231.123,91	
04.03.02	OBRA DE FABRICA	5.390.784,82	
04.03.03	CONDUCCIONES	829.802,85	
04.03.04	ACCESORIOS	51.100,91	
04.03.05	ELECTRICIDAD	8.975,18	
04.04	ARQUETA Y EDIFICIO DE TOMAS	2.195.693,67	
04.04.01	MOVIMIENTO DE TIERRAS	13.940,05	
04.04.02	OBRA DE FABRICA	628.292,20	
04.04.02.01	ARQUETA INFERIOR	355.236,94	
04.04.02.02	LOSA DE PASO Y ACCESO A GALERÍA	35.085,60	
04.04.02.03	ESTRUCTURA SUPERIOR	237.969,66	
04.04.03	ARQUITECTURA	144.835,07	
04.04.03.01	FACHADA Y CUBIERTA	125.955,30	
04.04.03.02	CARPINTERÍA	18.879,77	
04.04.04	CONDUCCIONES Y VALVULERÍA	1.224.975,94	
04.04.04.01	CONDUCCIONES Y VALVULERIA	1.191.288,75	
04.04.04.02	APOYOS	33.687,19	
04.04.05	ESTRUCTURA METÁLICA DE ACCESO	63.165,52	
04.04.06	ELEMENTOS VARIOS	19.399,00	
04.04.07	ARQUETA DE CAUDALÍMETROS	82.711,17	
04.04.07.01	OBRA DE FÁBRICA	35.692,46	
04.04.07.02	EQUIPOS Y ELEMENTOS METÁLICOS	47.018,71	
04.04.08	URBANIZACIÓN	18.374,72	
04.05	ELEMENTOS DE ROTURA DE CARGA	296.560,90	
04.05.01	MOVIMIENTO DE TIERRAS	11.257,93	
04.05.02	OBRA DE FÁBRICA	285.302,97	
04.05.02.01	CUENCO DEFLECTOR	252.789,47	
04.05.02.02	CUENCO DE AMORTIGUACIÓN	32.513,50	
04.06	CANAL DE DESCARGA AL PULGUER	483.869,31	
04.06.01	MOVIMIENTO DE TIERRAS	77.567,56	
04.06.02	SECCIONES TIPO	88.568,96	
04.06.03	SALTOS	20.409,20	
04.06.04	HINCA BAJO NA-160	297.323,59	
04.06.04.01	TRABAJOS PREPARATORIOS	6.579,83	
04.06.04.02	ESTRUCTURA DE HINCA	77.500,03	
04.06.04.03	HINCA	186.381,38	
04.06.04.04	TRATAMIENTOS Y AUSCULTACIÓN	26.862,35	
04.07	ALIVIADERO	237.552,17	
04.07.01	OBRA DE FÁBRICA	54.864,99	
04.07.02	ELEMENTOS METÁLICOS	180.420,74	
04.07.03	VARIOS	2.266,44	
04.08	AUSCULTACIÓN E INSTRUMENTACIÓN	454.913,15	
04.08.01	SENSORES Y EQUIPOS	218.182,74	
04.08.02	SISTEMA AUTOMATIZADO DE ADQUISICIÓN DE DATOS	104.586,19	
04.08.03	INGENIERÍA Y FORMACIÓN Balsa de Tudela	25.549,80	
04.08.04	SISTEMA DE CONTROL Y COMUNICACIONES Balsa de Tudela	56.016,46	
04.08.05	CANALIZACIÓN Y CABLEADOS	16.723,68	
04.08.06	INTRUSISMO Balsa de Tudela	33.854,28	
04.09	ACCESOS	104.523,48	
04.09.01	MOVIMIENTO DE TIERRAS	79.981,09	
04.09.03	DRENAJE LONGITUDINAL Y TRANSVERSAL	24.449,86	
04.09.04	SEÑALIZACIÓN	92,53	
04.10	EDIFICIO DE CONTROL	116.487,92	
04.10.01	MOVIMIENTO DE TIERRAS	278,39	
04.10.02	CIMENTOS Y ESTRUCTURA	25.907,69	
04.10.03	ARQUITECTURA	58.135,57	
04.10.03.01	FACHADAS Y CUBIERTAS	49.724,59	
