

BARRANQUILLA

THE FEASIBILITY STUDY
ON THE URBAN DEVELOPMENT
OF THE CENTRAL DISTRICT
OF BARRANQUILLA
THE REPUBLIC OF COLOMBIA

DRAWINGS

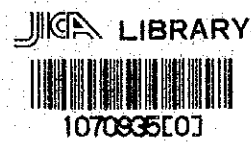
FINAL REPORT
FEBRUARY 1988

JAPAN INTERNATIONAL
COOPERATION AGENCY

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18322

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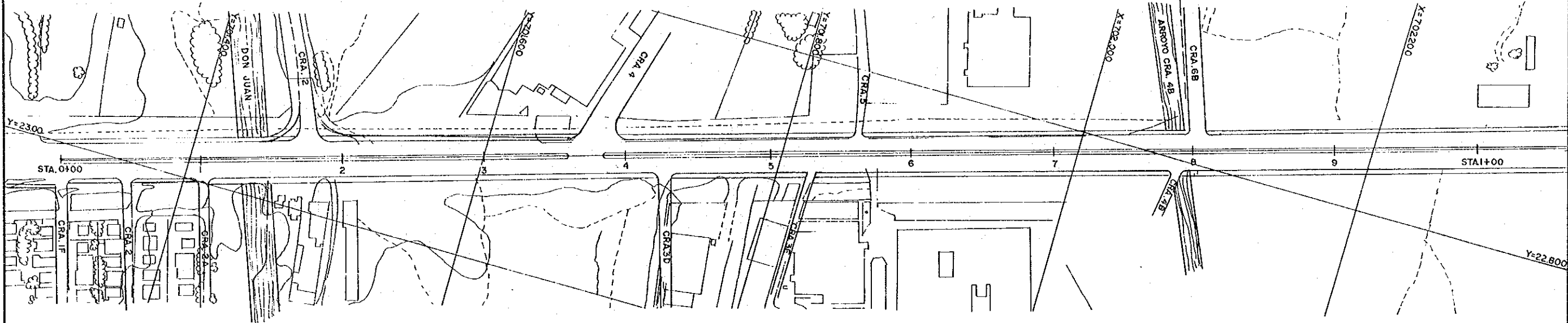
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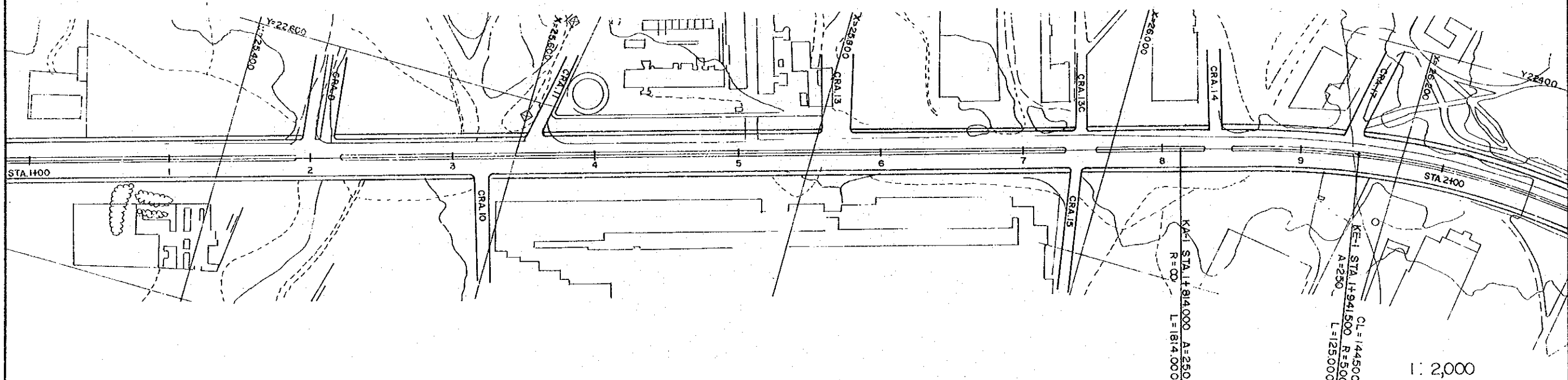
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PART I
ROADS

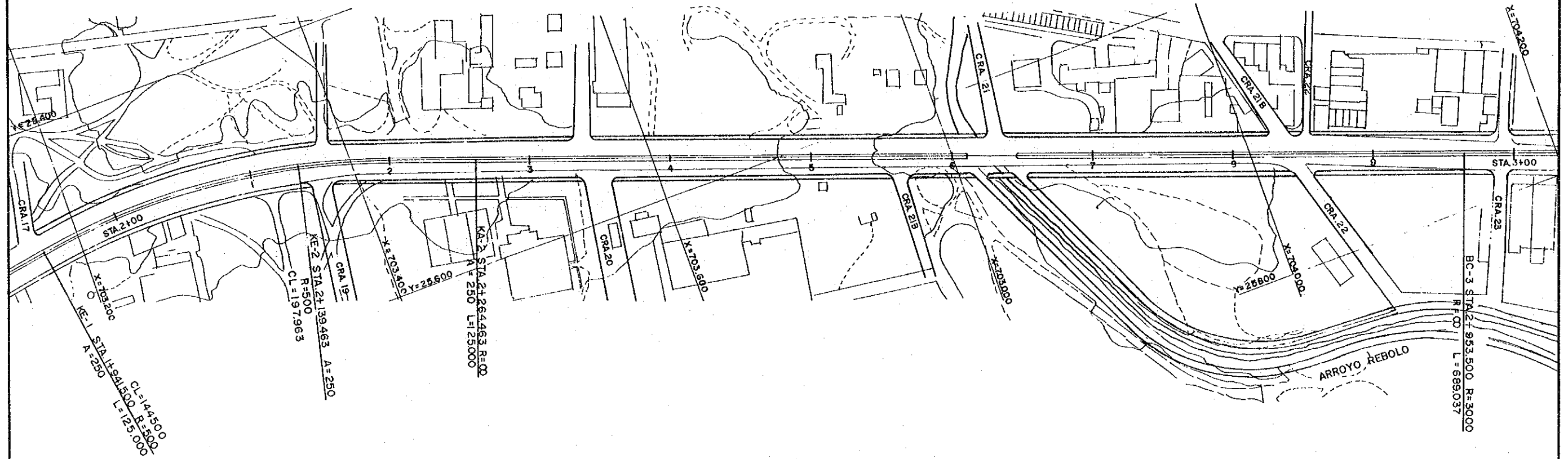
CALLE 30 IMPROVEMENT PLAN (1)



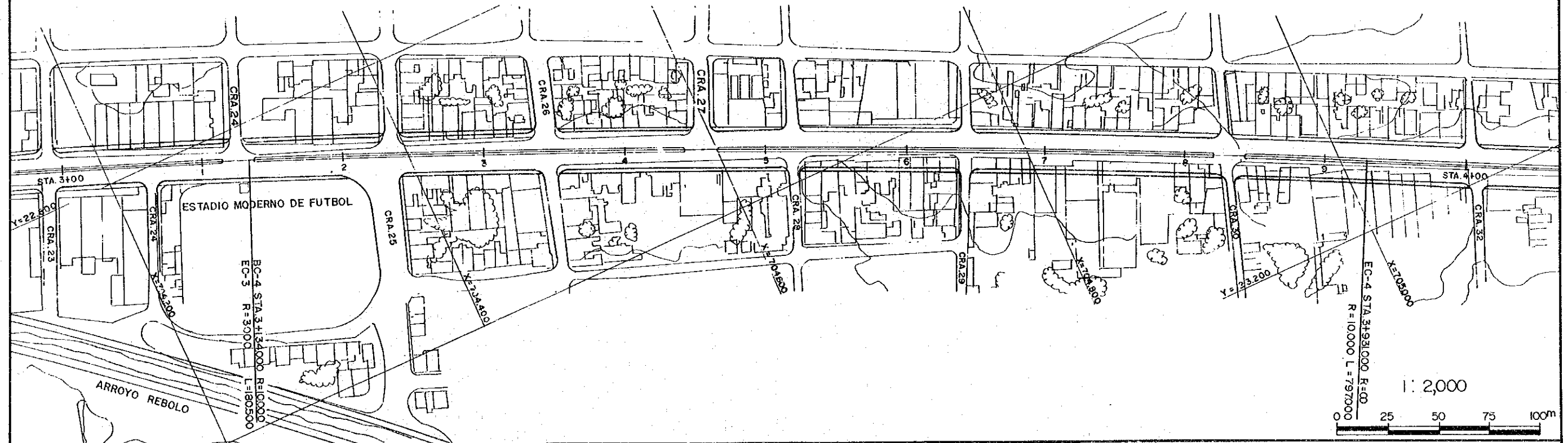
CALLE 30 IMPROVEMENT PLAN (2)



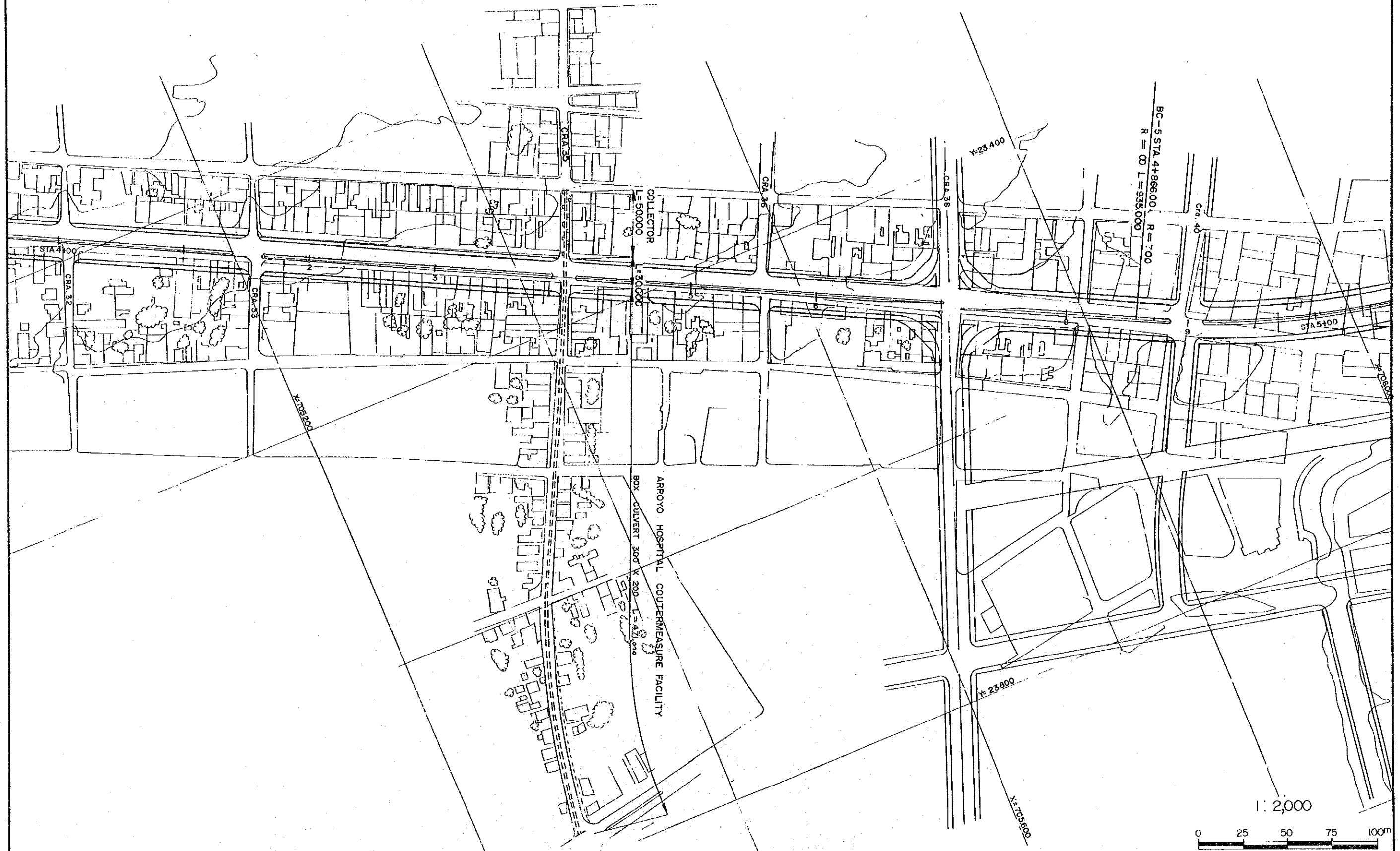
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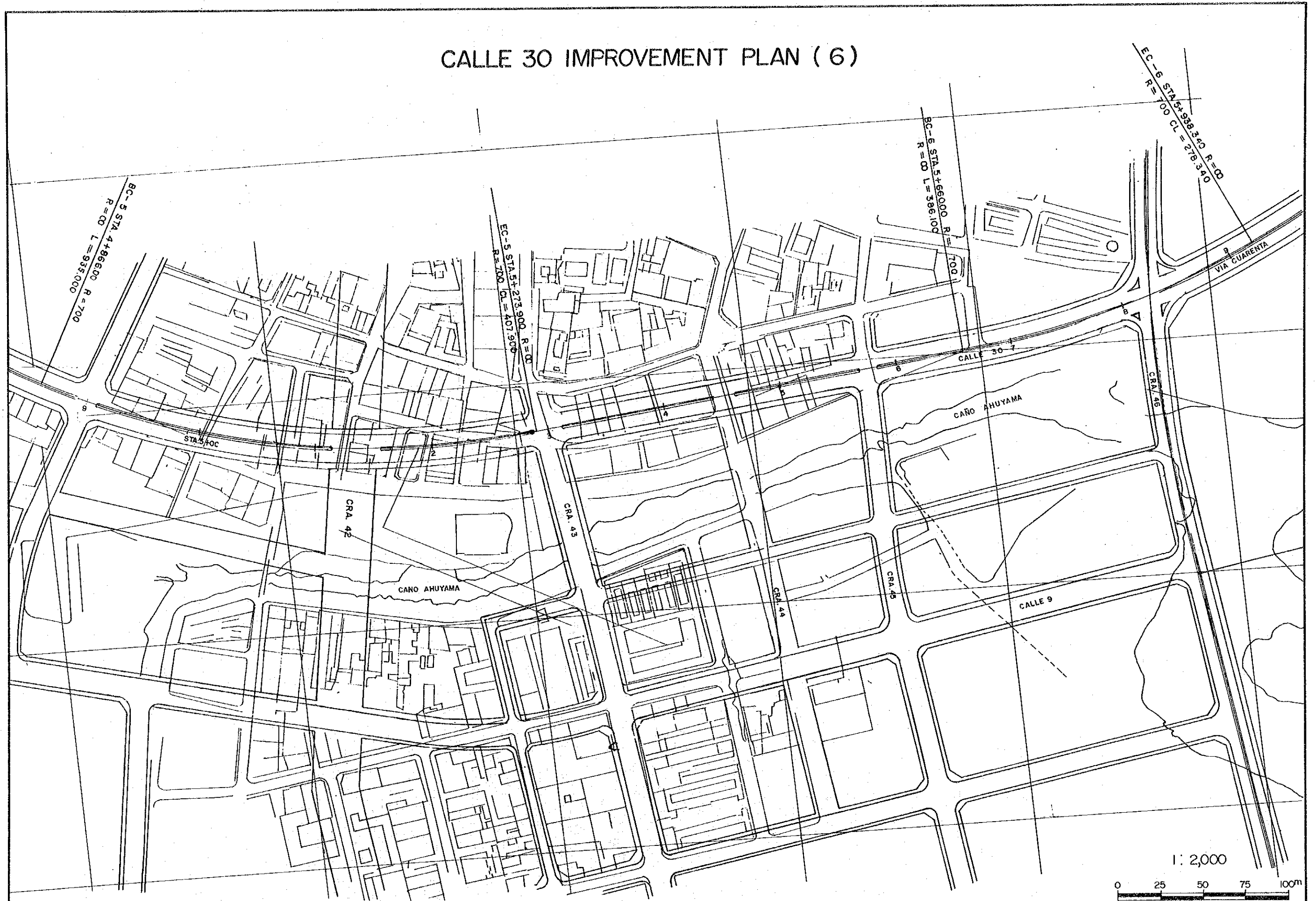
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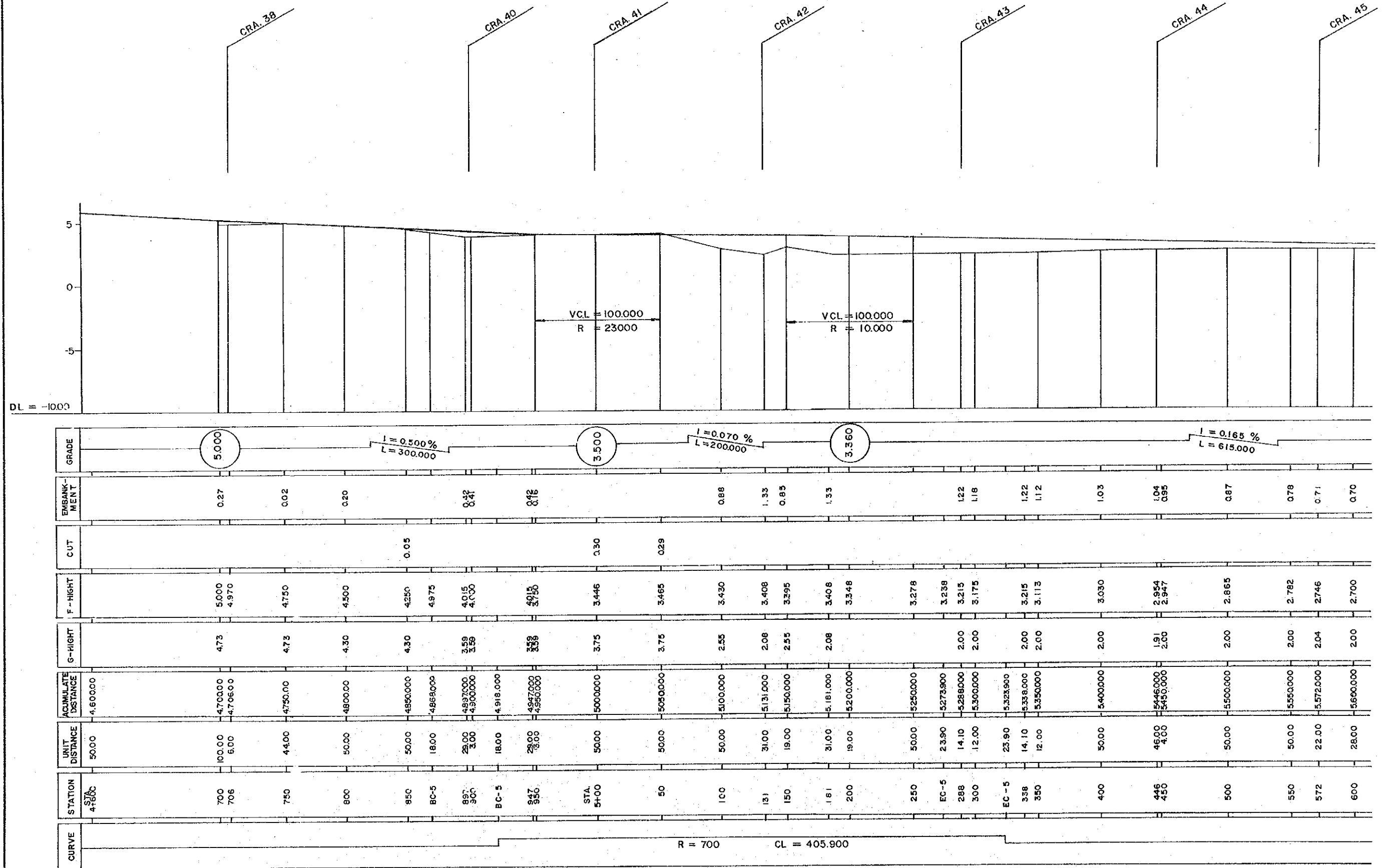
CALLE 30 IMPROVEMENT PLAN (5)



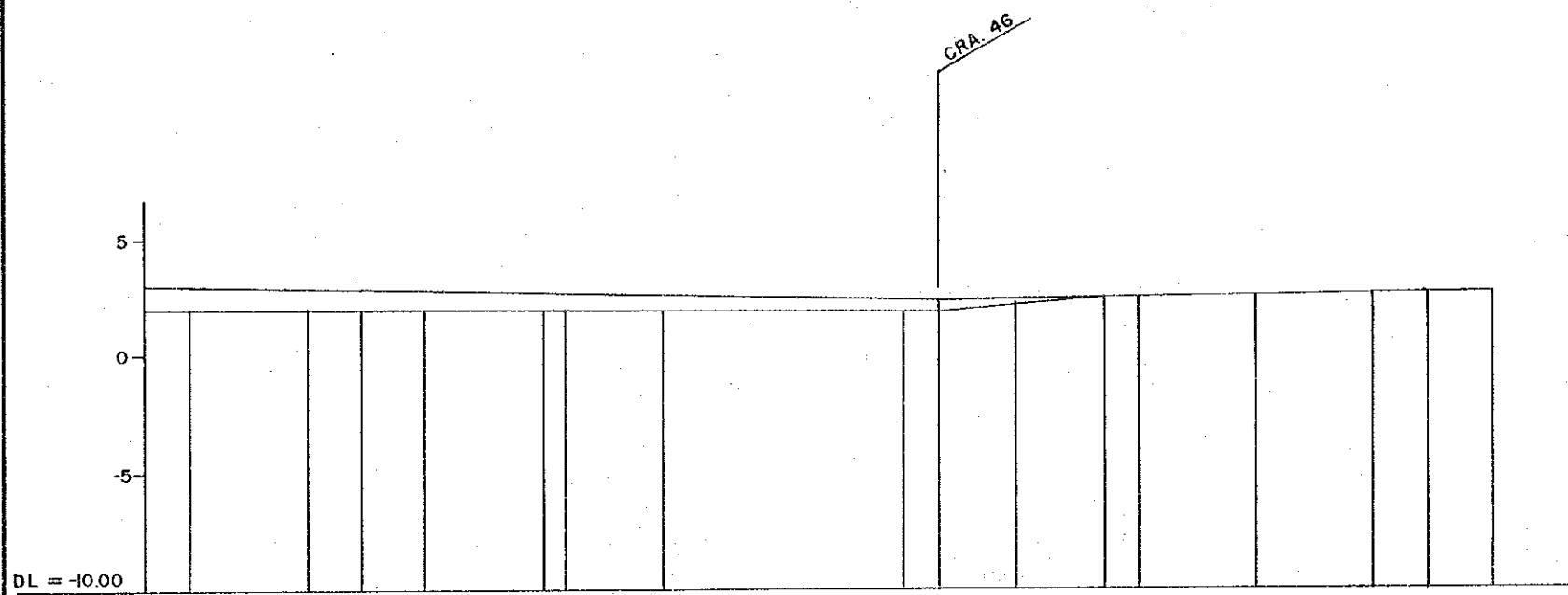
CALLE 30 IMPROVEMENT PLAN (6)



PROFILE OF CALLE 30 IN THE CENTRAL DISTRICT (I)

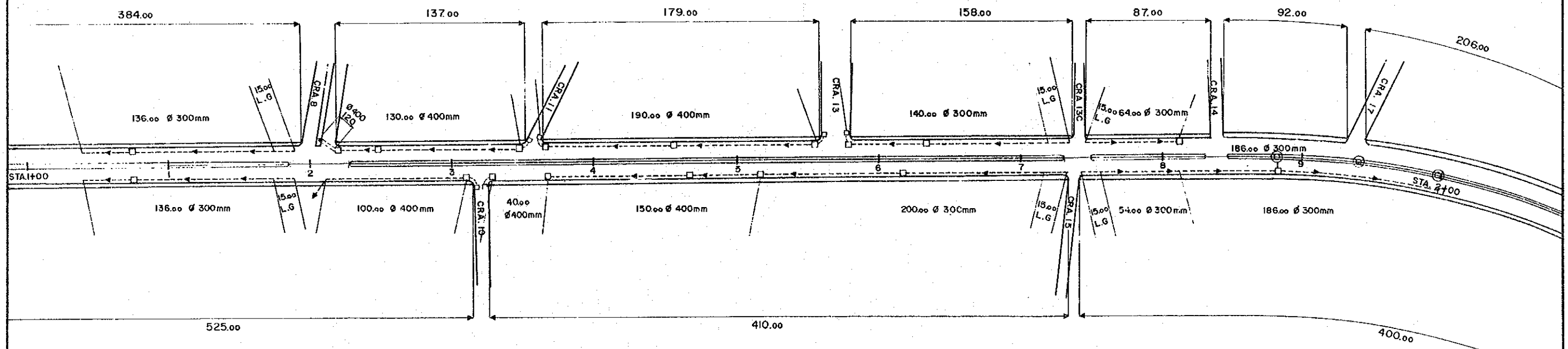
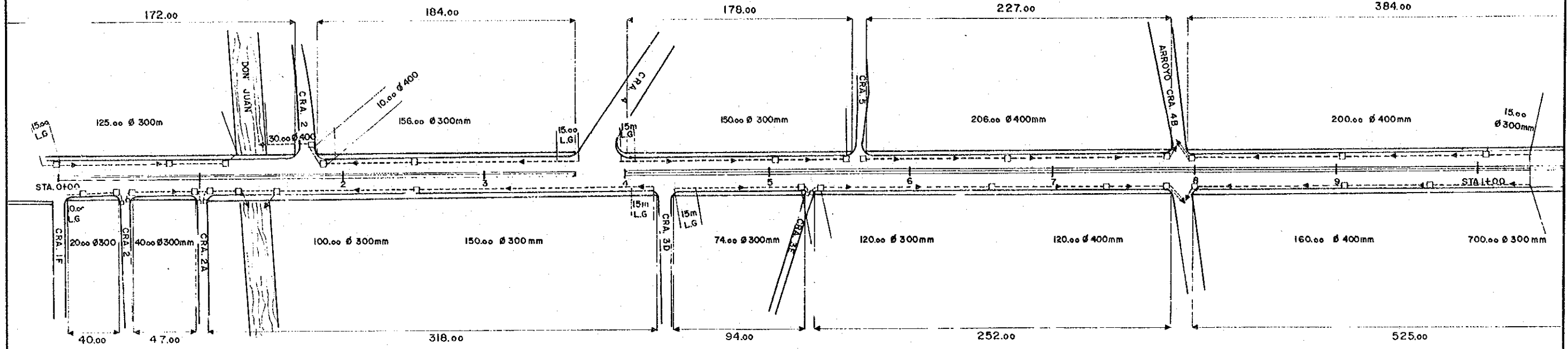


