ÍNDICE DE PLANOS

TOMO II

Nº	Título
PLANOS DE PROYECTOS	
001-1/2	Planta General. Disposición de Obras
001-2/2	Planta General. Disposición de Obras
002-1/1	Compuertas. Plantas y Detalles
SECTOR 1	
	Proyecto de Mejoramiento Canal Toma del Corral
003-1/2	Canal Toma del Corral. Planta y Perfil Longitudinal
003-2/2	Canal Toma del Corral. Planta, Perfil Longitudinal y Detalles
004-1/1	Canal Toma del Corral, Cruce de Quebradas, Plantas y Detalles
	Proyecto de Mejoramiento Canal La Tomita
005-1/1	Canal La Tomita. Planta, Perfil Longitudinal y Detalles
006-1/1	Canal La Tomita, Cruce de Quebradas, Plantas y Detalles
	Proyecto de Mejoramiento Canal Coipita
007-1/1	Canal Coipita. Planta, Perfil Longitudinal y Detalles
	Proyecto de Mejoramiento Canal Venado
008-1/2	Canal Venado. Planta y Perfil Longitudinal
008-2/2	Canal Venado. Planta, Perfil Longitudinal y Detalles
009-1/2	Canal Venado. Cruce de Quebrada Venado. Plantas y Detalles
009-2/2	Canal Venado. Cruce de Quebrada Chacarilla. Plantas y Detalles
	Proyecto de Mejoramiento Canal Toma Honda
010-1/2	Canal Toma Honda. Planta y Perfil Longitudinal
010-2/2	Canal Toma Honda. Las Breas, Planta, Perfil Longitudinal y Detalles
011-1/2	Canal Toma Honda. Cruce de Quebrada Km 0.288. Plantas y Detalles
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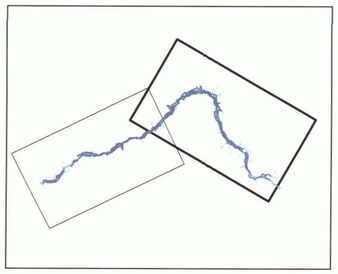
012-2/2	Canal Las Breas. Planta, Perfil Longitudinal y Detalles
013-1/1	Canal Las Breas. Cruce de Quebrada Km 0.177. Plantas y Detalles
	Proyecto de Mejoramiento Canal Totoral-El Bosque
014-1/3	Canal Totoral-El Bosque. Planta y Perfil Longitudinal
014-2/3	Canal Totoral-El Bosque. Planta y Perfil Longitudinal
014-3/3	Canal Totoral-El Bosque. Planta, Perfil Longitudinal y Detalles
015-1/2	Canal Totoral. Cruce de Quebrada Km 0.094 y Km 0.467. Plantas y Detalles
015-2/2	Canal Totoral. Cruce de Quebrada Km 3.960 y Km 5.739. Plantas y Detalles

IV REGIÓN DE COQUIMBO
ESQUICIO REGIONAL

Datos Cartográficos y Geodésicos:
Proyección UTM
(Universal Transversa de Mercator)
Huso 19 Sur
Elipsoide GRS-80
Datum SIRGAS 2000 (WGS-84)

DISTRIBUCIÓN DE LÁMINAS



N

UNIFICACIÓN PANTEÓN
UNIFICACIÓN LA PARTERA
UNIFICACIÓN FARELLONES
UNIFICACIÓN ACHUPALLA
UNIFICACIÓN MOLINO EL BOSQUE

Cruce de Quebrada

Cementerio
El Castillo
El Parrón
El Chalar
Hurtado
Las Higueras
El Sauce Cresposo
Las Trancas
Morrillos
Las Cardas
Seron
Pueblo Hundido
Serón
La Cortadera
Salvadores
La Puntilla
El Bosque
La Embarrada
La Embarcada
Co. José María
Co. Maitenes
Cementerio
La Brea Norte
La Brea Sur
Bolsico Norte
Paso Las Lajas

Canal Panteón
Canal El Parrón
Canal Mirador
Canal La Achupalla
Canal Catarrito
Canal Molino El Bosque
Canal Tolcral - El Bosque
Canal Los Perales
Canal Farellones
Canal Los Leones
Canal Las Flechas
Canal El Sauce
Canal Zapata
Canal Chivil Mangel
Canal Seron
Canal Paral de Seron
Canal La Viga de Serón
Canal La Cienega - La Cortadera
Canal La Cienega
Canal La Cortadera
Canal Rinconada
Canal Nogales - Limarí
Canal Toma Honda
Canal Colpin
Canal La Toma
Canal Toma del Corral
Canal Venado
Canal Nuevo
Canal Nuevo Matancillo

6655000
6650000
6645000
6640000
6635000
6630000
340000
345000
350000
355000
360000
325000
330000
335000

SIMBOLOGÍA

Infraestructura
- Construcciones

Red Vial
- Camino Pavimentado
- Camino de Tierra
- Huella

- Canal Unificado Revestido

Hidrografía
- Río
- Estero
- Quebrada
- Canal
- Embalse Recoleta

Curvas de Nivel
- Curva de Nivel Índice
- Curva de Nivel Secundaria

1 0.5 0 1 km

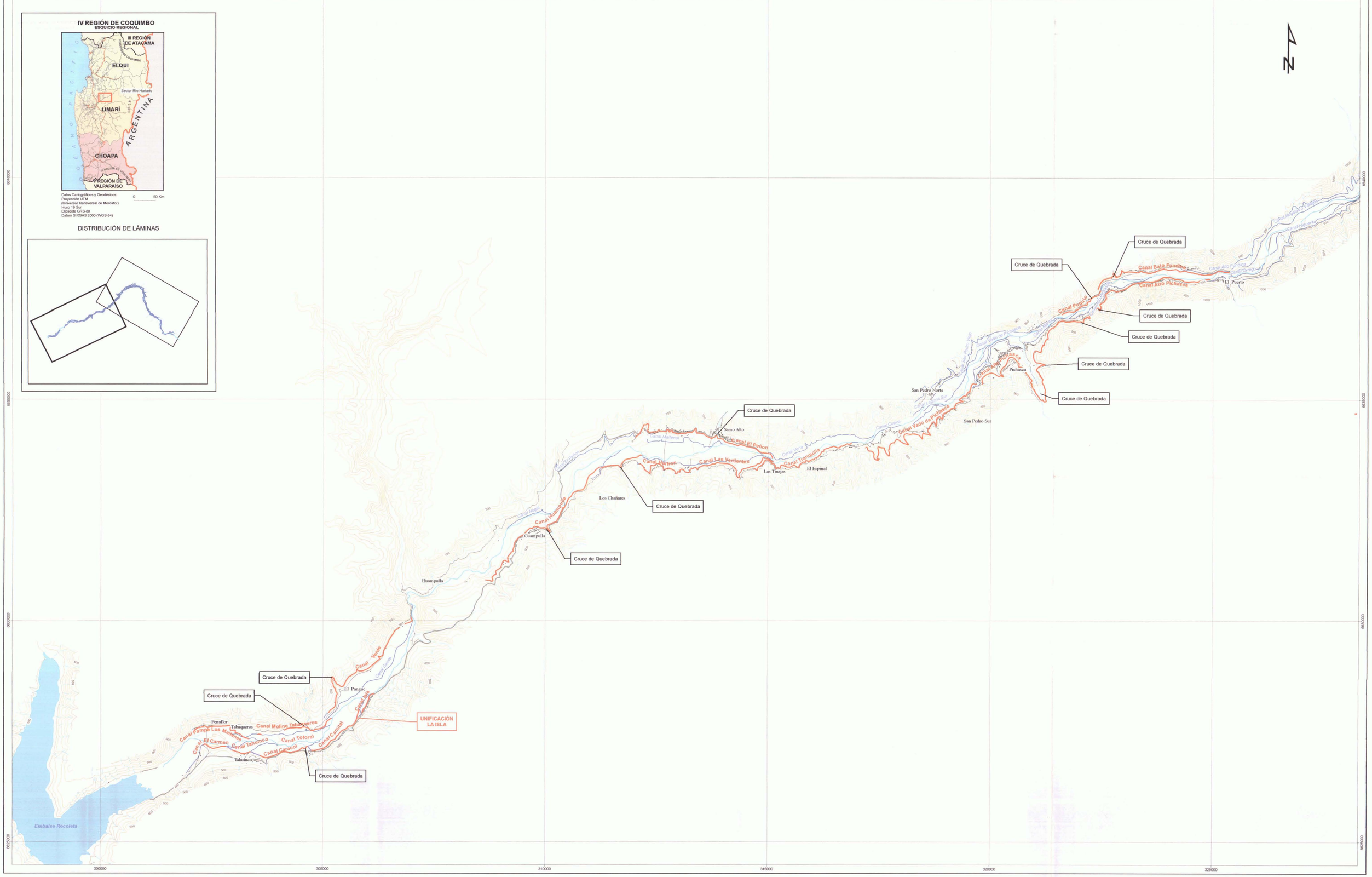
GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISIÓN NACIONAL DE RIEGO	Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo		Título Plano: Planta General Disposición de Obras	
Consultor: GCF Ingenieros Ltda.	Escala: 1:40.000	Proyección Cartográfica: UTM (Universal Transversal de Mercator) Huso 19 Sur, Datum WGS-84	Fuente Cartográfica: Lev. Aerofotogramétrico Escala 1:25000	Fecha: Febrero 2010	Lámina: 001-1/2

IV REGIÓN DE COQUIMBO
ESQUICIO REGIONAL

Datos Cartográficos y Geodésicos:
Proyección UTM
(Universal Transversal de Mercator)
Huso 19 Sur
Elipsoide GRS-80
Datum SIRGAS 2000 (WGS-84)

0 50 Km

DISTRIBUCIÓN DE LÁMINAS



SIMBOLOGÍA

Infraestructura
- Construcciones

Red Vial
- Camino Pavimentado
- Camino de Tierra
- Huella

Canal Unificado Revestido

Hidrografía
- Río
- Estero
- Quebrada
- Canal
- Embalse Recoleta

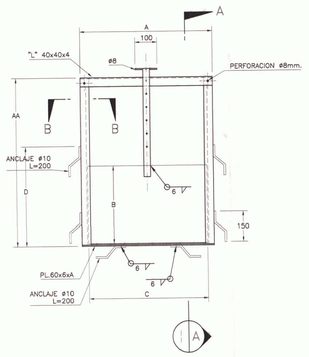
Curvas de Nivel
- Curva de Nivel Índice
- Curva de Nivel Secundaria

1 0.5 0 1 2 3 km

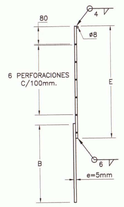
GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISIÓN NACIONAL DE RIEGO	Nombre Estudio	Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo	Título Plano	Planta General Disposición de Obras
Consultor: GCF Ingenieros Ltda.	Escala: 1:40.000	Proyección Cartográfica: UTM (Universal Transversal de Mercator) Huso 19 Sur, Datum WGS-84	Fuente Cartográfica: Lev. Aerofotogrametrico Escala 1:25000	Fecha: Febrero 2010
				Lámina: 001-2/2

COMPUERTA TIPO 1

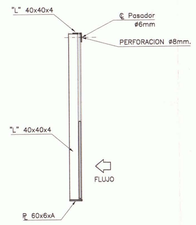
MARCO Y COMPUERTA ELEVACION
S/ESCALA
(DIMENSIONES EN mm.)



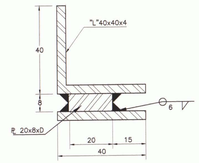
COMPUERTA
S/ESCALA
(DIMENSIONES EN mm.)



CORTE A–A
S/ESCALA
(DIMENSIONES EN mm.)

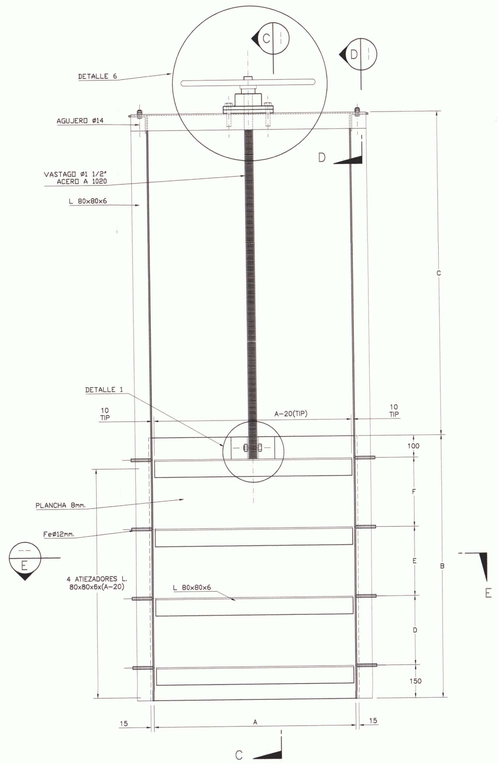


CORTE B–B
ESC.1:1
(DIMENSIONES EN mm.)

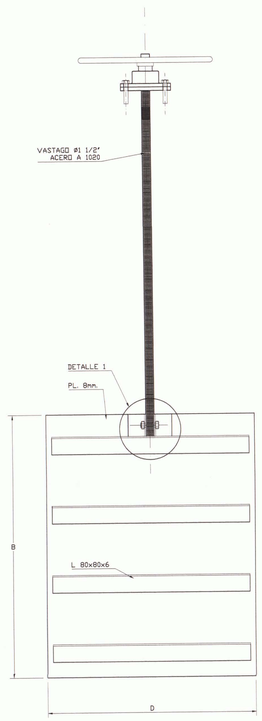


COMPUERTA TIPO 2

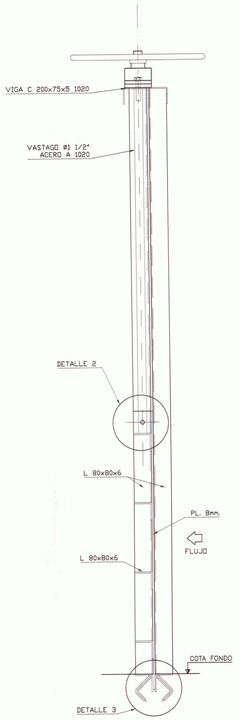
MARCO Y COMPUERTA ELEVACION
S/ESCALA
(DIMENSIONES EN mm.)



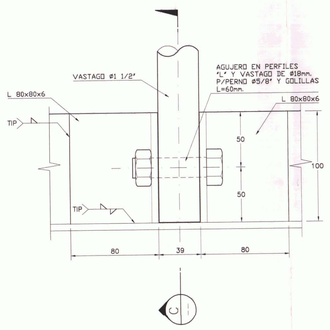
COMPUERTA ELEVACION
S/ESCALA
(DIMENSIONES EN mm.)



COMPUERTA CORTE C–C
S/ESCALA
(DIMENSIONES EN mm.)



DETALLE 1
ESC.1:2
(DIMENSIONES EN mm.)



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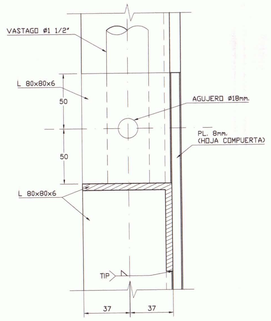

DETALLE 3
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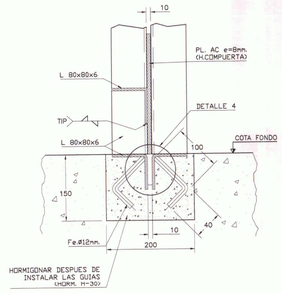
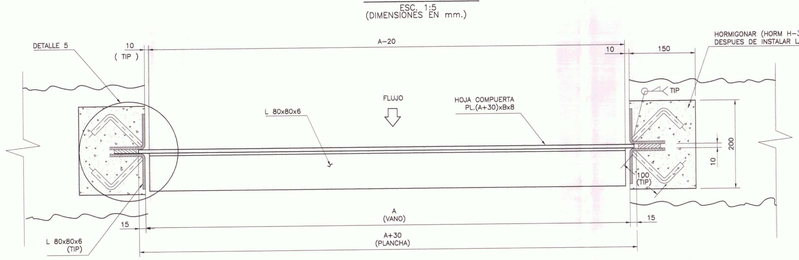
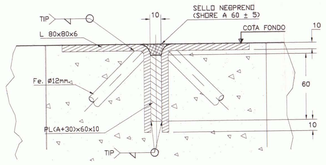
(DIMENSIONES EN mm.)



CORTE E–E
ESC.1:5
(DIMENSIONES EN mm.)



DETALLE 4
ESC.1:2
(DIMENSIONES EN mm.)



DETALLE 5
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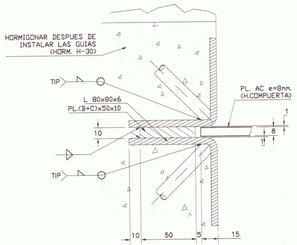
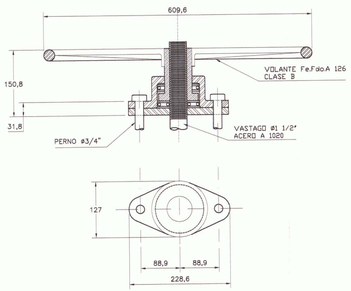
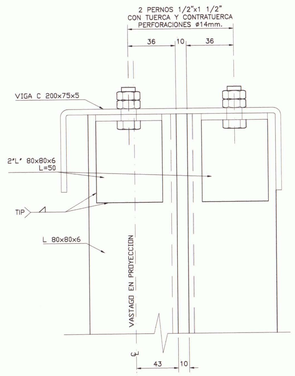
(DIMENSIONES EN mm.)



DETALLE 6
ESC.1:5
(DIMENSIONES EN mm.)



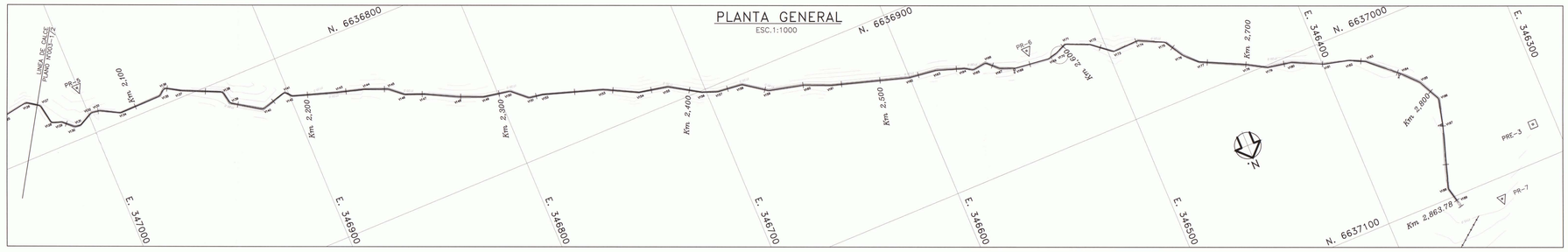
CORTE D–D
ESC.1:2
(DIMENSIONES EN mm.)



GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISIÓN NACIONAL DE RIEGO	Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo	Título Plano: COMPUERTAS. PLANTAS Y DETALLES	
CONSULTOR: GCF Ingenieros Ltda.	Escala: Indicadas	Proyección Cartográfica: UTM (Universal Transversal de mercator) Huso 19 Sur Datum PSAD 1956	Fecha: FEBRERO 2010
			Lámina: 002-1/1

CANAL TOMA DEL CORRAL

PLANTA GENERAL
ESC.1:1000



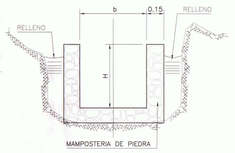
COORDENADAS DE PRE

PRE	NORTE (m)	ESTE (m)	COTA (m.s.n.m.)
03	6637081.14	346311.27	1719.69

COORDENADAS DE PR

PR	NORTE (m)	ESTE (m)	COTA (m.s.n.m.)
05	6636774.79	347000.46	1724.62
06	6636945.35	346538.77	1721.97
07	6637110.57	346340.94	1715.96