04.10.03.02	CARPINTERÍA	8.410,98	
04.10.04	INSTALACIONES	22.302,19	
04.10.04.01	SANEAMIENTO	1.804,97	
04.10.04.02	FONTANERÍA	3.182,97	
04.10.04.03	ELECTRICIDAD E ILUMINACIÓN	10.070,00	
04.10.04.04	CLIMATIZACIÓN Y VENTILACIÓN	4.987,94	
04.10.04.05	CONTRAINCENDIOS	405,89	
04.10.04.06	TELECOMUNICACIONES	1.850,42	
04.10.05	MOBILIARIO	3.987,69	
04.10.06	URBANIZACIÓN	5.876,39	
04.11	CERRAMIENTOS	124.860,70	
04.12	INSTALACIONES ELECTRICAS	455.893,77	
04.12.01	LÍNEA ELECTRICA DE MEDIA TENSIÓN	76.291,82	
04.12.02	LÍNEAS DE BT	51.460,33	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
04.12.03	TRANSFORMACIÓN Y GENERACION.....	42.339,16	
04.12.04	CUADROS	47.541,96	
04.12.05	ALUMBRADO	80.440,83	
04.12.06	ACOMETIDA Y LEGALIZACIÓN ARQUETA DE TOMAS.....	66.690,39	
04.12.07	CANALIZACIONES	73.084,46	
04.12.08	TOMA TIERRA	13.262,46	
04.12.09	MECANISMOS	4.782,36	
04.13	SERVICIOS AFECTADOS	67.575,05	
04.13.01	REPOSICIÓN DE LINEAS ELÉCTRICAS	67.575,05	
04.14	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (BT)	694.400,73	
04.14.01	MEDIDAS PROTECTORAS, CORRECTORAS (BT)	67.401,62	
04.14.01.01	ATMÓSFERA (BT).....	44.785,26	
04.14.01.02	SUELO (BT).....	5.934,00	
04.14.01.03	HIDROLOGÍA (BT)	11.122,36	
04.14.01.04	FAUNA Y FLORA (BT)	5.560,00	
04.14.02	SEGUIMIENTO ARQUEOLÓGICO (BT).....	91.617,96	
04.14.03	PROGRAMA VIGILANCIA AMBIENTAL (BT).....	77.477,76	
04.14.04	INTEGRACIÓN PAISAJÍSTICA (BT)	457.903,39	
04.15	GESTIÓN DE RESIDUOS (BT)	60.935,67	
04.16	SEGURIDAD Y SALUD	372.076,30	
05	BALSA DE MOSTRAKAS.....	4.034.033,14	1,99
05.01	BALSA.....	1.592.406,30	
05.01.01	EXCAVACIONES Y DESMONTES.....	591.330,44	
05.01.01.01	DESBROCES	33.869,85	
05.01.02.02	MOVIMIENTO DE TIERRAS	557.460,59	
05.01.02	RELLENO DE CUERPO DE BALSA	405.637,71	
05.01.03	CORONACIÓN DE BALSA.....	114.415,77	
05.01.04	IMPERMEABILIZACIÓN.....	302.648,54	
05.01.05	DRENAJE INTERIOR.....	88.907,30	
05.01.05.01	CONDUCCIONES DE DRENAJE	69.430,22	
05.01.05.02	ARQUETAS Y DESAGÜES	19.477,08	
05.01.06	DRENAJE EXTERIOR.....	89.466,54	
05.02	CONDUCCIÓN DE ENTRADA Y SALIDA	1.766.619,89	
05.02.01	ARQUETA EN ALMENARA.....	223.416,57	
05.02.01.01	MOVIMIENTO DE TIERRAS	15.882,46	
05.02.01.02	OBRA DE FÁBRICA	51.547,04	
05.02.01.03	ELEMENTOS HIDROMECAÑICOS	155.024,29	
05.02.01.04	ELEMENTOS ACCESORIOS	962,78	