PROFILE OF CALLE 30 IN THE CENTRAL DISTRICT (2)

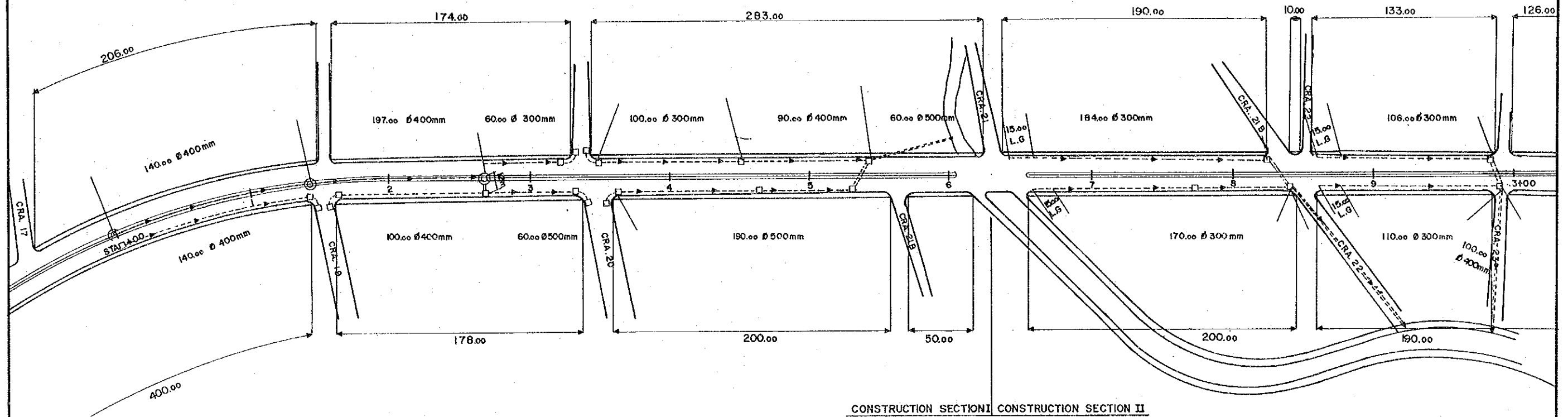


CURVE	STATION	UNIT DISTANCE	ACCUMULATE DISTANCE	G-HIGHT	F-HIGHT	CUT	EMBANKMENT	GRADE
R = ∞ L = 386.100	500	50.00	5.500.000	2.00	2.865		0.87	I = 0.165% L = 615.000
	550	50.00	5.550.000	2.00	2.782		0.78	
R = 700 CL = 278.340	572	22.00	5.572.000	2.04	2.746		0.71	C.P.P. I = 0.1267%
	600	28.00	5.600.000	2.00	2.700		0.70	
	650	50.00	5.650.000	2.00	2.618		0.62	2.345
	BC-6 650	10.00	5.660.000	2.00	2.634		0.63	
	700	40.00	5.700.000	1.90	2.535		0.64	
	750	50.00	5.750.000	1.88	2.453		0.58	
	800	50.00	5.800.000	1.85	2.370		0.52	
	815	15.00	5.815.000	1.81	2.345		0.53	
	900	45.00	5.900.000					
	EC-6 950	38.34 11.66	5.938.340 5.950.000					
	STA 6+00	50.00	6.000.000					
	50	50.00	6.050.000					
	100	50.00	6.100.000					

CALLE 30 ROAD FACILITIES PLAN (1)

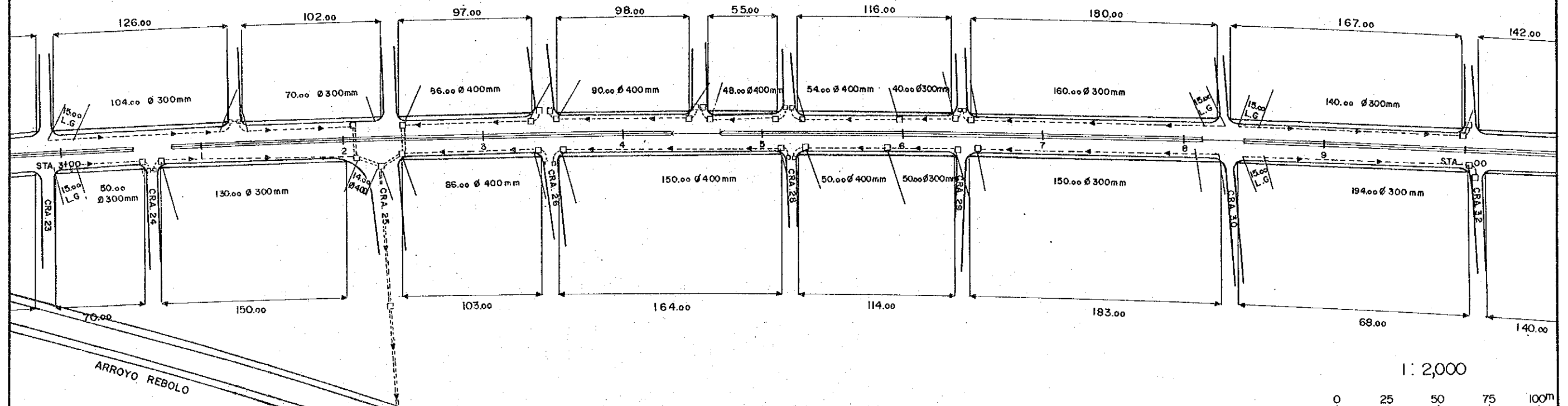


CALLE 30 ROAD FACILITIES PLAN (3)

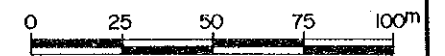


CONSTRUCTION SECTION I CONSTRUCTION SECTION II

CALLE 30 ROAD FACILITIES PLAN (4)

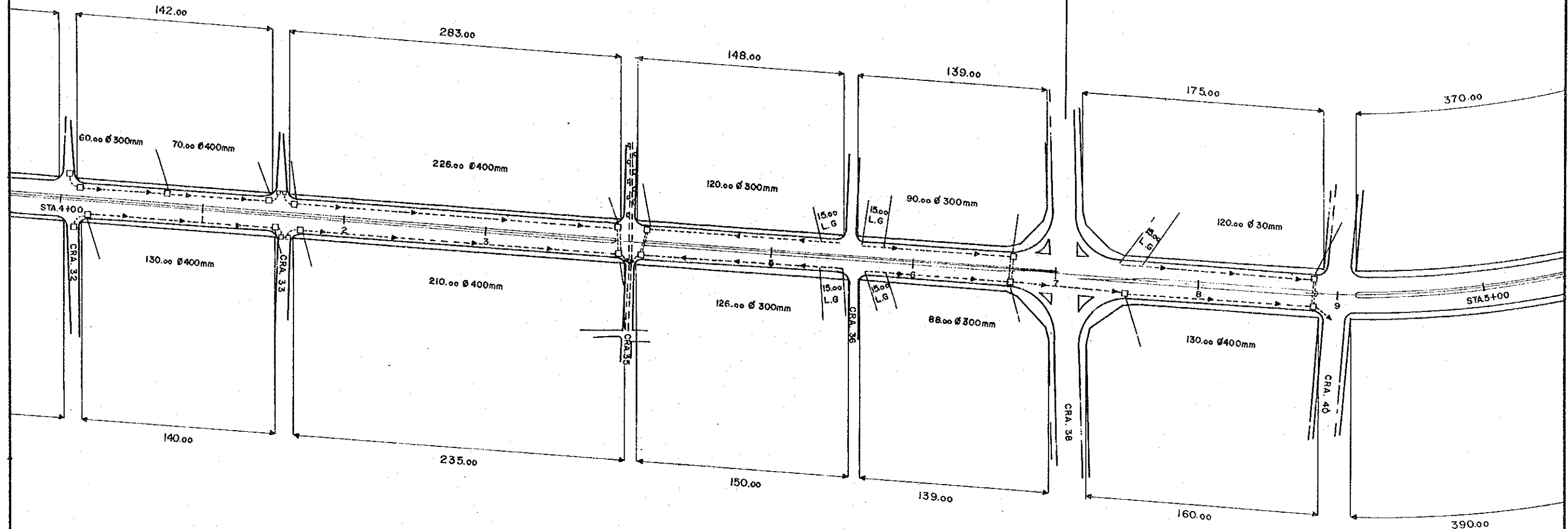


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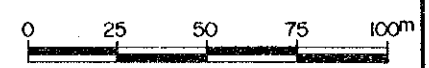


CALLE 30 ROAD FACILITIES PLAN (5)

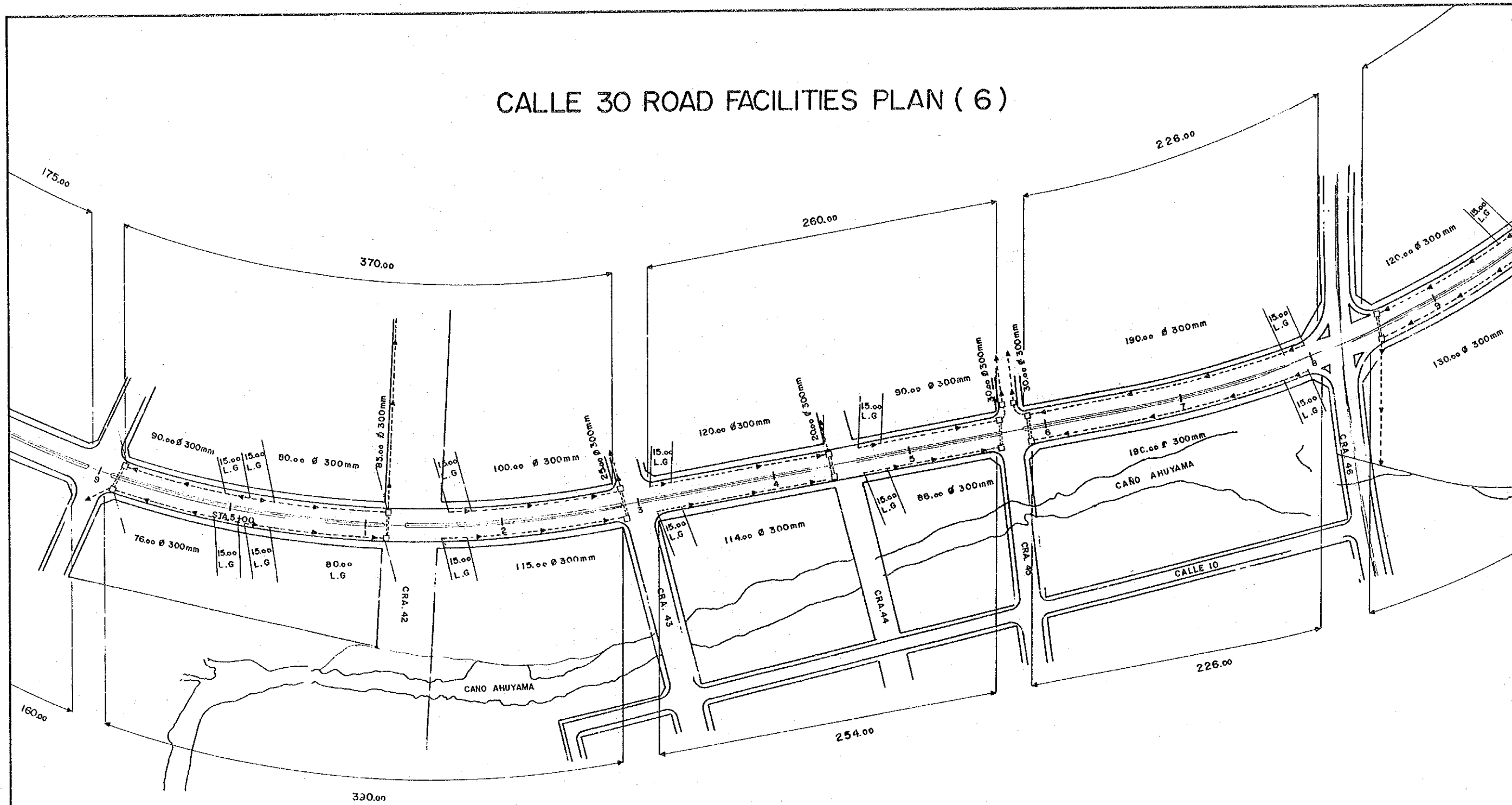
CONSTRUCTION SECTION II CONSTRUCTION SECTION III



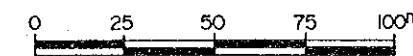
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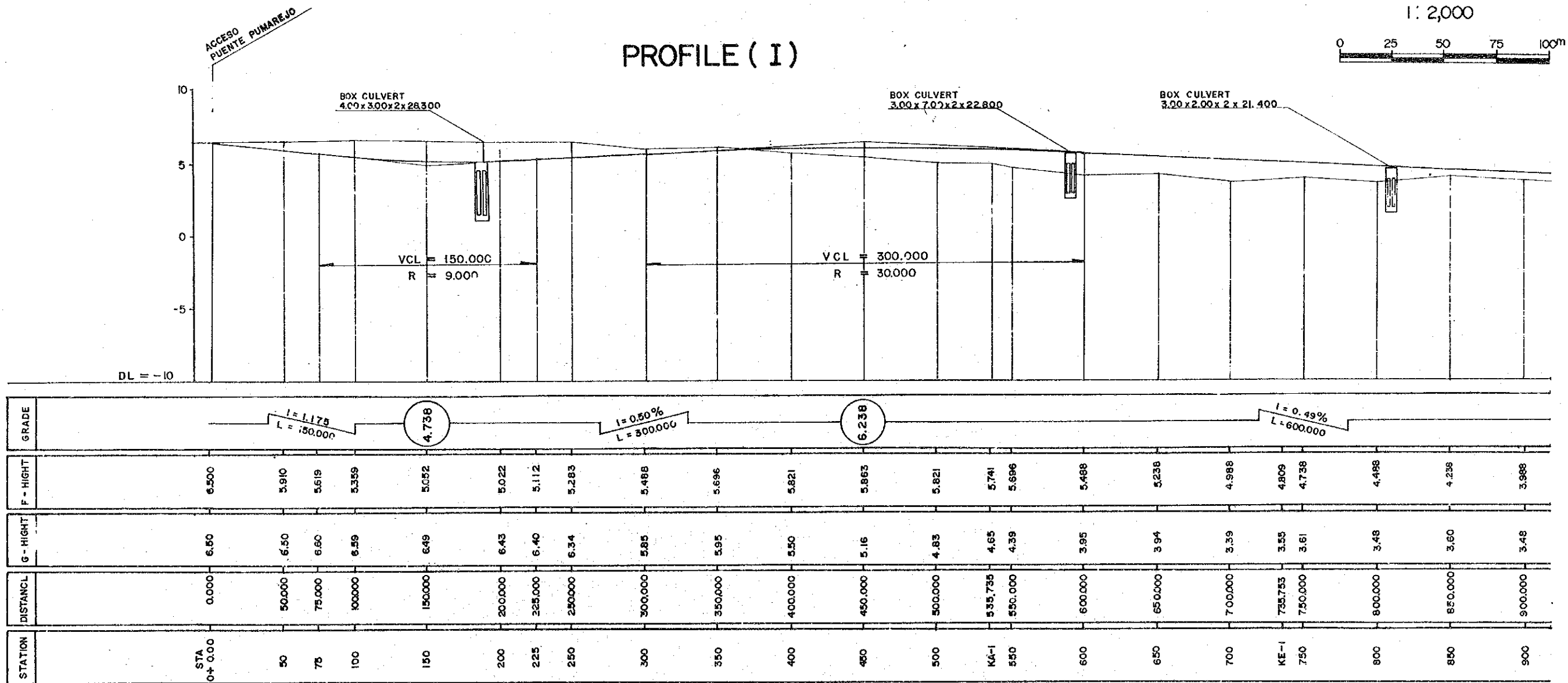
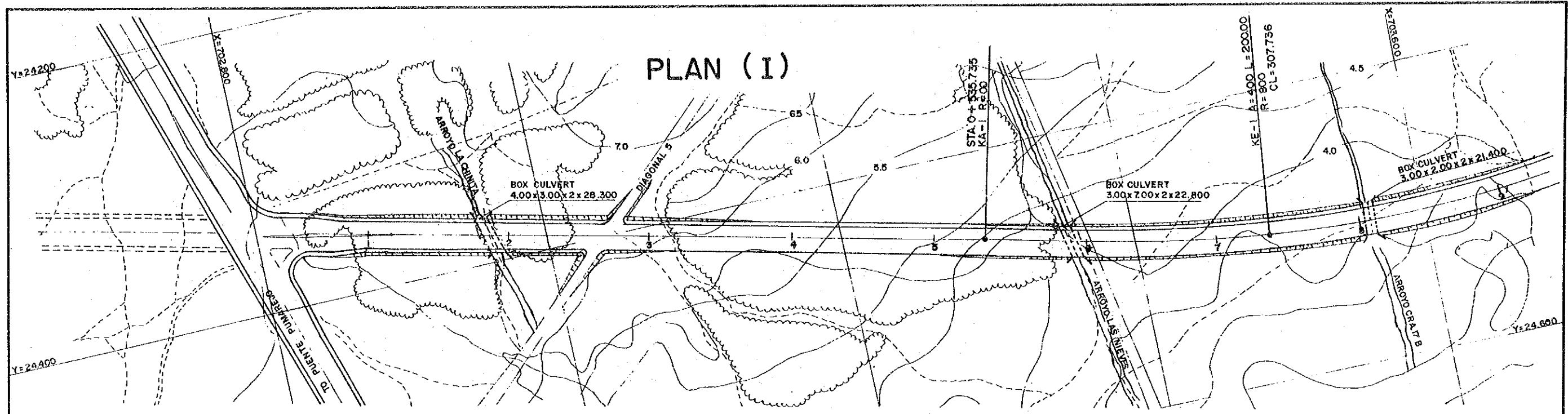


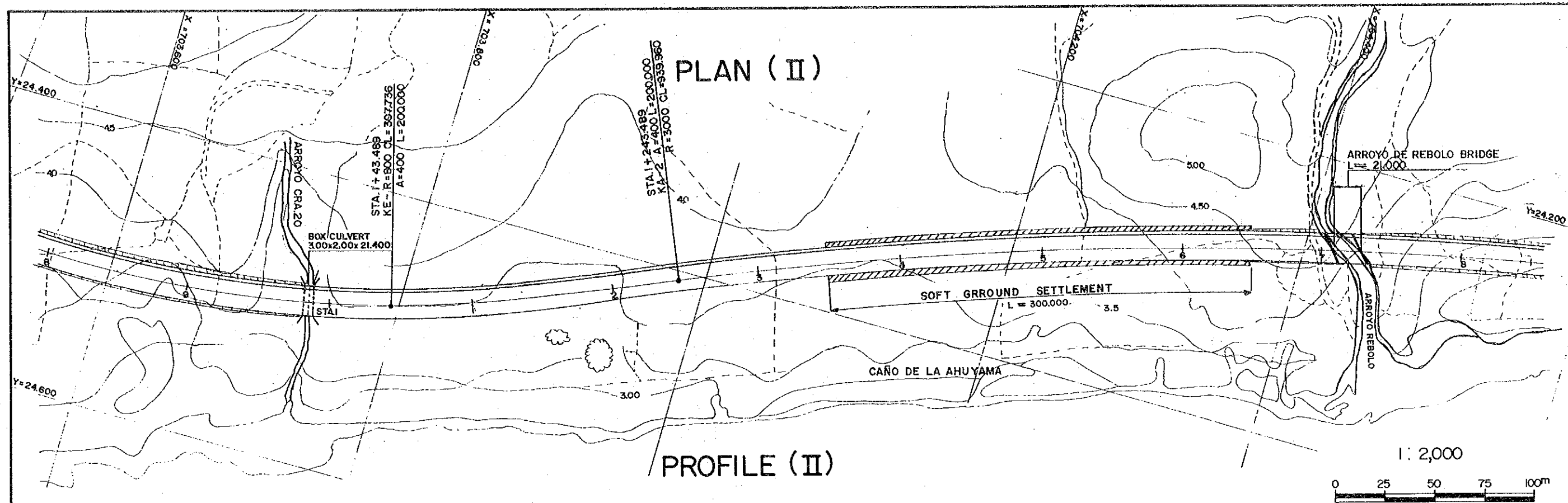
CALLE 30 ROAD FACILITIES PLAN (6)



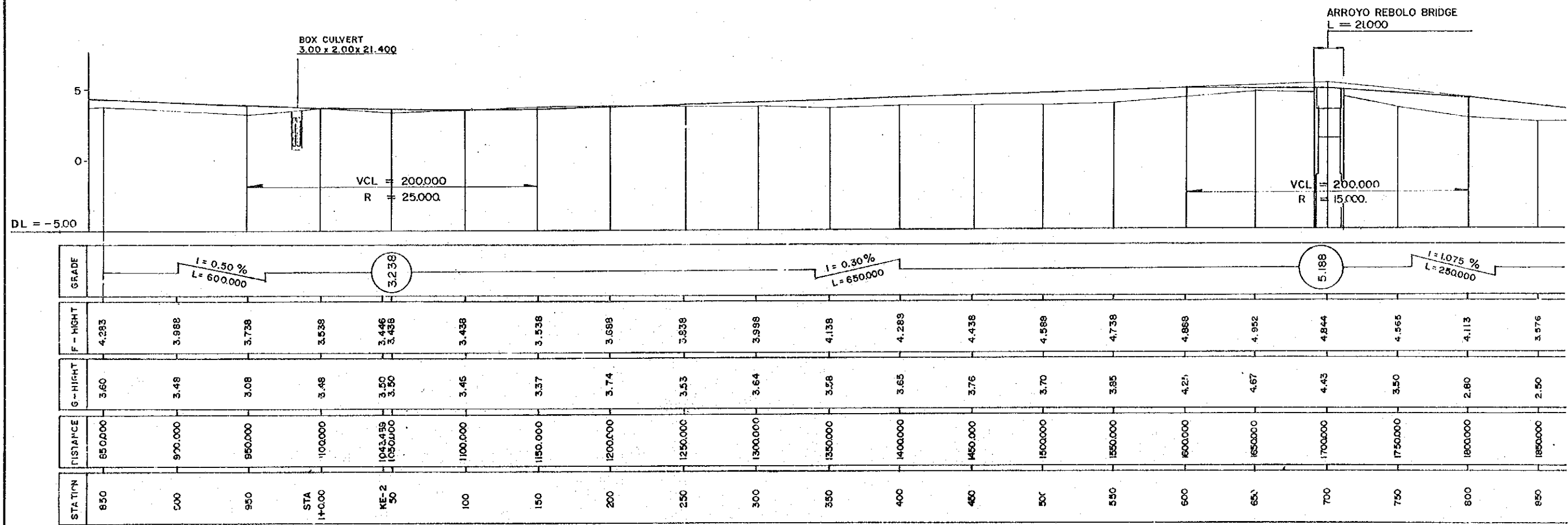
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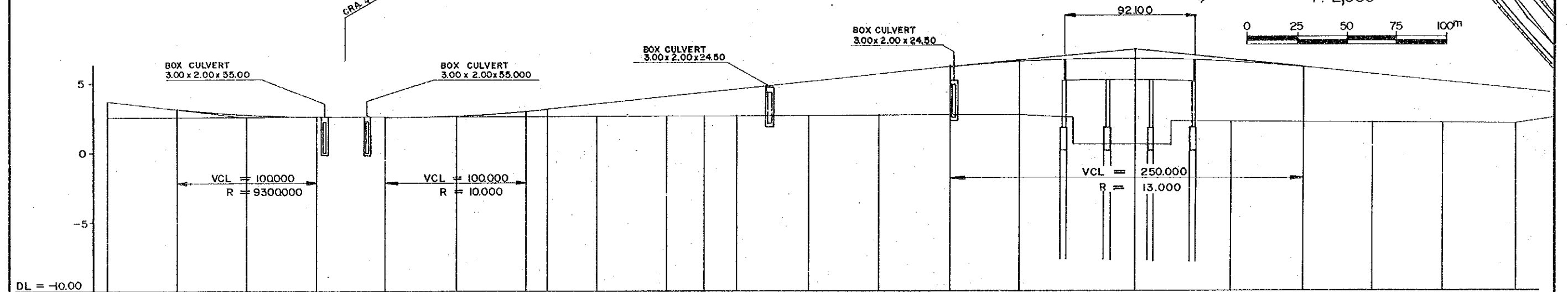
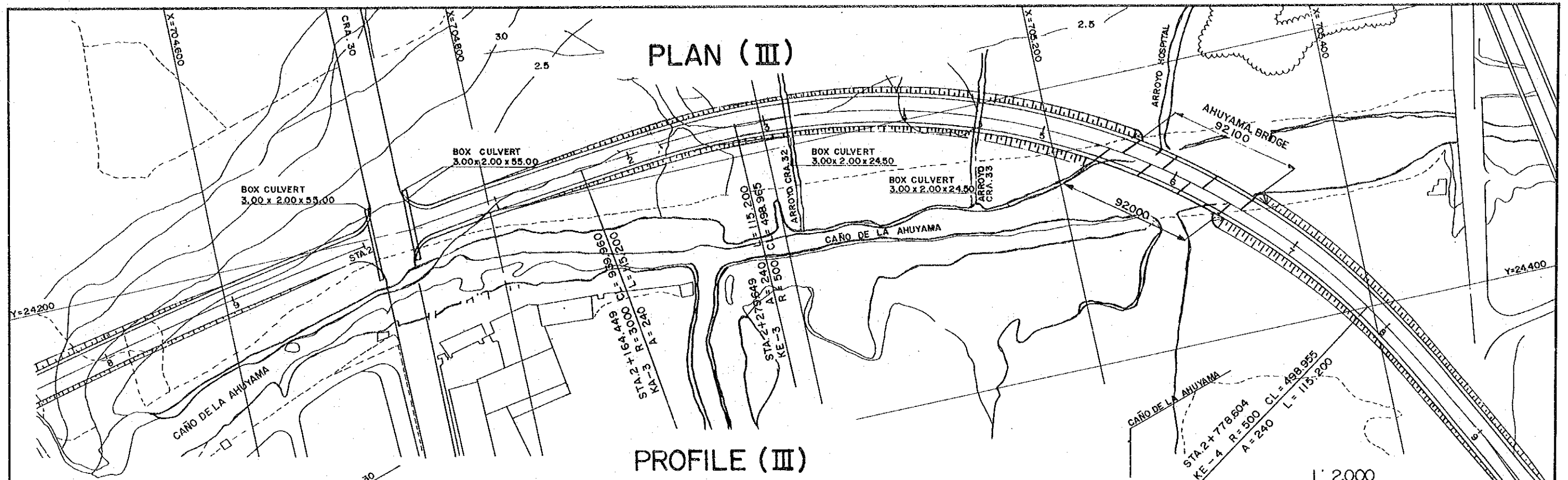