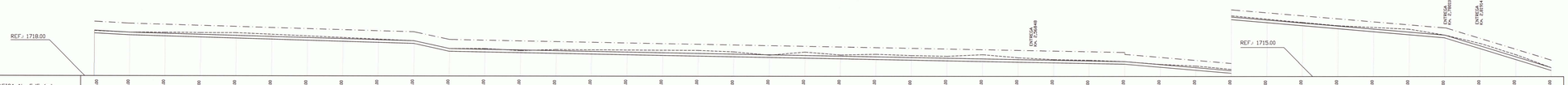
SECCION TIPO
S/E



CUADRO DESARROLLO DE CURVAS Y VERTICES

VERTICE	COORDENADAS UBICACION							INICIO	FIN
N°	ESTE (m)	NORTE (m)	VERTICE (m)	ANGULO (s)	RADIO (m)	TANGENTE (m)	DESARROLLO (m)	CURVA (m)	CURVA (m)
127	347021.412	6636779.109	2003.95	-39.56	21.5	6.90	13.36	1722.5	1735.4
128	347019.454	6636786.366	2014.39	-87.99	22.5	18.61	31.10	1720.3	1751.4
129	347014.295	6636788.153	2019.85	-21.22	23.5	3.95	7.83	1734.3	1742.1
130	347009.132	6636792.880	2026.85	-47.20	24.5	9.52	18.16	1735.6	1753.8
131	347006.120	6636793.382	2029.90	-10.50	25.5	2.11	4.21	1745.2	1749.4
132	346998.400	6636789.498	2038.55	29.67	26.5	6.29	12.35	1749.7	1762.0
133	346993.845	6636790.254	2043.16	-10.47	27.5	2.27	4.52	1758.1	1762.6
134	346984.351	6636795.336	2053.83	-31.29	28.5	7.15	14.01	1764.0	1778.0
135	346962.130	6636795.007	2076.15	0.94	29.5	0.22	0.44	1792.8	1793.3
136	346958.734	6636792.079	2080.64	45.29	30.5	11.33	21.70	1786.2	1807.9
137	346951.095	6636796.610	2089.52	-34.08	31.5	8.64	16.87	1796.8	1813.7
138	346931.471	6636805.539	2111.09	-21.18	32.5	7.05	13.88	1819.5	1833.4
139	346930.152	6636812.287	2117.96	-87.71	33.5	27.59	46.15	1825.7	1851.8
140	346915.293	6636821.913	2135.66	-36.60	34.5	10.20	19.83	1831.7	1851.6
141	346901.675	6636817.907	2149.85	18.21	35.5	5.11	10.16	1850.5	1860.6
142	346898.907	6636821.346	2154.27	-56.85	36.5	17.47	32.59	1842.4	1875.0
143	346876.421	6636828.573	2177.89	-19.80	37.5	5.88	11.66	1875.3	1887.0
144	346863.089	6636832.339	2191.74	-17.52	38.5	5.33	10.60	1889.6	1900.2
145	346851.533	6636837.043	2204.22	-24.61	39.5	7.73	15.27	1899.6	1914.9
146	346844.852	6636842.762	2213.01	-45.07	40.5	14.97	28.67	1901.0	1929.7
147	346834.958	6636846.748	2223.68	-24.38	41.5	8.95	15.89	1917.3	1933.2
148	346813.414	6636854.699	2241.14	-30.10	42.5	10.24	20.09	1932.4	1952.5
149	346807.551	6636859.668	2254.00	-25.25	43.5	8.74	17.25	1946.4	1963.6
150	346793.686	6636862.227	2268.10	-11.62	44.5	4.07	8.12	1964.9	1973.0
151	346785.939	6636869.114	2278.47	-46.36	45.5	17.30	33.07	1962.0	1995.1
152	346778.856	6636870.240	2285.64	-10.04	46.5	3.67	7.33	1981.3	1988.6
153	346748.827	6636879.922	2317.19	-19.85	47.5	7.47	14.81	2009.0	2023.8
154	346732.325	6636888.340	2335.11	-30.03	48.5	11.66	22.98	2023.2	2046.1
155	346717.399	6636891.389	2350.95	-12.83	49.5	5.00	9.98	2044.7	2054.7
156	346702.191	6636900.782	2368.80	-35.22	50.5	14.34	27.94	2053.3	2081.1
157	346694.603	6636903.597	2376.92	-22.62	51.5	9.24	18.04	2065.6	2083.9
158	346681.468	6636904.997	2390.13	-6.76	52.5	2.79	5.57	2085.1	2090.7
159	346669.918	6636913.191	2404.29	-39.28	53.5	17.05	33.01	2085.0	2118.0
160	346632.181	6636917.495	2422.56	-15.14	54.5	6.51	12.96	2112.7	2125.7
161	346638.792	6636923.135	2437.07	-25.41	55.5	11.23	22.16	2122.5	2144.6
162	346600.259	6636934.835	2477.34	-18.77	56.5	8.39	16.66	2165.3	2181.9
163	346585.720	6636936.711	2492.00	-8.17	57.5	3.69	7.38	2184.5	2191.9
164	346571.894	6636941.496	2506.63	-21.31	58.5	9.84	19.49	2193.0	2212.5
165	346568.101	6636943.634	2511.14	-36.27	59.5	17.47	33.99	2189.1	2223.2
166	346560.890	6636942.937	2518.42	8.74	60.5	4.16	8.31	2209.3	2217.6
167	346555.139	6636948.431	2526.37	-48.55	61.5	24.66	46.90	2196.8	2243.6
168	346547.823	6636951.408	2534.27	-24.60	62.5	12.23	24.10	2214.7	2238.8
169	346529.825	6636953.567	2552.40	-7.60	63.5	3.79	7.58	2240.9	2248.5
170	346520.323	6636952.546	2557.01	14.19	64.5	7.22	14.38	2242.1	2256.5
171	346518.923	6636949.821	2563.97	25.63	65.5	13.37	26.37	2242.9	2269.2
172	346507.342	6636954.866	2576.60	-26.16	66.5	13.86	27.32	2254.9	2282.0
173	346497.321	6636963.026	2589.52	-43.50	67.5	24.00	46.13	2257.0	2303.1
174	346483.521	6636962.503	2602.83	2.49	68.5	1.34	2.68	2291.2	2293.9
175	346470.731	6636968.804	2617.55	-28.37	69.5	15.75	30.97	2291.4	2322.4
176	346464.933	6636978.587	2628.92	-65.94	70.5	40.17	73.03	2277.8	2350.9
177	346458.454	6636984.987	2638.03	-49.61	71.5	29.36	55.72	2296.4	2346.2
178	346436.140	6636995.789	2662.82	-28.70	72.5	16.62	32.68	2325.0	2357.7
179	346427.006	6637001.118	2673.40	-33.63	73.5	19.88	38.92	2331.1	2370.0
180	346414.870	6637003.423	2685.95	-11.76	74.5	6.90	13.76	2356.3	2370.1
181	346389.443	6637010.717	2702.83	-28.44	75.5	17.15	33.73	2361.9	2395.6
182	346386.483	6637014.053	2716.21	-16.04	76.5	9.69	19.27	2383.2	2402.5
183	346378.817	6637017.785	2724.74	-28.84	77.5	17.86	35.11	2383.4	2418.6
184	346364.373	6637030.676	2744.10	-46.39	78.5	29.94	57.20	2390.1	2447.3
185	346356.950	6637038.587	2754.95	-52.02	79.5	34.42	64.97	2393.8	2458.8
186	346351.110	6637050.153	2767.90	-70.24	80.5	49.54	88.81	2387.8	2476.6
187	346354.553	6637063.784	2781.94	-115.77	81.5	104.68	148.21	2336.4	2484.6
188	346364.584	6637095.054	2814.80	-119.75	82.5	113.08	155.19	2299.7	2454.9
189	346362.871	6637102.158	2822.11	-84.94	83.5	65.76	111.41	2283.4	2394.8

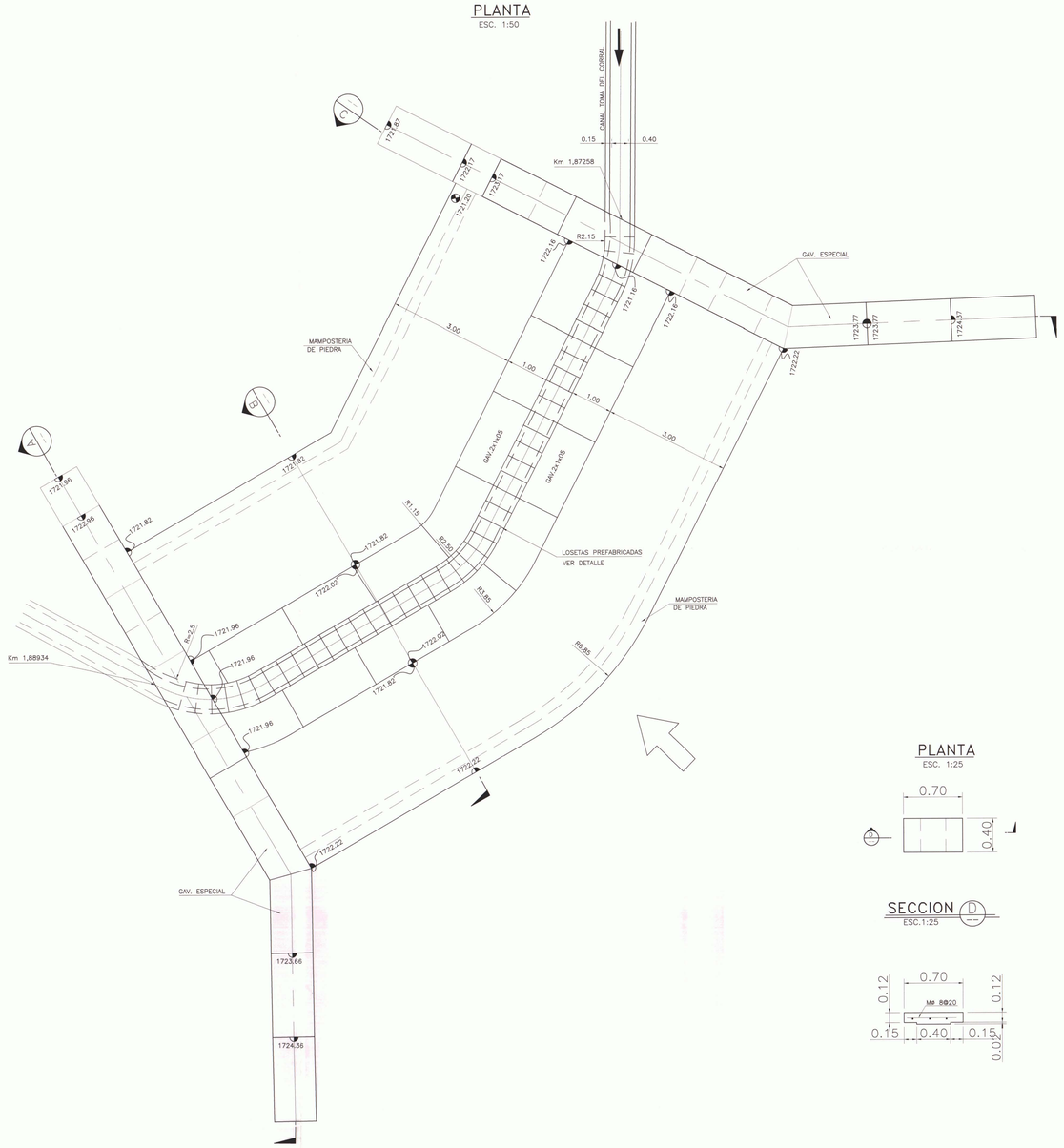
PERFIL LONGITUDINAL
ESC. H=1:1000
ESC. V=1:100



| | | | | | | |

CANAL TOMA DEL CORRAL
CRUCE DE QUEBRADA EL TRAPICHE

PLANTA
ESC. 1:50



PLANTA
ESC. 1:25

SECCION D
ESC.1:25

CUADRO DE PR

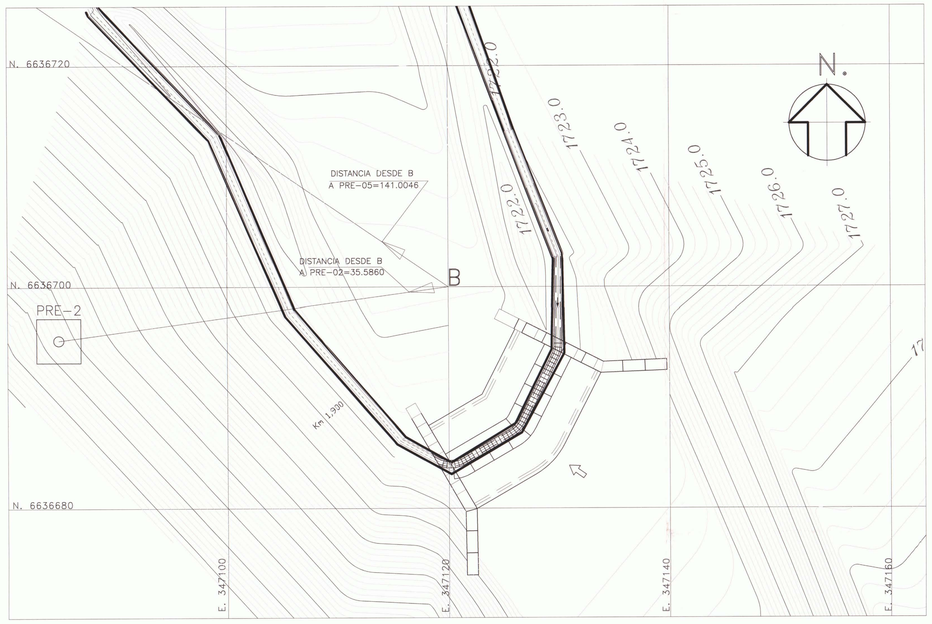
PR	NORTE	ESTE	COTA (m.)
05	6636774.79	347000.46	1724.62

CUADRO DE PRE

PR	NORTE	ESTE	COTA (m.)
02	6636693.45	347077.14	1731.20

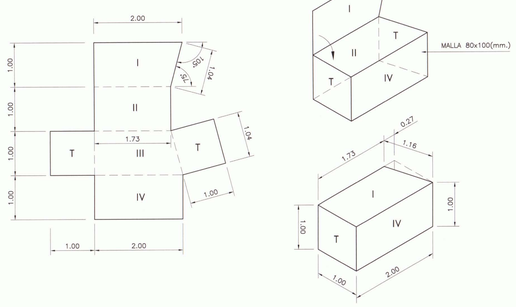
CUBICACION DE GAVIONES

DIMENSIONES GAVIONES	CANTIDAD
2x1x1	13
2x1x0,50	23
ESPECIAL (VER DETALLE)	4

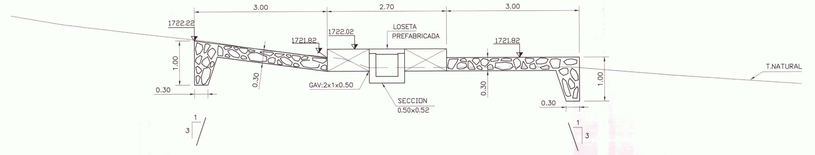


GAVION ESPECIAL
ESC. 1:50

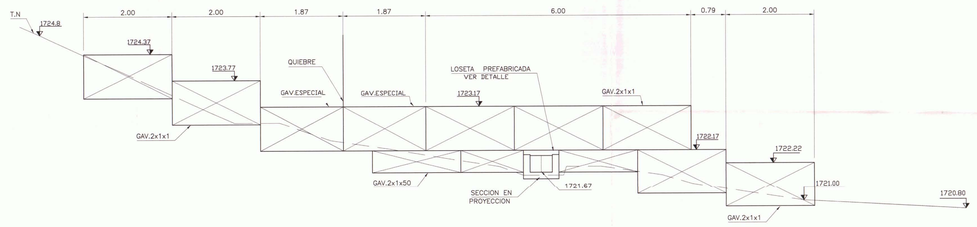
GAVION DESPLEGADO



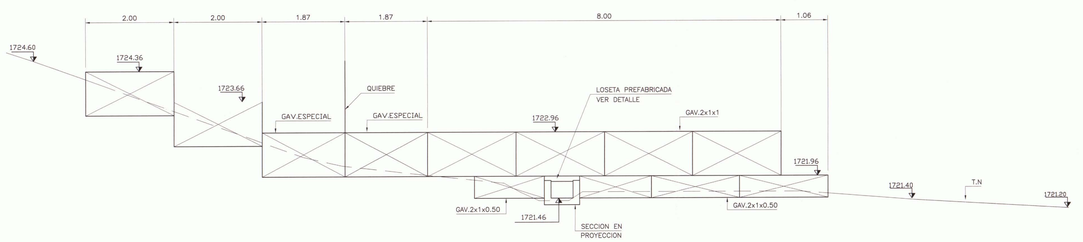
SECCION B
ESC.1:50



SECCION C
ESC.1:50



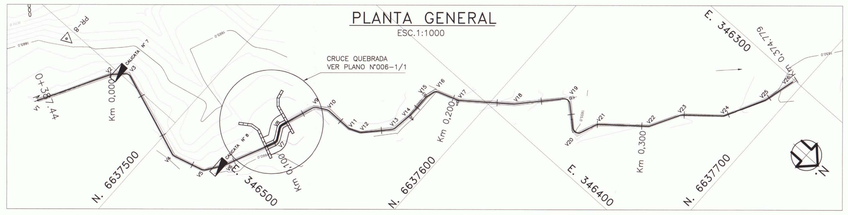
SECCION A
ESC.1:50



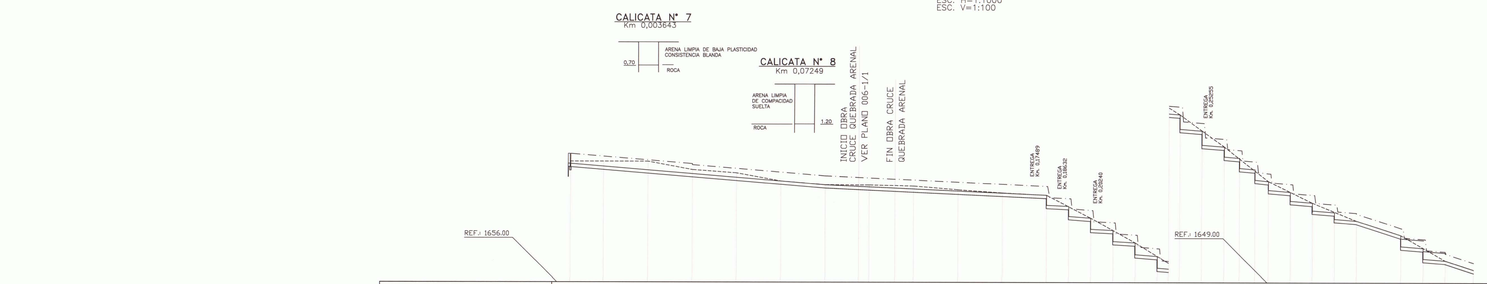
GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISION NACIONAL DE RIEGO	Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo	Título Plano: CANAL TOMA DEL CORRAL CRUCE DE QUEBRADAS, PLANTAS Y DETALLES	
CONSULTOR: GCF Ingenieros Ltda.	Escala: Indicadas	Proyección Cartográfica: UTM (Universal Transversal de mercatór Huso 19 Sur Datum PSAD 1956	Fecha: FEBRERO 2010
			Lámina: 004-1/1

CANAL LA TOMITA

PLANTA GENERAL
ESC.1:1000



PERFIL LONGITUDINAL
ESC. H=1:1000
ESC. V=1:100



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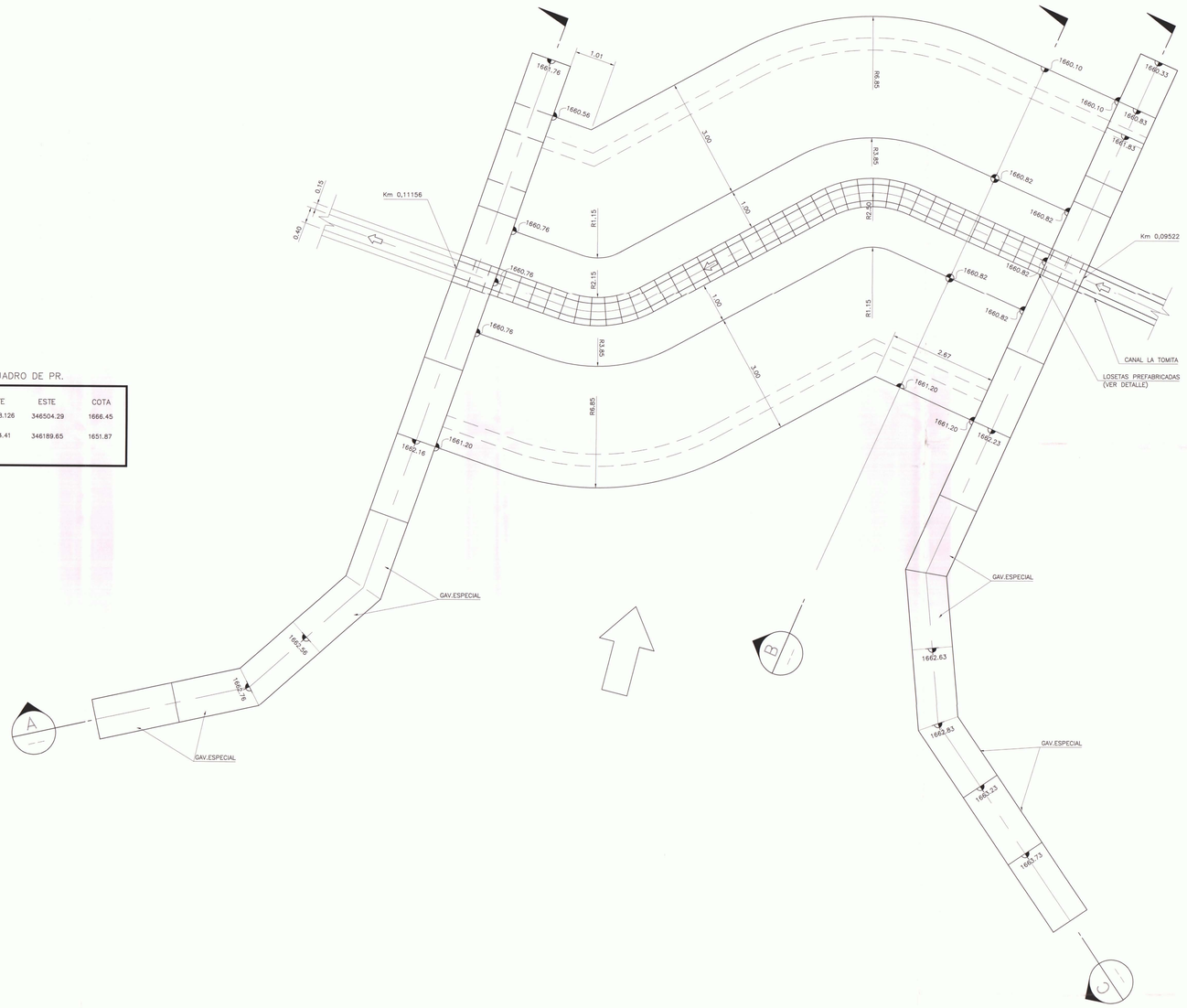
CANAL LA TOMITA
CRUCE DE QUEBRADA EL ARENAL

PLANTA GENERAL
ESC. 1:200

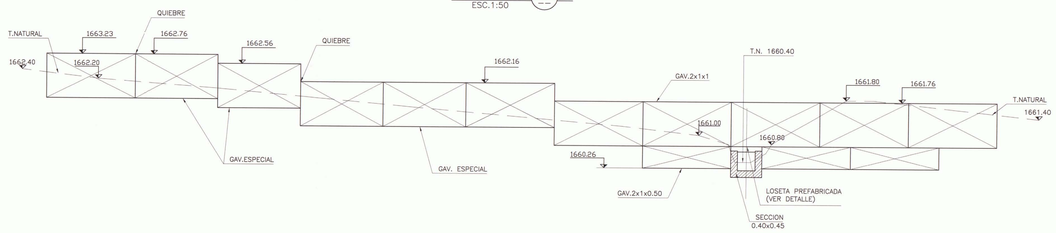
CUADRO DE PR.