05.02.02	CONDUCCIÓN DE LLENADO VACIADO.....	1.504.716,08	
05.02.02.01	MOVIMIENTO DE TIERRAS	313.686,69	
05.02.02.02	CONDUCCIONES	1.191.029,39	
05.02.03	ARQUETA EN BALSA	38.487,24	
05.02.03.01	MOVIMIENTO DE TIERRAS	2.886,50	
05.02.03.02	OBRA DE FÁBRICA	26.059,59	
05.02.03.03	ELEMENTOS ACCESORIOS	9.541,15	
05.03	DESAGÜE DE FONDO	108.520,30	
05.03.01	CONDUCCIÓN.....	22.481,49	
05.03.01.01	MOVIMIENTO DE TIERRAS	4.922,82	
05.03.01.02	CONDUCCIÓN	17.558,67	
05.03.02	ARQUETA DE VÁLVULAS	66.944,84	
05.03.02.01	MOVIMIENTO DE TIERRAS	1.324,22	
05.03.02.02	OBRA DE FÁBRICA	15.637,21	
05.03.02.03	CONDUCCIÓN Y VÁLVULERÍA	42.381,52	
05.03.02.04	CUBIERTA METÁLICA.....	6.545,26	
05.03.02.05	ELEMENTOS ACCESORIOS	1.056,63	
05.03.03	CUENCO DEFLECTOR.....	5.882,95	
05.03.03.01	MOVIMIENTO DE TIERRAS	879,53	
05.03.03.02	OBRA DE FÁBRICA	5.003,42	
05.03.04	CANAL DE DESCARGA.....	13.211,02	
05.04	AUSCULTACIÓN E INSTRUMENTACIÓN	78.992,19	
05.04.01	SENSORES Y EQUIPOS	27.834,78	
05.04.02	SISTEMA AUTOMATIZADO DE ADQUISICIÓN DE DATOS	51.157,41	
05.05	ACCESOS.....	39.590,89	
05.05.01	MOVIMIENTO DE TIERRRAS.....	4.555,83	
05.05.02	FIRMES	22.874,17	
05.05.03	DRENAJE LONGITUDINAL Y TRANSVERSAL	12.160,89	
05.06	INSTALACION ELECTRICA.....	40.634,88	
05.06.01	LINEAS DE BT	1.280,08	
05.06.02	TRANSFORMACION Y GENERACION.....	1.245,48	
05.06.03	CUADROS	12.772,92	
05.06.04	ALUMBRADO.....	3.680,81	
05.06.05	ACOMETIDA Y LEGALIZACION	14.585,64	
05.06.06	CANALIZACIONES	1.837,80	
05.06.07	TOMA DE TIERRA	4.608,11	
05.06.08	MECANISMOS	624,04	
05.07	URBANIZACIÓN Y CERRAMIENTOS.....	37.314,06	

RESUMEN DE PRESUPUESTO POR CAPÍTULOS

Proyecto de Construcción de la Segunda Fase del Canal de Navarra

CAPÍTULO	RESUMEN	IMPORTE (€)	%
05.07.01	URBANIZACIÓN GENERAL.....	7.510,30	
05.07.02	CERRAMIENTOS.....	29.803,76	
05.08	SERVICIOS AFECTADOS	23.055,73	
05.09	GESTIÓN DE RESIDUOS.....	53.834,99	
05.10	GESTIÓN ARQUEOLÓGICA Y AMBIENTAL (BM).....	197.184,76	
05.10.01	MEDIDAS PROTECTORAS, CORRECTORAS (BM)	47.013,20	
05.10.01.01	ATMÓSFERA (BM).....	29.856,84	
05.10.01.02	SUELO (BM).....	2.793,60	
05.10.01.03	HIDROLOGÍA (BM).....	10.346,76	
05.10.01.04	FAUNA Y FLORA (BM).....	4.016,00	
05.10.02	SEGUIMIENTO ARQUEOLÓGICO (BM).....	62.761,92	
05.10.03	PROGRAMA VIGILANCIA AMBIENTAL (BM)	54.929,28	
05.10.04	INTEGRACIÓN PAISAJÍSTICA (BM)	32.480,36	
05.11	SEGURIDAD Y SALUD	95.879,15	