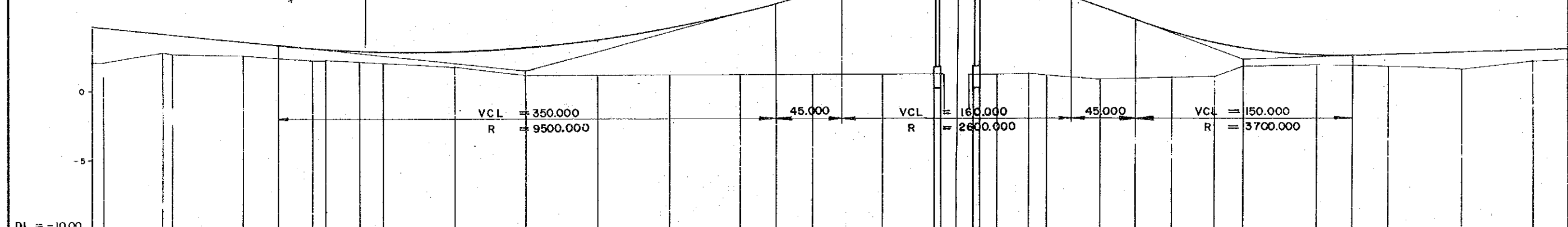
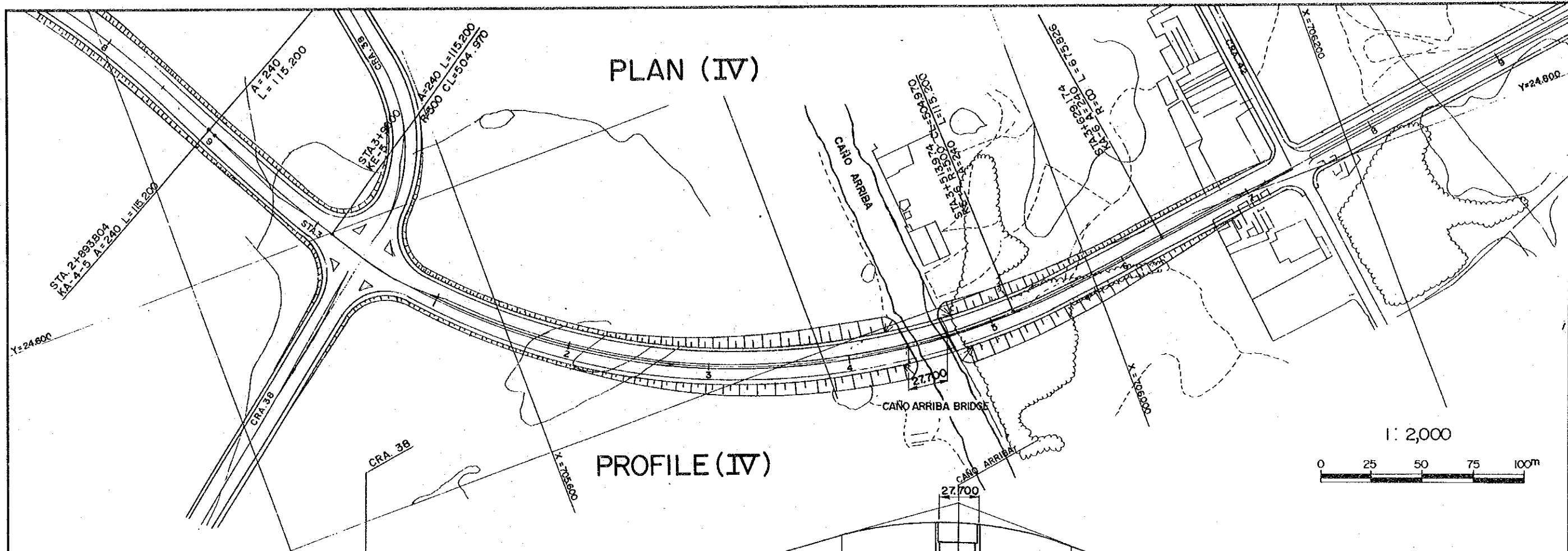


PROFILE (II)

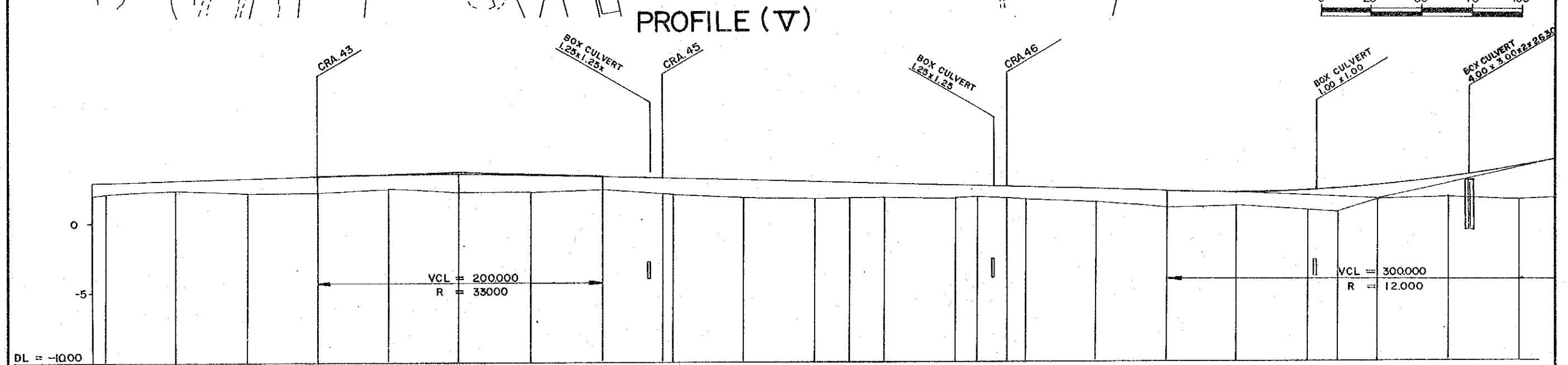
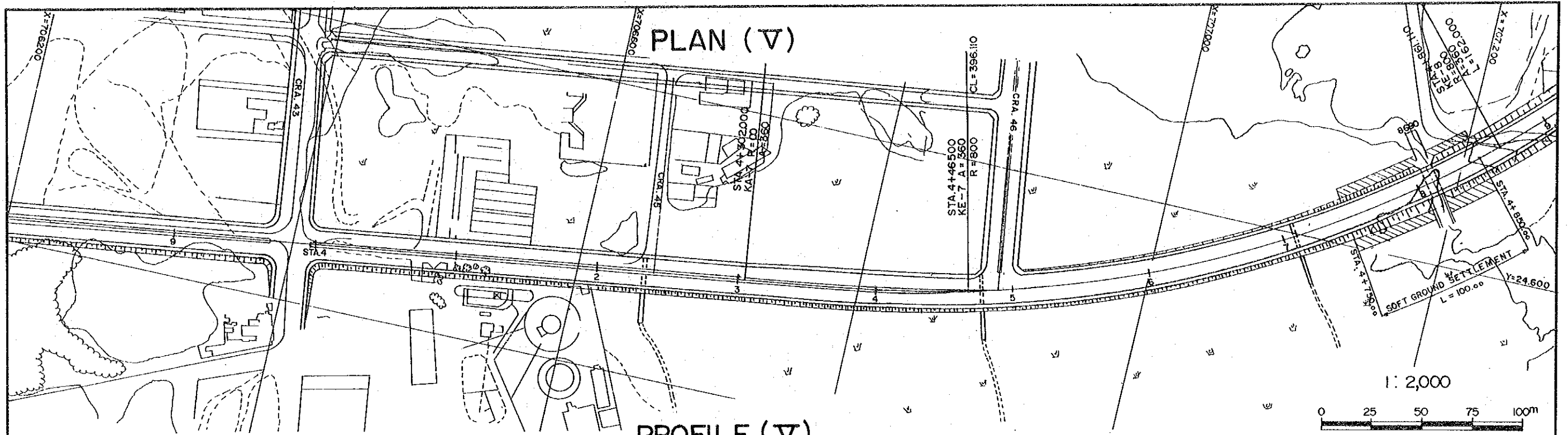




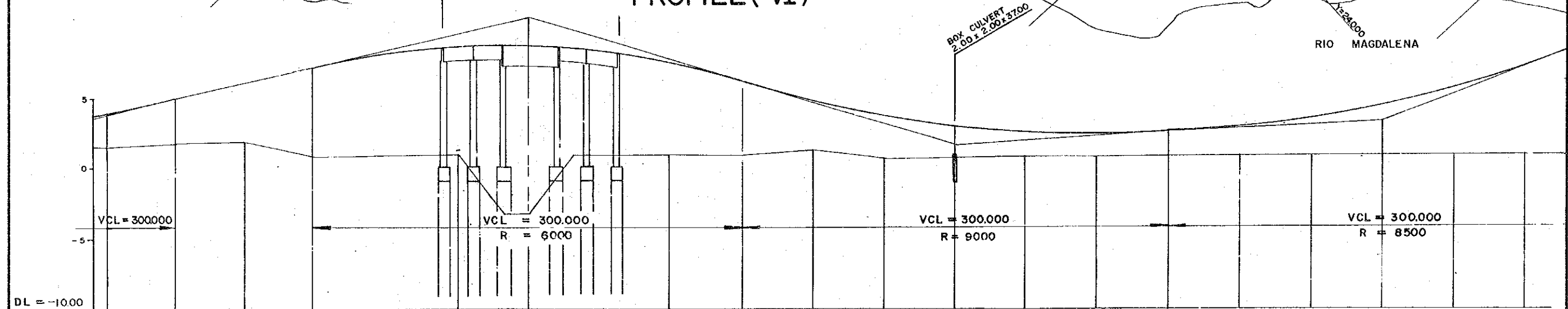
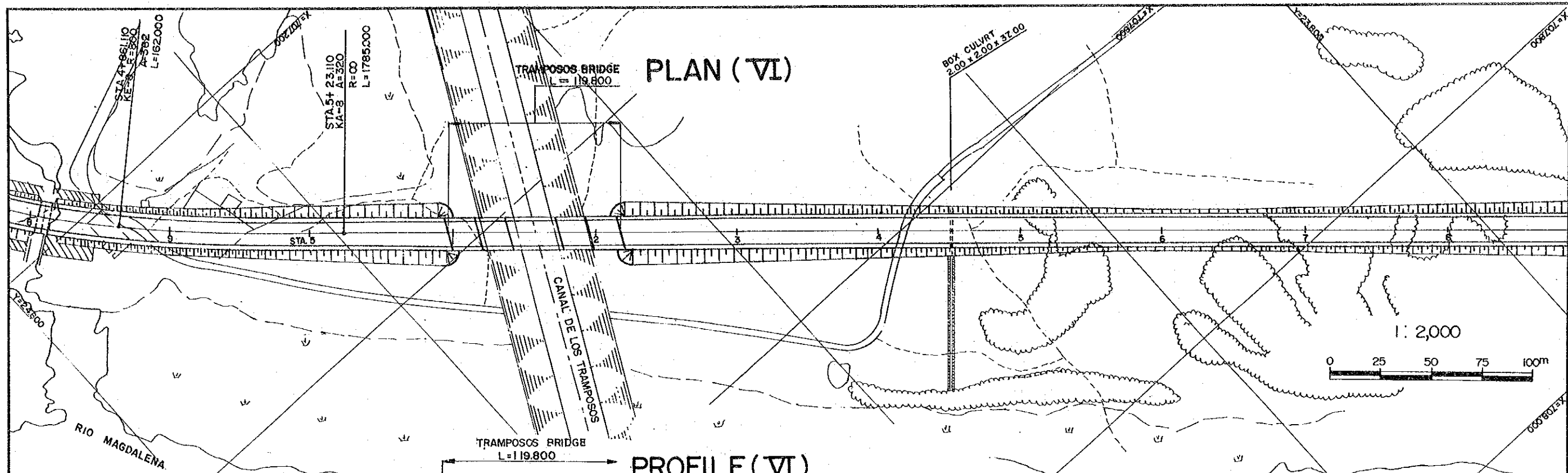
STATION	DISTANCE	G-HIGHT	F-HIGHT	GRADE
850	1850.000	2.50	3.576	$i = 1.0752\%$ $L = 250.000$
900	1900.000	2.50	3.038	
950	1950.000	2.50	2.634	
STA 2+0.00	2000.000	2.50	2.500	LEVEL $L = 150.000$
50	2050.000	2.50	2.500	
100	2100.000	2.50	2.625	$i = 1.00\%$ $L = 475.000$
150	2150.000	2.50	3.000	
KA-3	2164.449	2.50	3.114	
200	2200.000	2.50	3.439	LEVEL $L = 150.000$
250	2250.000	2.50	3.999	
KE-3	2279.649	2.50	4.295	
300	2300.000	2.50	4.489	$i = 1.00\%$ $L = 575.000$
350	2350.000	2.50	4.998	
400	2400.000	2.50	5.488	
450	2450.000	2.50	6.100	LEVEL $L = 150.000$
500	2500.000	2.50	6.400	
550	2550.000	2.14	6.600	
575	2575.000	2.01	6.625	LEVEL $L = 150.000$
600	2600.000	2.02	6.600	
650	2650.000	1.95	6.400	
700	2700.000	2.00	6.000	$i = 1.00\%$ $L = 575.000$
750	2750.000	2.00	5.500	
KE-4	2778.604	2.00	5.213	
800	2800.000	2.00	4.899	LEVEL $L = 150.000$
850	2850.000	2.00	4.449	



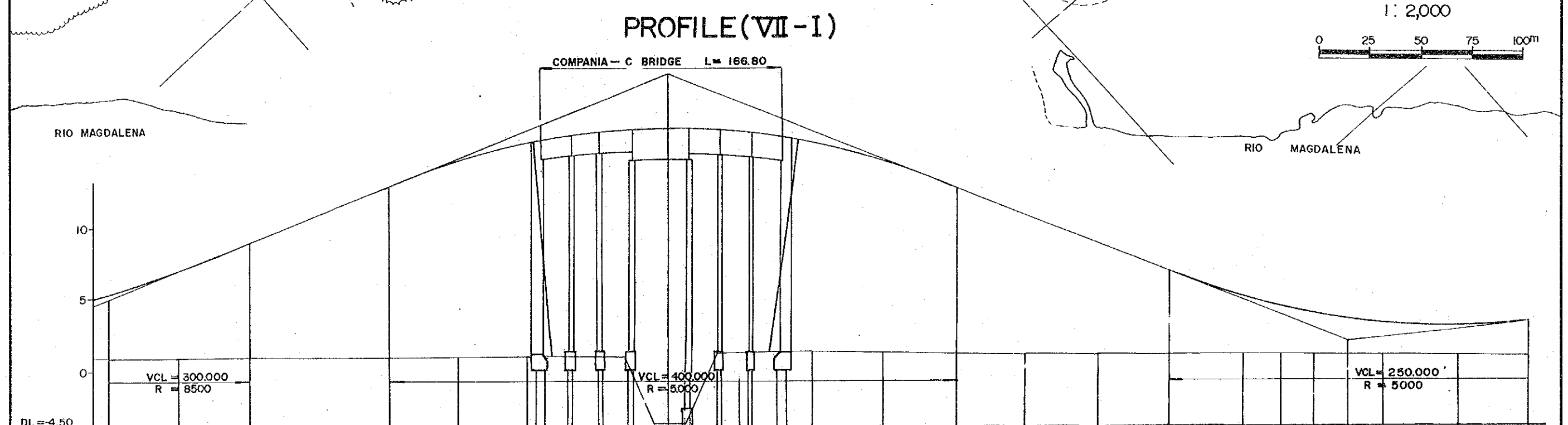
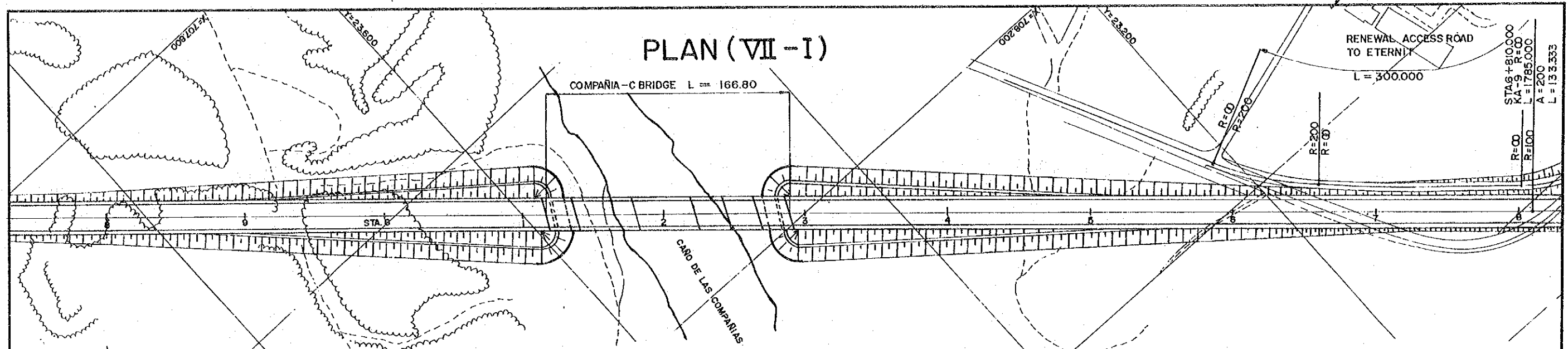
STATION	DISTANCE	G-HIGHT	F-HIGHT	GRADE
850	2850.000	2.00	4.443	
KA-4-5 900	2893.804 2900.000	2.63 2.90	4.000 3.940	
950	2950.000	2.50	3.500	
975	2975.000	2.25	3.250	
STA 3+000 KE-5	3000.000 3009.000	2.12 2.12	3.033 2.971	
350.000	3035.904	2.00	2.837	
50	3050.000	2.00	2.797	
100	3100.000	1.70	2.826	
150	3150.000	1.10	3.118	
200	3200.000	1.10	3.676	
250	3250.000	1.10	4.497	
300	3300.000	1.10	5.583	
325	3325.000	1.10	6.225	
350	3350.000	1.10	6.900	
370	3370.000	1.10	7.440	
400	3400.000	1.10	8.018	
450	3450.000	1.10	8.305	
500	3500.000	1.10	7.531	
KE-6 530	3513.974 3530.000	1.10 1.10	7.132 6.580	
550	3550.000	1.00	5.825	
575	3575.000	0.75	4.981	
600	3600.000	0.60	4.023	
KA-6 650	3623.174 3650.000	0.90 1.60	3.239 2.814	
700	3700.000	1.65	2.285	
725	3725.000	1.60	2.272	
750	3750.000	1.50	2.350	
800	3800.000	1.34	2.500	
850	3850.000	1.83	2.650	



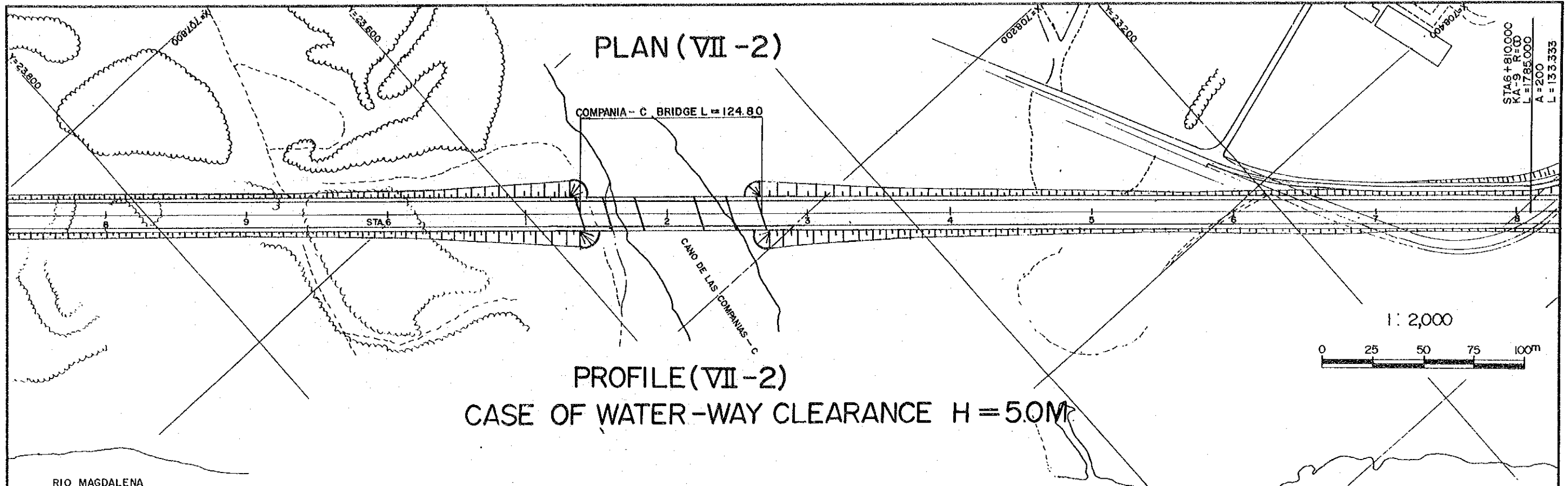
STATION	DISTANCE	G-HIGHT	F-HIGHT	GRADE
850	3850.000	1.83	2.650	I = 0.30 % L = 450.000
900	3900.000	2.05	2.800	
950	3950.000	1.93	2.950	3.400
STA 4+000	3983.174	1.91	3.050	
50	4050.000	2.22	3.213	I = 0.30 % L = 650.000
100	4100.000	1.95	3.250	
150	4150.000	2.00	3.213	1.450
200	4200.000	2.10	3.100	
242	4242.000	1.80	2.874	I = 2.30 % L = 400.000
250	4250.000	1.72	2.950	
300	4300.000	1.60	2.800	3.050
350	4350.000	1.50	2.650	
375	4375.000	1.50	2.575	1.47
400	4400.000	1.52	2.500	
450	4450.000	1.60	2.350	1.27
484	4484.000	1.60	2.248	
500	4500.000	1.35	2.200	3.850
550	4550.000	1.16	2.050	
600	4600.000	0.97	1.900	1.23
650	4650.000	0.78	1.858	
700	4700.000	0.59	2.033	1.47
750	4750.000	1.23	2.425	
800	4800.000	1.47	3.050	1.27
850	4850.000	1.27	3.850	



STATION	DISTANCE	G-HIGHT	F-HIGHT	GRADE
850	4850.000	1.27	3.850	I = 2.30% L = 400.000
855 KE-B	4862.000	1.34	4.086	
900	4900.000	1.57	4.897	
950	4950.000	1.67	6.047	10.650
STA. 5+0.00	5000.000	0.65	7.197	
KA-B	5023.110	0.70	7.725	
50	5050.000	0.80	8.126	I = 3.00% L = 300.000
100	5100.000	0.82	8.614	
150	5150.000	0.76	8.663	
200	5200.000	0.80	8.263	1.650
250	5250.000	0.80	7.420	
300	5300.000	0.75	6.150	
350	5350.000	1.20	4.789	I = 0.35% L = 300.000
400	5400.000	0.60	3.708	
450	5450.000	0.65	2.906	
500	5500.000	0.68	2.383	2.700
550	5550.000	0.71	2.139	
600	5600.000	0.74	2.170	
650	5650.000	0.78	2.502	0.81
700	5700.000	0.81	3.133	
750	5750.000	0.84	4.068	
800	5800.000	0.84	5.308	0.90
850	5850.000	0.90	6.852	