PR N °	NORTE	ESTE	COTA
08	6637438.126	346504.29	1666.45
09	6637754.41	346189.65	1651.87

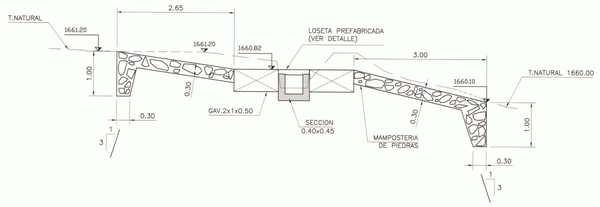
PLANTA
ESC. 1:50



SECCION A
ESC.1:50



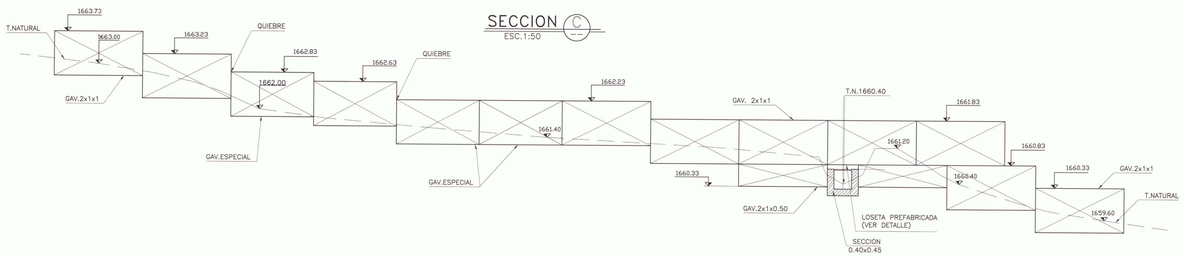
SECCION B
ESC.1:50



CUBICACION DE GAVIONES

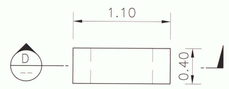
DIMENSIONES GAVIONES	CANTIDAD
2x1x1	15
2x1x0.50	15
ESPECIAL (VER DETALLE)	8

SECCION C
ESC.1:50

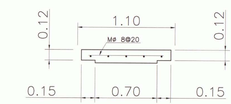


DETALLE DE LOSETA

PLANTA
ESC. 1:25

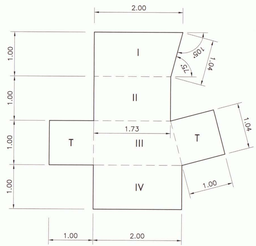


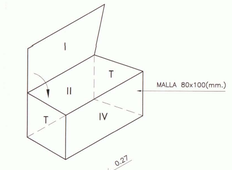
SECCION D
ESC.1:25

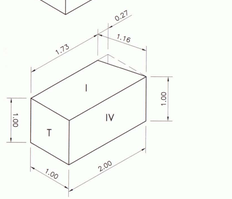


GAVION ESPECIAL
ESC. 1:50

GAVION DESPLEGADO



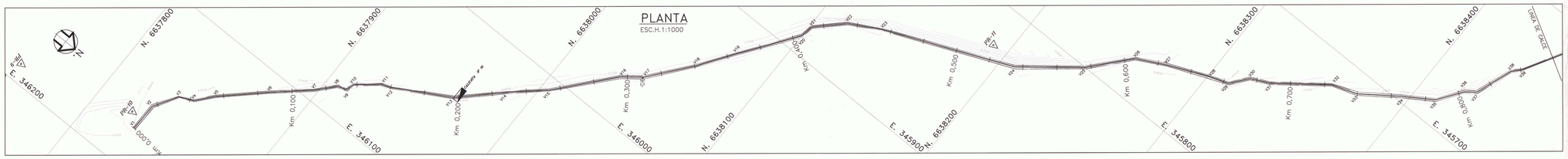




GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISIÓN NACIONAL DE RIEGO	Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo	Título Plano: CANAL LA TOMITA CRUCE DE QUEBRADAS, PLANTAS Y DETALLES	
CONSULTOR: GCF Ingenieros Ltda.	Escala: Indicadas	Proyección Cartográfica: UTM (Universal Transversal de mercator) Huso 19 Sur Datum PSAD 1956	Fecha: FEBRERO 2010
			Lámina: 006-1/1

CANAL COIPITA

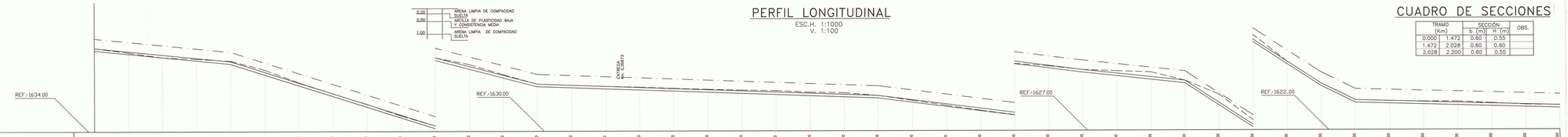
PLANTA
ESC.H.1:1000



CALICATA N° 10
Km 0,200

0,20	ARENA LIMPIA DE COMPACIDAD SUELTA
0,50	ARCILLA DE PLASTICIDAD BAJA Y CONSISTENCIA MEDIA
1,00	ARENA LIMPIA DE COMPACIDAD SUELTA

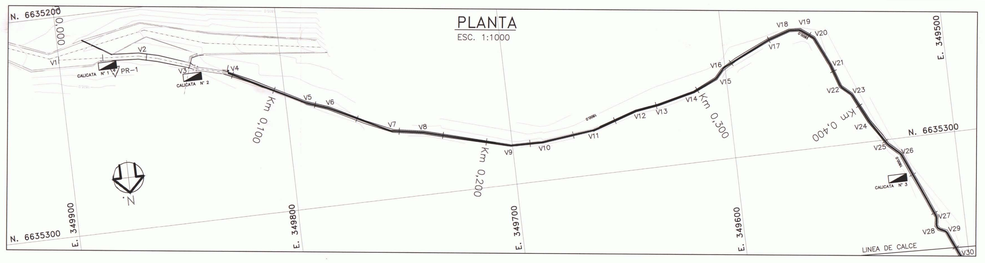
PERFIL LONGITUDINAL
ESC.H. 1:1000
V. 1:100



| | | |

CANAL VENADO

PLANTA
ESC. 1:1000

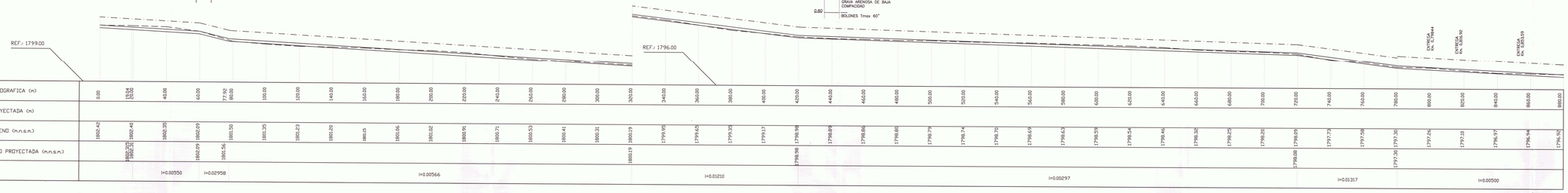


SECCION TIPO
S/E

CALICATA N° 1
Km.0,02204

CALICATA N° 2
Km.0,062.48

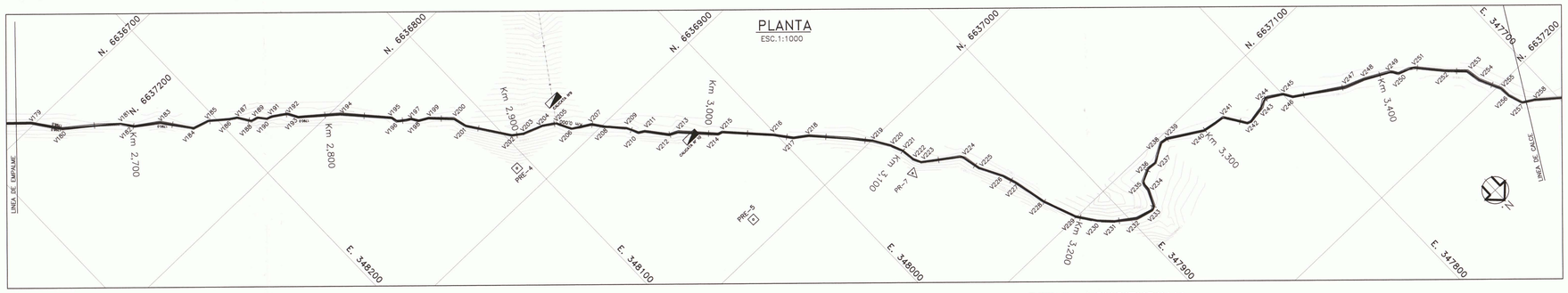
PERFIL LONGITUDINAL
ESC. H 1:1000
V 1:100



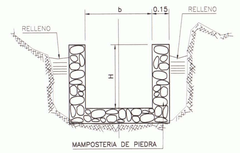
| | | |

CANAL VENADO

PLANTA
ESC.1:1000



SECCION TIPO
S/E

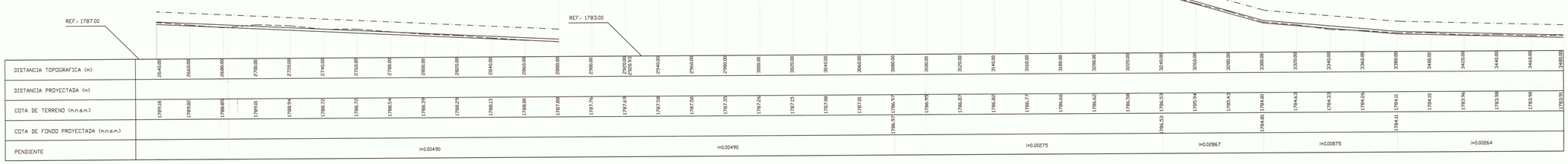


CUADRO DESARROLLO DE CURVAS Y VERTICES

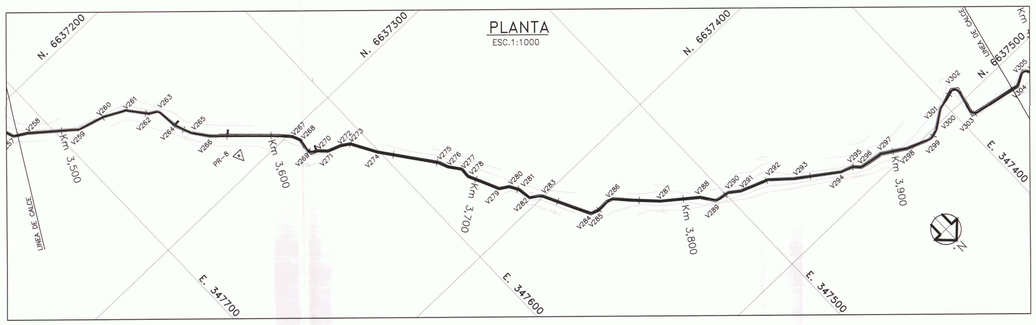
VERTICE	COORDENADAS UBICACION							INICIO	FIN
N°	ESTE (m)	NORTE (m)	VERTICE (m)	ANGULO (g)	RADIO (m)	TANGENTE (m)	DESARROLLO (m)	CURVA	CURVA
178	348269.399	6636698.524	2650.55	30.11	2.5	18.94	37.58	2412.1	2479.2
180	348258.955	6636711.872	2668.49	-24.93	2.5	14.78	29.17	2461.1	2490.1
181	348238.746	6636730.228	2686.42	0.73	2.5	0.43	0.86	2496.3	2506.2
182	348232.646	6636736.035	2703.05	-42.50	2.5	26.53	51.07	2498.3	2537.0
183	348221.814	6636743.690	2718.79	-8.30	2.5	5.06	10.11	2519.1	2529.2
184	348211.613	6636757.564	2734.07	-2.25	2.5	1.38	2.76	2539.9	2542.7
185	348203.622	6636760.086	2742.39	15.35	2.5	8.63	19.17	2546.1	2559.2
186	348195.204	6636769.902	2757.56	50.89	2.5	34.00	64.34	2556.4	2590.8
187	348191.926	6636789.173	2767.11	40.21	2.5	26.63	51.47	2574.0	2585.5
188	348187.922	6636775.187	2784.68	3.97	2.5	2.63	5.14	2581.3	2586.4
189	348184.529	6636776.772	2797.98	21.48	2.5	11.79	23.26	2583.2	2606.5
190	348181.317	6636779.973	2773.04	31.63	2.5	21.35	42.08	2562.2	2604.3
191	348178.616	6636785.849	2775.86	86.09	2.5	70.83	118.35	2560.3	2678.6
192	348171.692	6636780.270	2783.64	1.48	2.5	0.96	1.91	2567.2	2569.2
193	348169.172	6636790.196	2789.47	-17.84	2.5	12.34	24.51	2570.4	2594.9
194	348152.781	6636803.808	2810.84	-20.54	2.5	14.40	28.55	2573.5	2602.0
195	348135.259	6636803.210	2838.99	-16.34	2.5	11.55	22.98	2593.1	2616.1
196	348134.188	6636826.714	2840.66	-13.90	2.5	9.92	19.76	2607.3	2627.1
197	348128.258	6636830.714	2847.81	21.61	2.5	15.69	31.05	2609.8	2638.9
198	348126.329	6636833.782	2851.44	11.09	2.5	8.08	16.11	2619.8	2635.9
199	348127.871	6636838.083	2856.55	27.27	2.5	20.34	40.66	2627.8	2652.5
200	348112.705	6636845.518	2869.56	55.16	2.5	43.71	81.88	2636.6	2683.5
201	348110.636	6636851.685	2878.44	-13.96	2.5	9.94	19.44	2658.4	2654.5
202	348097.336	6636871.946	2900.44	-24.91	2.5	19.12	37.76	2664.5	2689.2
203	348092.537	6636875.381	2908.35	28.05	2.5	21.83	42.95	2664.2	2697.1
204	348085.734	6636879.136	2916.84	68.47	2.5	58.76	105.95	2667.1	2733.0
205	348078.812	6636861.485	2923.56	3.28	2.5	2.29	4.57	2678.5	2683.1
206	348076.171	6636860.483	2923.23	-0.28	2.5	0.20	0.44	2680.4	2680.9
207	348064.153	6636858.856	2942.25	-12.41	2.5	9.13	18.40	2693.6	2709.9
208	348060.580	6636850.414	2949.59	-10.13	2.5	7.33	14.56	2705.4	2720.0
209	348052.689	6636838.636	2960.64	-2.12	2.5	1.69	3.38	2708.6	2711.9
210	348049.886	6636913.311	2958.97	-28.31	2.5	21.10	41.80	2693.1	2738.0
211	348047.067	6636917.042	2970.28	24.98	2.5	20.30	40.09	2698.8	2738.9
212	348038.553	6636905.820	2985.74	-47.94	2.5	40.93	78.93	2690.1	2769.0
213	348035.227	6636928.941	2987.37	10.17	2.5	8.45	16.86	2723.4	2740.3
214	348021.068	6636943.849	3007.93	-27.38	2.5	23.09	45.81	2729.2	2774.9
215	348019.959	6636944.496	3010.14	26.54	2.5	22.13	44.81	2731.1	2775.9
216	348007.198	6636961.451	3036.12	-7.47	2.5	5.63	11.24	2768.8	2780.0
217	347994.636	6636971.638	3046.49	-36.98	2.5	32.73	63.60	2756.8	2820.4
218	347988.487	6636978.173	3054.29	10.85	2.5	9.22	18.39	2780.2	2804.6
219	347968.780	6637000.460	3086.85	-42.64	2.5	38.80	74.87	2789.2	2861.8
220	347961.987	6637007.448	3098.17	-30.25	2.5	25.47	49.51	2807.0	2860.0
221	347959.404	6637014.845	3102.89	-50.49	2.5	47.50	90.02	2792.5	2882.5
222	347954.495	6637015.415	3109.73	-107.37	2.5	129.31	183.70	2772.2	2908.0
223	347958.628	6637025.398	3114.13	-111.00	2.5	137.40	201.38	2844.0	2845.4
224	347939.547	6637031.590	3134.15	-58.65	2.5	58.13	117.05	2829.8	2870.8
225	347939.142	6637047.711	3143.38	28.12	2.5	26.38	51.90	2704.4	2756.3
226	347931.383	6637059.215	3158.40	-137.82	2.5	141.08	207.46	2685.0	2732.5
227	347926.193	6637035.503	3158.40	137.82	2.5	141.08	207.46	2800.1	2800.1
228	347925.491	6637082.856	3182.79	-21.45	2.5	20.48	40.82	2664.0	2704.8
229	347921.298	6637084.113	3187.50	-44.01	2.5	42.04	83.74	2676.4	2760.2
230	347912.452	6637087.792	3202.03	-63.48	2.5	66.69	122.14	2642.0	2764.1
231	347906.134	6637083.090	3206.12	-74.13	2.5	76.77	134.65	2687.4	2822.1
232	347886.893	6637121.692	3232.24	10.95	2.5	10.13	21.41	2706.1	2727.5
233	347880.763	6637113.536	3243.52	-60.90	2.5	64.09	120.80	2694.0	2762.8
234	347880.763	6637115.209	3250.80	89.87	2.5	107.83	178.58	2619.4	2798.0
235	347867.375	6637103.053	3253.04	-89.87	2.5	30.00	59.74	2747.3	2807.0
236	347870.437	6637107.379	3265.04	2.45	2.5	2.05	5.09	2699.2	2704.8
237	347861.592	6637111.043	3273.26	4.39	2.5	3.67	7.31	2711.8	2719.1
238	347861.588	6637102.467	3280.39	36.39	2.5	89.27	156.09	2628.2	2784.3
239	347857.875	6637103.053	3284.04	-89.87	2.5	30.00	59.74	2747.3	2807.0
240	347841.583	6637113.043	3303.26	-1.07	2.5	1.11	2.22	2711.8	2714.0
241	347839.592	6637114.881	3315.00	-18.73	2.5	13.73	27.44	2705.1	2732.5
242	347823.374	6637126.413	3338.82	-115.92	2.5	173.18	344.91	2565.0	2809.9
243	347813.602	6637127.833	3344.00	14.37	2.5	26.26	51.81	2672.0	2723.8
244	347807.864	6637121.447	3344.00	177.79	2.5	181.17	252.55	2470.1	2722.6
245	347799.946	6637127.063	3353.18	-1.07	2.5	1.11	2.22	2705.1	2707.3
246	347791.187	6637117.758	3353.18	-54.07	2.5	62.55	117.58	2693.5	2811.0
247	347774.478	6637140.580	3380.13	47.22	2.5	30.28	59.64	2649.2	2708.8
248	347764.621	6637151.195	3395.42	1.50	2.5	0.97	1.93	2697.2	2699.1
249	347752.159	6637157.094	3410.45	50.00	2.5	58.67	111.14	2640.8	2751.9
250	347752.149	6637157.190	3414.09	-49.80	2.5	58.31	110.56	2703.4	2648.1
251	347742.858	6637163.082	3422.03	72.41	2.5	91.72	163.22	2507.1	2670.3
252	347737.988	6637164.688	3435.00	-37.64	2.5	44.05	83.58	2670.3	2753.9
253	347724.157	6637181.364	3449.64	-78.28	2.5	100.75	178.92	2500.0	2679.8
254	347722.801	6637181.569	3456.98	-78.88	2.5	101.66	180.58	2500.1	2680.7
255	347717.616	6637201.806	3469.37	-12.14	2.5	14.11	28.14	2557.2	2685.3
256	347716.346	6637201.083	3484.00	-24.59	2.5	29.00	57.98	2557.5	2615.5
257	347714.953	6637214.309	3482.27	-69.14	2.5	90.25	162.37	2493.5	2655.8
258	347709.292	6637217.784	3488.87	19.53	2.5	23.05	46.14	2549.2	2595.3
259	347691.922	6637232.641	3512.25	0.46	2.5	0.55	1.10	2594.1	2595.8
260	347675.717	6637246.195	3534.74	13.82	2.5	16.73	33.46	2598.0	2631.5
261	347669.695	6637241.120	3535.28	-15.80	2.5	13.05	26.04	2605.0	2631.1
262	347669.595	6637241.220	3550.30	20.00	2.5	23.57	47.14	2605.0	2652.1
263	347669.595	6637261.871	3550.30	38.77	2.5	55.70	70.18	2631.1	2667.3
264	347658.357	6637281.115	3566.03	88.42	2.5	88.42	176.84	2590.3	2717.0
265	347658.357	6637283.622	3569.80	-41.97	2.5	53.88	103.84	2675.1	2679.1
266	347650.648	6637270.634	3576.56	-4.99	2.5	6.38	12.76	2662.2	2708.3
267	347647.981	6637274.133	3584.03	30.44	2.5	38.68	76.36	2662.2	2708.3
268	347621.175	6637300.364	3618.03	-12.88	2.5	16.29	32.47	2657.5	2690.1
269	347619.207	6637310.784	3622.32	49.51	2.5	63.56	122.47	2619.2	2741.6
270	347616.207	6637315.063	3639.80	43.12	2.5	53.97	102.40	2629.8	2732.2
271	347610.689	6637316.605	3645.00	1.32	2.5	0.84	1.68	2683.2	2684.9
272	347610.827	6637319.858	3639.65	-23.41	2.5	30.58	60.50	2658.3	2719.0
273	347606.996	6637328.363	3654.80	-87.59	2.5	87.59	175.80	2658.3	2739.4
274	347600.176	6637353.459	3656.98	-87.59	2.5	87.09	175.80	2680.8	2781.7
275	347597.961	6637358.053	3685.10	-59.39	2.5	84.34	156.26	2628.4	2784.7
276	347582.196	6637369.412	3689.81	-73.43	2.5	113.62	199.65	2581.6	2781.3
277	347578.341	6637363.672	3696.33	-59.73	2.5	85.91	159.03	2588.4	2757.5
278	347578.341	6637363.672	3696.33	-59.73	2.5	85.91	159.03	2588.4	2757.5
279	347577.357	6637383.521	3715.59	-72.48	2.5	109.75	195.26	2492.1	2687.4
280	347568.314	6637390.149	3720.40	-36.74	2.5	51.51	89.56	2531.3	2620.8
281	347568.053	6637390.203	3725.04	-67.59	2.5	101.86	184.21	2482.4	2666.6
282	347565.385	6637398.098	3730.89	-91.76	2.5	153.77	251.53	2417.4	2669.0
283	347565.711	6637399.390	3736.62	-39.73	2.5	58.60	108.50	2464.1	2574.2
284	347554.054	6637410.519	3740.29	-70.20	2.5	108.66	184.80	2432.6	2617.4
285	347546.691	6637421.717	3745.86	-91.79	2.5	30.68	60.76	2491.7	2552.4
286	347533.283	6637431.719	3771.39	-60.01	2.5	0.00	0.04	2539.1	2539.2
287	347523.513	6637438.133	3774.03	-91.25	2.5	76.43	144.51	2475.5	2620.0
288	347509.382	6637449.267	3812.02	-62.48	2.5	83.56	170.47	2478.0	2648.4
289	347504.144	6637455.591	3818.86	-59.72	2.5	87.58	176.22	2419.2	2643.0
290	347498.647	6637456.551	3828.03	-9.94	2.5	14.28	28.50	2542.9	2571.4
291	347494.068	6637458.923	3831.72	-40.40	2.5	60.72	118.46	2512.6	2631.0

PERFIL LONGITUDINAL
ESC.H 1:1000
V 1:100

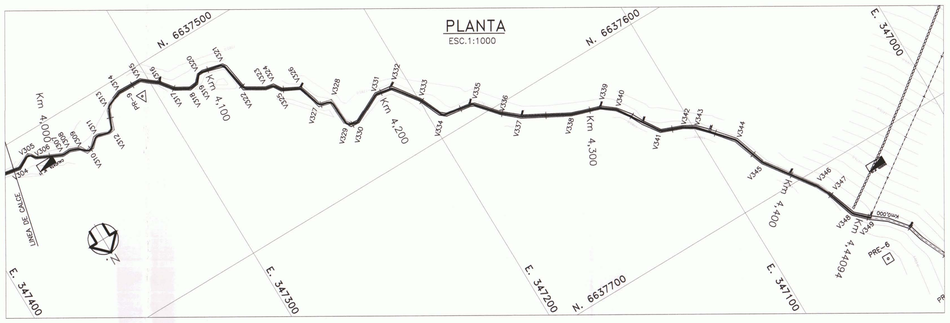
CALICATA N° 10
Km. 2,991.34



PLANTA
ESC.1:1000

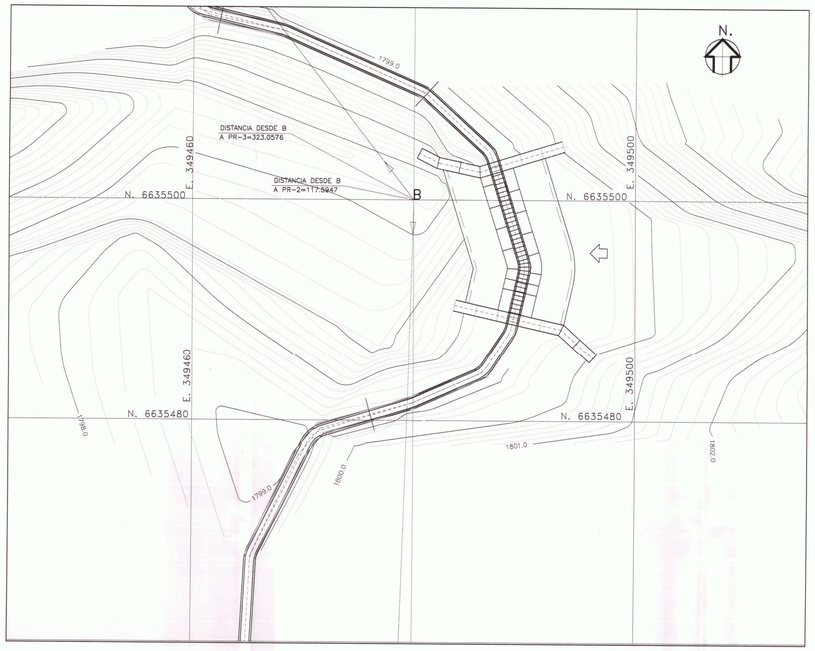


PLANTA
ESC.1:1000



CANAL VENADO
CRUCE DE QUEBRADA VENADO

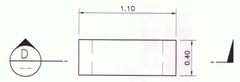
CRUCE DE QUEBRADA VENADO Km. 0,67083
PLANTA GENERAL
ESC. 1:200