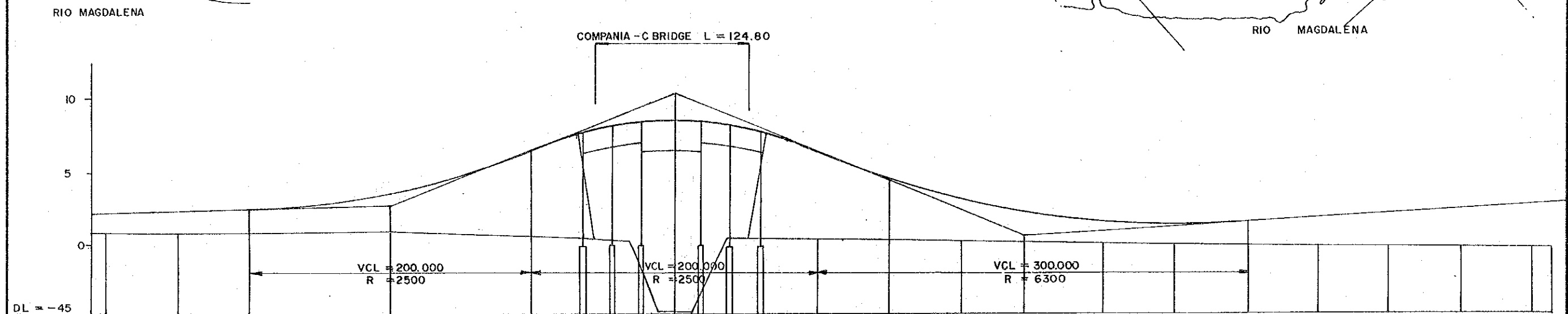


STATION	DISTANCE	G-HIGHT	F-HIGHT	GRADE
800	5800.000	0.84	5.308	I = 4.00 % L = 450.000
850	5850.000	0.90	6.852	
900	5900.000	0.94	8.700	
950	5950.000	0.97	10.700	
STA 6+00.00	6000.000	1.00	12.700	I = 4.00 % L = 475.000
50	6050.000	1.04	14.450	
100	6100.000	1.07	15.700	
150	6150.000	1.10	16.450	
200	6200.000	0.90	16.700	
250	6250.000	1.10	16.450	
300	6300.000	1.20	15.700	
350	6350.000	1.14	14.450	
400	6400.000	1.09	12.700	
450	6450.000	1.03	10.700	
500	6500.000	0.97	8.700	
550	6550.000	0.95	6.700	
600	6600.000	0.93	4.957	
625	6625.000	0.92	3.730	
650	6650.000	0.92	3.305	
675	6675.000	0.91	2.916	
700	6700.000	0.90	2.823	
750	6750.000	0.90	2.823	
800	6800.000	1.00	2.823	

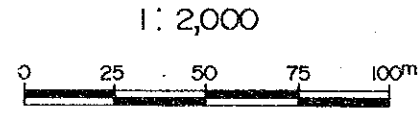
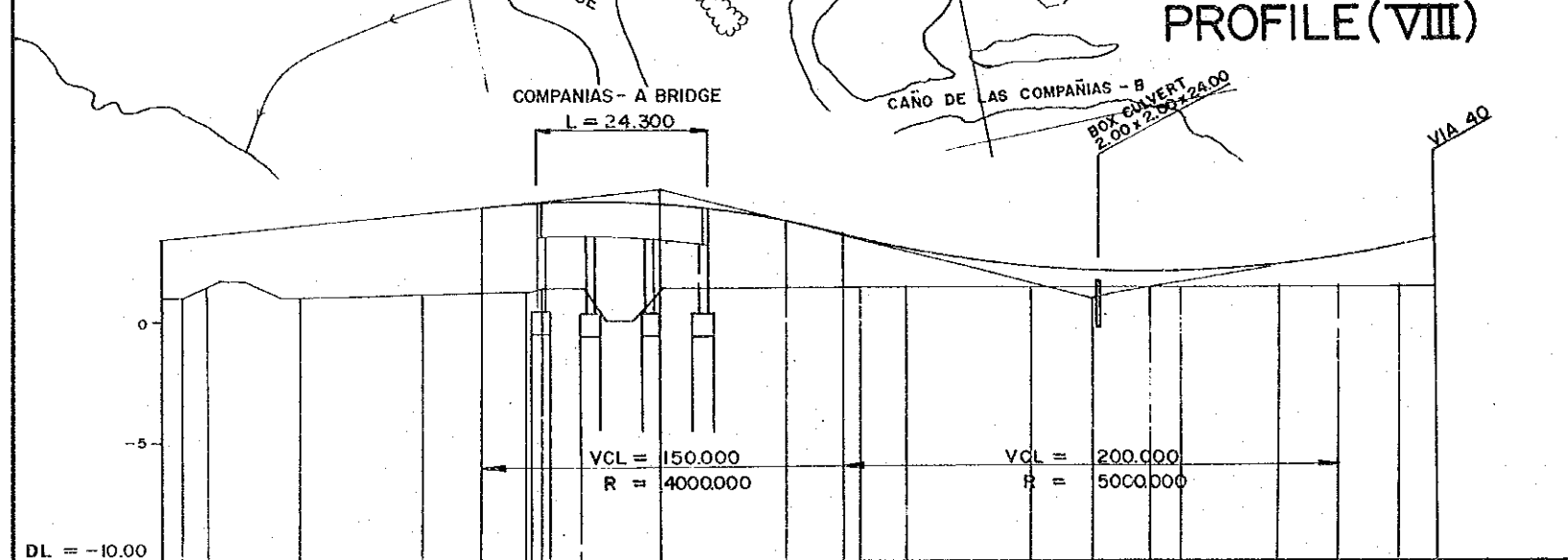
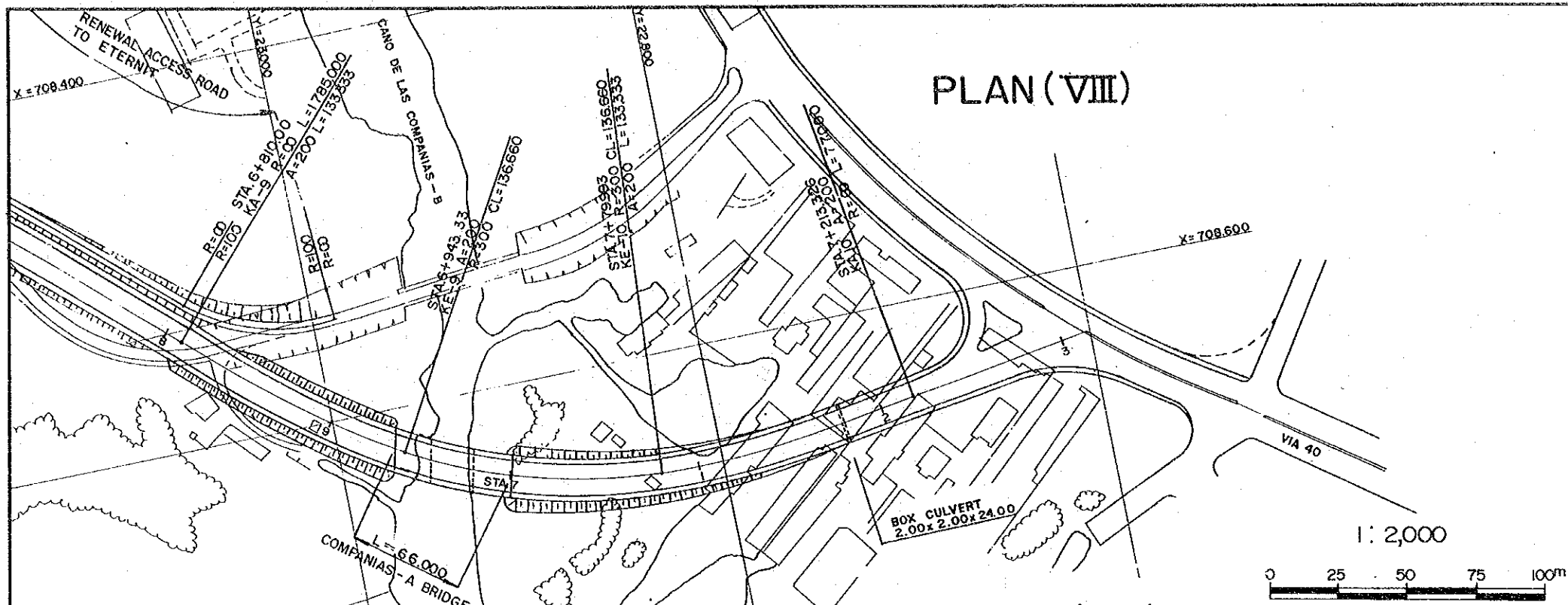


PROFILE (VII-2)

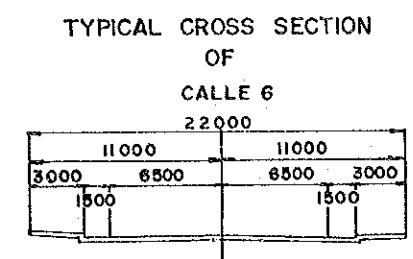
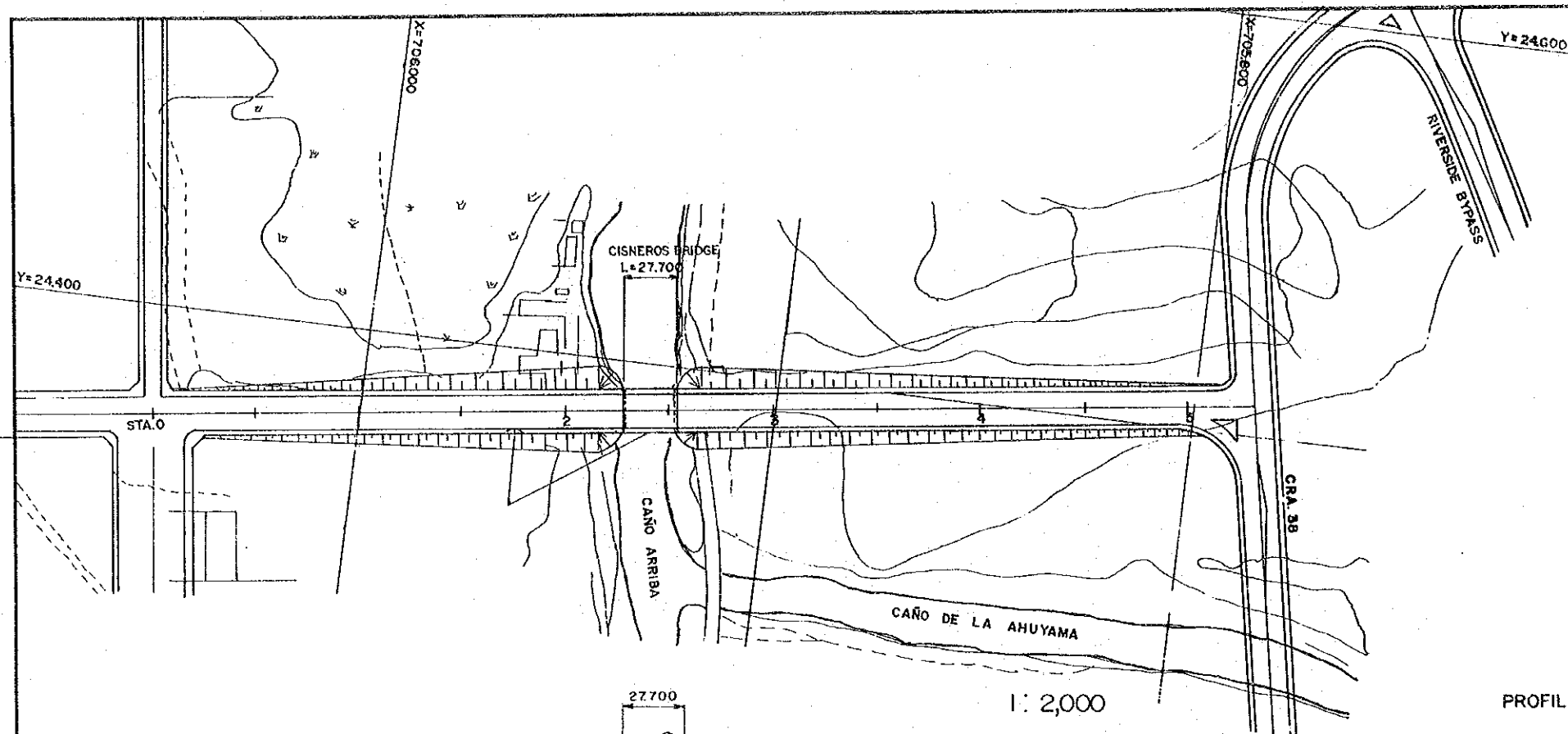
CASE OF WATER-WAY CLEARANCE H = 5.0M



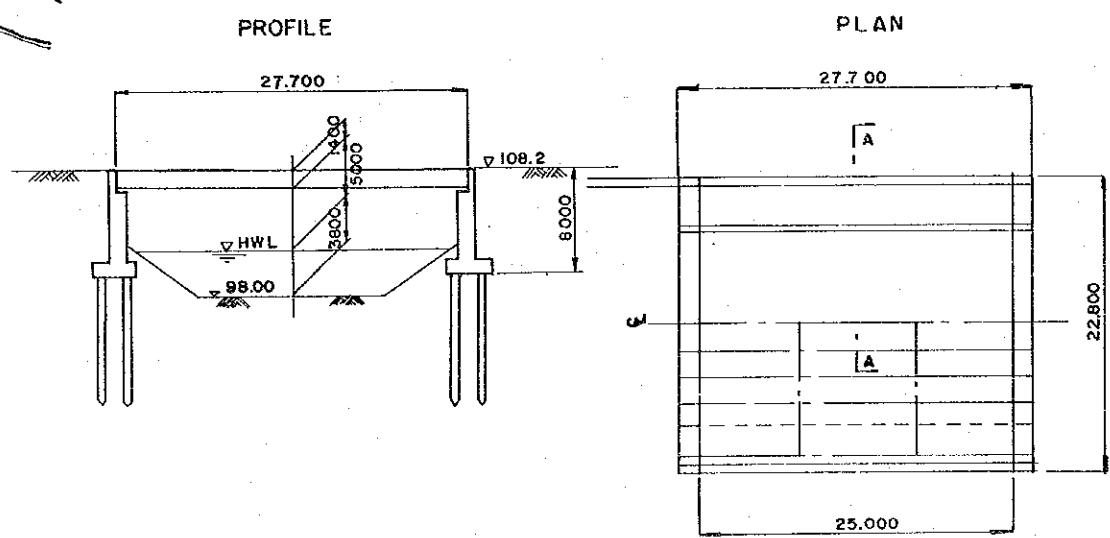
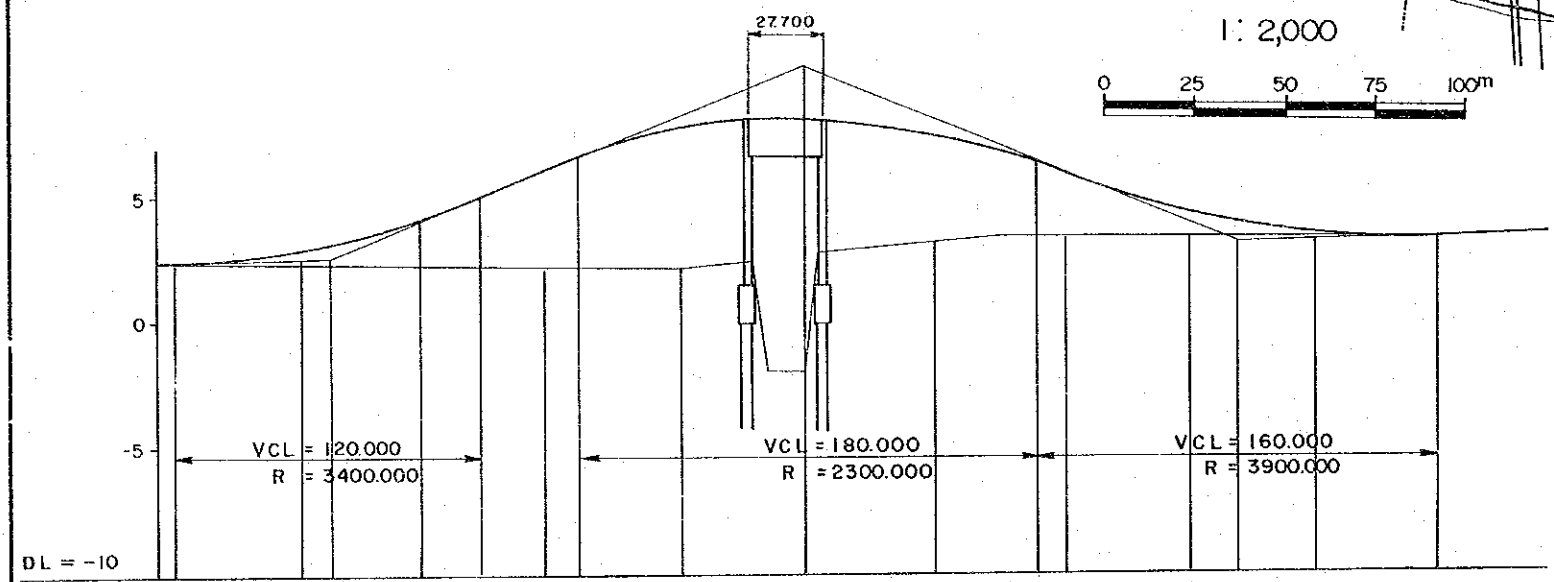
STATION	DISTANCE	G-HIGHT	F-HIGHT	GRADE
800	5600.000	0.84	2.400	I = 0.30% L = 550.000
850	5850.000	0.90	2.850	
900	5900.000	0.94	3.000	
950	5950.000	0.90	3.381	3 3 C
STA 6+0.000	6000.000	1.00	4.225	
50	6050.000	1.04	5.531	I = 4.0% L = 200.000
100	6000.000	1.07	7.300	
150	6150.000	1.10	8.800	
200	6200.000	0.90	9.300	1 1 3 C
250	6250.000	1.10	8.800	
300	6300.000	1.20	7.300	I = 4.0% L = 250.000
350	6350.000	1.14	5.498	
400	6400.000	1.09	4.093	
450	6450.000	1.03	3.083	1 3 0
500	6500.000	0.97	2.470	
550	6550.000	0.95	2.253	I = 0.755% L = 550.000
600	6600.000	0.93	2.433	
650	6650.000	0.92	2.811	
700	6700.000	0.90	3.188	
750	6750.000	0.90	3.566	
800	6800.000	1.00	3.943	



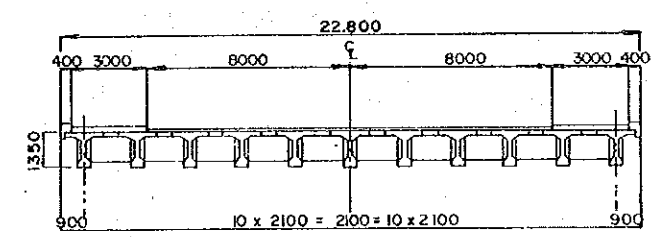
STATION	DISTANCE	G-HIGHT	H-HIGHT	GRADE
900	6800.000	1.00	3.142	I = 0.75% L = 550.000
KA-9	6810.000	1.00	3.257	
850	6850.000	1.10	3.718	5.450
900	6900.000	1.20	4.925	
925	6925.000	1.20	4.584	I = 2.82857% L = 175.000
KE-9	6943.333	1.25		
950	6950.000	1.30		0.500
982	6982.000		4.809	
STA 7000	7000.000	1.40	4.702	I = 2.00% L = 125.000
50	7050.000	1.40	3.952	
75	7075.000	1.40	3.327	3000
KE-10	7079.000	1.40	3.357	
100	7100.000	1.40	2.937	
150	7150.000	1.40	2.027	
179	7179.000	1.40	1.207	
200	7200.000	1.40	1.820	
KA-10	7213.326	1.40	1.865	
250	7250.000	1.40	2.257	
275	7275.000	1.40	2.641	
300	7300.000	3.00	3.000	
313	7313.000		3.180	



DETAILS OF CISNEROS BRIDGE

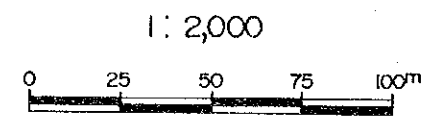
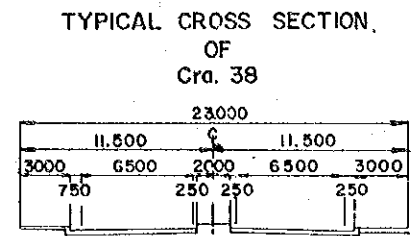
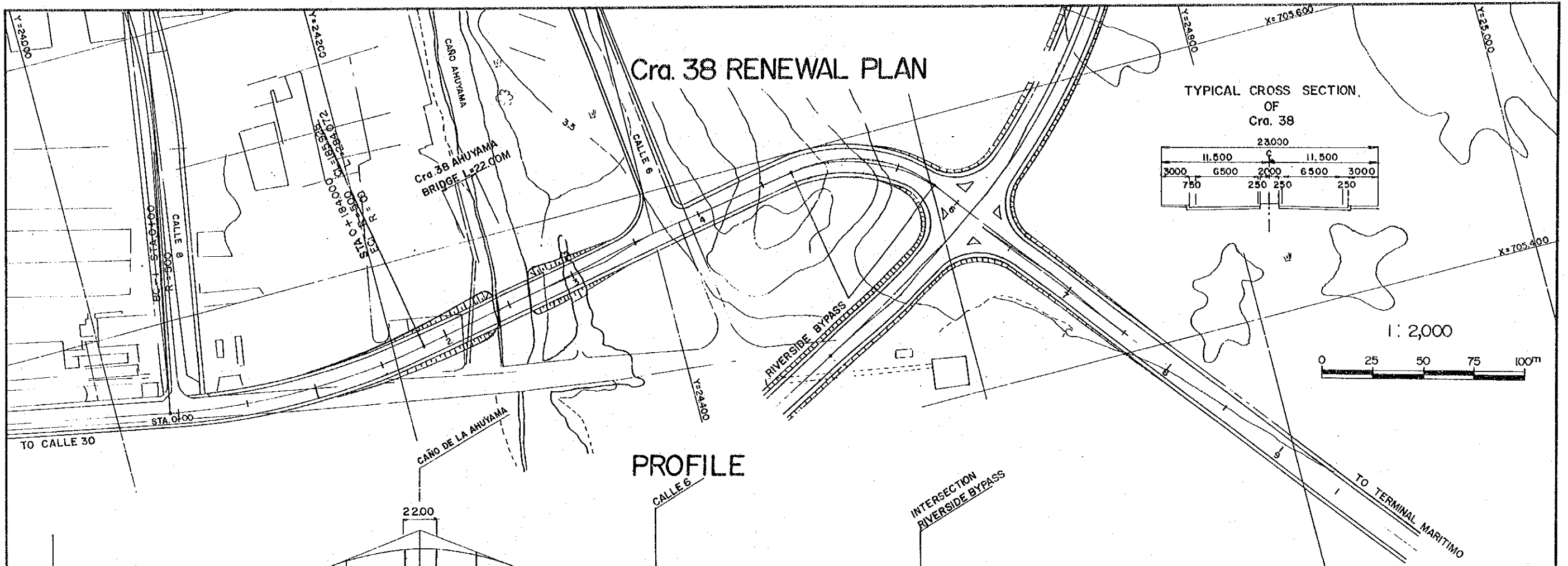


TYPICAL CROSS SECTION

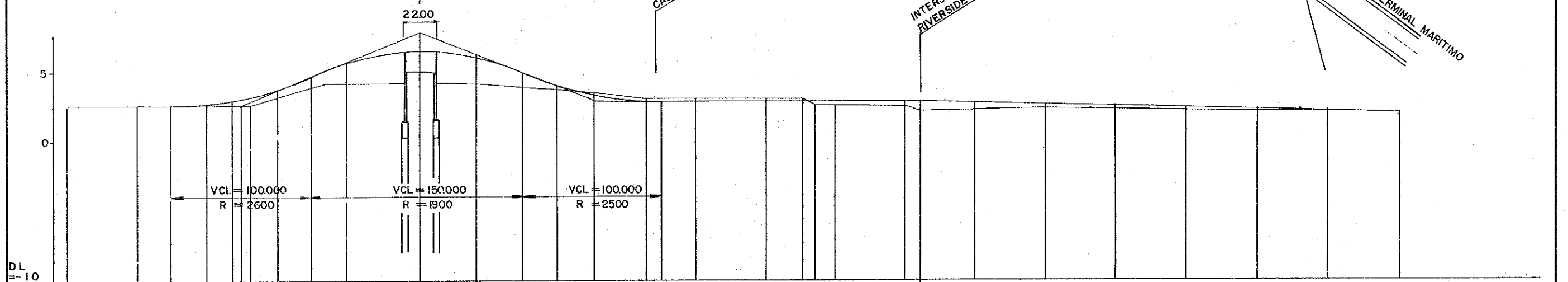


STATION	50	60	100	120	150	160	200	250	300	340	350	400	420	450	500
DISTANCE	50.000	60.000	100.000	120.000	150.000	160.000	200.000	250.000	300.000	340.000	350.000	400.000	420.000	450.000	500.000
G-HIGHT	2.09	2.08	2.05	2.03	2.02	2.02	2.00	2.45	2.95	3.20	3.21	3.22	3.23	3.24	3.23
F-HIGHT	2.725	2.833	4.059	4.800	6.000	6.400	7.645	8.200	7.645	6.400	6.013	4.460	4.018	3.547	3.273
GRADE	1 = 0.450% L = 60.000		1 = 4.000% L = 190.000		1 = 4.000% L = 170.000		1 = 0.091% L = 110.000								

Cra. 38 RENEWAL PLAN



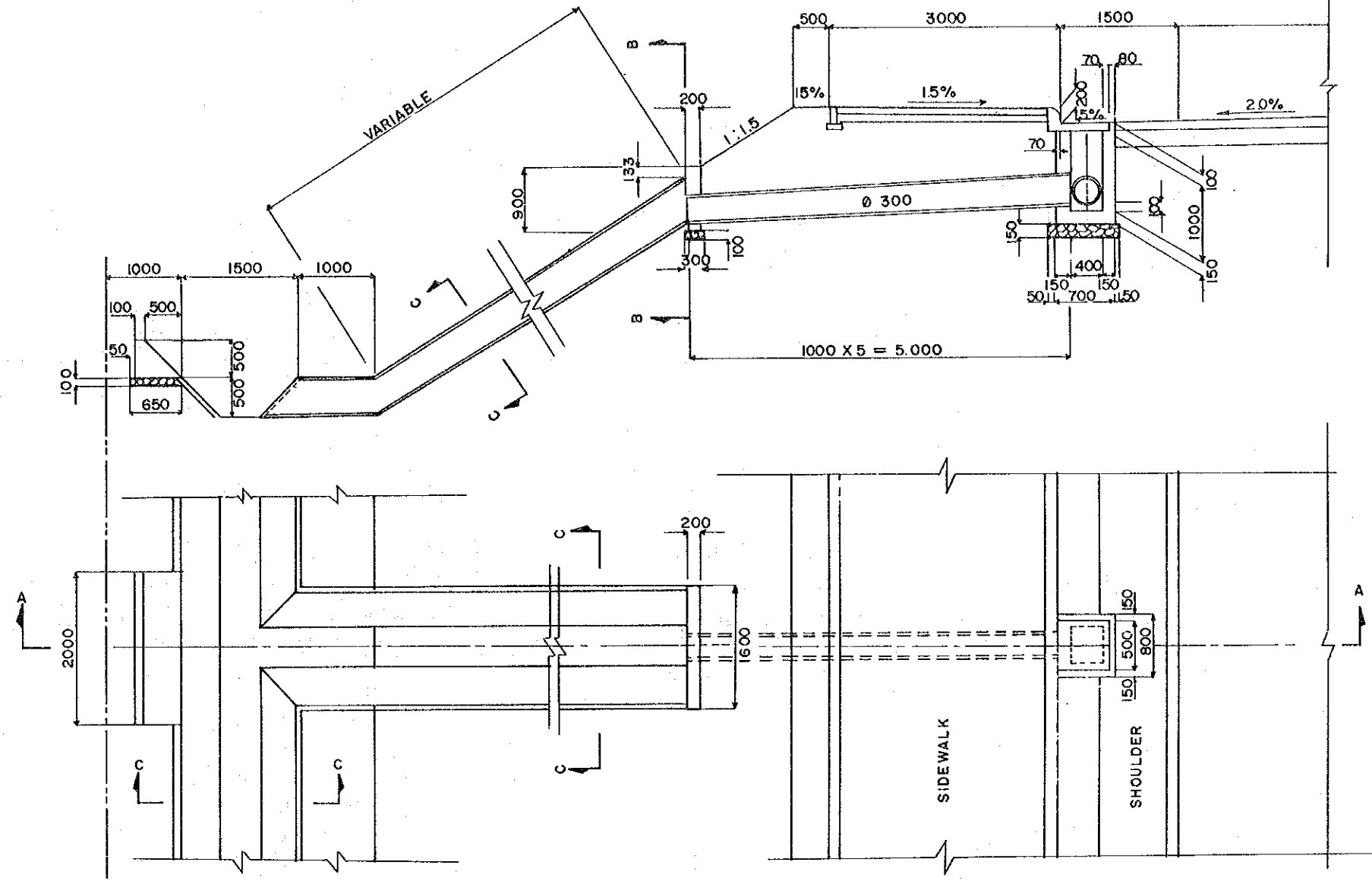
PROFILE



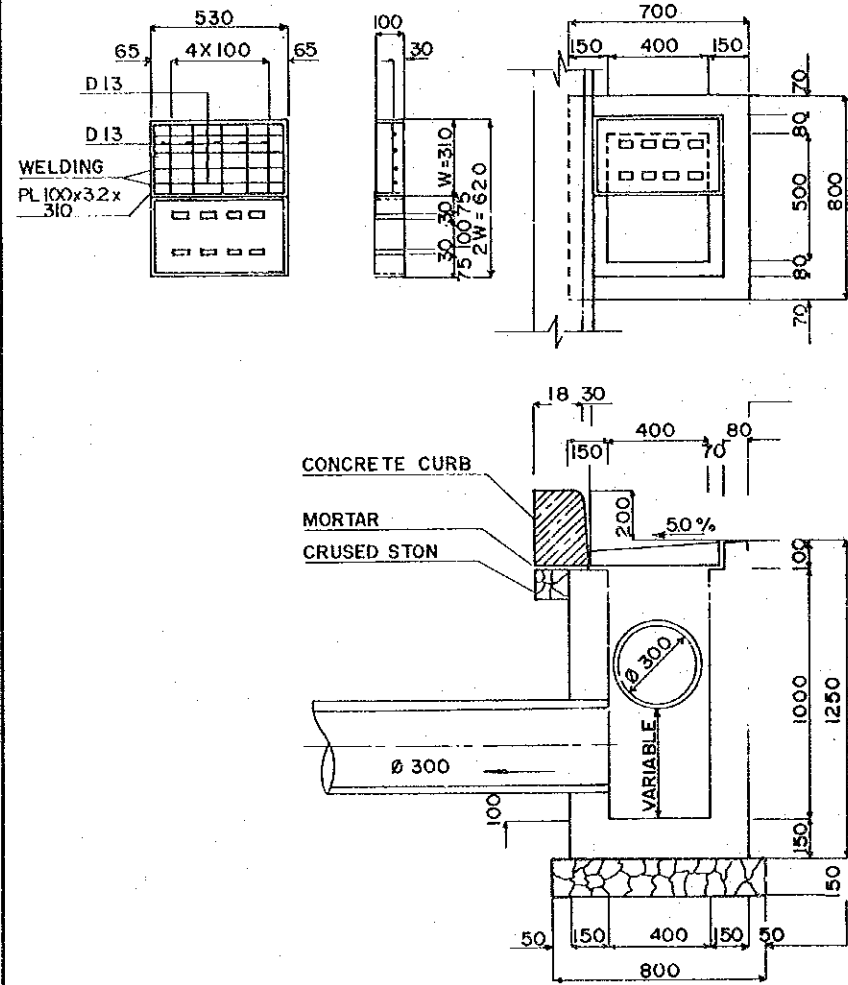
STATION	DISTANCE	G-HIGHT	F-HIGHT	GRADE
STA 0+00 BC-1	0.000	2.50	2.500	
50	50.000	2.51	2.516	
75	75.000	2.51	2.524	
100	100.000	2.52	2.656	
130	125.000	2.54	3.036	I = 0.032% L = 125.000
	130.000	2.54	3.142	
150	150.000	3.10	3.640	
175	175.000	3.75	4.540	I = 4.0% L = 125.000
EC-1	184.000	4.00	4.878	
200	200.000	4.00	5.373	
250	250.000	4.00	6.040	
293	293.000	4.00	5.347	I = 4.0% L = 125.000
300	300.000	3.89	5.373	
325	325.000	3.75	4.940	
350	350.000	3.49	3.668	
375	375.000	3.40	3.051	
400	400.000	3.15	2.691	
414	414.000	3.00	2.600	
425	425.000	3.00	2.586	
450	450.000	3.00	2.608	
500	500.000	3.00	2.654	
527	527.000	3.00	2.678	
535	535.000	2.50	2.666	
550	550.000	2.48	2.698	
EC-2	578.631	2.48	2.745	I = 0.091% L = 287.000
600	600.000	2.39	2.756	
612	612.000	2.00	2.635	
650	650.000	2.32	2.476	
700	700.000	2.34	2.318	
750	750.000	2.16	2.159	
800	800.000	2.08	2.000	
850	850.000	2.00	2.000	
900	900.000	2.00	2.000	
950	950.000	2.00	2.000	

DRAINAGE FACILITIE AT EMBANKMENT SECTION
OF
RIVERSIDE BYPASS

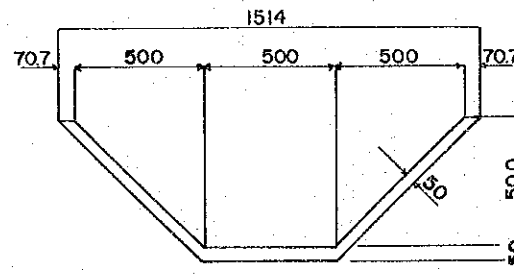
SECTION A - A



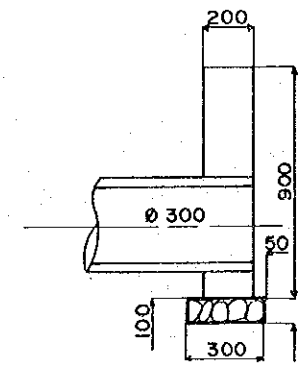
DETAIL OF CATCH BASIN



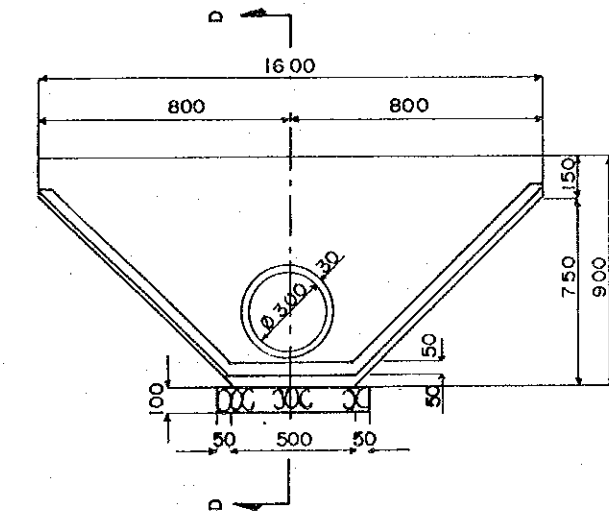
SECTION C - C



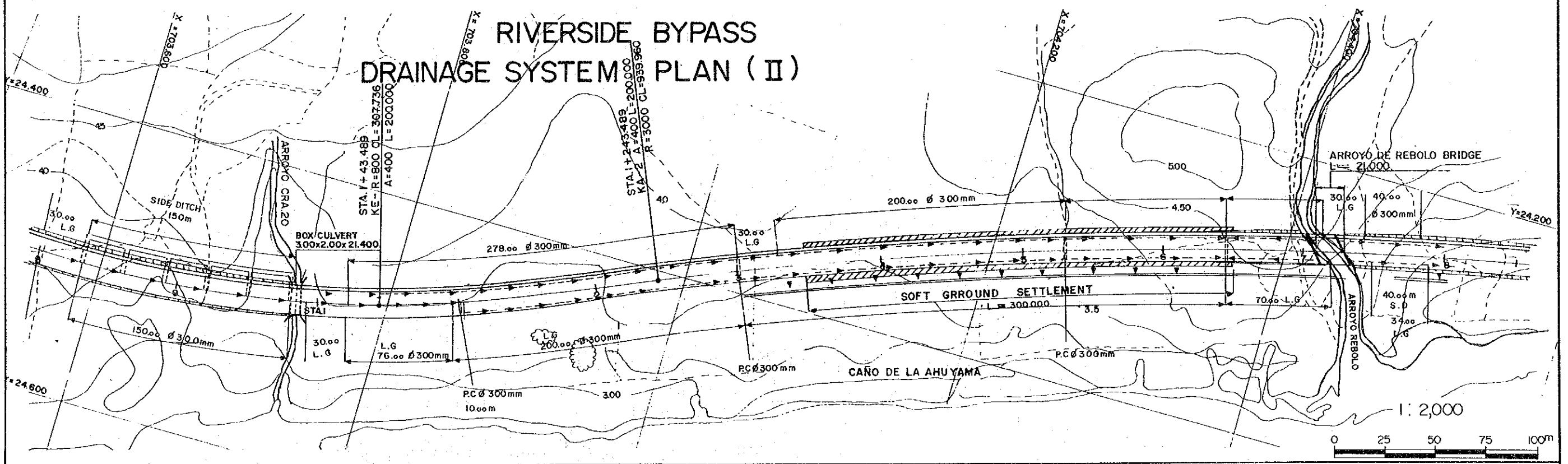
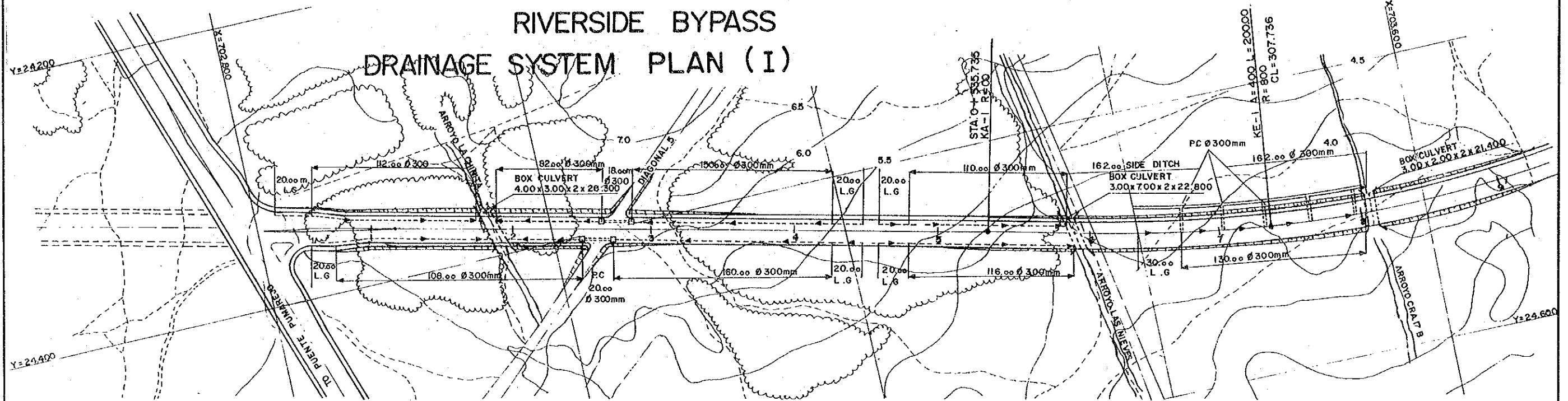
SECTION D - D



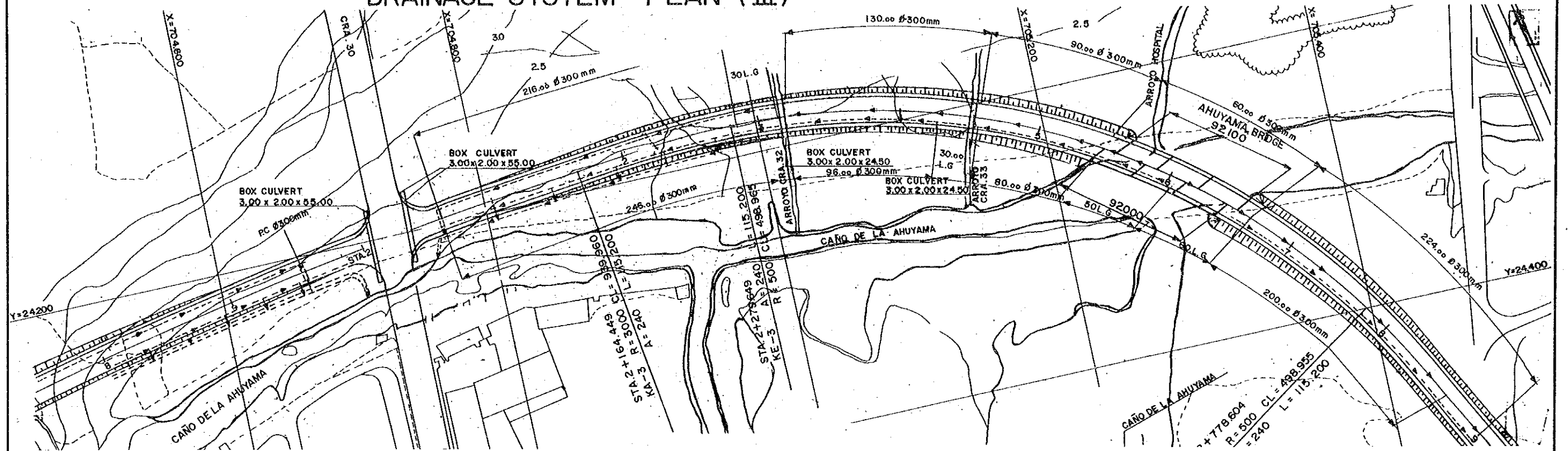
SECTION B - B



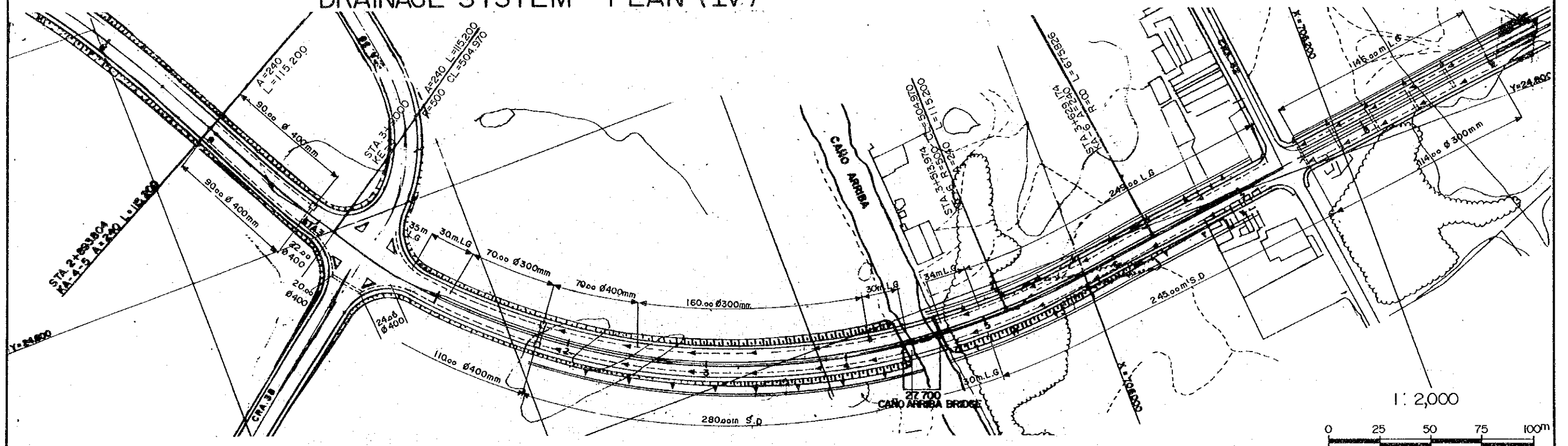
RIVERSIDE BYPASS DRAINAGE SYSTEM PLAN (I)



RIVERSIDE BYPASS DRAINAGE SYSTEM PLAN (III)

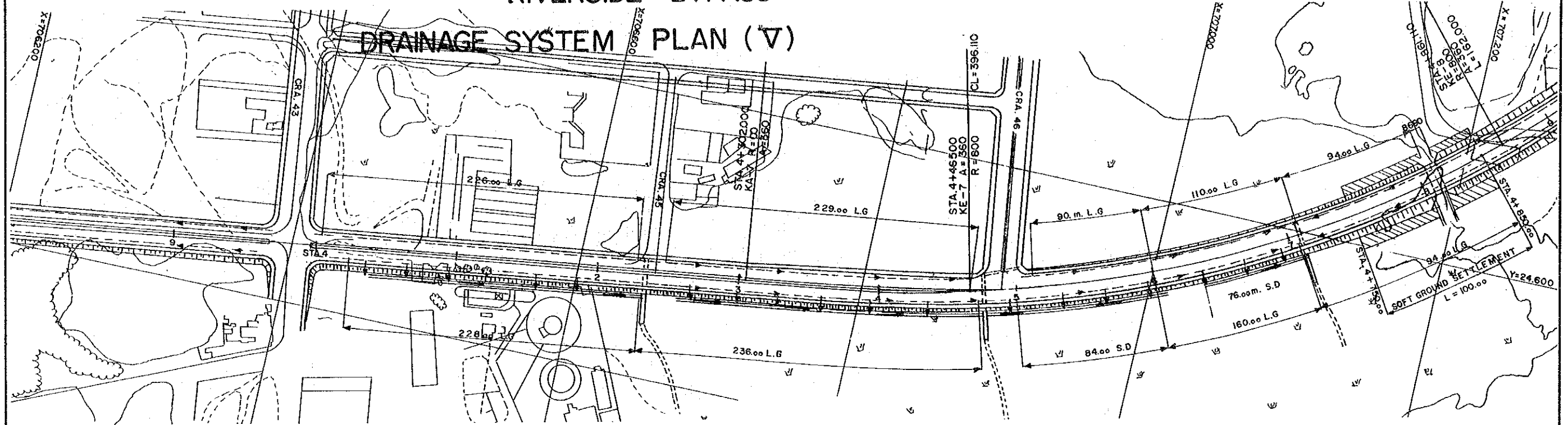


RIVERSIDE BYPASS DRAINAGE SYSTEM PLAN (IV)

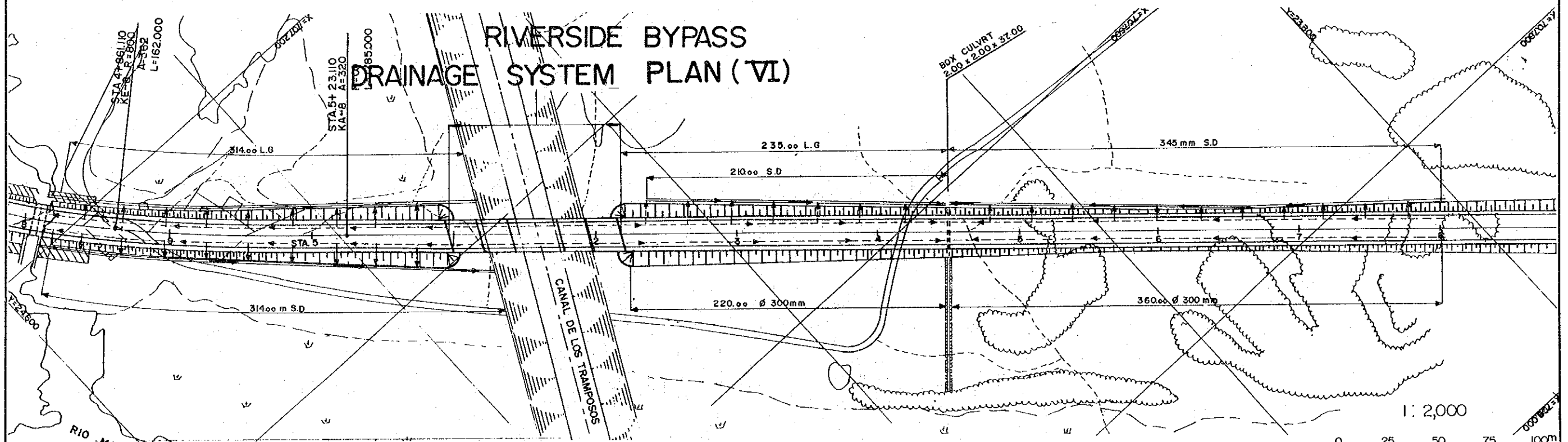


RIVERSIDE BYPASS

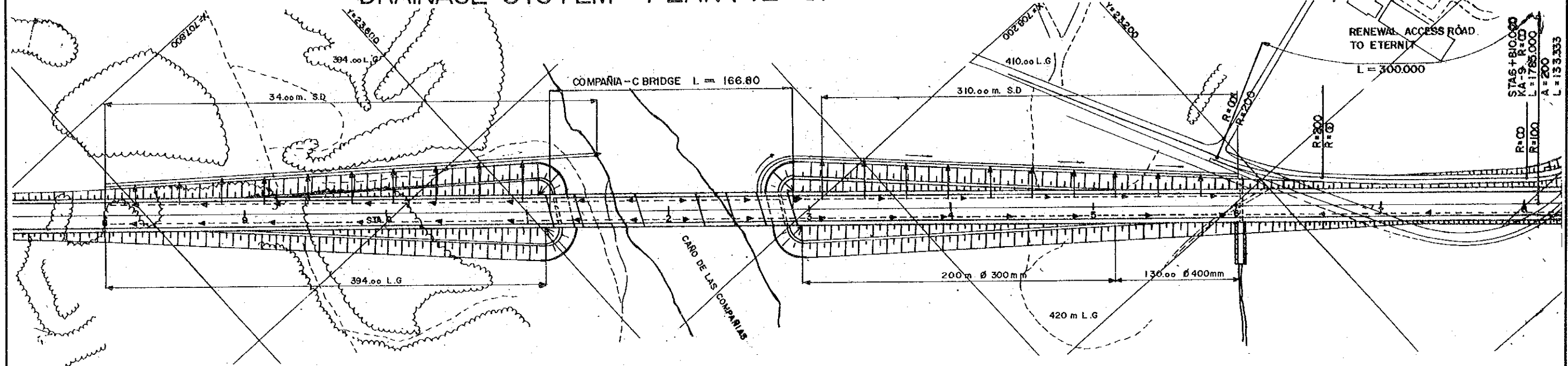
DRAINAGE SYSTEM PLAN (V)