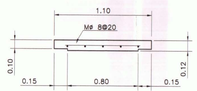
CUADRO DE PR

PR	NORTE	ESTE	COTA (m.)
02	6635382.27	349476.53	1799.71
03	6635755.00	349281.66	1799.82

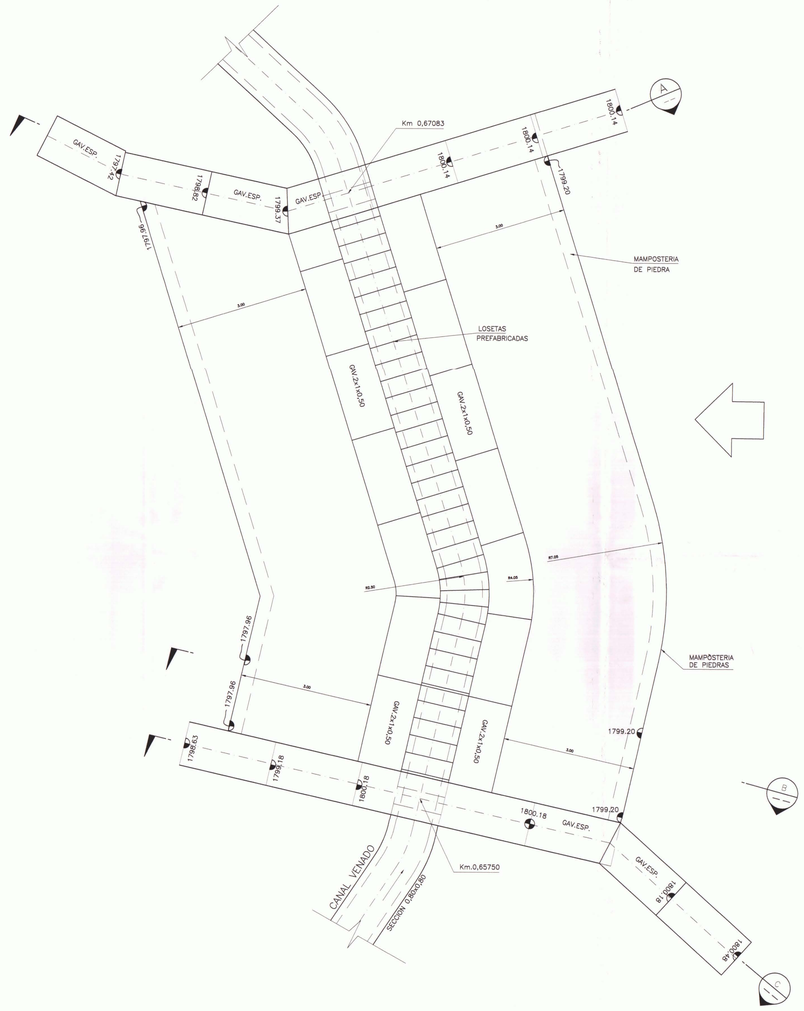
DETALLE DE LOSETA
PLANTA
ESC. 1:25



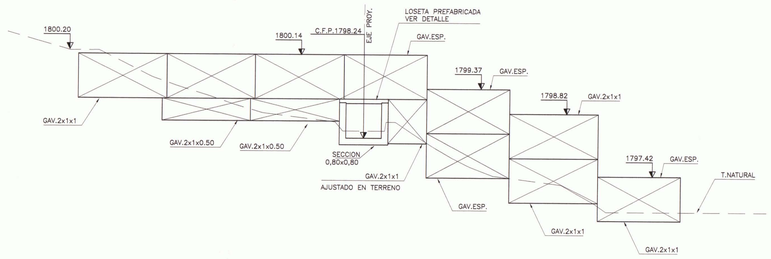
SECCION (D)
ESC.1:25



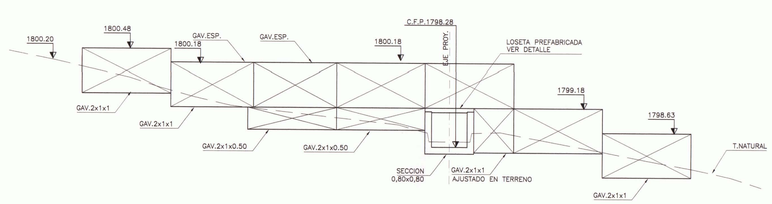
PLANTA
ESC. 1:50



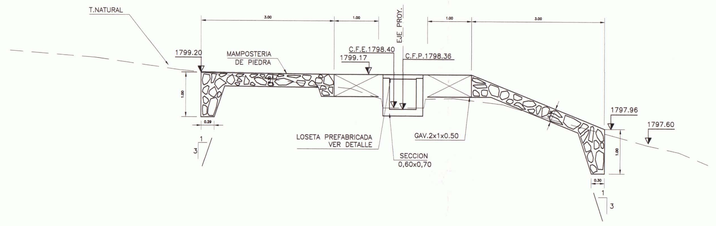
SECCION (A)
ESC.1:50



SECCION (C)
ESC.1:50

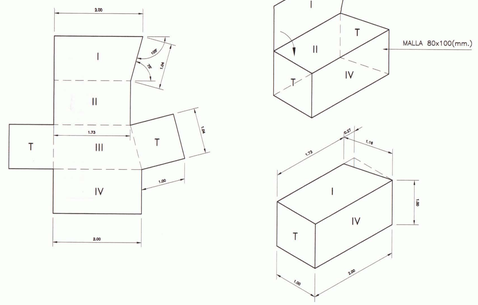


SECCION (B)
ESC.1:50



GAVION ESPECIAL
ESC. 1:50

GAVION DESPLEGADO



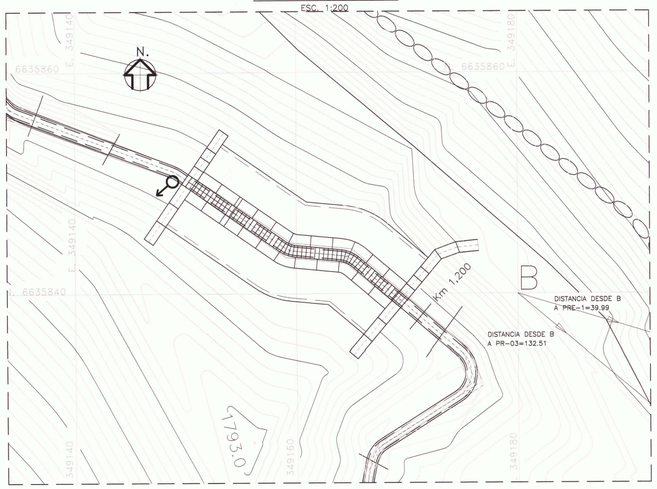
NOTAS GENERALES :

– TODAS LAS OBRAS SON DE MAMPOSTERIA DE PIEDRAS.

GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISIÓN NACIONAL DE RIEGO	Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo	Título Plano: CANAL VENADO CRUCE DE QUEBRADA VENADO, PLANTAS Y DETALLES	
CONSULTOR: GCF Ingenieros Ltda.	Escala: Indicadas	Proyección Cartográfica: UTM (Universal Transversal de mercator) Huso 19 Sur Datum PSAD 1956	Fecha: FEBRERO 2010
			Lámina: 009-1/2

CANAL VENADO
CRUCE DE QUEBRADA CHACARILLA

CRUCE DE QUEBRADA CHACARILLA Km.1,2248
PLANTA GENERAL
ESC. 1:200



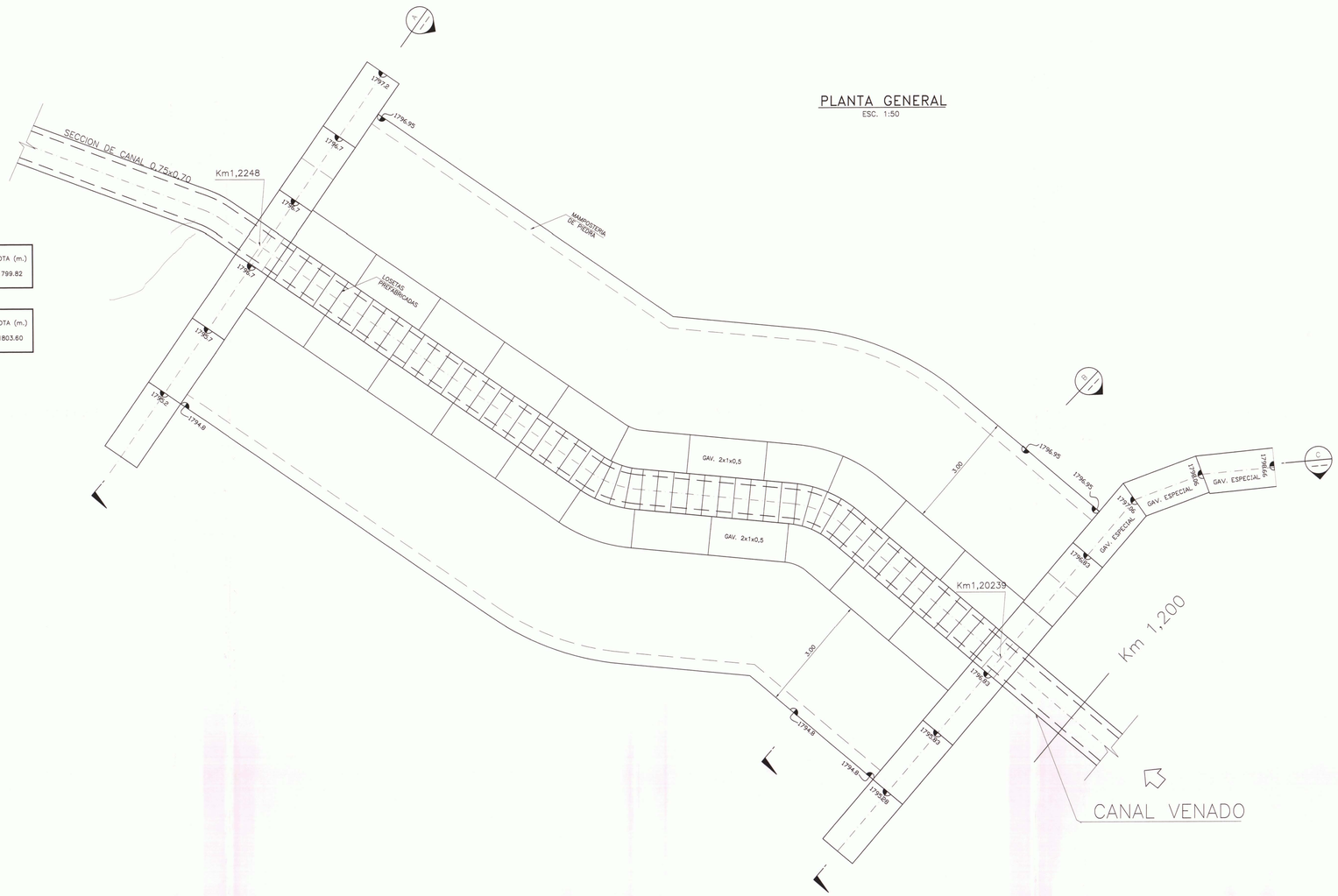
CUADRO DE PR

PR	NORTE	ESTE	COTA (m.)
03	6635755.00	349281.66	1799.82

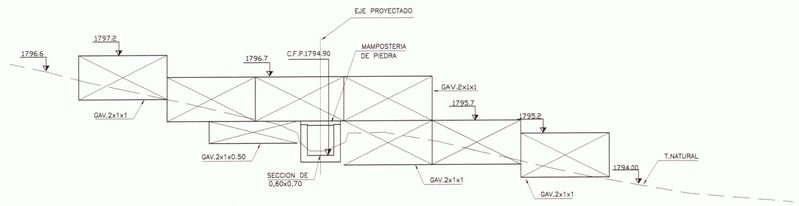
CUADRO DE PRE

PR	NORTE	ESTE	COTA (m.)
01	6635828.48	349218.31	1803.60

PLANTA GENERAL
ESC. 1:50

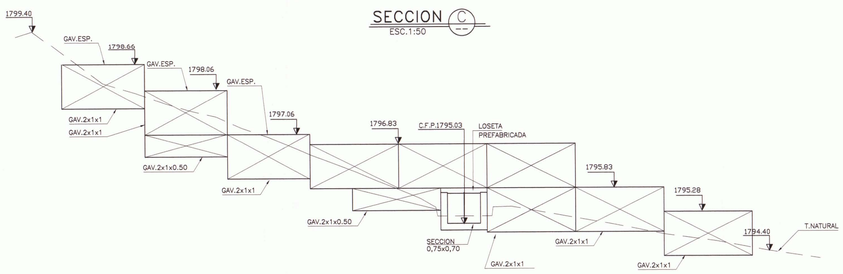


SECCION A
ESC.1:50



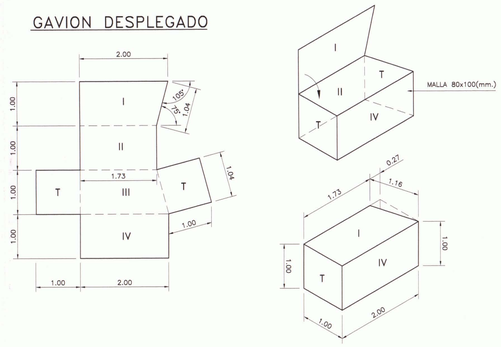
SECCION B
ESC.1:50

SECCION C
ESC.1:50



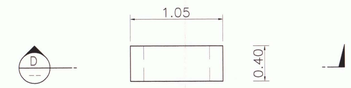
GAVION ESPECIAL
ESC. 1:50

GAVION DESPLEGADO

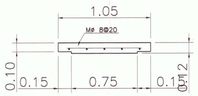


DETALLE DE LOSETA

PLANTA
ESC. 1:25

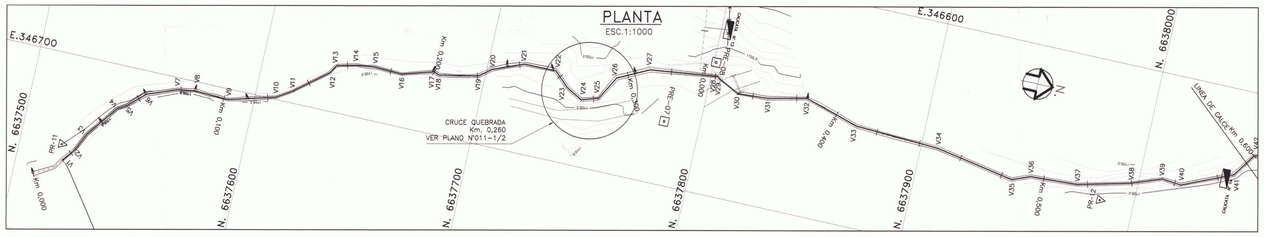


SECCION D
ESC.1:25



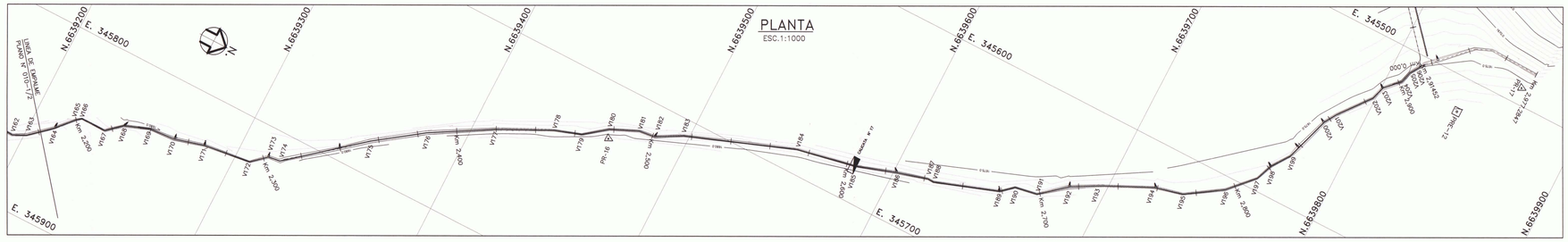
GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISIÓN NACIONAL DE RIEGO	Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo	Título Plano: CANAL VENADO CRUCE DE QUEBRADA CHACARILLA PLANTAS Y DETALLES	
CONSULTOR: GCF Ingenieros Ltda.	Escala: Indicadas	Proyección Cartográfica: UTM (Universal Transversal de mercator) Huso 19 Sur Datum PSAD 1956	Fecha: FEBRERO 2010
			Lámina: 009-2/2

CANAL TOMA HONDA



CANAL TOMA HONDA

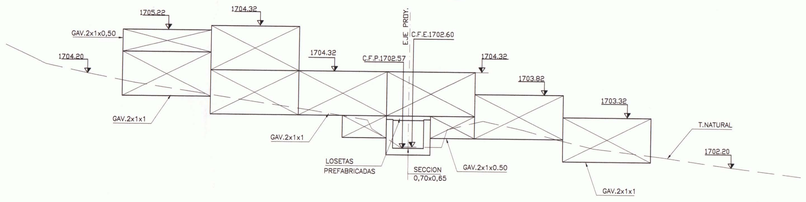
PLANTA
ESC.1:1000



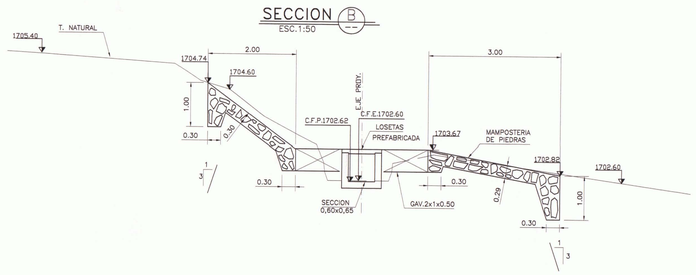
CRUCE QUEBRADA Km. 0,28824

PLANTA GENERAL
ESC. 1:200

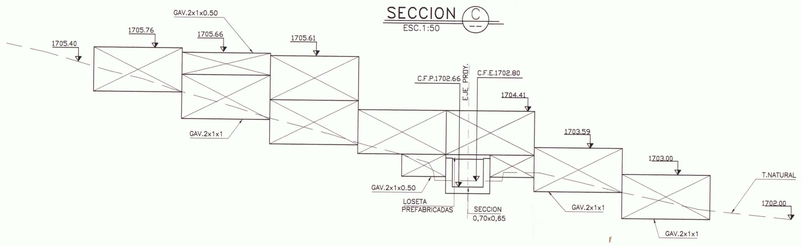
SECCION A
ESC.1:50



SECCION B
ESC.1:50

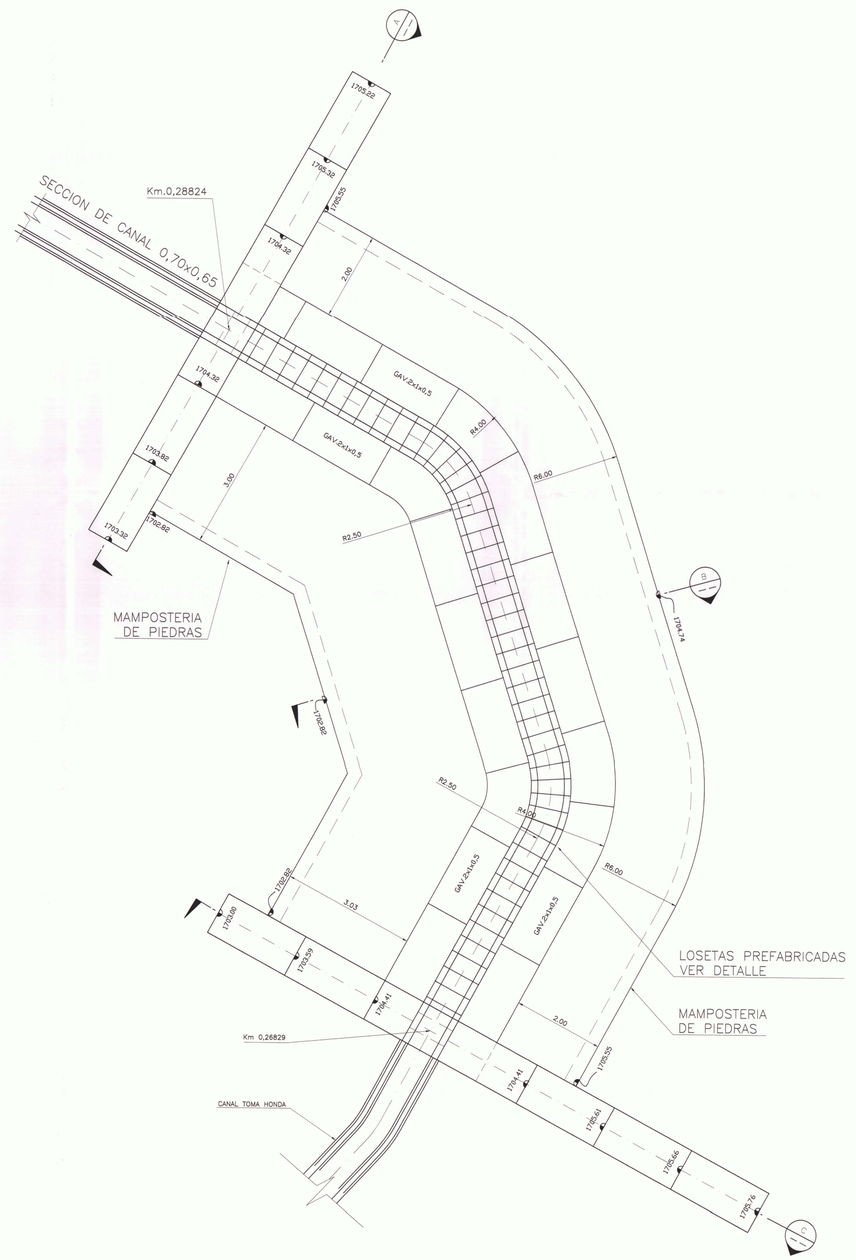


SECCION C
ESC.1:50



CRUCE DE QUEBRADA-CANAL TOMA HONDA

PLANTA GENERAL
ESC. 1:50



CUADRO DE PR

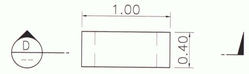
PR	NORTE	ESTE	COTA (m.)
11	6637519.06	346740.90	1704.96

CUADRO DE PRE

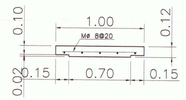
PR	NORTE	ESTE	COTA (m.)
07	6637783.74	346671.26	1706.56

DETALLE DE LOSETA

PLANTA
ESC. 1:25



SECCION D
ESC.1:25



GOBIERNO DE CHILE
MINISTERIO DE AGRICULTURA
COMISIÓN NACIONAL DE RIEGO

CONSULTOR
GCF Ingenieros Ltda.