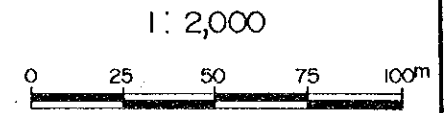
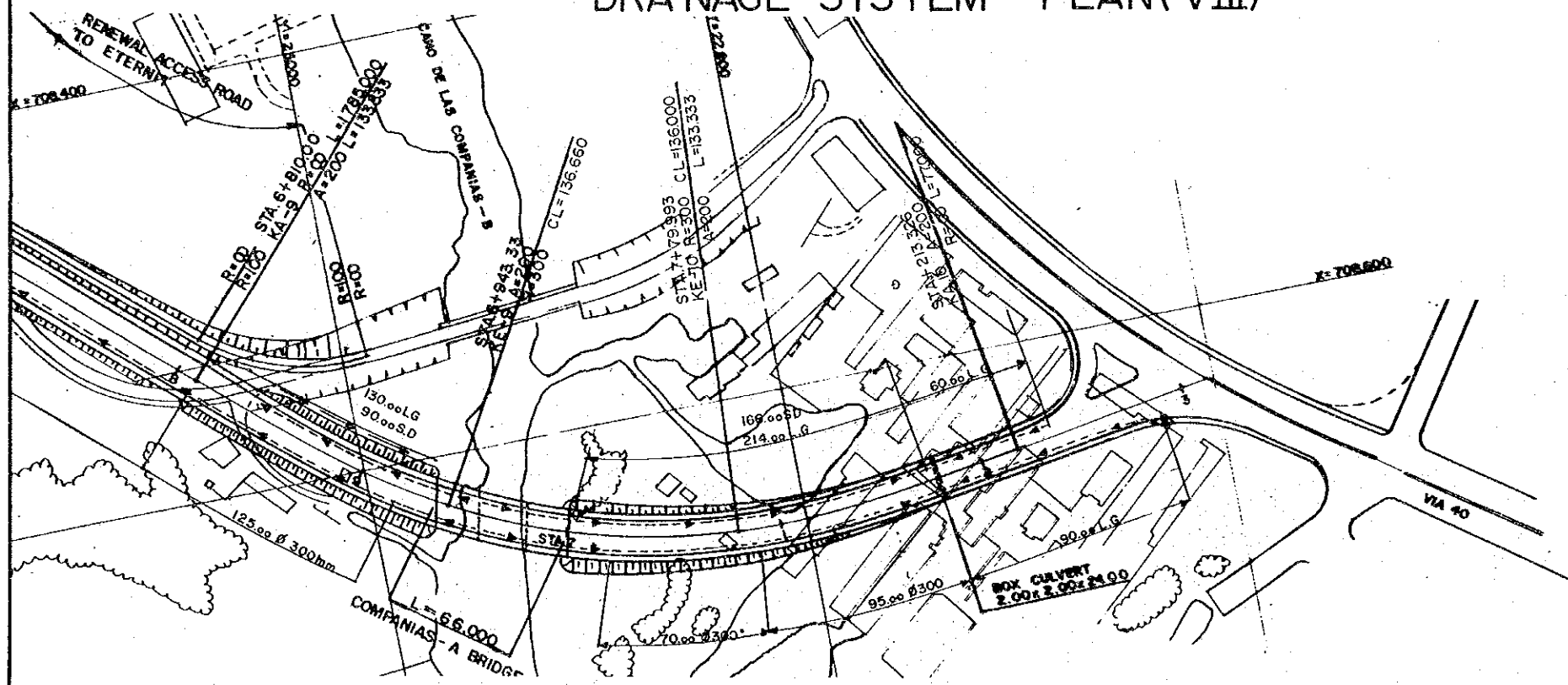
DRAINAGE SYSTEM PLAN (VI)

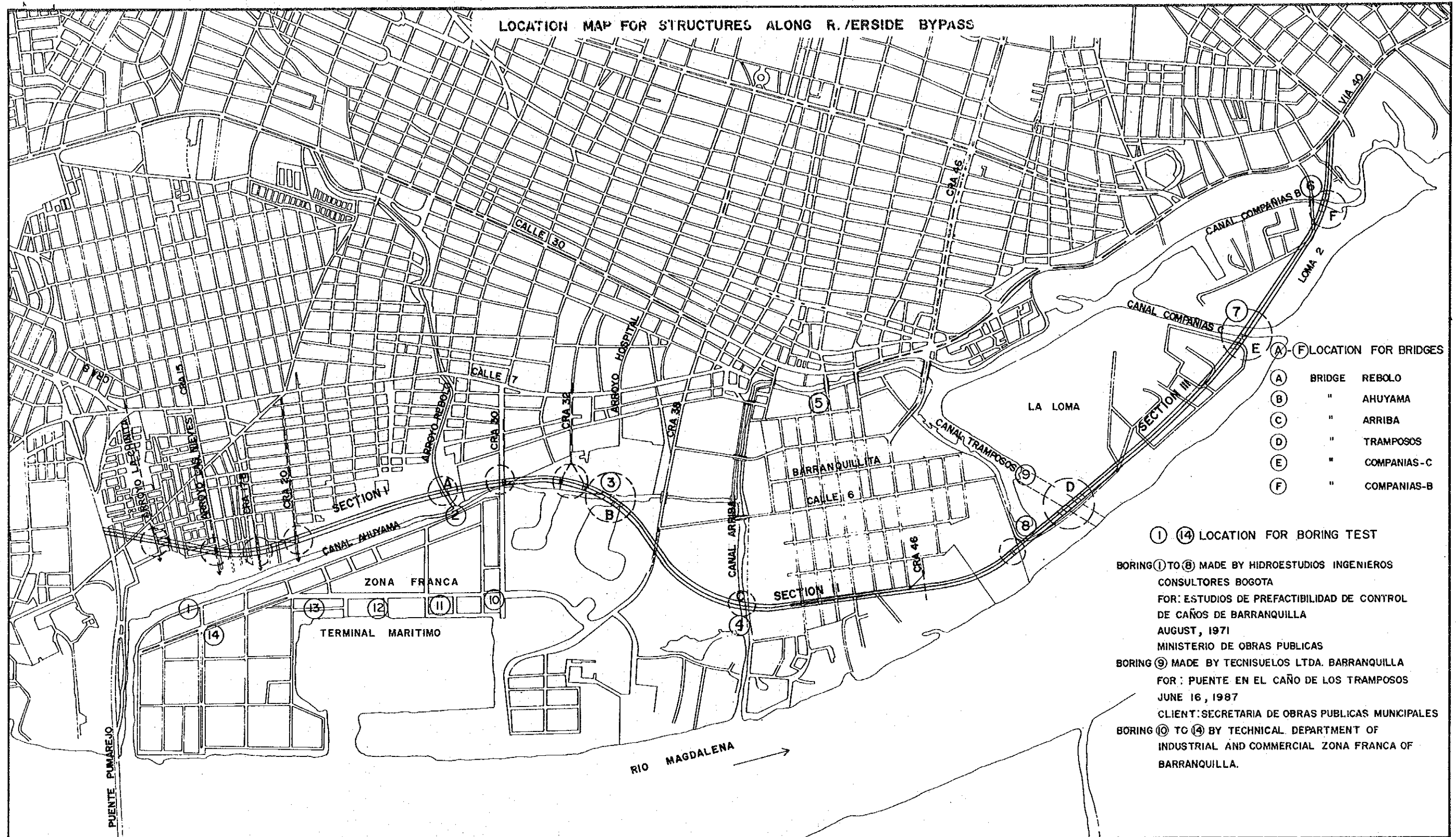


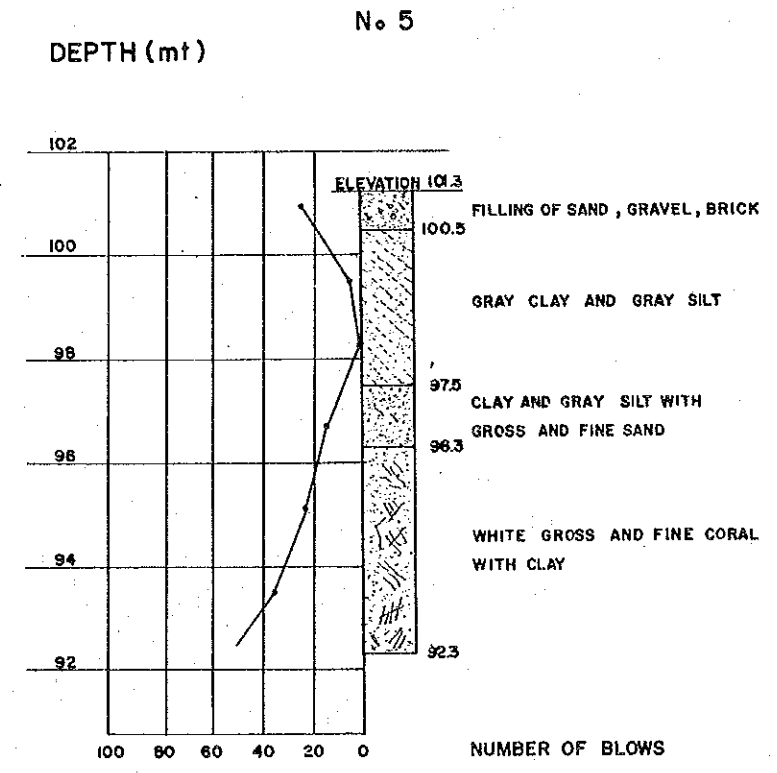
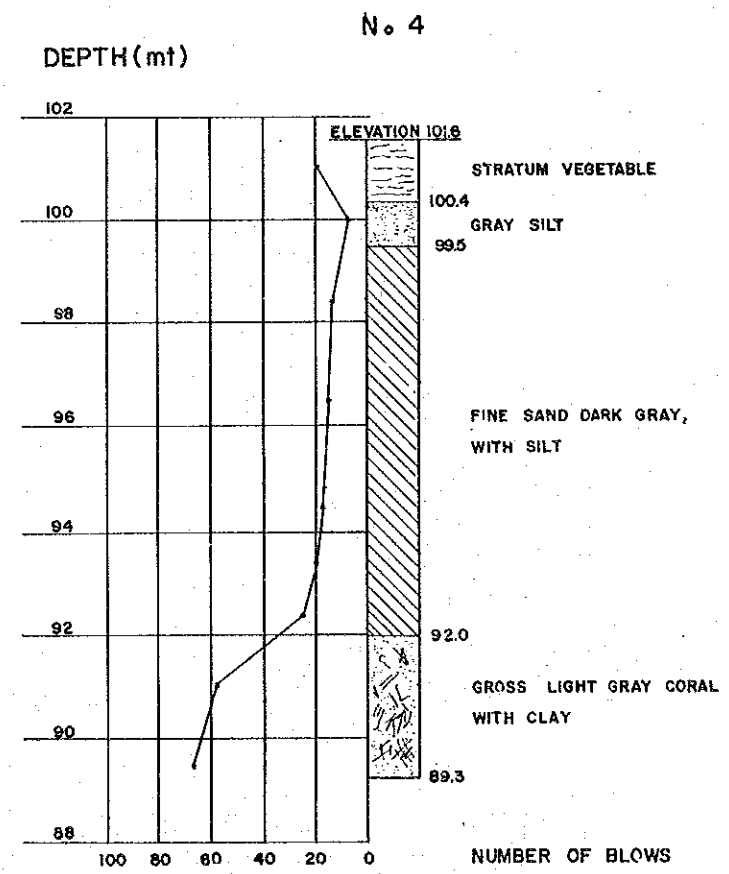
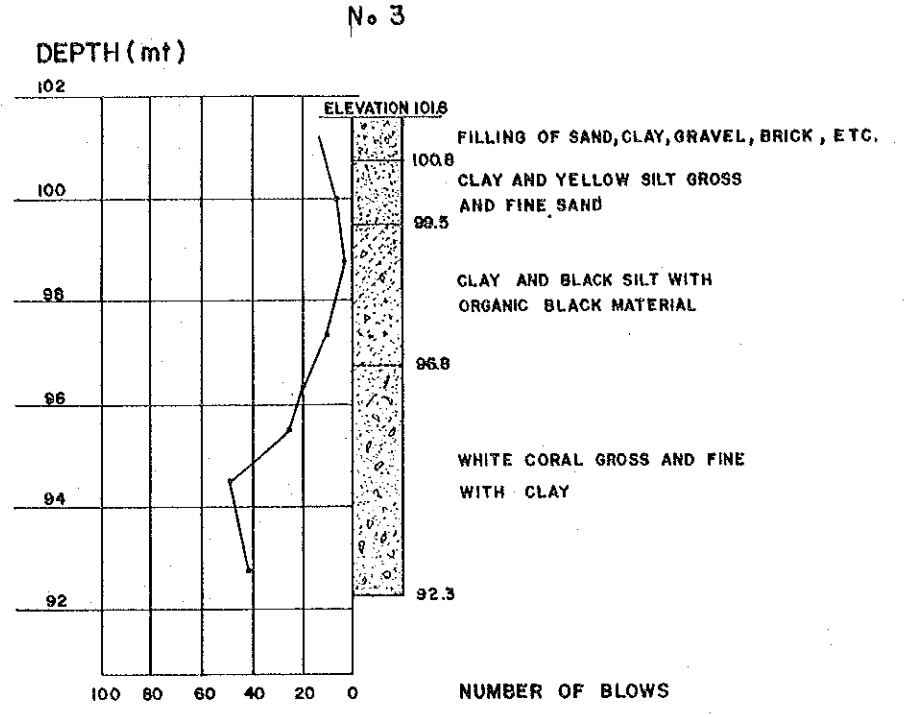
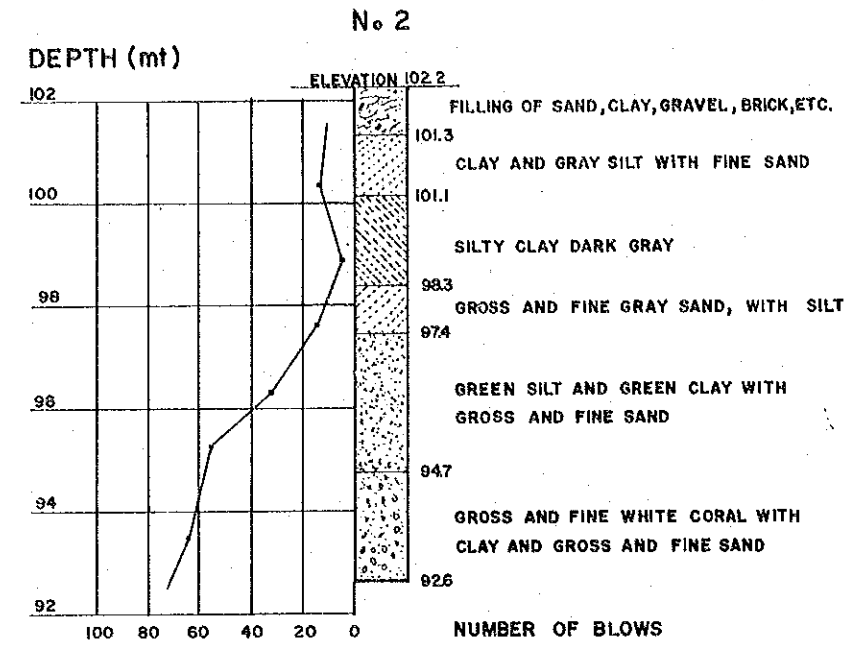
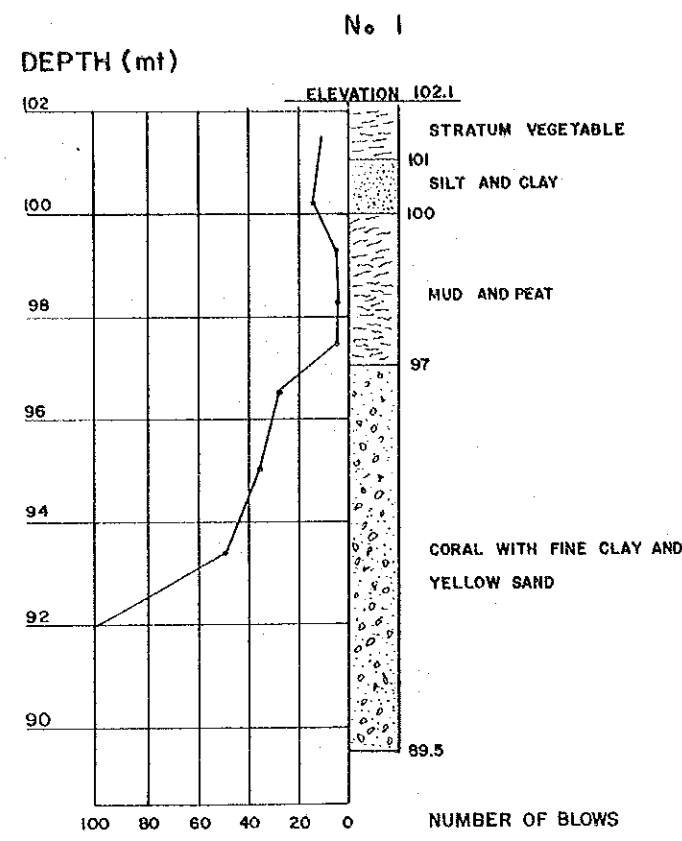
RIVERSIDE BYPASS DRAINAGE SYSTEM PLAN (VII-I)

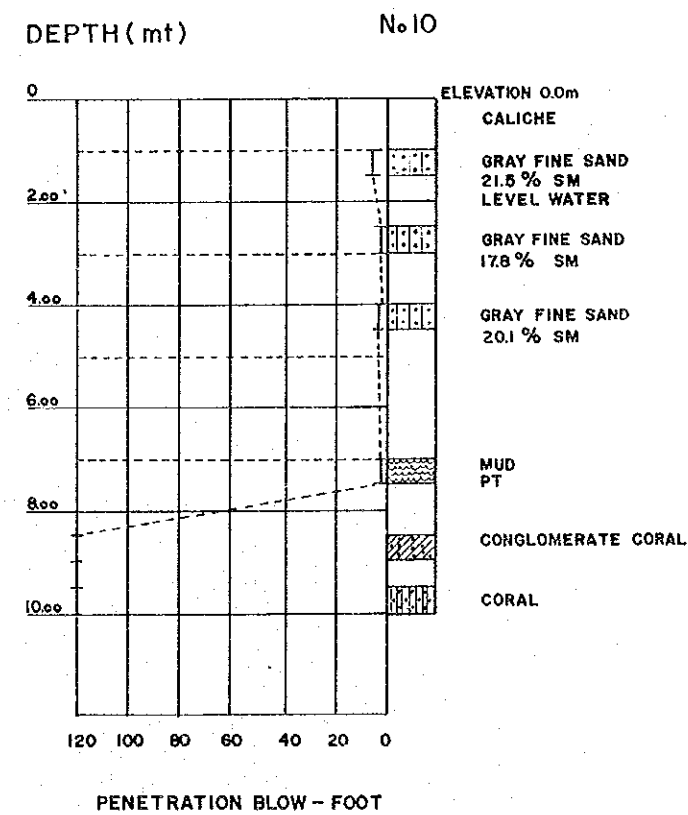
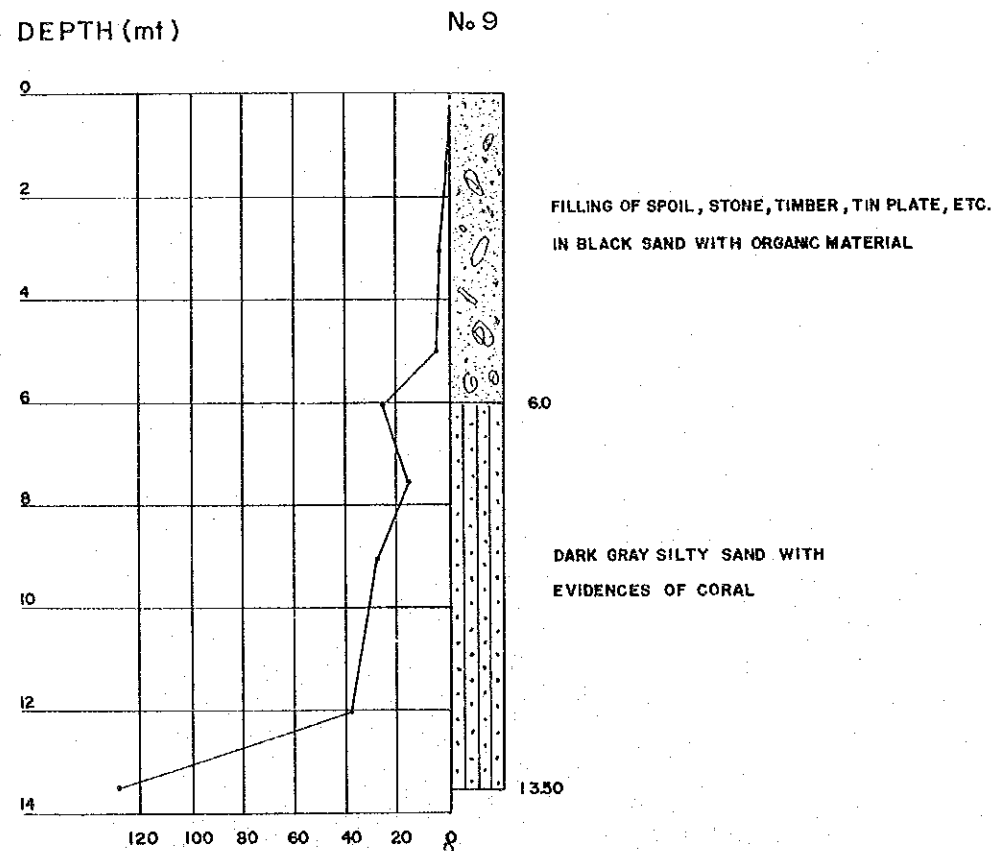
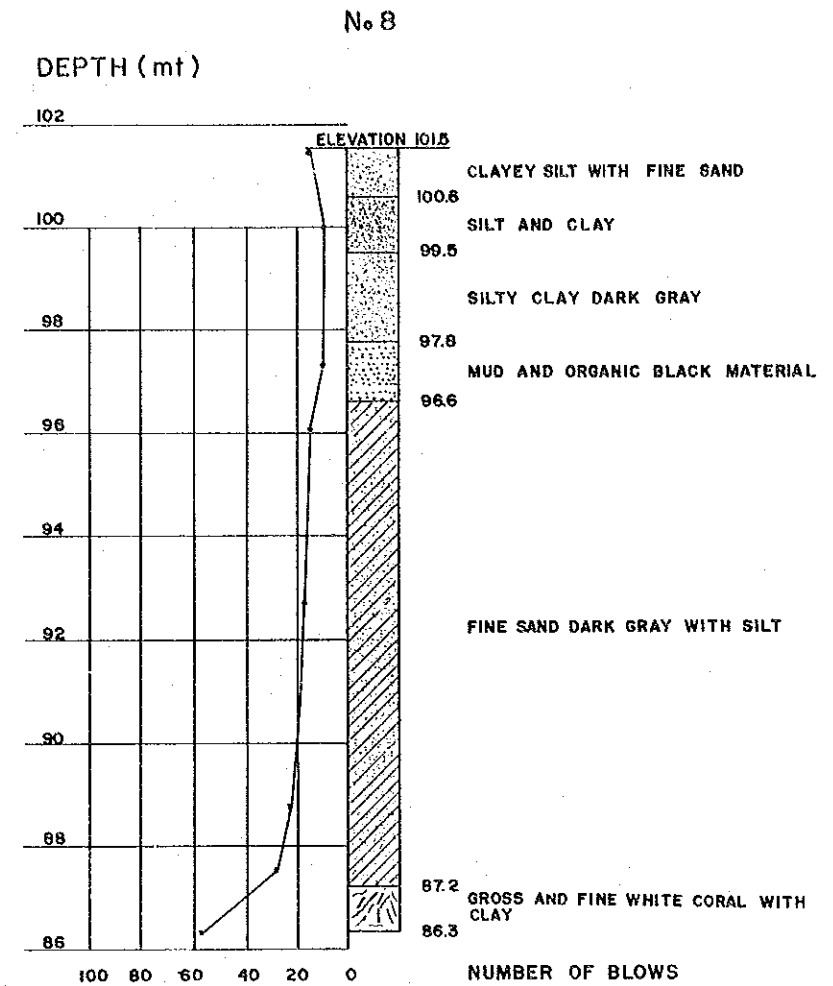
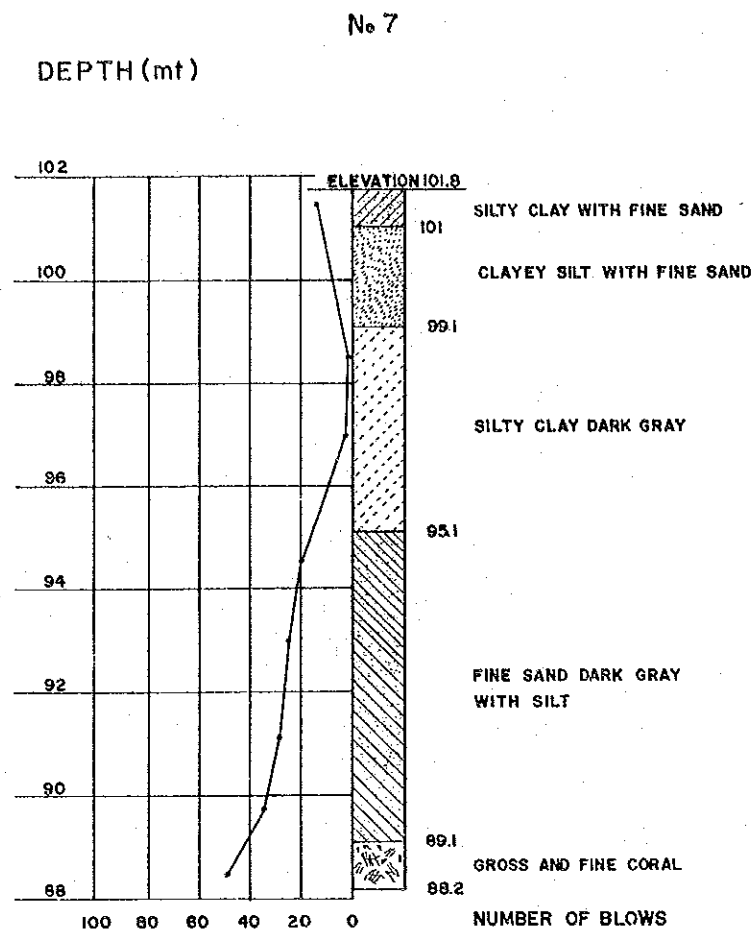
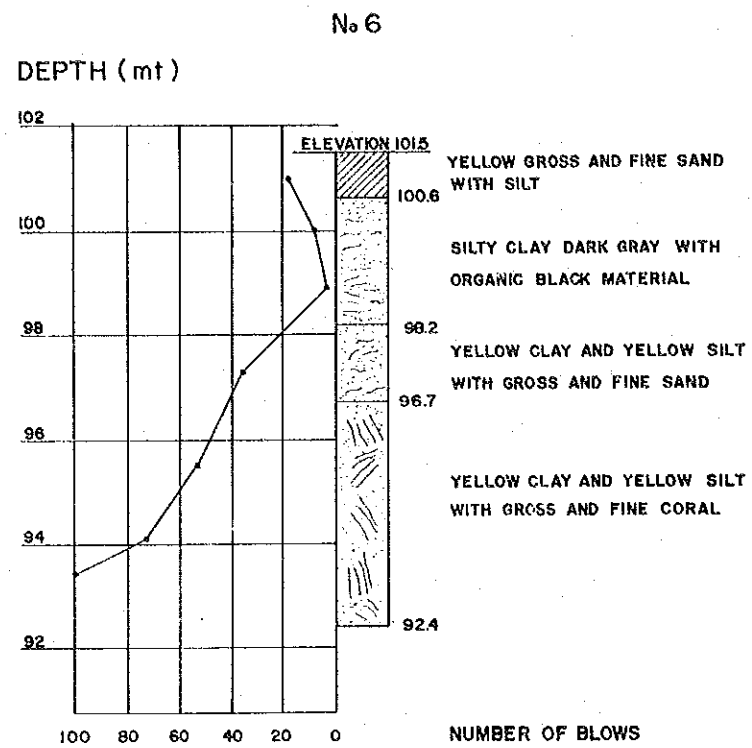