Nombre Estudio
Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo

Título Plano
CANAL TOMA HONDA
CRUCE DE QUEBRADA Km 0.288
PLANTAS Y DETALLES

Escala: Indicadas

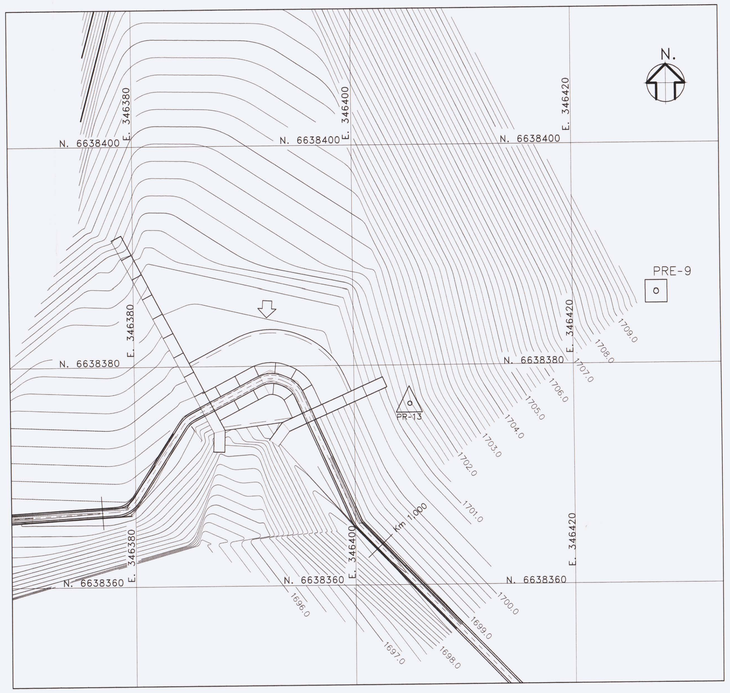
Proyección Cartográfica: UTM (Universal Transversal de mercator) Huso 19 Sur Datum PSAD 1956

Fecha: FEBRERO 2010

Lámina: 011-1/2

CANAL TOMA HONDA
CRUCE DE QUEBRADA Km 1,01347

CRUCE QUEBRADA Km. 1,01347
PLANTA GENERAL
ESC. 1:200



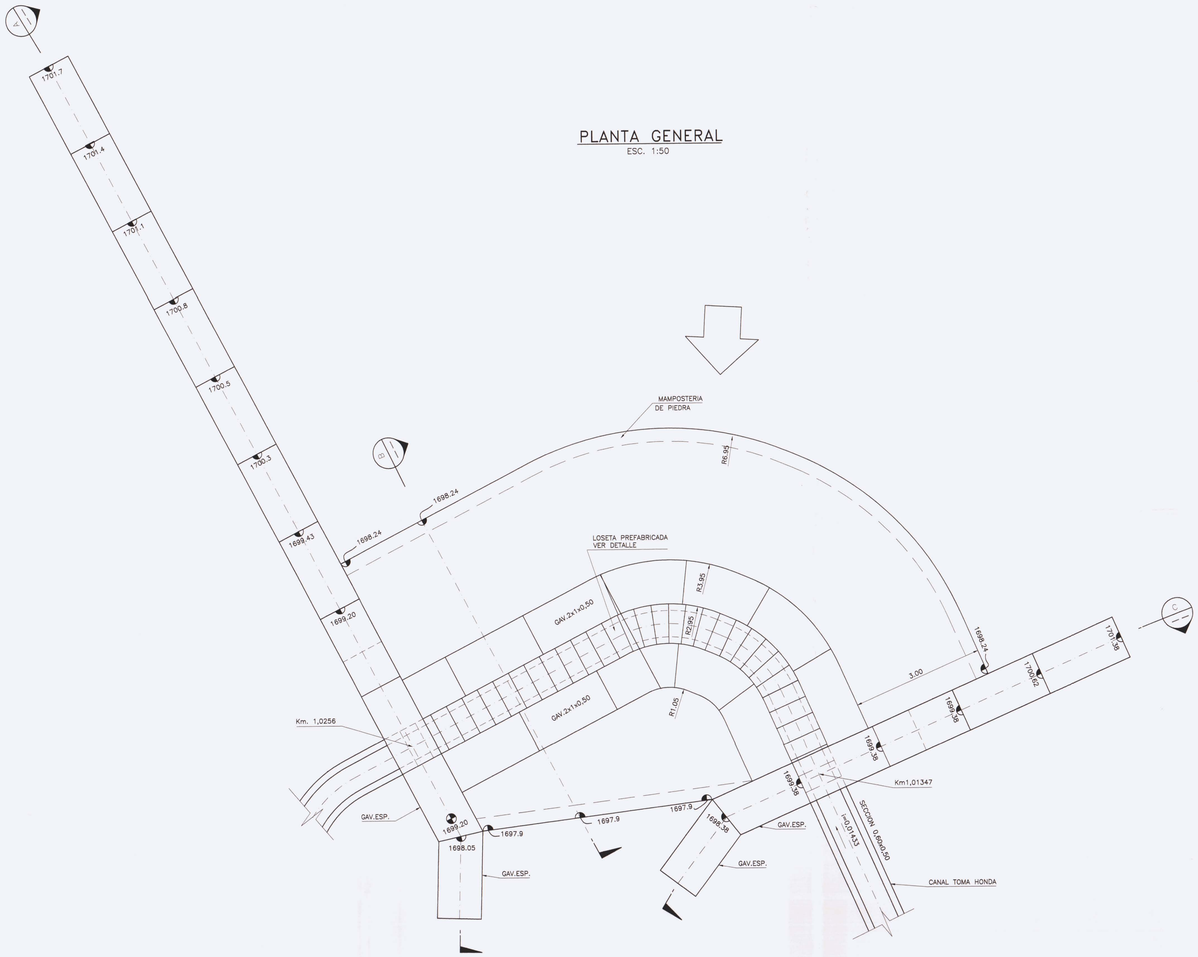
CUADRO DE PR

PR	NORTE	ESTE	COTA (m.)
13	6638376.50	346405.06	1701.56

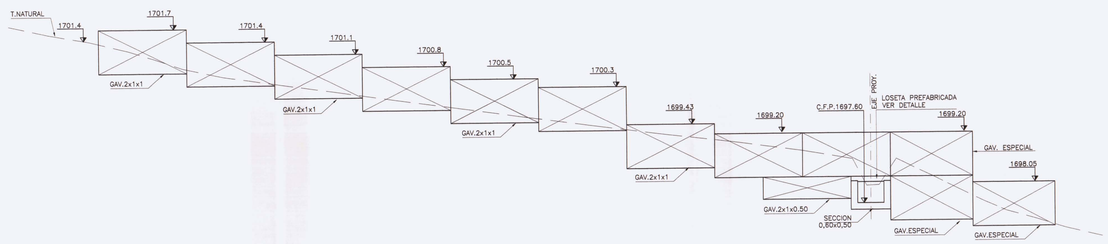
CUADRO DE PRE

PR	NORTE	ESTE	COTA (m.)
09	6638385.70	346426.25	1709.99

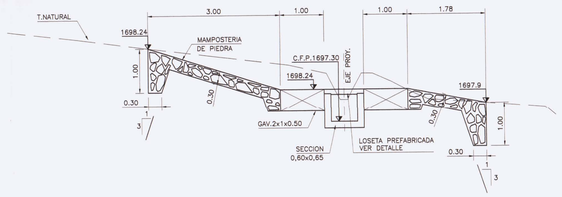
PLANTA GENERAL
ESC. 1:50



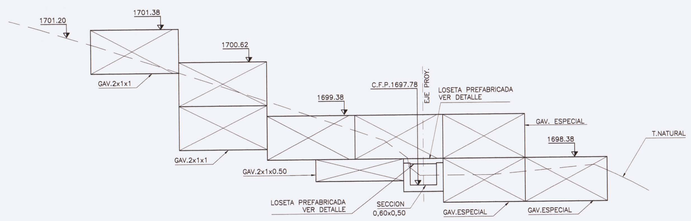
SECCION A
ESC.1:50



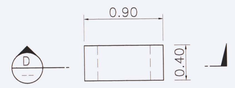
SECCION B
ESC.1:50



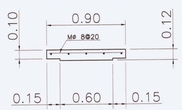
SECCION C
ESC.1:50



DETALLE DE LOSETA
PLANTA
ESC. 1:25

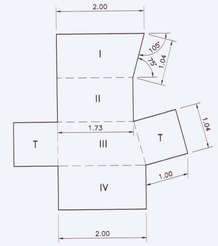


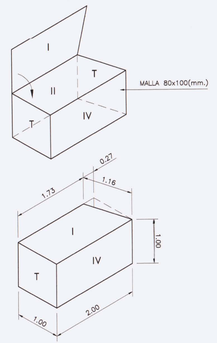
SECCION D
ESC.1:25



GAVION ESPECIAL
ESC. 1:50

GAVION DESPLEGADO

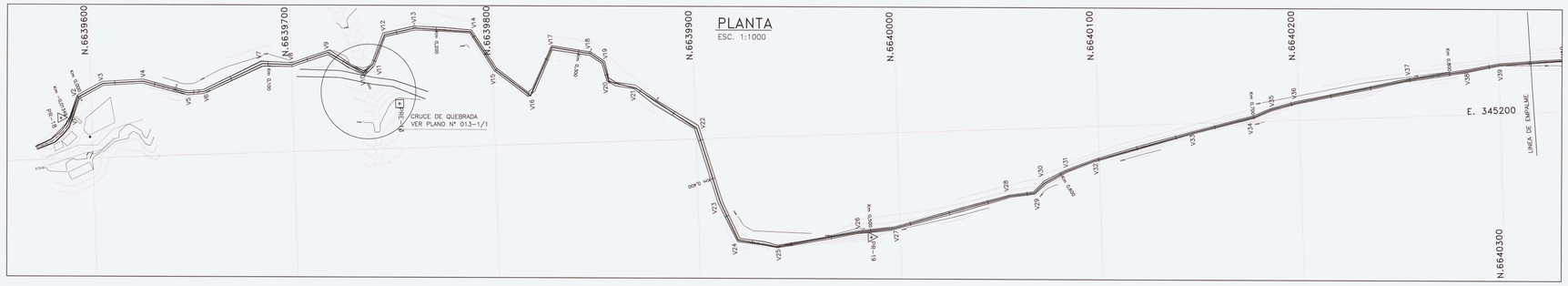




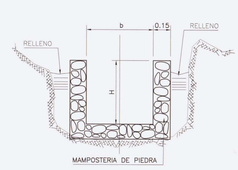
GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISIÓN NACIONAL DE RIEGO	Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo	Título Plano: CANAL TOMA HONDA CRUCE DE QUEBRADA Km 1.013 PLANTA Y DETALLES	
CONSULTOR: GCF Ingenieros Ltda.	Escala: Indicadas	Proyección Cartográfica: UTM (Universal Transversal de mercator) Huso 19 Sur Datum PSAD 1956	Fecha: FEBRERO 2010
			Lámina: 011-2/2

CANAL LAS BREAS

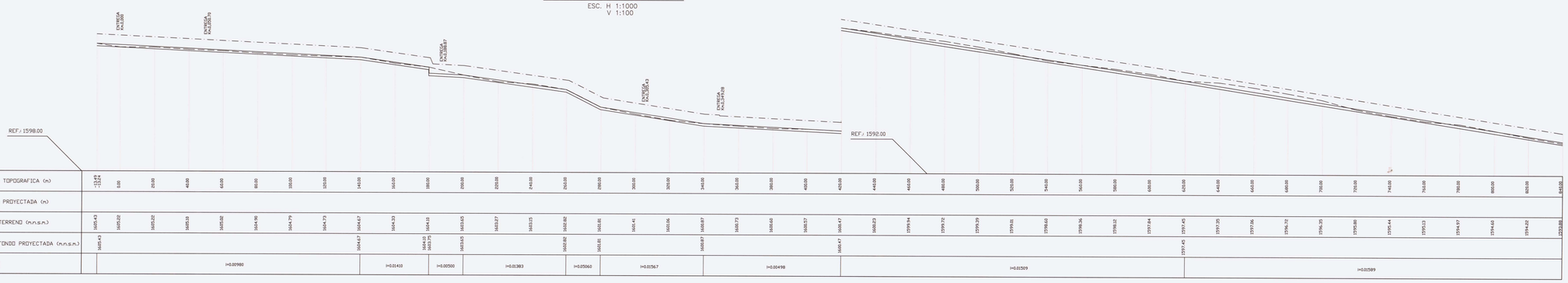
PLANTA
ESC. 1:1000



SECCION TIPO
S/E



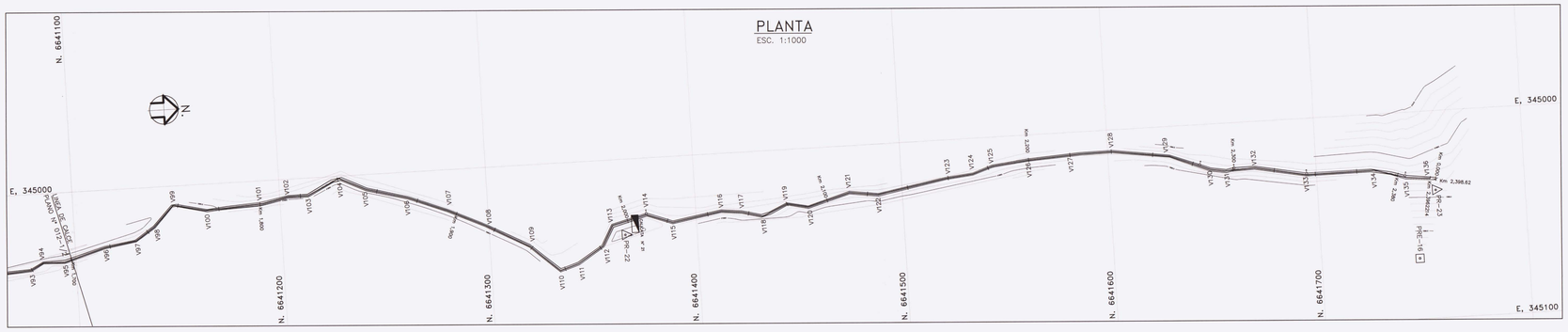
PERFIL LONGITUDINAL
ESC. H 1:1000
V 1:100



| | | |

CANAL LAS BREAS

PLANTA
ESC. 1:1000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N. 6641400
N. 6641500
N. 6641600
N. 6641700
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E, 345100
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Km 0,200
Km 0,400
Km 0,600
Km 0,800
Km 1,000
Km 1,200
Km 1,400
Km 1,600
Km 1,800
Km 2,000
Km 2,200
Km 2,398.62
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V94
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V97
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V100
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V102
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V104
V105
V106
V107
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V115
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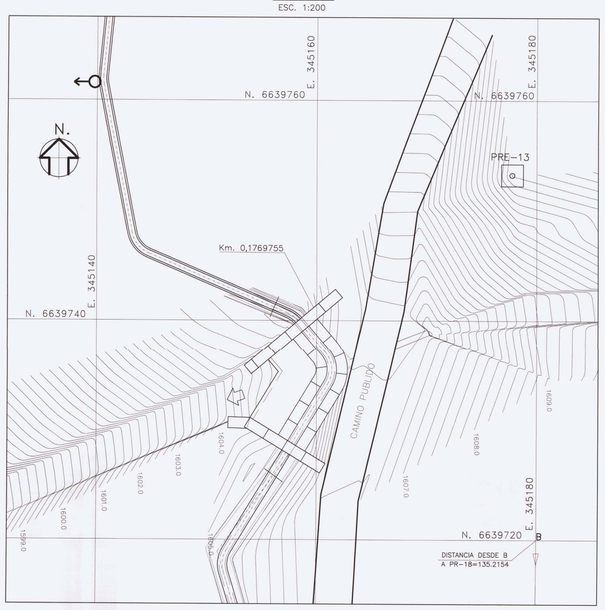
V131
V132
V133
V134
V135
V136
PI=1°-36'-22
PI=16°-39'-24
PI=2°-38'-16
PI=2°-38'-16
PI=2°-38'-16

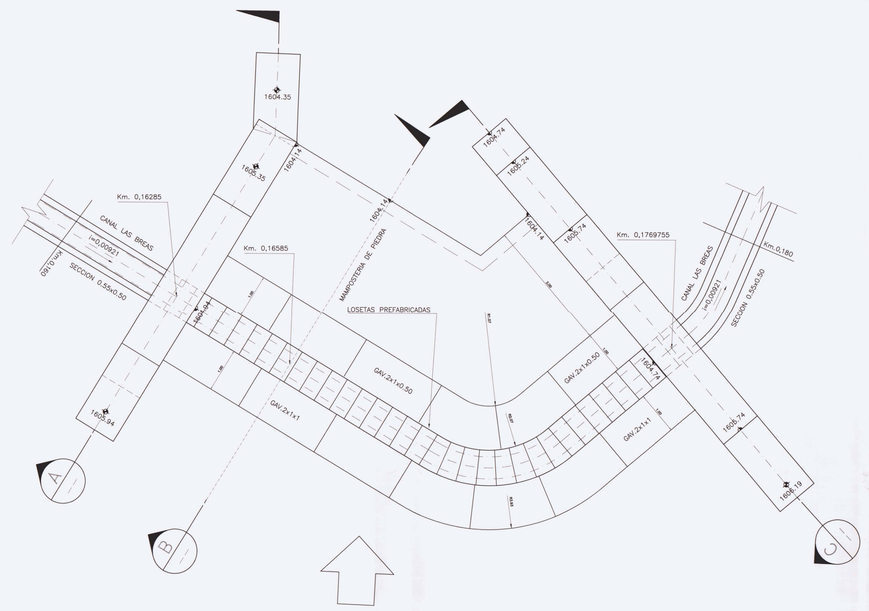
CANAL LAS BREAS
CRUCE DE QUEBRADA

CRUCE DE QUEBRADA Km.0,1769755

PLANTA
ESC. 1:200



PLANTA
ESC.1:50



SECCION A
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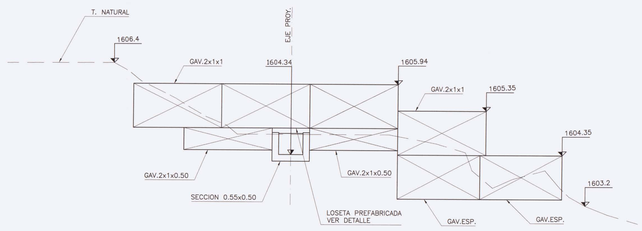
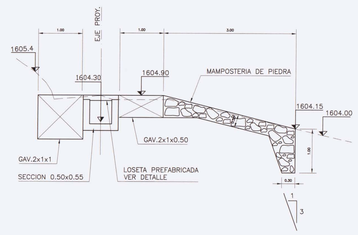
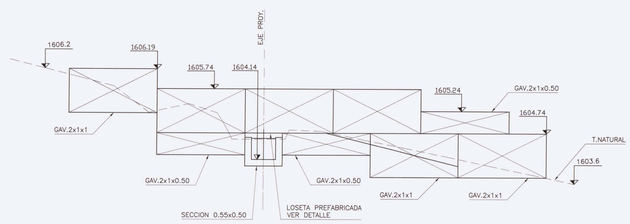


SECCION B
ESC.1:50

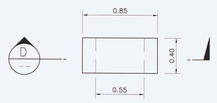


SECCION C
ESC.1:50

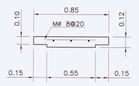


DETALLE LOSETA

PLANTA
ESC. 1:25

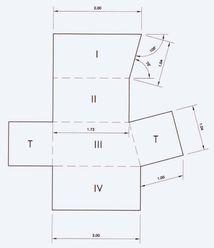


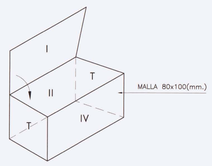
SECCION D
ESC.1:25

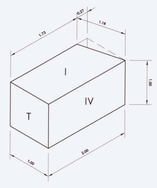


GAVION ESPECIAL
ESC. 1:50

GAVION DESPLEGADO







CUADRO DE PR

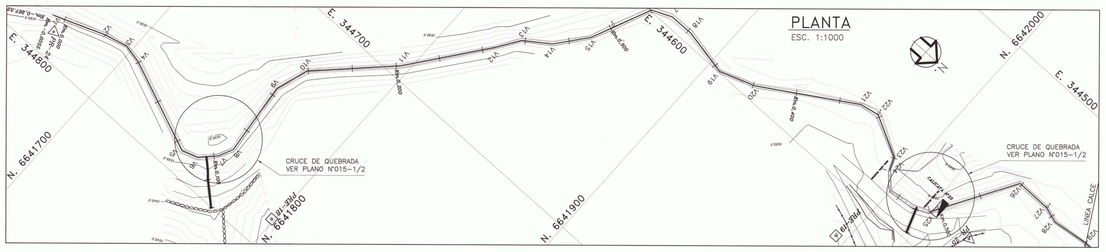
PR	NORTE	ESTE	COTA (m.)
18	6639584.79	345179.59	1605.47

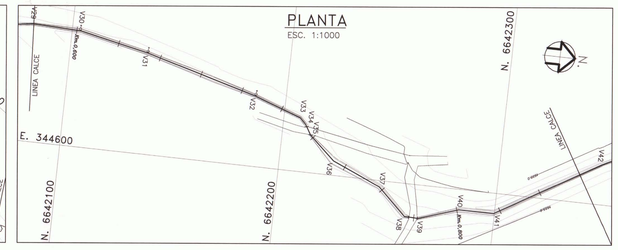
CUADRO DE PRE

PR	NORTE	ESTE	COTA (m.)
13	6639753.23	345177.77	1611.22

GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISIÓN NACIONAL DE RIEGO	Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo		Título Plano: CANAL LAS BREAS CRUCE DE QUEBRADA Km 0.177 PLANTAS Y DETALLES
CONSULTOR: GCF Ingenieros Ltda.	Escala: Indicadas	Proyección Cartográfica: UTM (Universal Transversal de mercator) Huso 19 Sur Datum PSAD 1956	Fecha: FEBRERO 2010	Lámina: 013-1/1

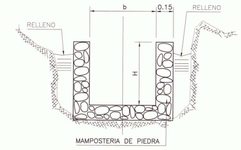
CANAL TOTORAL–EL BOSQUE





SECCION TIPO

S/E



CUADRO DESARROLLO DE CURVAS Y VERTICES

VERTICE	COORDENADAS UBICACION							INICIO	FIN
N°	ESTE (m)	NORTE (m)	VERTICE	ANGULO (s)	RADIO (m)	TANGENTE (m)	DESARROLLO (m)	CURVA (m)	CURVA (m)
1	344782.814	6641662.964	0					0.0	0.0
2	344773.701	6641686.711	25.44	7.28	2.5	0.14	0.29	25.3	25.6
3	344771.026	6641697.085	36.15	29.05	2.5	0.58	1.14	35.6	36.7
4	344772.803	6641705.674	44.92	11.16	2.5	0.22	0.44	44.7	45.1
5	344789.577	6641747.760	90.22	44.16	2.5	0.80	1.73	89.3	91.0
6	344787.195	6641755.084	97.93	-31.41	2.5	0.63	1.23	97.2	98.4
7	344780.318	6641781.663	107.45	-10.48	2.5	0.21	0.80	106.9	107.7
8	344773.857	6641764.714	114.59	-35.01	2.5	0.71	1.37	113.8	115.1
9	344769.769	6641760.998	148.88	27.02	2.5	0.54	1.06	148.2	149.2
10	344724.589	6641765.957	164.85	29.87	2.5	0.60	1.17	164.1	165.2
11	344699.458	6641746.063	207.44	-8.74	2.5	0.17	0.34	207.1	207.4
12	344659.801	6641852.282	250.90	-4.06	2.5	0.08	0.16	250.6	250.8
13	344649.118	6641826.342	263.71	23.52	2.5	0.47	0.92	263.0	264.0
14	344640.963	6641840.822	277.79	-17.94	2.5	0.35	0.70	277.4	278.1
15	344621.511	6641851.906	295.61	-16.45	2.5	0.32	0.65	295.3	295.9
16	344598.410	6641863.999	320.74	47.28	2.5	0.87	1.86	319.9	321.7
17	344595.431	6641873.025	335.60	25.07	2.5	0.50	0.98	334.8	335.8
18	344580.194	6641884.101	346.68	13.14	2.5	0.26	0.51	346.4	346.9
19	344569.470	6641905.847	368.84	-34.35	2.5	0.69	1.35	367.8	369.2
20	344563.564	6641922.258	386.29	-13.46	2.5	0.27	0.53	385.7	386.2
21	344567.658	6641963.871	435.30	23.82	2.5	0.47	0.94	434.5	435.4
22	344566.028	6641972.696	444.28	41.83	2.5	0.85	1.64	443.4	445.1
23	344575.474	6641991.092	464.96	44.84	2.5	0.92	1.76	463.6	465.4
24	344581.401	6641993.543	471.37	-59.55	2.5	1.52	2.72	469.3	472.1
25	344583.842	6642013.454	497.38	-71.58	2.5	1.58	2.81	495.0	497.8
26	344546.109	6642041.585	540.95	66.77	2.5	1.45	2.82	539.5	541.0
27	344546.287	6642058.033	557.40	18.27	2.5	0.36	0.72	555.6	556.3
28	344548.520	6642065.310	565.07	-28.83	2.5	0.53	1.05	563.0	564.1
29	344546.428	6642083.150	581.98	10.23	2.5	0.20	0.40	580.3	580.7
30	344547.234	6642103.889	603.14	11.07	2.5	0.22	0.43	602.1	602.5
31	344553.947	6642135.228	635.79	3.72	2.5	0.07	0.15	634.3	634.4
32	344567.894	6642158.044	658.51	4.63	2.5	0.09	0.18	657.0	657.1
33	344575.585	6642207.381	711.16	27.68	2.5	0.55	1.09	709.2	710.2
34	344578.313	6642220.156	725.05	23.76	2.5	0.47	0.93	723.5	724.4
35	344582.830	6642221.953	730.45	-18.60	2.5	0.37	0.73	729.6	730.3
36	344593.413	6642234.434	736.15	-20.80	2.5	0.41	0.82	735.3	736.1
37	344602.889	6642246.683	746.13	-23.80	2.5	0.47	0.93	745.2	746.1
38	344614.954	6642259.329	777.62	-46.24	2.5	0.90	1.82	775.8	777.6
39	344613.175	6642283.533	793.83	-22.37	2.5	0.44	0.88	793.0	793.9
40	344609.269	6642283.646	802.88	19.61	2.5	0.39	0.77	800.9	801.7
41	344609.153	6642299.673	818.31	-12.26	2.5	0.24	0.48	817.8	818.3
42	344581.737	6642346.521	873.17	4.23	2.5	0.08	0.17	871.5	871.6
43	344573.830	6642358.325	886.39	-43.50	2.5	0.85	1.74	884.1	885.4
44	344576.019	6642364.171	892.23	-47.96	2.5	0.99	1.88	889.6	891.5
45	344568.701	6642383.858	918.45	54.61	2.5	1.14	2.14	915.6	917.7
46	344559.842	6642390.874	925.53	-47.47	2.5	0.98	1.86	922.7	924.5
47	344545.081	6642411.602	950.86	35.29	2.5	0.71	1.39	949.2	949.8
48	344544.717	6642417.858	957.13	-42.91	2.5	0.88	1.69	954.2	955.9
49	344534.852	6642438.834	971.89	-37.67	2.5	0.68	1.28	969.2	970.4
50	344531.605	6642443.426	986.84	-31.93	2.5	0.64	1.25	984.1	985.3
51	344522.750	6642453.511	1000.28	33.65	2.5	0.68	1.32	997.4	998.8
52	344521.545	6642459.713	1006.58	-21.76	2.5	0.43	0.85	1004.0	1004.8
53	344511.169	6642473.275	1026.98	26.22	2.5	0.53	1.03	1024.5	1025.5
54	344509.530	6642490.658	1040.46	-42.08	2.5	0.86	1.66	1037.4	1039.1
55	344502.864	6642495.125	1046.39	45.50	2.5	0.91	1.79	1044.5	1046.3
56	344502.005	6642509.082	1061.68	-54.22	2.5	1.11	2.13	1059.4	1061.5
57	344500.172	6642518.051	1076.54	36.55	2.5	0.74	1.44	1073.3	1074.8
58	344497.941	6642524.183	1083.05	-17.54	2.5	0.35	0.69	1080.1	1080.7
59	344487.973	6642530.484	1089.37	-26.98	2.5	0.54	1.06	1086.3	1087.4
60	344480.709	6642546.809	1107.23	-26.16	2.5	0.53	1.03	1104.2	1105.2
61	344470.988	6642555.702	1120.41	36.64	2.5	0.74	1.44	1117.1	1118.6
62	344468.009	6642565.020	1127.45	-31.93	2.5	0.64	1.25	1124.2	1125.4
63	344460.514	6642578.624	1145.95	12.36	2.5	0.24	0.49	1143.1	1143.6
64	344449.153	6642606.618	1183.72	14.11	2.5	0.28	0.55	1181.3	1181.8
65	344444.465	6642634.743	1204.68	-46.71	2.5	0.96	1.83	1201.1	1202.9
66	344441.226	6642637.333	1208.82	25.99	2.5	0.52	1.02	1205.8	1206.8
67	344435.109	6642648.791	1221.81	13.45	2.5	0.27	0.53	1218.8	1219.4
68	344418.955	6642677.294	1251.46	14.98	2.5	0.29	0.58	1248.5	1249.0
69	344426.359	6642691.038	1265.22	-7.33	2.5	0.14	0.29	1262.4	1262.6
70	344430.981	6642724.687	1299.39	-17.16	2.5	0.34	0.67	1296.2	1296.9
71	344411.168	6642746.198	1322.94	35.48	2.5	0.72	1.35	1319.5	1320.9
72	344402.602	6642757.227	1334.06	-16.53	2.5	0.33	0.65	1331.4	1332.1
73	344400.858	6642778.168	1355.18	-52.55	2.5	1.09	2.06	1351.3	1353.4
74	344404.103	6642782.233	1362.23	42.60	2.5	0.87	1.67	1358.5	1360.2
75	344399.642	6642797.364	1378.00	-47.48	2.5	0.98	1.86	1374.1	1375.9
76	344392.641	6642807.545	1388.15	33.14	2.5	0.67	1.30	1384.9	1386.2
77	344381.729	6642820.957	1408.42	6.18	2.5	0.12	0.24	1405.4	1405.5
78	344372.948	6642840.886	1432.70	11.71	2.5	0.24	0.46	1429.9	1430.4
79	344367.562	6642863.769	1453.72	-7.28	2.5	0.14	0.29	1450.9	1451.2
80	344361.492	6642889.942	1480.06	-34.15	2.5	0.69	1.34	1476.3	1477.6
81	344359.193	6642907.909	1499.74	-52.79	2.5	1.07	2.07	1495.2	1497.3
82	344368.547	6642917.039	1509.69	-25.82	2.5	0.51	1.01	1505.9	1507.0
83	344361.056	6642924.099	1518.88	63.74	2.5	1.29	2.50	1513.4	1515.9
84	344362.378	6642937.122	1527.13	-50.62	2.5	1.02	1.99	1522.6	1524.6
85	344355.697	6642943.707	1538.69	29.62	2.5	0.59	1.16	1534.1	1535.2
86	344351.136	6642962.435	1561.02	33.88	2.5	0.72	1.41	1556.7	1558.1
87	344336.466	6642978.127	1579.72	-44.95	2.5	1.40	2.55	1573.9	1576.4
88	344346.573	6642989.388	1592.34	20.34	2.5	0.40	0.80	1588.0	1588.8
89	344343.413	6643025.980	1631.20	6.57	2.5	0.13	0.26	1627.2	1627.4
90	344328.002	6643048.281	1654.17	23.54	2.5	0.47	0.92	1649.8	1650.7
91	344329.236	6643057.778	1663.74	-36.36	2.5	0.73	1.43	1659.3	1660.7
92	344308.642	6643101.309	1711.90	5.19	2.5	0.10	0.20	1707.8	1708.1
93	344285.870	6643141.611	1756.29	6.94	2.5	0.13	0.27	1752.7	1752.9
94	344281.840	6643175.694	1791.00	-64.93	2.5	1.40	2.55	1785.7	1788.2
95	344270.252	6643178.018	1803.05	33.20	2.5	0.65	1.26	1798.2	1799.5
96	344240.764	6643207.694	1844.25	22.42	2.5	0.44	0.88	1839.6	1840.5
97	344239.230	6643210.913	1847.82	46.80	2.5	0.96	1.83	1842.9	1844.8
98	344241.612	6643217.620	1854.81	-46.28	2.5	0.95	1.80	1849.5	1851.4
99	344213.923	6643233.109	1871.51	-43.57	2.5	0.86	1.73	1866.6	1868.3
100	344224.355	6643237.618	1882.51	33.18	2.5	0.67	1.30	1877.9	1879.2
101	344222.173	6643240.145	1888.32	55.66	2.5	1.13	2.19	1880.6	1882.8
102	344225.736	6643253.715	1899.72	-49.55	2.5	1.03	1.95	1894.1	1896.0
103	344222.173	6643260.079	1907.06	37.81	2.5	0.77	1.48	1901.5	1903.0
104	344224.576	6643268.693	1916.70	-17.37	2.5	0.35	0.69	1913.7	1914.4
105	344218.538	6643336.264	1983.73	7.99	2.5	0.16	0.31	1978.8	1979.1
106	344218.509	6643371.348	2018.81	13.60	2.5	0.27	0.53	2013.7	2014.3
107	344221.819	6643386.669	2034.49	-21.14	2.5	0.42	0.83	2029.3	2030.1
108	344219.637	6643404.875	2052.83	22.84	2.5	0.45	0.90	2047.6	2048.4
109	344222.544	6643416.913	2065.27	-16.96	2.5	0.47	0.93	2059.9	2060.8
110	344219.439	6643462.843	2111.32	-20.28	2.5	0.72	1.43	2105.8	2107.2
111	344220.305	6643480.488	2129.07	-59.14	2.5	2.76	5.11	2121.5	2126.6
112	344219.180	6643493.009	2141.64	-55.39	2.5	3.01	5.66	2133.4	2139.0
113	344213.371	6643501.391	2151.83	-14.43	2.5	0.85	1.70	2145.1	2146.8
114	344210.962	6643554.176	2204.68	-78.11	2.5	5.99	10.43	2193.0	2203.5
115	344204.428	6643567.764	2219.75	-27.66	2.5	2.10	4.15	2210.5	2214.6
116	344200.189	6643606.401	2258.62	-13.26	2.5	1.10	2.19	2256.3	2252.5
117	344199.046	6643627.551	2279.80	-26.17	2.5	2.40	4.73	2270.1	2274.9
118	344201.801	6643637.408	2290.08	-63.30	2.5	6.78	12.43	2276.0	2288.4
119	344201.369	6643645.605	2298.30	-124.23	2.5	19.94	33.34	2269.9	2296.2
120	344183.509	6643671.325	2326.61	14.43	2.5	1.65	3.29	2316.9	2320.2
121	344184.984	6643685.166	2343.53	3.47	2.5	0.42	1.84	2321.7	2323.5
122	344185.455	6643695.636	2355.86	64.50	2.5	9.18	18.22	2324.1	2341.4
123	344175.909	6643712.953	2373.37	10.34	2.5	1.42	2.84	2347.7	2350.5
124	344182.614	6643728.213	2388.24	-28.34	2.5	3.88	7.68	2360.7	2368.4
125	344179.561	6643737.543	2399.88	5.47	2.5	0.93	1.66	2374.4	2376.1
126	344182.779	6643799.345	2461.87	-9.02	2.5	1.46	2.91	2436.7	2439.6
127	344190.638	6643839.362	2502.65	-1.20	2.5	0.22	0.44	2478.7	2479.1
128	344201.158	6643874.120	2538.96	36.14	2.5	6.56	12.77	2508.7	2521.4
129	344210.135	6643891.737	2558.64	-10.34	2.5	1.91	3.80	2554.9	2558.7
130	344210.182	6643914.787	2581.87	88.75	2.5	20.51	34.15	2537.3	2571.4
131	344213.475	6643932.037	2599.94	79.56	2.5	18.59	31.87	2550.8	2582.6
132	344229.302	6643945.096	2618.96	1.30	2.5	0.27	6.54	2580.8	2583.4
133	344237.631	6643983.807	2658.56	-16.41	2.5	3.56	7.09	2616.1	2623.2
134	344233.232	6643995.498	2671.05	-10.85	2.5	2.43	4.86	2633.7	2638.6
135	344230.448	6644009.519	2685.34	20.31	2.5	4.75	9.41	2644.1	2653.5
136	344223.999	6644020.179	2697.80	64.36	2.5	16.88	30.83	2644.9	2675.7
137	344218.469	6644024.019	2702.09	76.98	2.5	21.78	38.09	2671.4	2709.5
138	344222.299	6644067.307	2745.92	71.72	2.5	20.52	36.61	2681.0	2717.6
139	344234.123	6644078.359	2760.81	-37.23	2.5	10.09	15.59	2701.5	2725.1
140	344240.336	6644083.640	2770.38	-72.07	2.5	21.92	39.06	2699.1	2738.1

PERFIL LONGITUDINAL

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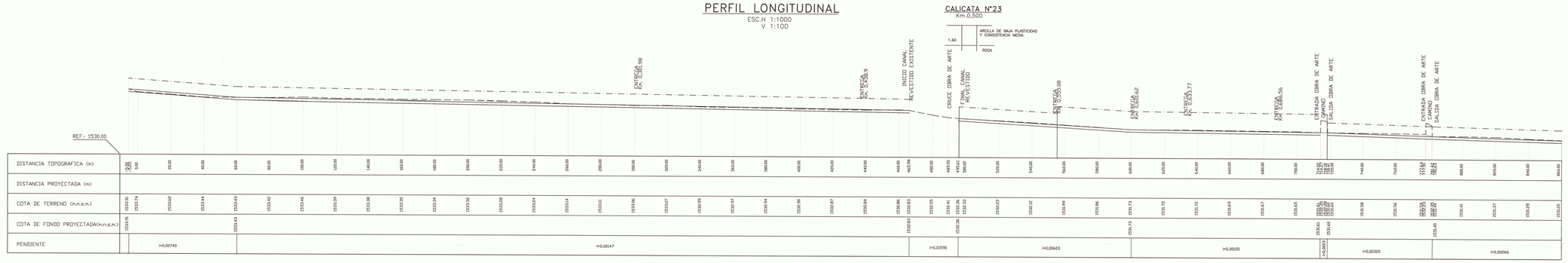
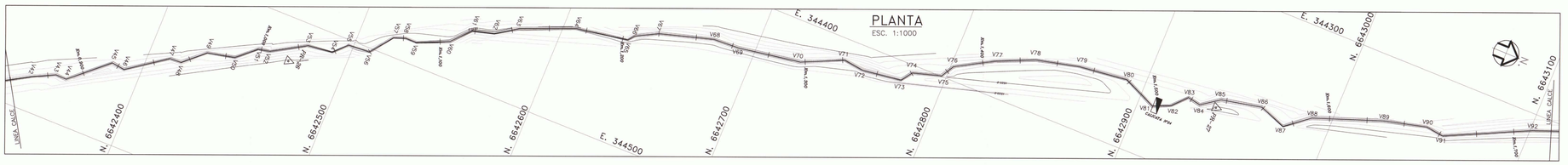
V 1:100





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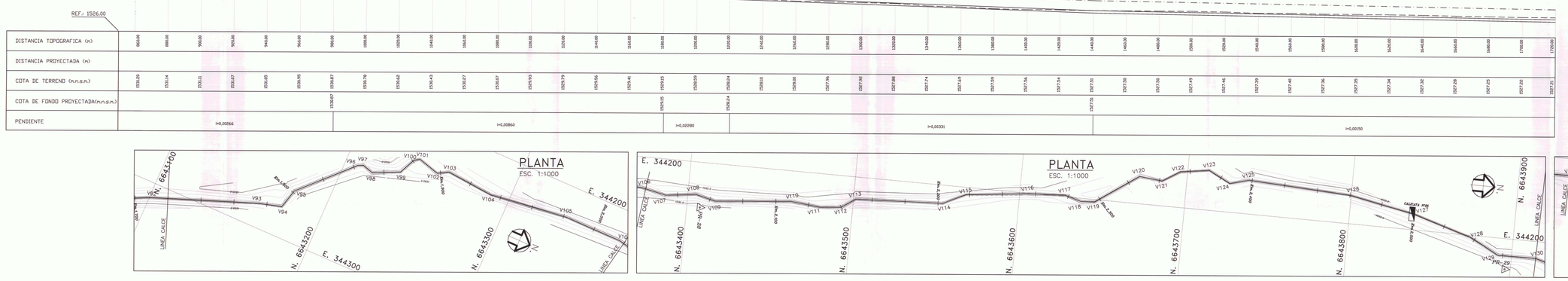

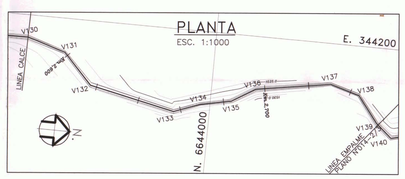

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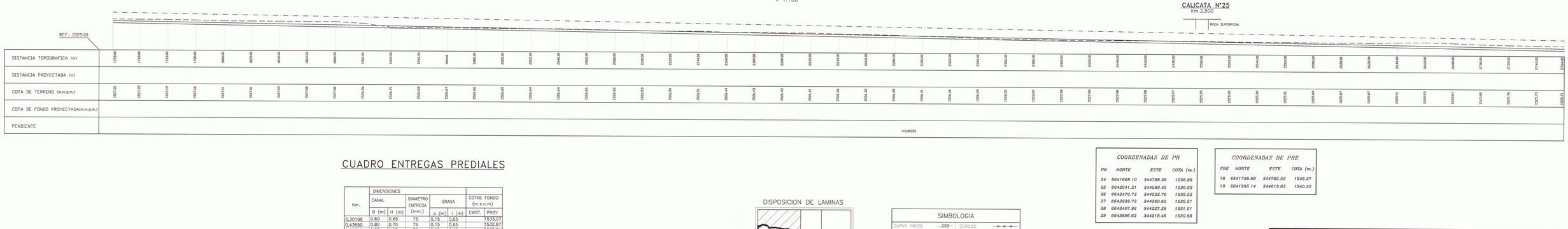


CUADRO DE SECCIONES

TRAMO	SECCION b(m)	SECCION H(m)	OBS.
0.000 – 0.498	0.80	0.85	
0.498 – 0.555	0.80	0.70	
0.555 – 0.718	1.00	1.10	
0.718 – 4.134	0.80	0.85	

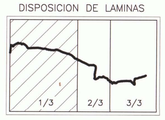
CUADRO ENTREGAS PREDIALES

Km.	DIMENSIONES CANAL B (m)	CANAL H (m)	DIAMETRO ENTREGA (mm.)	GRADA a (m)	GRADA I (m)	COTAS FONDO (m.s.n.m) EXIST.	COTAS FONDO (m.s.n.m) PROY.
0,30198	0.60	0.65	75	0,15	0,65		1533,07
0,43890	0.80	0.70	75	0,15	0,65		1532,87
0,55508	1.00	1.10	75	0,05	0,65		1532,0
0,60162	1.00	1.10	75	0,2	0,65		1531,73
0,63377	1.00	1.10	75	0,2	0,65		1531,69
0,68656	1.00	1.10	75	0,2	0,65		1531,64

NOTAS GENERALES :

– DETALLES DE ENTREGAS PREDIALES VER PLANO 014–3/3
– TODAS LAS OBRAS SON DE MAMPOSTERIA DE PIEDRAS.

DISPOSICION DE LAMINAS



SIMBOLOGIA

CURVA INDICE	250	CERCOS	
CURVA INTERMEDIA		CAM. PAVIMENTADO	
CAM. TIERRA		RIOS–ESTEROS	
VERTICE CANAL PROY.	VO	COTA FONDO PROY.	C.F.P.
EJE PROYECTO		PROYECTO	
TERRENO		BORDE CANAL	

COORDENADAS DE PR

PR	NORTE	ESTE	COTA (m.)
24	6641668.10	344788.39	1536.88
25	6642041.21	344580.45	1536.89
26	6642470.73	344522.76	1535.52
27	6642939.73	344360.62	1530.51
28	6643407.92	344227.28	1531.51
29	6643896.62	344218.48	1530.88

COORDENADAS DE PRE

PRE	NORTE	ESTE	COTA (m.)
18	6641798.88	344785.59	1546.27
19	6641995.14	344619.83	1540.20

GOBIERNO DE CHILE
MINISTERIO DE AGRICULTURA
COMISION NACIONAL DE RIEGO

CONSULTOR: GCF Ingenieros Ltda.

Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo

Título Plano: CANAL TOTORAL - EL BOSQUE PLANTA Y PERFIL LONGITUDINAL

Escala: Indicadas

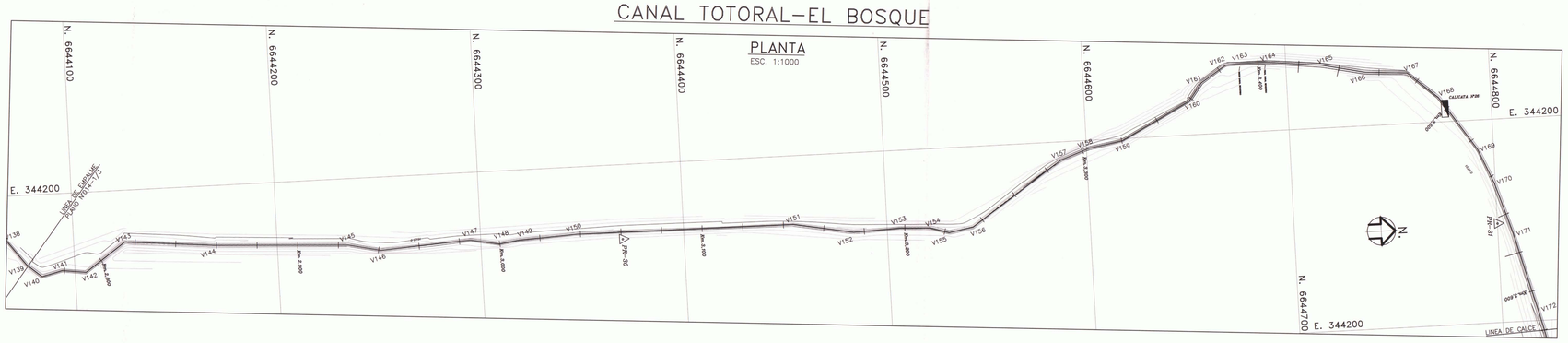
Proyección Cartográfica: UTM (Universal Transversal de mercator) Huso 19 Sur Datum PSAD 1956

Fecha: FEBRERO 2010

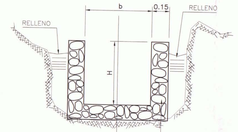
Lámina: 014-1/3

CANAL TOTORAL–EL BOSQUE

PLANTA
ESC. 1:1000



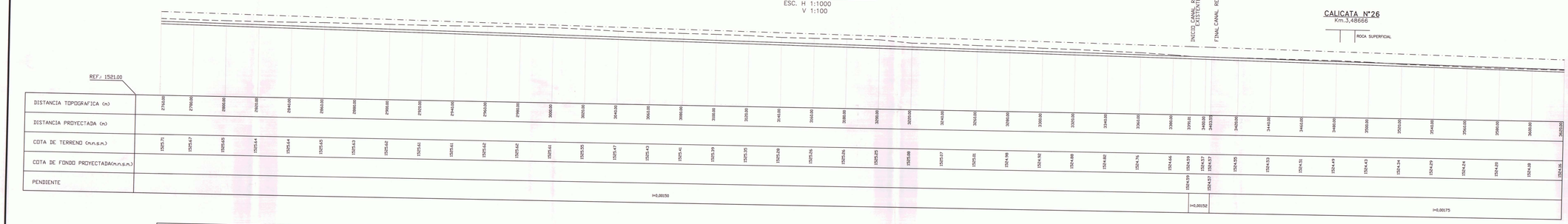
SECCION TIPO
S/E



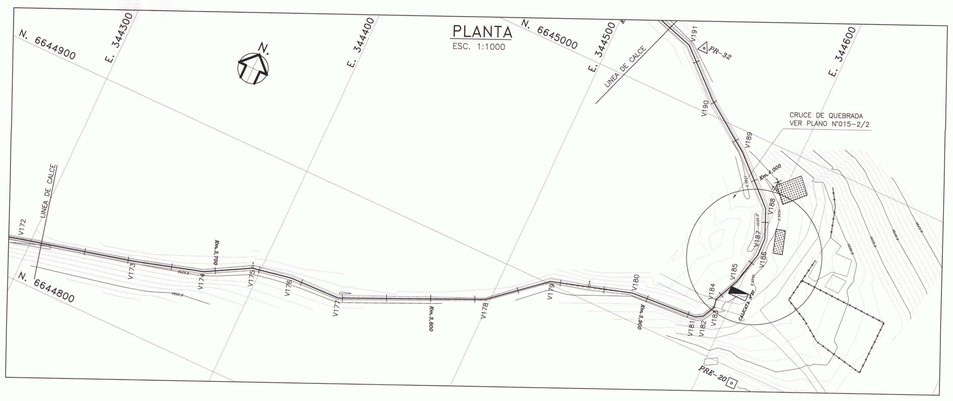
CUADRO DESARROLLO CURVAS Y VERTICES

VERTICE	COORDENADAS UBICACION		VERTICE	ANGULO	RADIO	TANGENTE	DESARROLLO	INICIO CURVA	FIN CURVA
N°	ESTE (m)	NORTE (m)	(m)	(s)	(m)	(m)	(m)	(m)	(m)
139	344234.123	6644018.359	2780.81	−37.03	2.5	10.09	19.16	2701.9	2721.5
140	344240.336	6644083.640	2770.38	−72.07	2.5	21.92	39.06	2693.1	2732.1
141	344237.833	6644093.678	2780.73	−12.91	2.5	3.09	17.78	2717.5	2735.3
142	344239.312	6644105.345	2792.49	−83.66	2.5	28.25	48.98	2709.7	2757.6
143	344225.429	6644125.059	2816.60	10.49	2.5	3.10	6.18	2750.5	2756.7
144	344229.338	6644169.138	2860.85	12.01	2.5	3.79	7.52	2794.1	2801.6
145	344232.589	6644235.056	2926.80	31.16	2.5	9.86	19.33	2853.9	2873.3
146	344235.965	6644250.836	2942.59	−2.95	2.5	0.94	1.88	2870.8	2872.7
147	344233.350	6644295.079	2987.25	67.48	2.5	24.32	43.99	2899.5	2943.5
148	344233.854	6644309.145	3001.63	35.62	2.5	12.28	23.91	2921.7	2945.6
149	344234.441	6644318.929	3011.52	24.17	2.5	8.43	16.65	2934.4	2951.0
150	344233.934	6644347.695	3040.32	−74.84	2.5	29.65	52.33	2941.8	2994.1
151	344233.747	6644454.116	3146.74	−17.61	2.5	6.30	12.59	3064.5	3077.1
152	344239.060	6644483.149	3176.65	57.63	2.5	22.61	42.09	3078.1	3120.2
153	344238.171	6644506.197	3199.32	−32.39	2.5	12.35	24.17	3107.9	3132.0
154	344239.885	6644521.197	3214.34	−58.03	2.5	23.78	44.21	3110.9	3155.1
155	344241.633	6644530.564	3224.10	13.08	2.5	5.10	10.17	3136.0	3146.2
156	344239.566	6644542.296	3236.00	14.56	2.5	5.82	11.55	3147.5	3159.0
157	344208.914	6644587.130	3280.32	−4.40	2.5	1.78	3.56	3205.5	3209.0
158	344204.008	6644600.841	3304.88	−56.77	2.5	20.09	40.82	3196.7	3237.5
159	344200.917	6644617.965	3322.28	−35.57	2.5	13.35	26.89	3222.5	3249.4
160	344183.261	6644651.725	3360.38	50.00	2.5	21.00	41.80	3230.6	3272.4
161	344174.632	6644658.090	3371.11	29.51	2.5	12.10	24.12	3250.6	3274.7
162	344166.630	6644670.482	3385.86	−57.00	2.5	21.13	40.50	3268.4	3309.0
163	344166.249	6644677.645	3393.03	−70.22	2.5	25.37	50.59	3268.7	3319.3
164	344166.291	6644692.154	3405.42	−50.88	2.5	18.37	33.43	3285.9	3319.3
165	344169.088	6644717.716	3433.24	−49.91	2.5	24.71	48.76	3279.8	3328.5
166	344173.688	6644736.963	3454.98	−51.43	2.5	24.60	46.83	3304.9	3351.8
167	344175.073	6644756.453	3474.48	−39.07	2.5	25.86	48.88	3322.9	3371.7
168	344181.921	6644774.224	3495.09	−60.58	2.5	19.49	37.75	3346.9	3384.6
169	344214.331	6644792.303	3527.39	−48.03	2.5	35.71	69.47	3352.5	3412.0
170	344231.455	6644799.540	3545.66	−104.28	2.5	25.16	47.91	3386.0	3433.9
171	344256.726	6644807.681	3572.22	−146.24	2.5	68.89	105.65	3359.0	3464.6
172	344294.301	6644817.598	3611.07	−112.08	2.5	80.49	117.07	3379.4	3426.9
173	344345.358	6644833.115	3663.64	−129.78	2.5	109.72	137.60	3374.9	3394.5
174	344376.888	6644839.287	3698.48	−113.92	2.5	85.40	122.58	3394.2	3516.8
175	344396.244	6644849.996	3718.80	−93.57	2.5	62.81	102.15	3160.1	3262.2
176	344414.064	6644853.313	3736.73	−116.42	2.5	91.51	128.63	3156.6	3285.2
177	344437.109	6644864.067	3759.19	−154.90	2.5	163.35	173.87	3003.8	3177.7
178	344498.028	6644881.507	3826.59	−104.95	2.5	79.71	119.52	3053.8	3173.3
179	344501.287	6644890.217	3837.08	−65.45	2.5	41.50	75.56	3077.8	3153.4
180	344557.227	6644912.016	3894.61	−127.86	2.5	117.12	149.75	3077.2	3226.9
181	344587.443	6644914.067	3924.92	−120.23	2.5	104.31	142.59	3095.8	3238.4
182	344590.750	6644915.973	3928.72	−92.51	2.5	67.98	135.75	3135.6	3271.3
183	344583.505	6644927.666	3939.04	−146.24	2.5	80.49	117.07	3179.4	3296.5
184	344592.866	6644925.384	3938.81	−10.59	2.5	2.32	4.64	3926.9	3931.5
185	344597.847	6644936.605	3951.09	−48.84	2.5	10.64	21.26	3929.8	3951.1
186	344601.451	6644951.366	3966.28	−53.51	2.5	30.64	58.49	3941.2	3999.7
187	344601.512	6644958.436	3974.16	−24.56	2.5	15.64	31.43	3948.4	3979.8
188	344595.870	6644971.806	3987.83	−24.56	2.5	15.79	31.19	3972.3	3003.5
189	344579.579	6644990.199	4005.77	−56.52	2.5	47.01	86.21	3953.3	4039.5
190	344553.316	6645006.795	4024.70	−52.85	2.5	36.77	69.27	3983.5	3052.8
191	344531.107	6645024.628	4070.02	65.03	2.5	39.71	73.27	3003.9	3077.1
192	344483.326	6645039.927	4112.10	−109.67	2.5	47.91	87.34	3077.4	3164.8
193	344472.782	6645048.591	4135.79	80.83	2.5	100.76	140.02	3008.3	3151.2
194	344448.122	6645070.578	4171.92	24.11	2.5	64.45	111.09	3005.6	3116.7
195	344436.063	6645146.617	4240.66	48.03	2.5	16.96	33.53	3111.1	3144.6
196	344410.773	6645176.176	4279.56	52.07	2.5	35.46	67.52	3121.1	3188.8
197	344394.461	6645188.273	4297.68	142.03	2.5	23.59	45.59	3169.0	3214.6
198	344390.473	6645179.258	4284.44	50.36	2.5	186.89	204.14	3022.5	3226.7
199	344393.020	6645193.978	4324.36	30.61	2.5	38.62	75.17	3071.8	3086.9
200	344399.875	6645207.985	4336.52	−22.42	2.5	22.92	44.95	3039.1	3084.1
201	344400.436	6645242.042	4374.02	12.97	2.5	16.82	33.28	3080.2	3093.6
202	344402.121	6645272.788	4404.78	−52.49	2.5	8.76	17.45	3099.3	3116.7
203	344398.442	6645304.108	4436.64	−131.16	2.5	41.10	79.57	3099.1	3178.6
204	344391.351	6645316.565	4448.09	−115.45	2.5	164.11	179.47	3004.1	3206.3
205	344407.608	6645352.334	4486.47	−165.04	2.5	125.80	178.62	2928.8	3107.5
206	344417.588	6645364.547	4504.53	−124.03	2.5	145.89	236.07	2779.3	3015.4
207	344421.427	6645377.654	4518.75	−174.03	2.5	367.15	369.44	2416.0	2785.5
208	344426.952	6645376.644	4524.36	−232.17	2.5	496.10	273.25	1933.9	2207.1
209	344432.976	6645378.630	4534.36	−232.17	2.5	389.66	366.44	1526.2	1892.6
210	344437.624	6645383.287	4539.01	−164.50	2.5	413.50	367.73	1159.7	1263.0
211	344436.089	6645422.860	4578.65	−89.38	2.5	358.11	284.87	897.9	762.8
212	344427.653	6645437.282	4583.37	−131.30	2.5	87.54	145.32	758.7	522.0
213	344438.963	6645446.036	4604.21	−189.82	2.5	174.50	215.53	256.7	472.7
214	344434.492	6645459.007	4616.49	−118.46	2.5	1376.71	314.57	−1008.1	−693.6
215	344462.832	6645476.370	4649.22	−128.06	2.5	142.92	198.17	−2140.9	−1942.7
216	344468.910	6645476.373	4655.38	−186.66	2.5	1031.46	318.12	−3201.1	−2883.0
217	344470.982	6645478.704	4658.90	−35.17	2.5	50.66	94.90	−3951.6	−3866.7

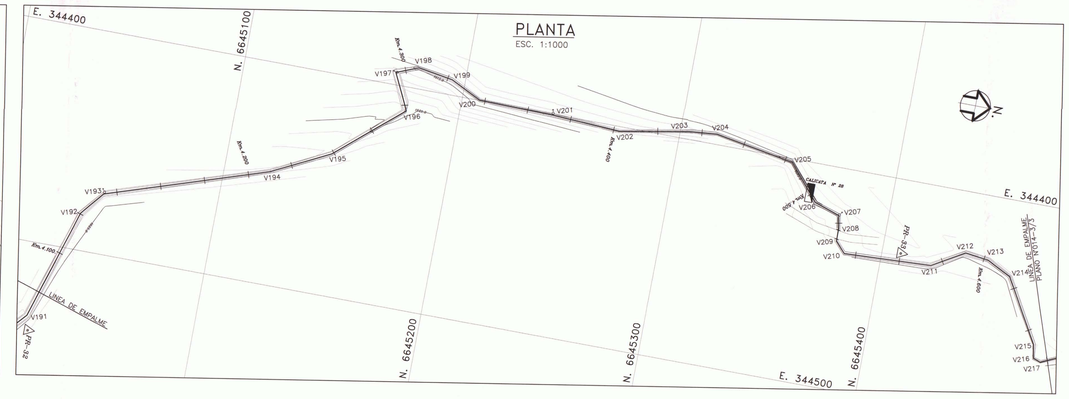
PERFIL LONGITUDINAL
ESC. H 1:1000
V 1:100



PLANTA
ESC. 1:1000



PLANTA
ESC. 1:1000

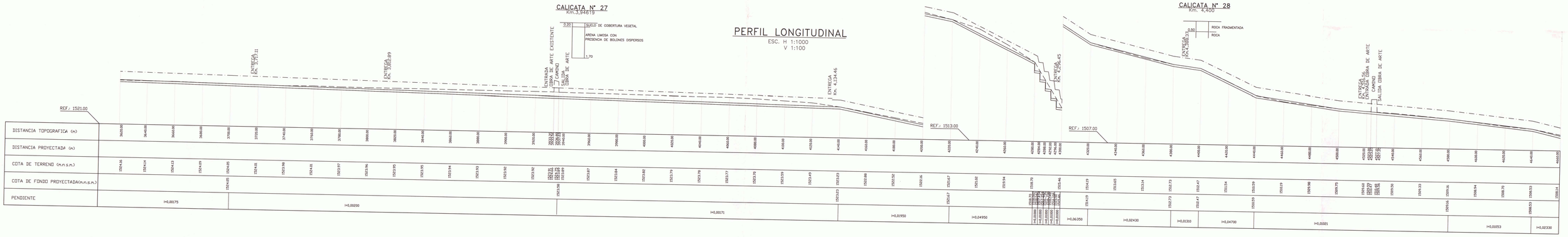


CUADRO DE SECCIONES

TRAMO	SECCION b(m)	SECCION H(m)	OBS.
0.718 – 4.134	0.60	0.60	
4.134 – 4.680	0.60	0.50	

CALICATA N° 27
Km.3,94619

PERFIL LONGITUDINAL
ESC. H 1:1000
V 1:100

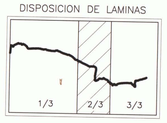


CUADRO ENTREGAS PREDIALES

Km.	DIMENSIONES CANAL B (m)	DIMENSIONES CANAL H (m)	DIAMETRO ENTREGA (mm.)	GRADA a (m)	GRADA I (m)	COTAS FONDO (m.s.n.m) EXIST.	COTAS FONDO (m.s.n.m) PROY.
3,71711	0.60	0.60	75	0,10	0,65		1524,02
3,81289	0.60	0.60	75	0,10	0,65		1523,83
4,13446	0.60	0.50	75	0,10	0,65		1523,24
4,29645	0.60	0.50	75	0,05	0,75		1515,50
4,38837	0.60	0.50	75	0,05	0,75		1512,62
4,51656	0.60	0.50	75	0,05	0,75		1509,81

NOTAS GENERALES :
- DETALLES DE ENTREGAS PREDIALES VER PLANO 014–3/3
- TODAS LAS OBRAS SON DE MAMPOSTERIA DE PIEDRAS.

DISPOSICION DE LAMINAS



SIMBOLOGIA			
CURVA INDICE	250	CERCOS	
CURVA INTERMEDIA		CAM. PAVIMENTADO	
CAM. TIERRA		RIOS–ESTEROS	
VERTICE CANAL PROY.	V0	COTA FONDO PROY. C.F.P.	
EJE PROYECTO		PROYECTO	
TERRENO		BORDE CANAL	

COORDENADAS DE PRE			
PRE	NORTE	ESTE	COTA (m.)
20	6644893.83	344615.20	153475

COORDENADAS DE PR			
PR	NORTE	ESTE	COTA (m.)
30	6644369.92	344236.64	1528.51
31	6644800.08	344251.33	1528.22
32	6645026.17	344539.80	1525.99
33	6645408.49	344433.19	1508.46

GOBIERNO DE CHILE
MINISTERIO DE AGRICULTURA
COMISION NACIONAL DE RIEGO

Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo

Título Plano: CANAL TOTORAL - EL BOSQUE PLANTA Y PERFIL LONGITUDINAL

CONSULTOR: GCF Ingenieros Ltda.

Escala: Indicadas

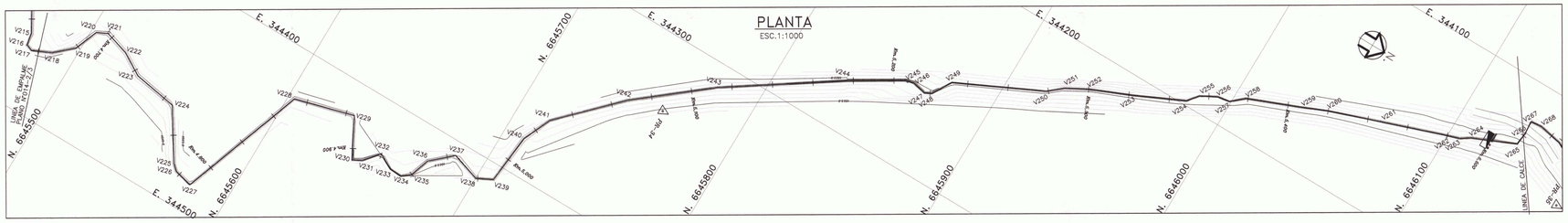
Proyección Cartográfica: UTM (Universal Transversal de mercator) Huso 19 Sur Datum PSAD 1956

Fecha: FEBRERO 2010

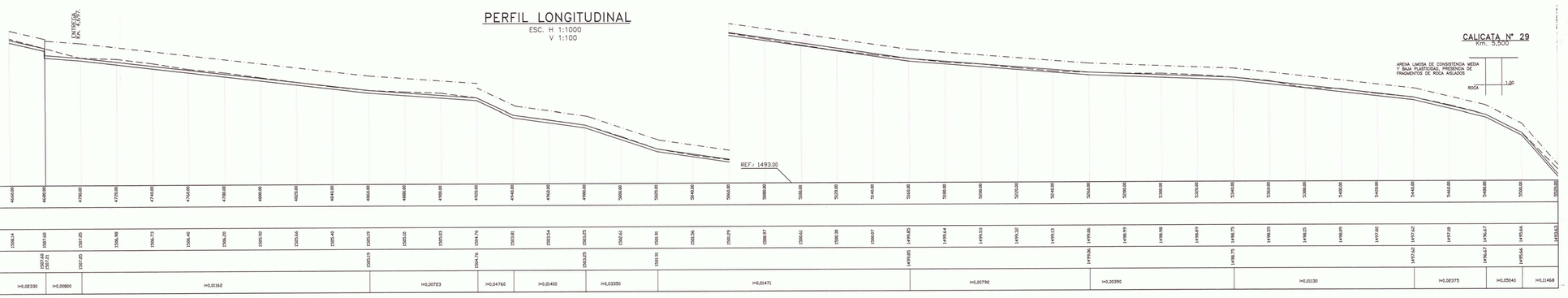
Lámina: 014-2/3

CANAL TOTORAL–EL BOSQUE

PLANTA
ESC.1:1000



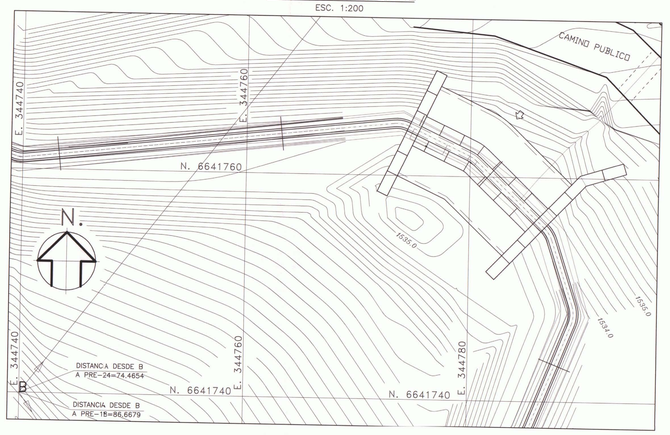
PERFIL LONGITUDINAL
ESC. H 1:1000
V 1:100



| | | |

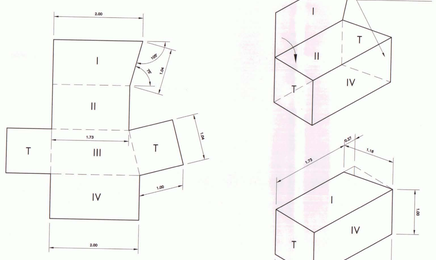
CRUCE DE QUEBRADAS –CANAL TOTORAL EL BOSQUE