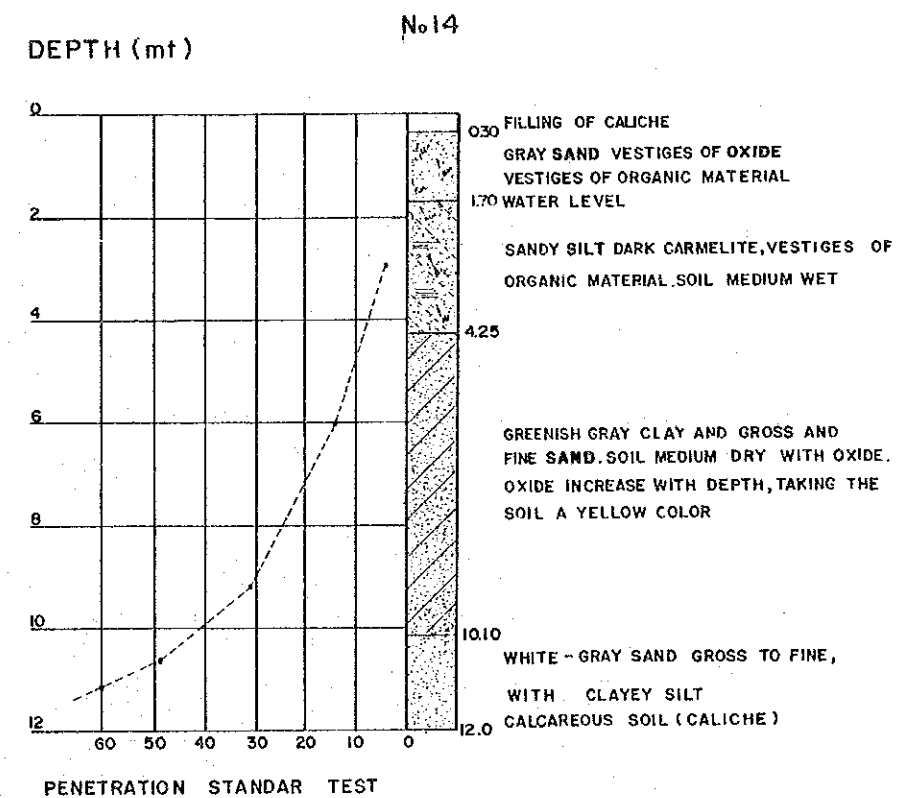
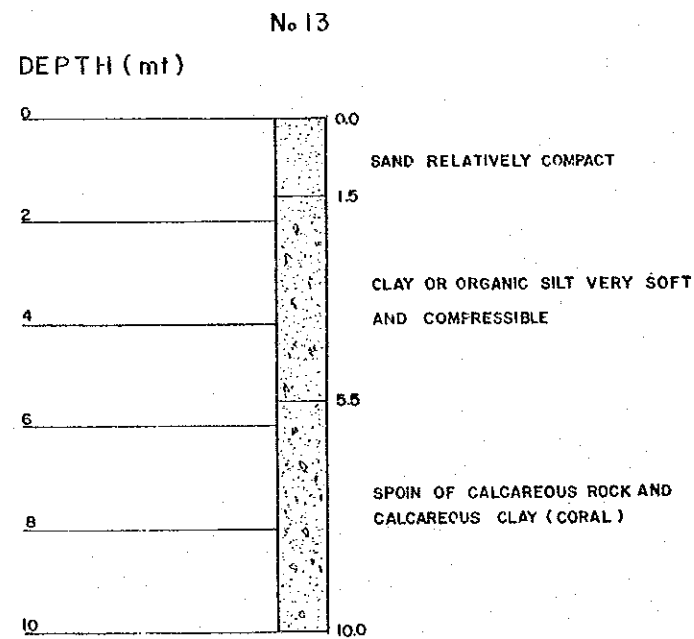
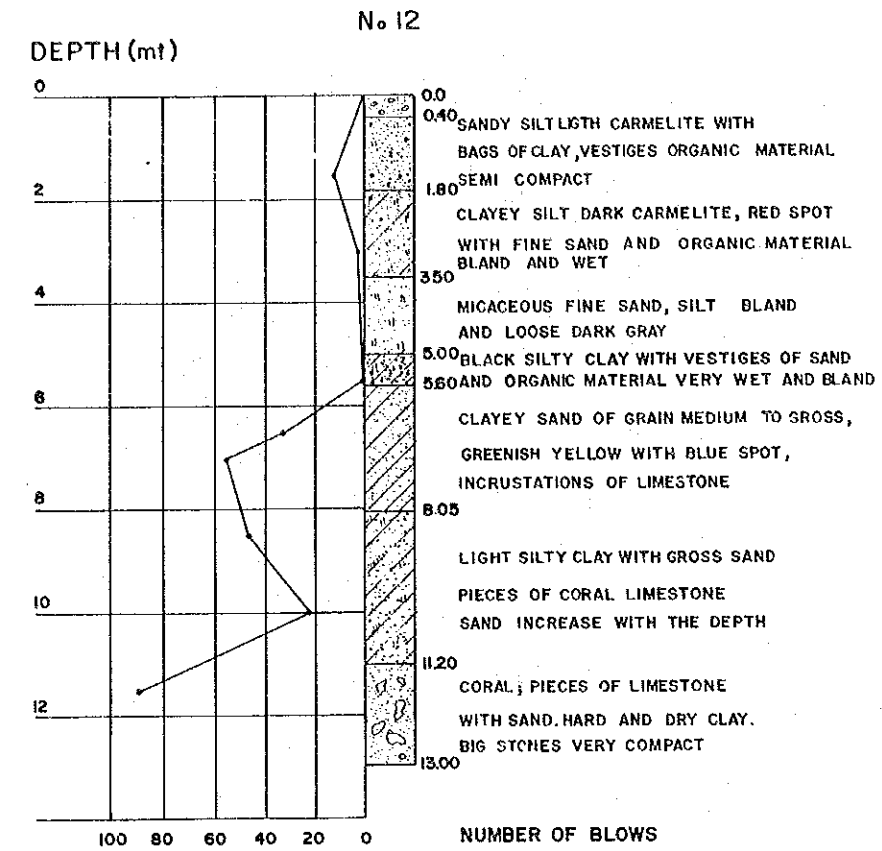
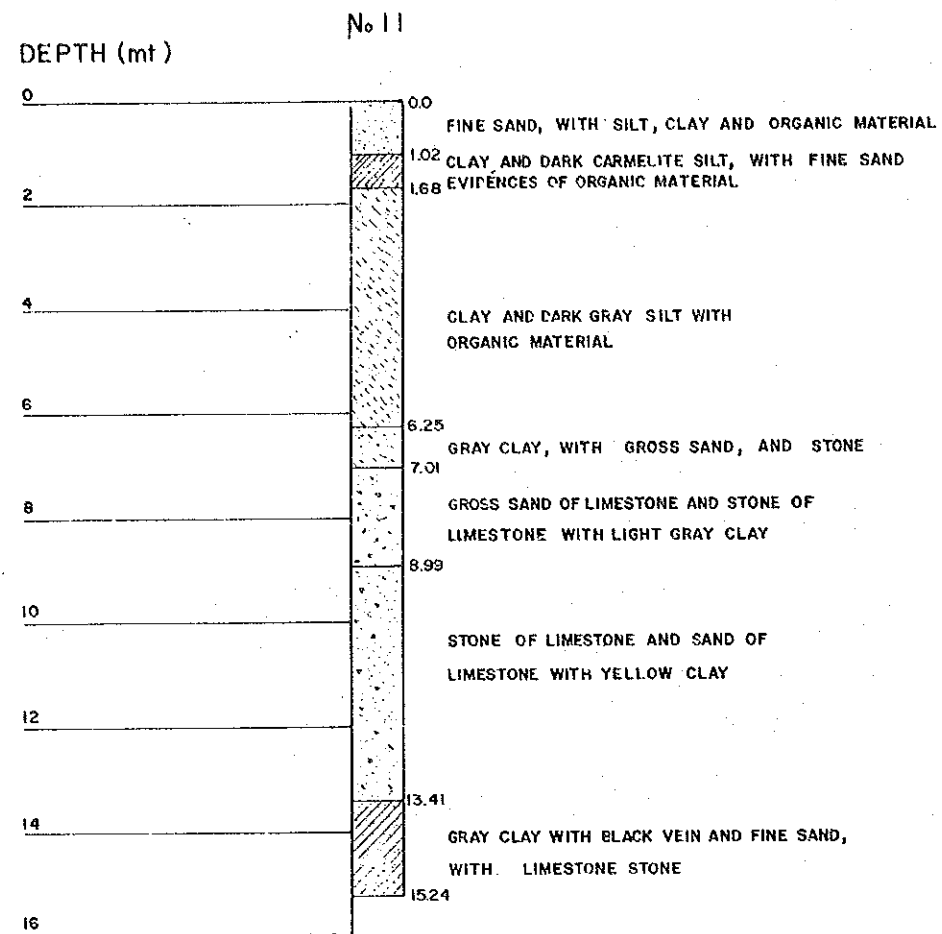
RIVERSIDE BYPASS DRAINAGE SYSTEM PLAN (VIII)





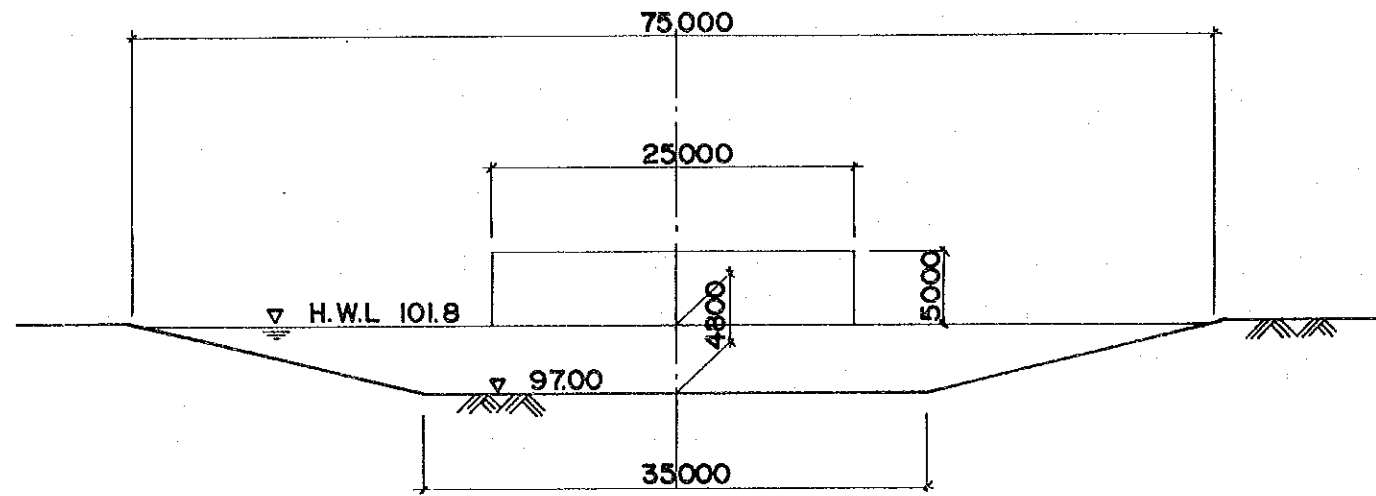




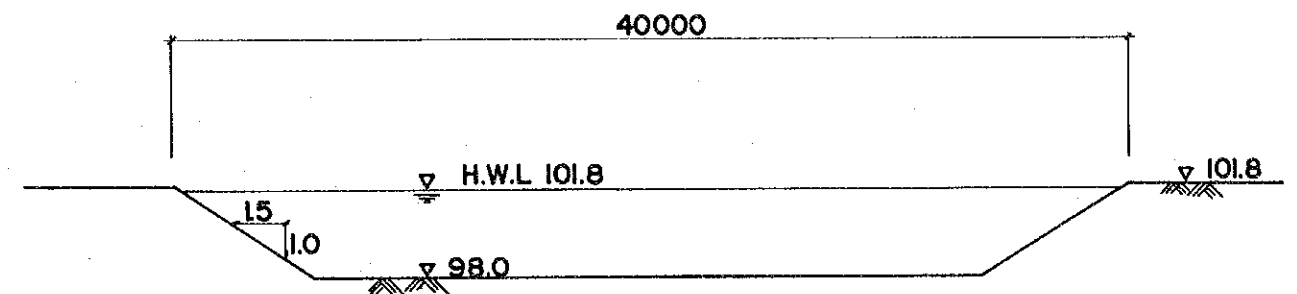


EXISTING PLANNING FOR CANAL (NAVIGATIONAL HEIGHT AND WIDTH)

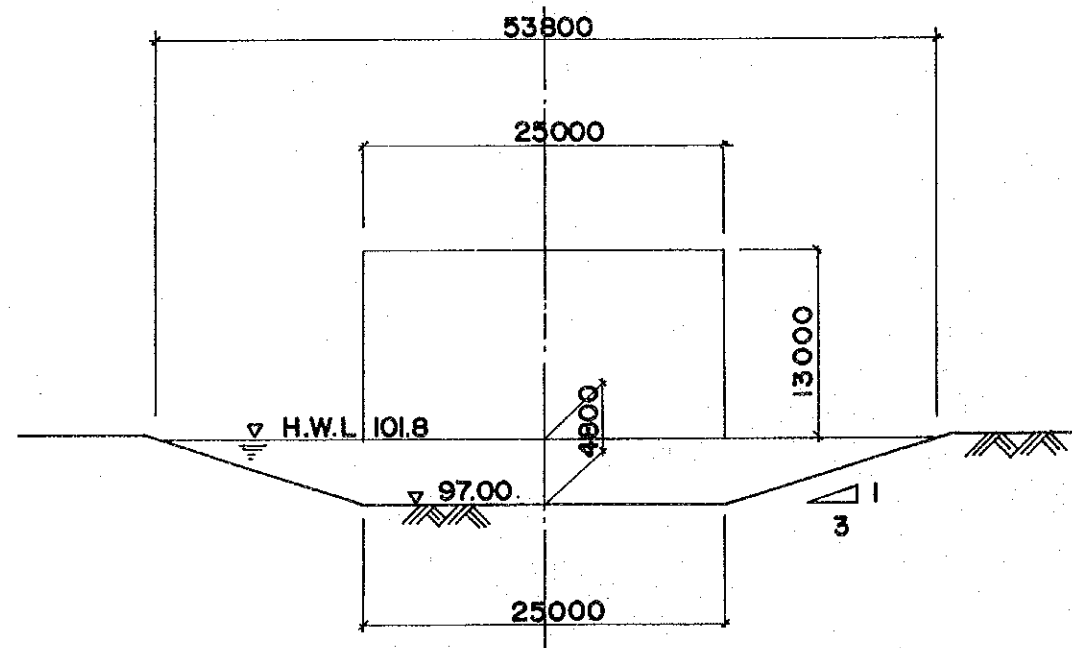
CANAL TRAMOSOS



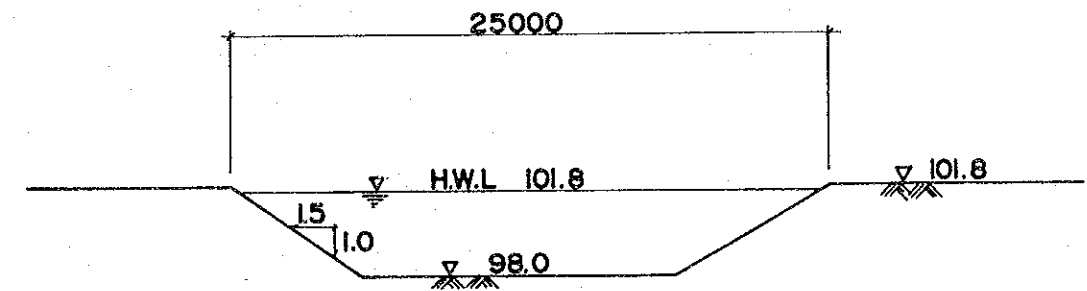
CANAL AHUYAMA



CANAL COMPAÑIAS-C



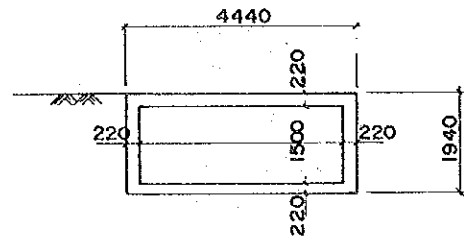
CANAL ARRIBA



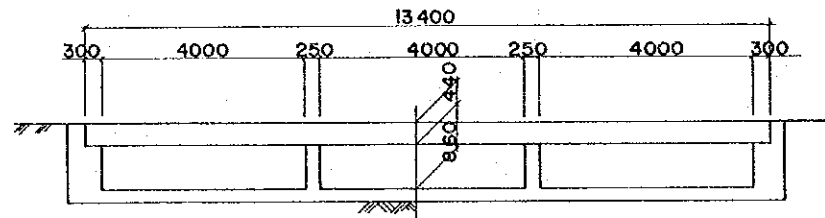
EXISTING CONDITION OF ARROYOS ALONG RIVERSIDE BYPASS

ARROYO LA CHINITA (CRA 8)

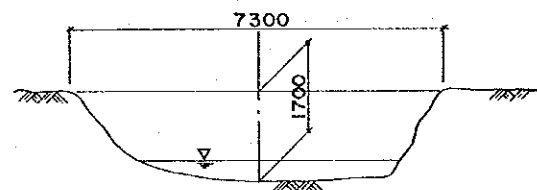
CANALIZED SECTION



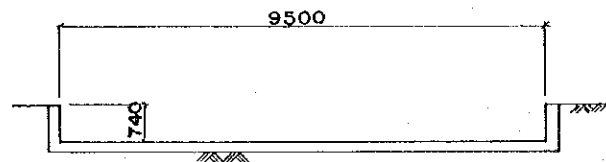
STREAM CROSSING ON CALLE 17



ERODED CHANNEL AT CAÑO AHUYAMA

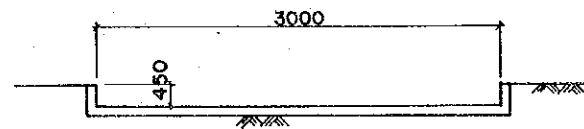


ARROYO LAS NIEVES (CRA 15)

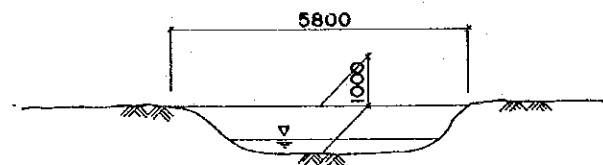


ARROYO CRA 20

CRA 20

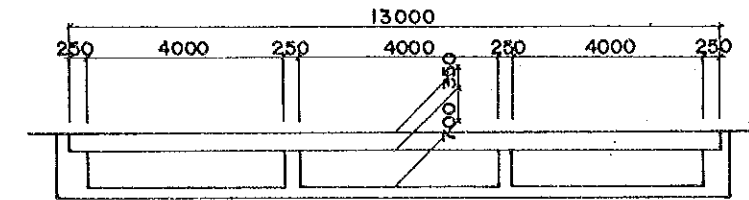


ERODED CHANNEL AT CAÑO AHUYAMA

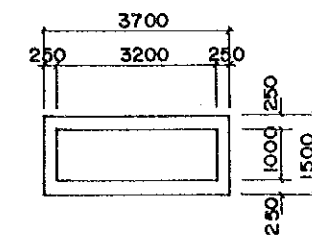


ARROYO CRA 32

STREAM CROSSING ON CALLE 17

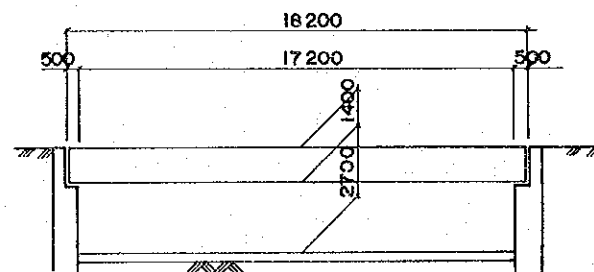


CANALIZED SECTION AT CAÑO AHUYAMA



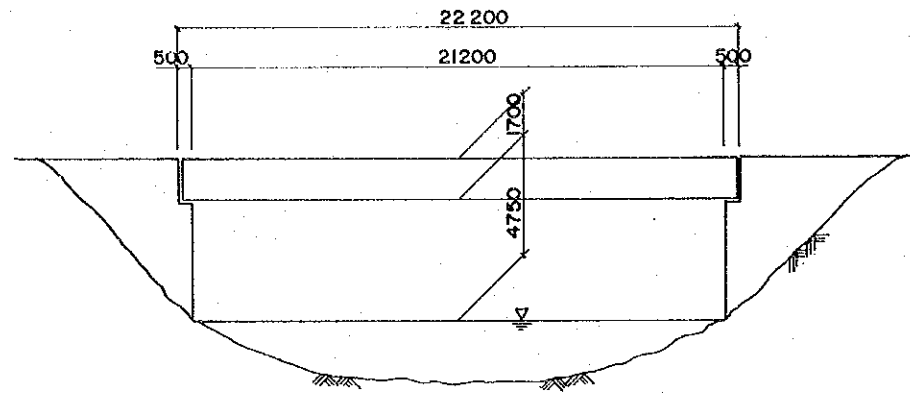
ARROYO REBOLO

BRIDGE ON CALLE 13

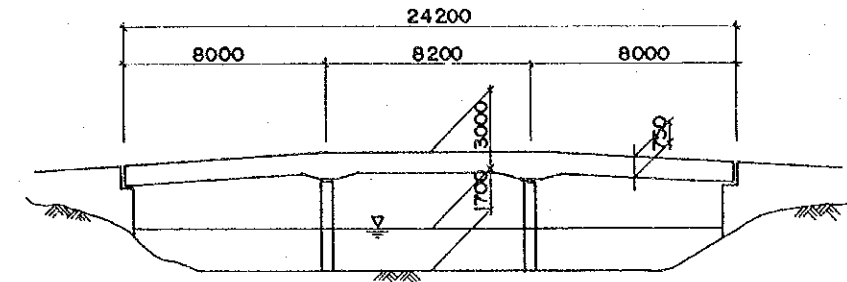


EXISTING BRIDGES FOR CAÑO AHUYAMA, ARRIBA AND COMPAÑIAS

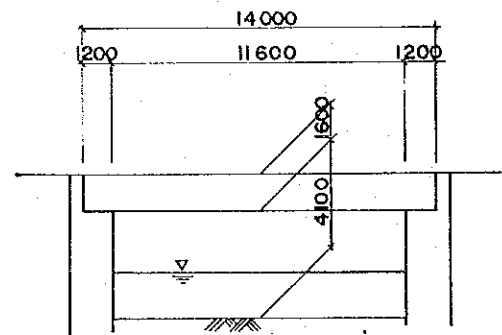
BRIDGE ON CAÑO AHUYAMA
BRIDGE ON CRA 30



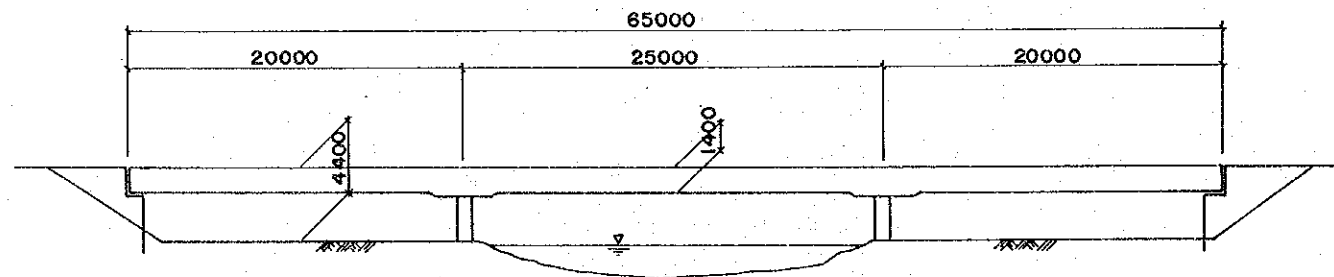
BRIDGE ON CAÑO ARRIBA
BRIDGE ON CALLE 6 (PUENTE CISNEROS)