CRUCE QUEBRADA Km.0,09366
PLANTA GENERAL
ESC. 1:200



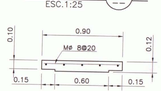
GAVION ESPECIAL
ESC. 1:50

GAVION DESPLEGADO

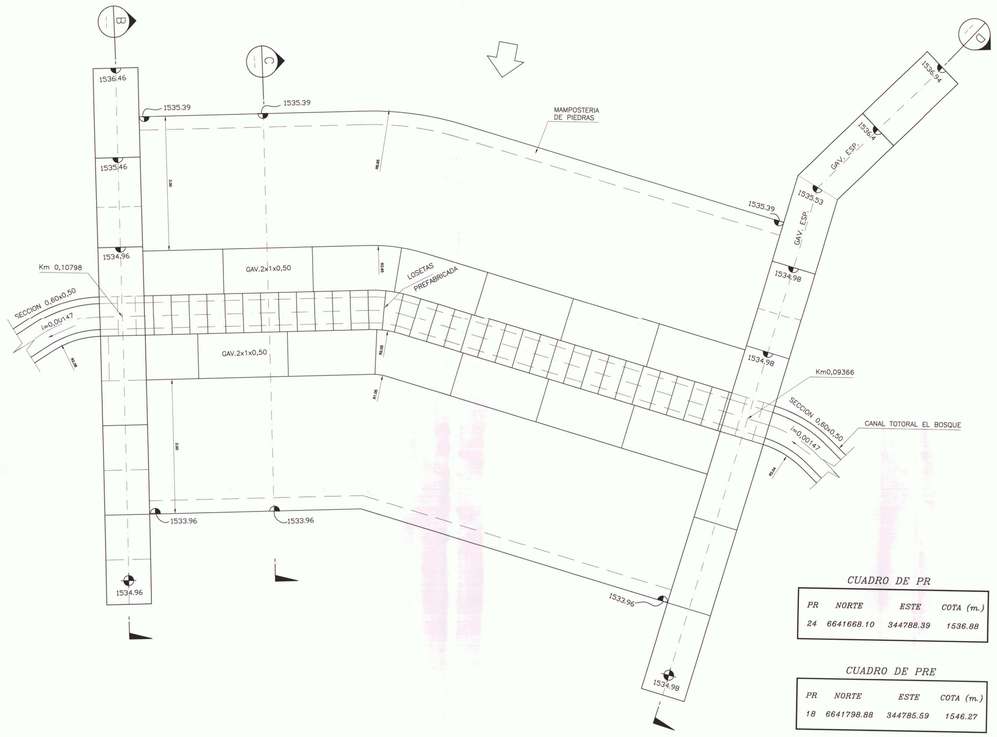


DETALLE LOSETA
PLANTA
ESC. 1:25

SECCION A
ESC.1:25



PLANTA
ESC. 1:50



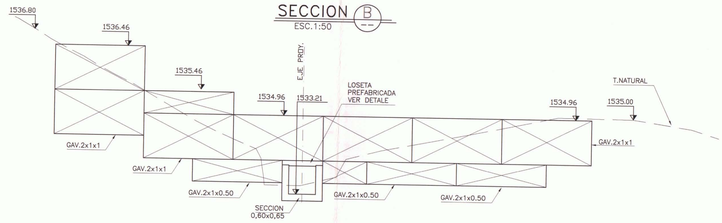
CUADRO DE PR

PR	NORTE	ESTE	COTA (m.)
24	6641668.10	344788.39	1536.88

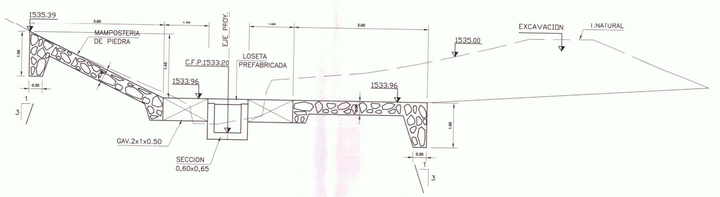
CUADRO DE PRE

PR	NORTE	ESTE	COTA (m.)
18	6641798.88	344785.59	1546.27

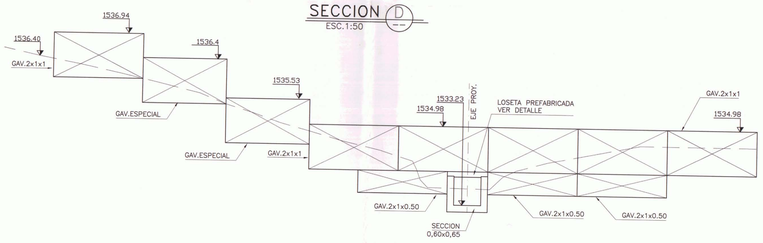
SECCION B
ESC.1:50



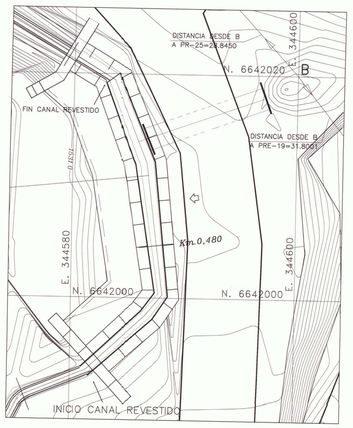
SECCION C
ESC.1:50



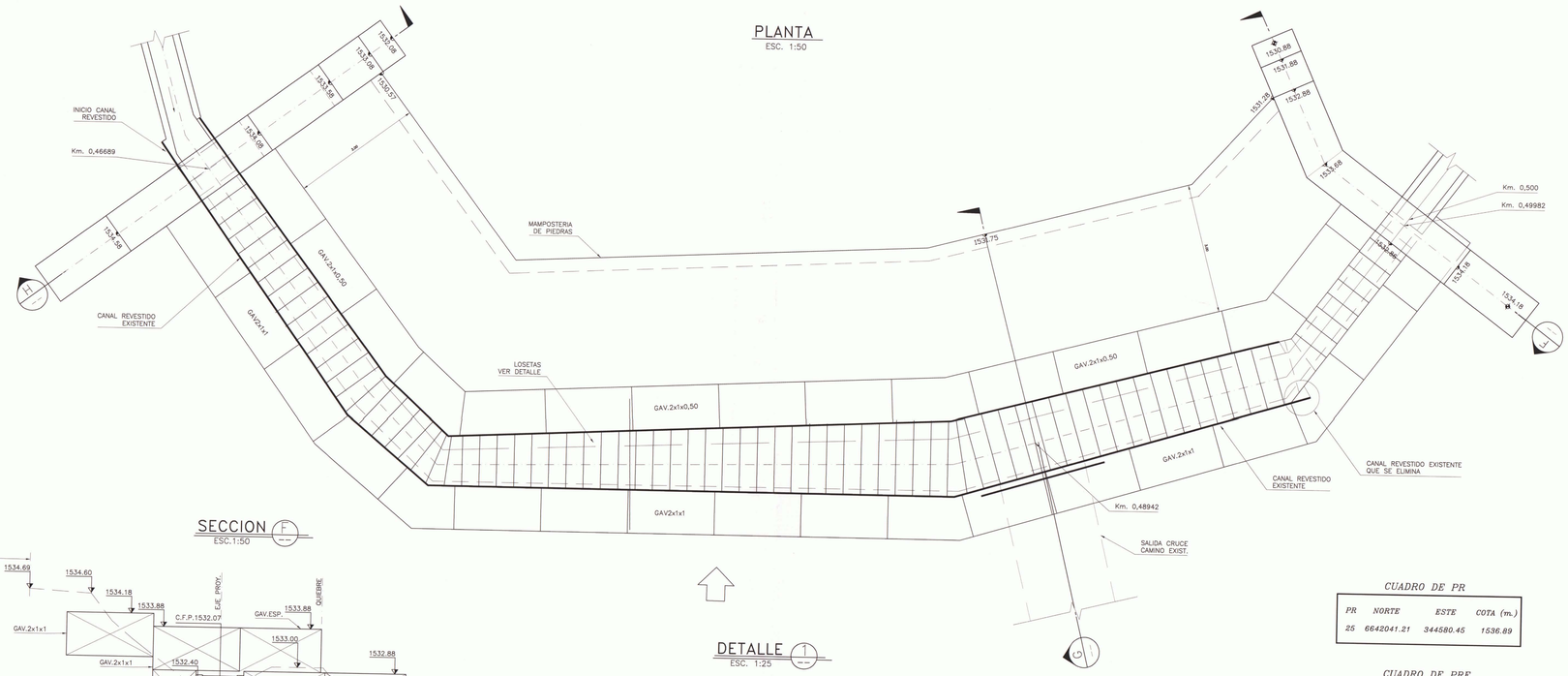
SECCION D
ESC.1:50



CRUCE QUEBRADA Km. 0,46689
PLANTA GENERAL
ESC. 1:200



PLANTA
ESC. 1:50



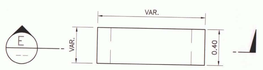
CUADRO DE PR

PR	NORTE	ESTE	COTA (m.)
25	6642041.21	344580.45	1536.89

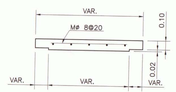
CUADRO DE PRE

PR	NORTE	ESTE	COTA (m.)
19	6641995.14	344619.83	1540.20

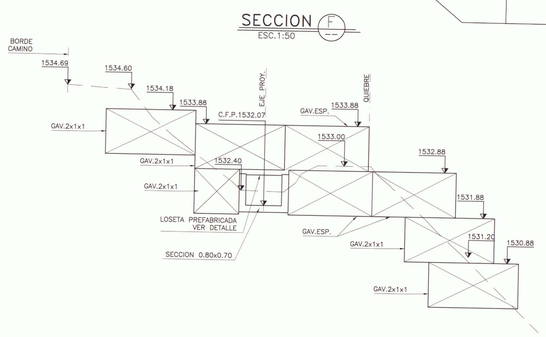
DETALLE LOSETA
PLANTA
ESC. 1:25



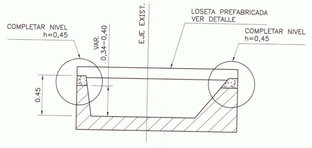
SECCION E
ESC.1:25



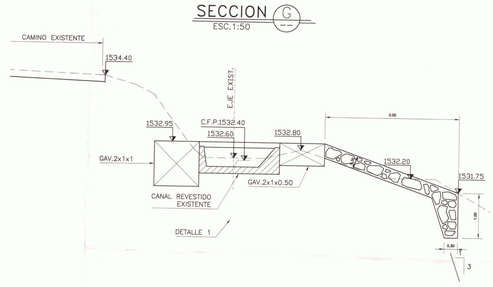
SECCION F
ESC.1:50



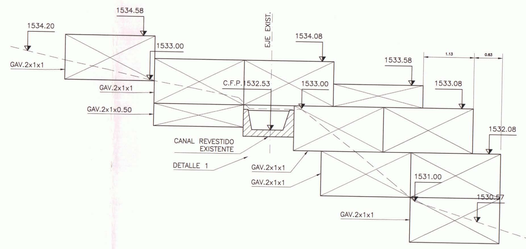
DETALLE 1
ESC. 1:25



SECCION G
ESC.1:50



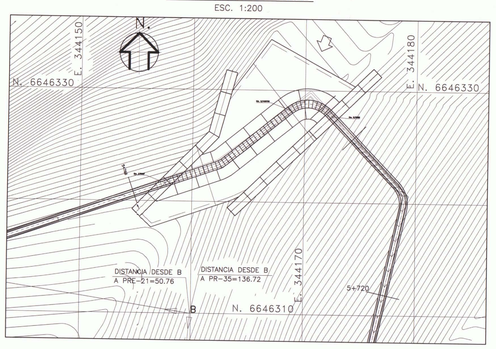
SECCION H
ESC.1:50



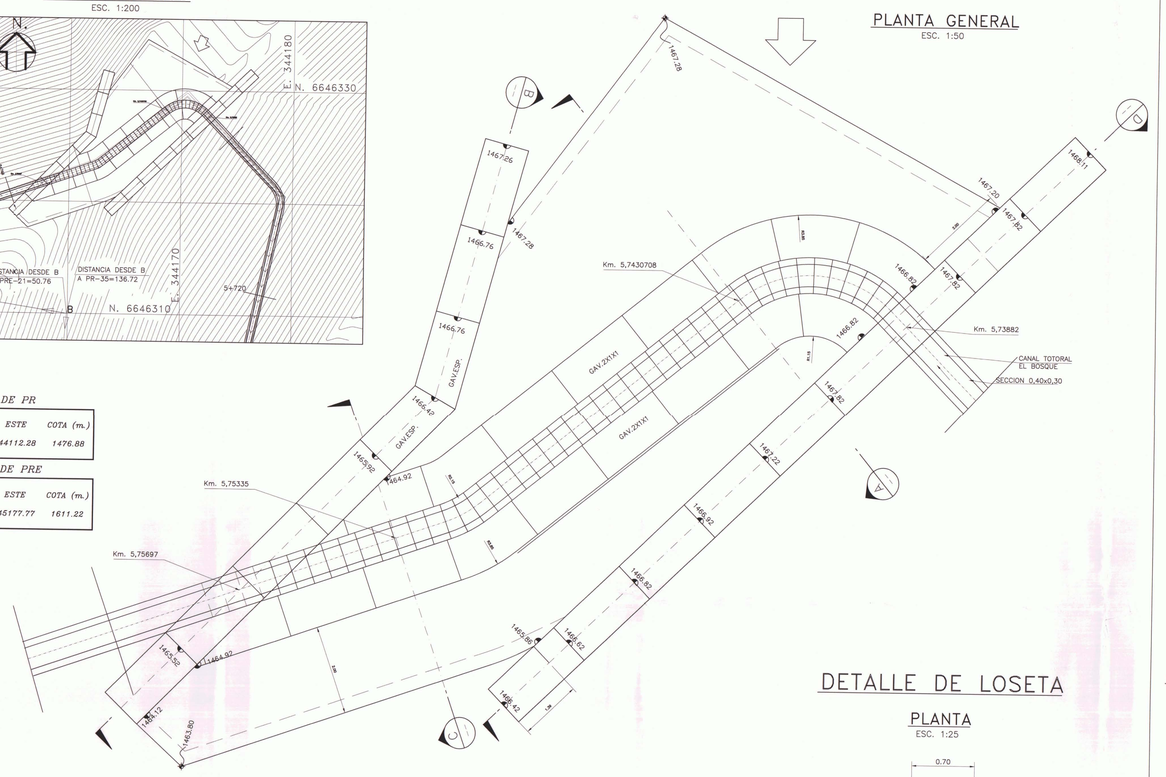
GOBIERNO DE CHILE MINISTERIO DE AGRICULTURA COMISION NACIONAL DE RIEGO	Nombre Estudio: Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo	Título Plano: CANAL TOTORAL EL BOSQUE CRUCE DE QUEBRADA Km 0.094 y Km 0.467 PLANTA Y DETALLES
CONSULTOR	Escala	Fecha / Lámina:
	Proyección Cartográfica UTM (Universal Transversal de Mercator)	

CANAL TOTORAL EL BOSQUE
CRUCE DE QUEBRADAS

CRUCE DE QUEBRADA Km 5,73882
PLANTA GENERAL
ESC. 1:200



PLANTA GENERAL
ESC. 1:50



CUADRO DE PR

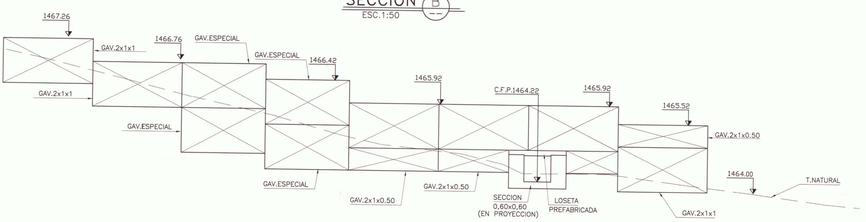
PR	NORTE	ESTE	COTA (m.)
35	6646163.82	344112.28	1476.88

CUADRO DE PRE

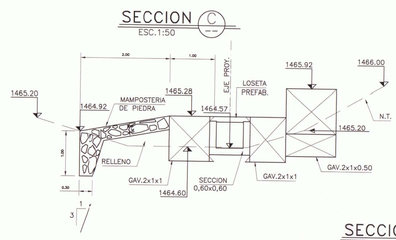
PR	NORTE	ESTE	COTA (m.)
21	6646317.28	345177.77	1611.22

SECCION A
ESC.1:50

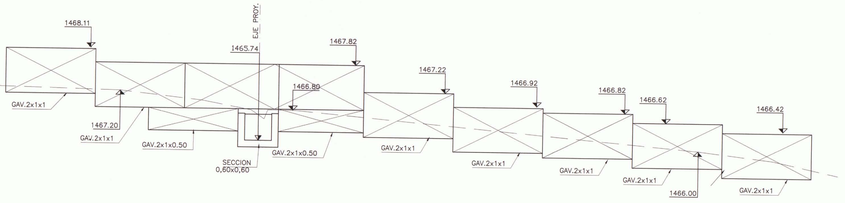
SECCION B
ESC.1:50



SECCION C
ESC.1:50



SECCION D
ESC.1:50

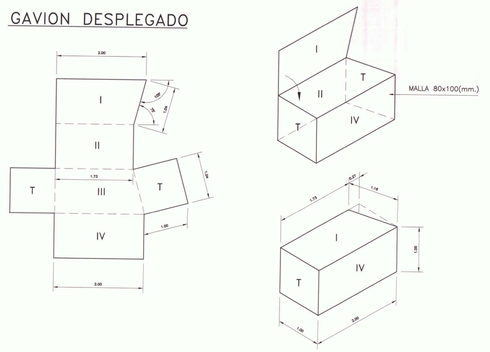


DETALLE DE LOSETA
PLANTA
ESC. 1:25

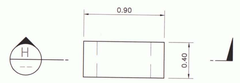
SECCION I
ESC.1:25

GAVION ESPECIAL
ESC. 1:50

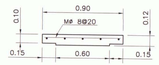
GAVION DESPLEGADO



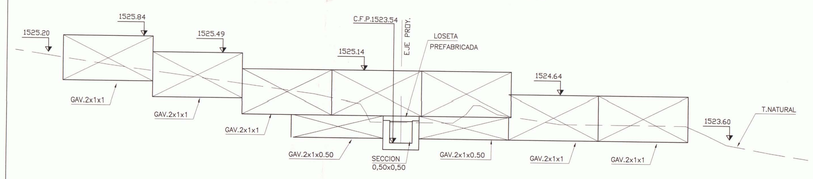
DETALLE DE LOSETA
PLANTA
ESC. 1:25



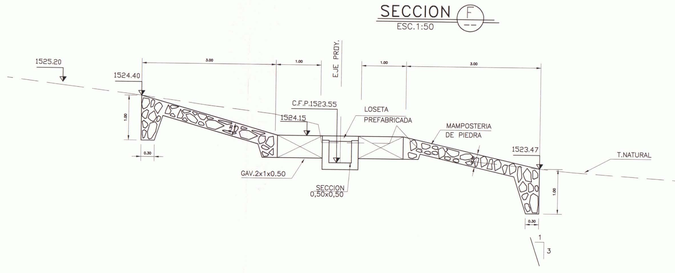
SECCION H
ESC.1:25



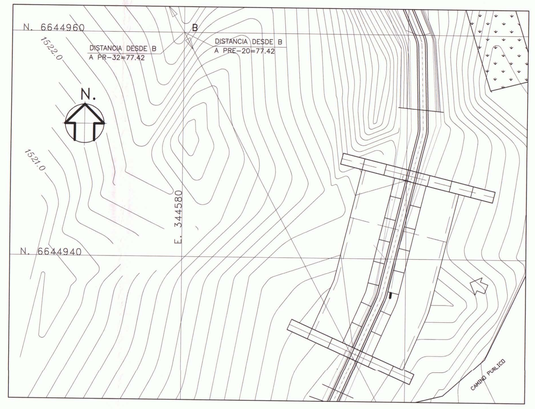
SECCION E
ESC.1:50



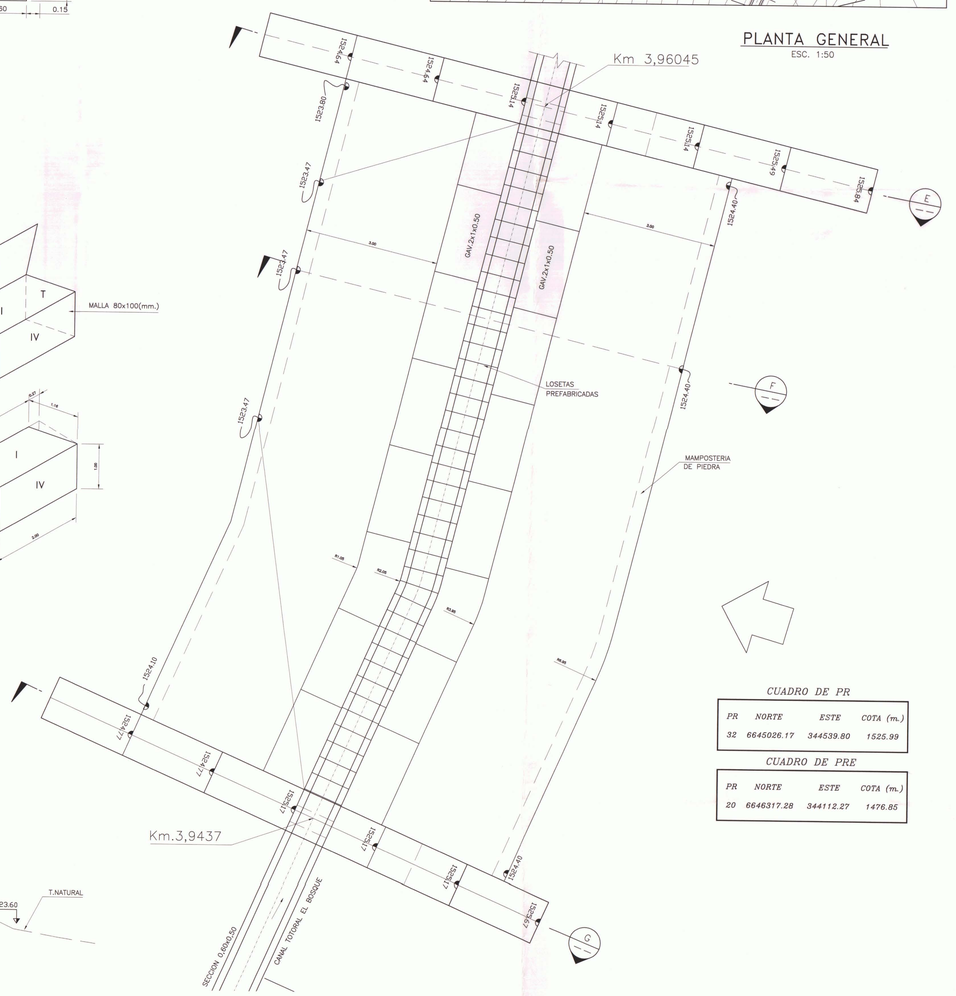
SECCION F
ESC.1:50



CRUCE DE QUEBRADA Km3,96045
PLANTA GENERAL
ESC. 1:200



PLANTA GENERAL
ESC. 1:50



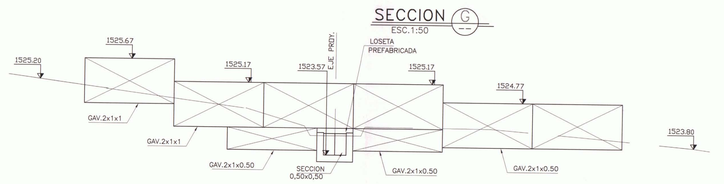
CUADRO DE PR

PR	NORTE	ESTE	COTA (m.)
32	6645026.17	344539.80	1525.99

CUADRO DE PRE

PR	NORTE	ESTE	COTA (m.)
20	6646317.28	344112.27	1476.85

SECCION G
ESC.1:50



GOBIERNO DE CHILE
MINISTERIO DE AGRICULTURA
COMISIÓN NACIONAL DE RIEGO

Nombre Estudio
Estudio de Prefactibilidad Mejoramiento del Sistema de Riego del Río Hurtado IV Región de Coquimbo

Título Plano
CANAL TOTORAL-EL BOSQUE
CRUCE U QUEBRADAS Km 3.960 y Km 5.739
PLANTAS Y DETALLES