BRIDGE ON CRA 38

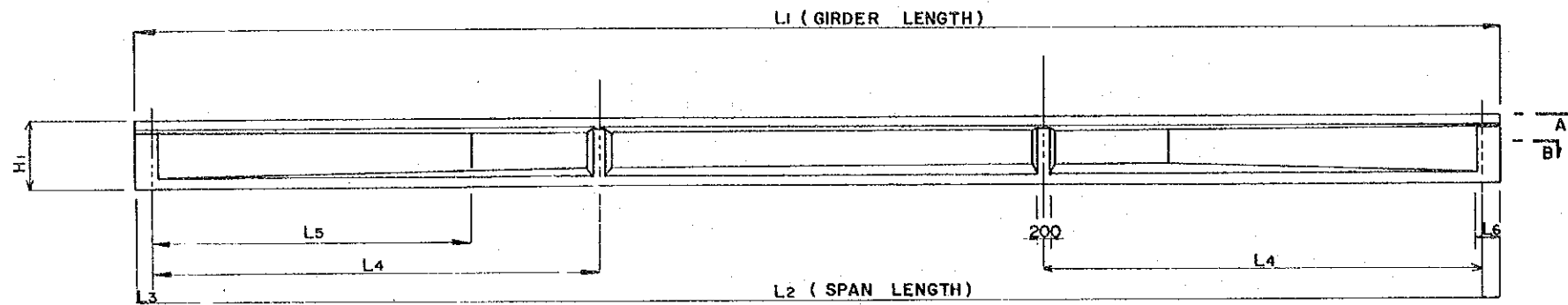


BRIDGE ON CAÑO DE LAS COMPAÑIAS (PUENTE ETERNIT)

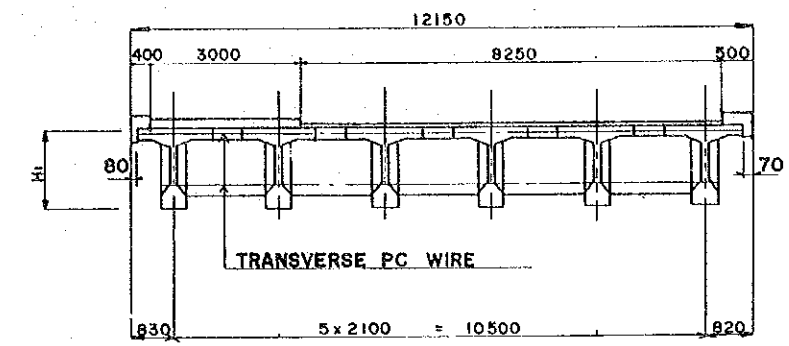


STANDARD DESIGN OF PRESTRESSED CONCRETE BRIDGE

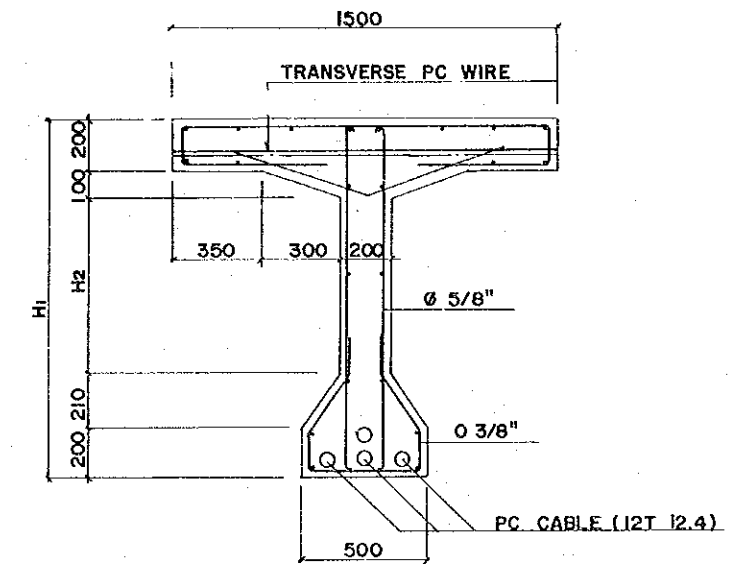
ELEVATION



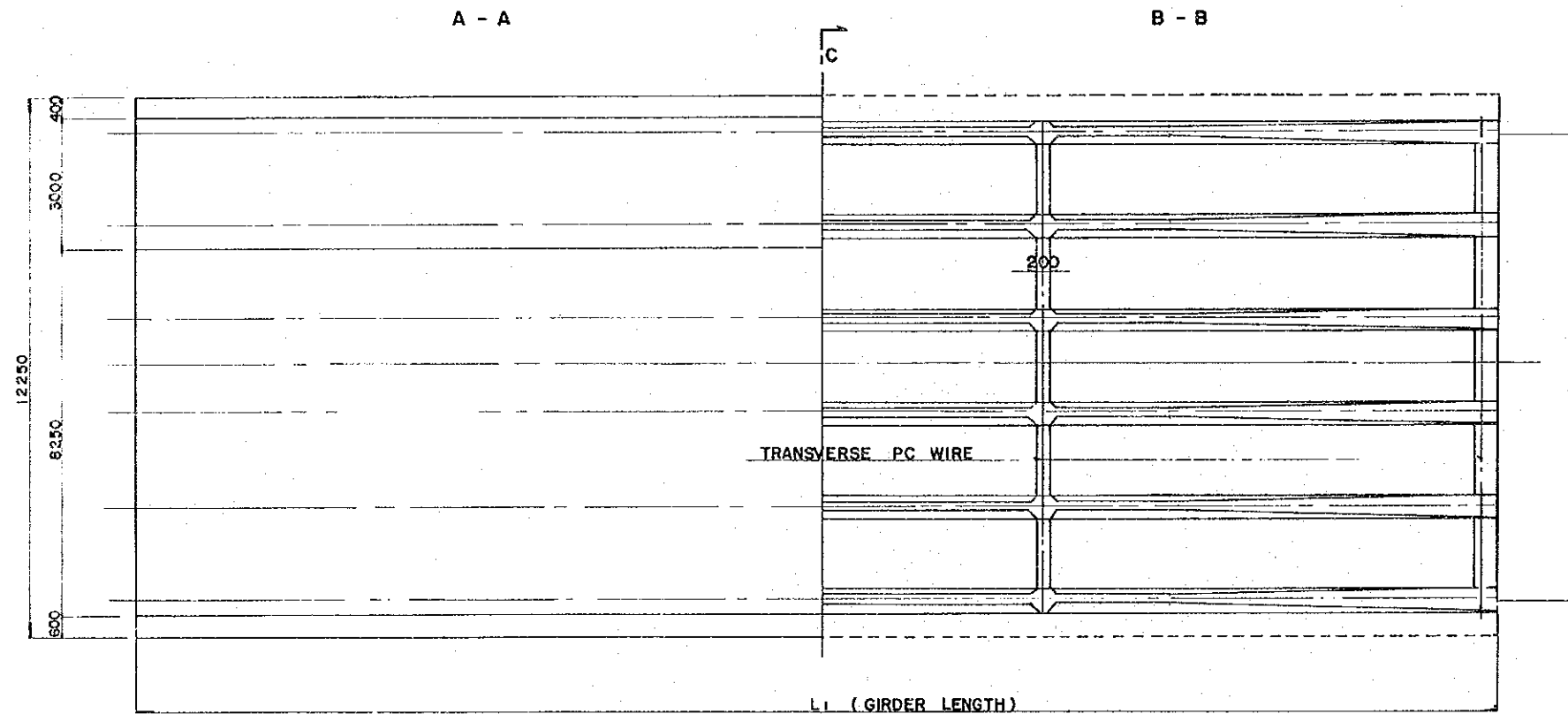
CROSS SECTION (C-C)



GERDER SECTION



PLAN



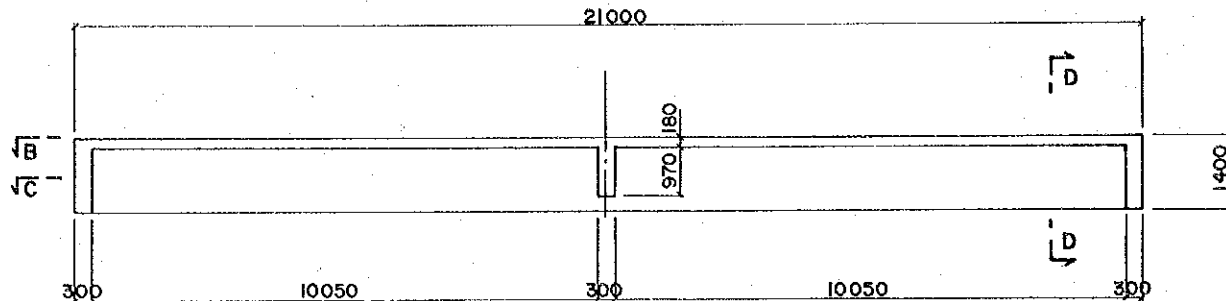
DIMENSION OF GIRDER

L1	L2	L3	L4	L5	L6	H1	H2
27.700	27.700	350	9.000	4.000	450	1.350	640
30.700	30.000	350	10.000	4.000	450	1.400	690
35.800	35.000	400	8.750	5.000	500	1.700	990
40.800	40.000	400	10.000	6.000	550	2.050	1340

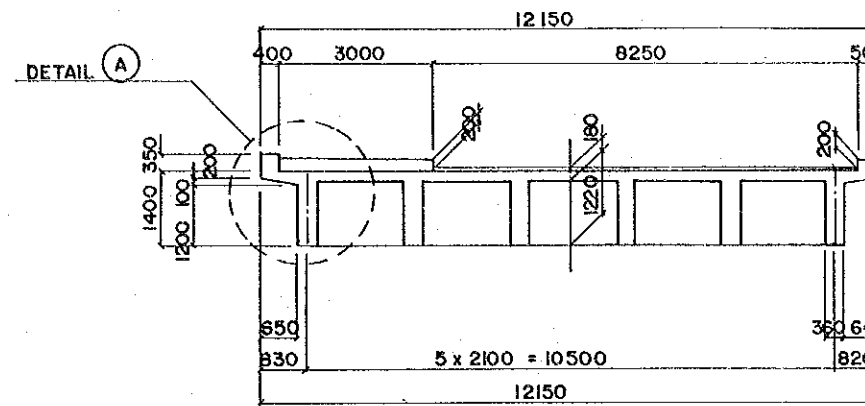
NOTE: HS20-44 LOADING (AASHTO 1977)
CONCRETE STRENGTH 5000 P.S.I.

STANDARD DESIGN OF R.C.D.G.

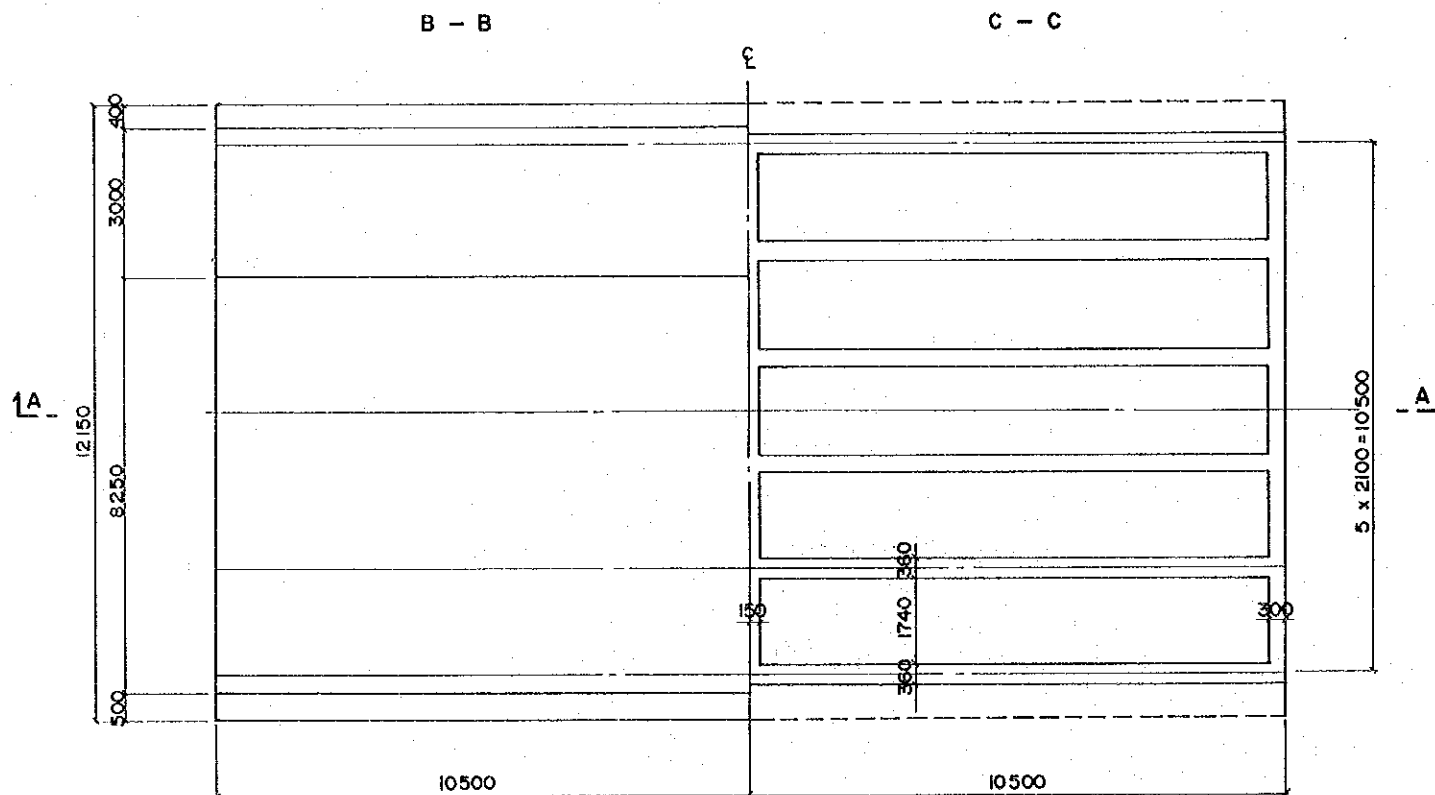
SIDE VIEW (A-A)



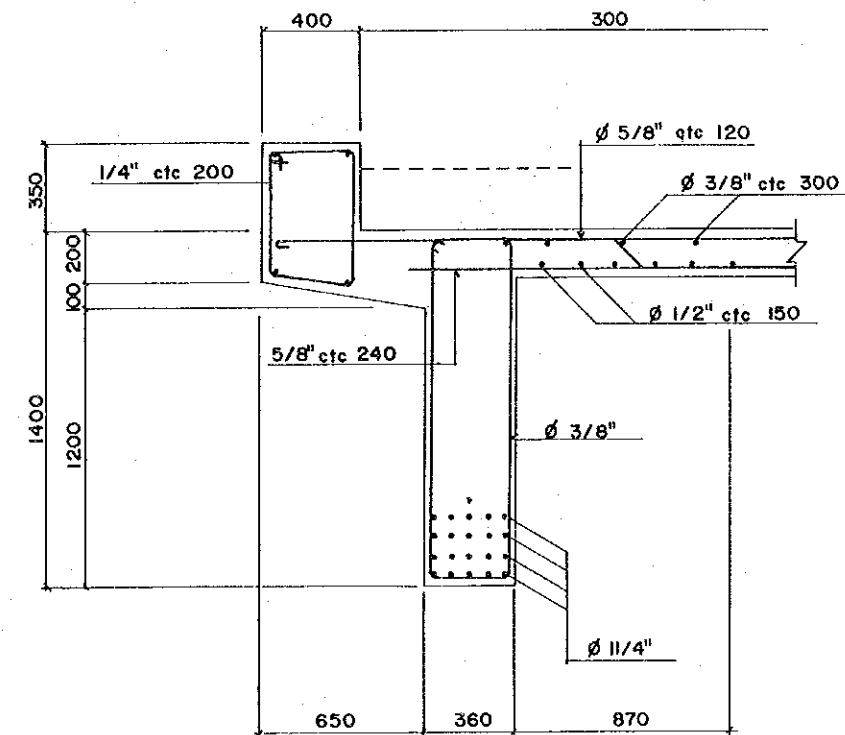
CROSS SECTION (D-D)



PLAN

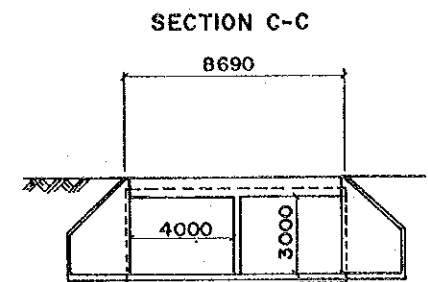
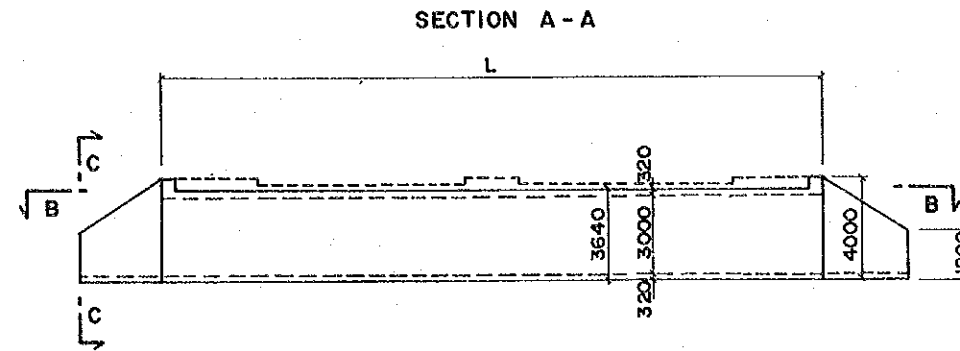
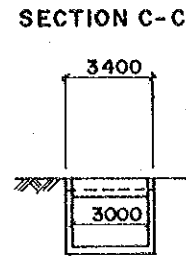
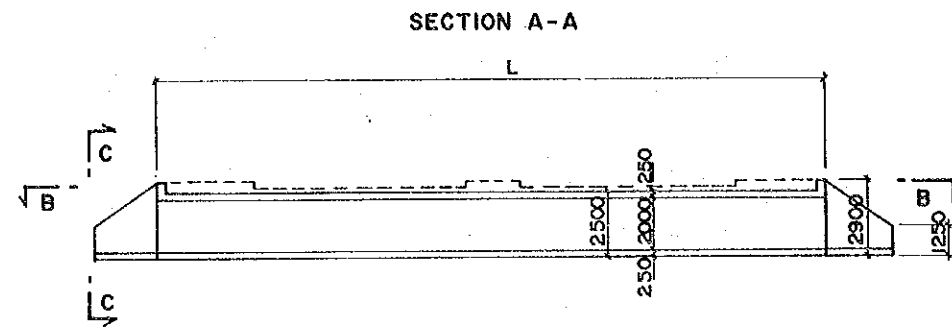


DETAIL (A)

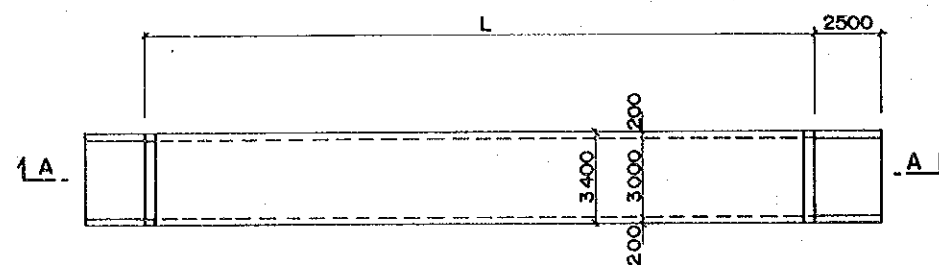


NOTE : CONCRETE. 3000 P.S.I.
HS 20-44 LOADING

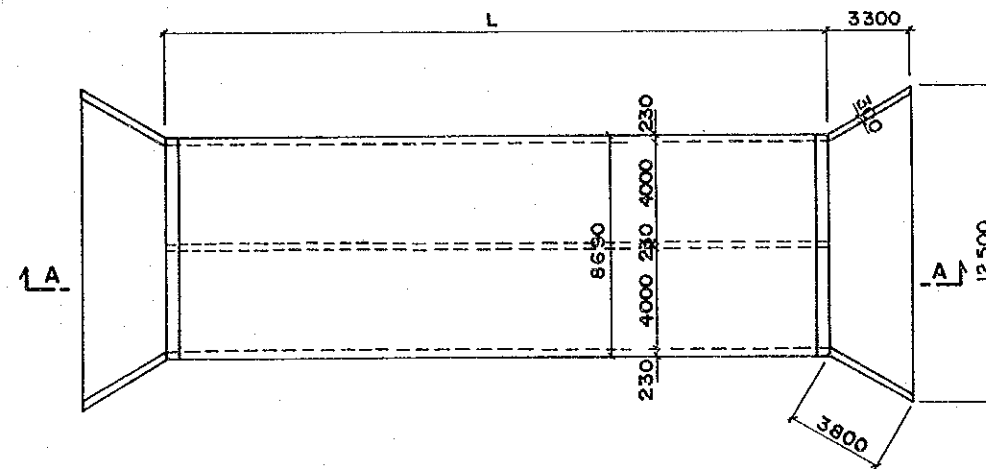
STANDARD DESIGN OF BOX CULVERT



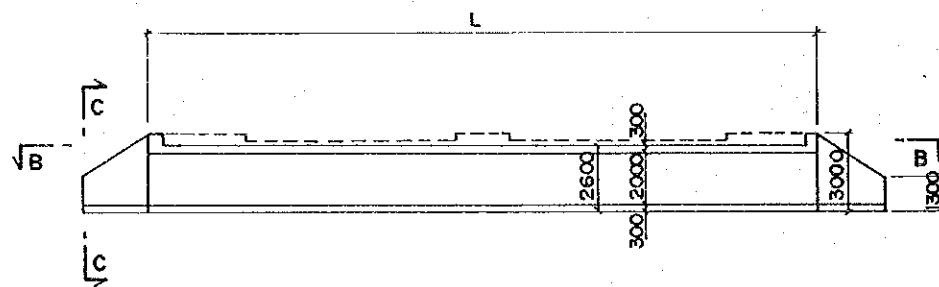
SECTION B-B (PLAN)



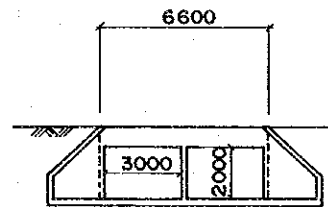
SECTION B-B (PLAN)



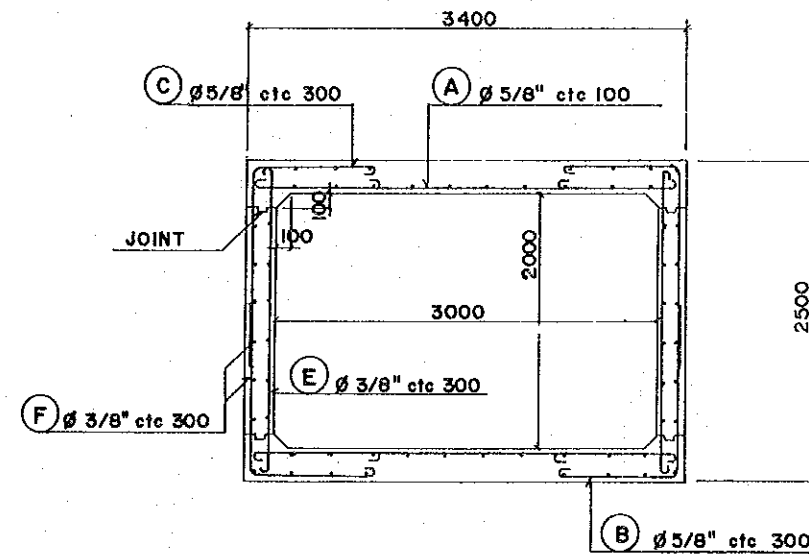
SECTION A-A



SECTION C-C



TYPICAL CROSS SECTION



SECTION B-B (PLAN)

