

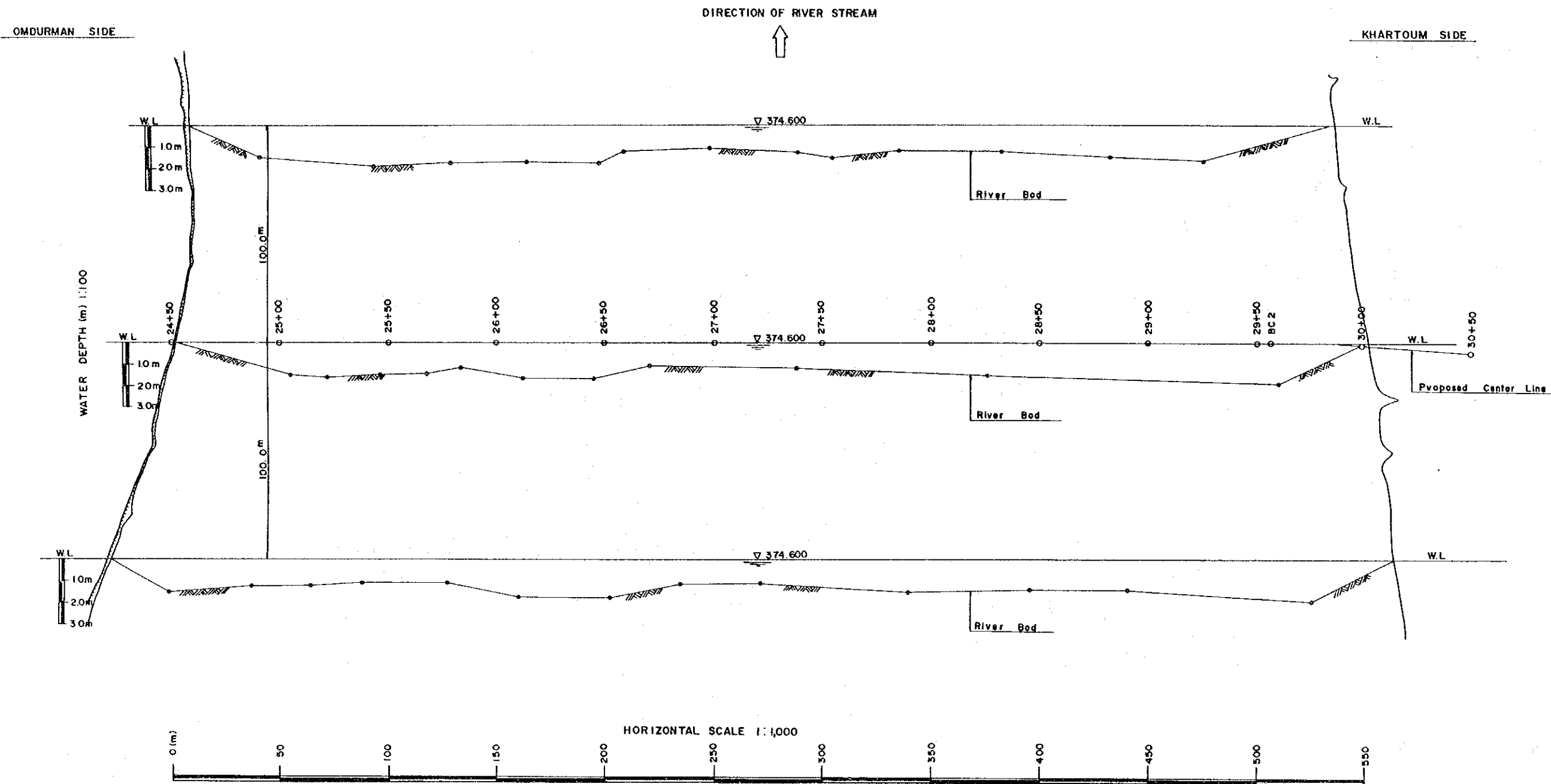
STATION NUMBER	COORDINATION	
	X (m)	Y (m)
NO 0	1,725,316.000	442,932.000
NO 1	1,725,321.042	443,031.873
NO 2	1,725,326.084	443,131.746
NO 3	1,725,331.126	443,231.618
BC 1	1,725,331.724	443,243.463
NO 4	1,725,332.289	443,331.865
NO 5	1,725,323.534	443,431.139
NO 6	1,725,304.882	443,529.342
EC 1	1,725,280.513	443,613.590
NO 7	1,725,276.587	443,625.221
NO 8	1,725,244.617	443,719.976
NO 9	1,725,217.646	443,814.728
NO 10	1,725,180.675	443,909.479
NO 11	1,725,148.705	444,004.231
NO 12	1,725,116.734	444,098.983
NO 13	1,725,084.764	444,193.734
NO 14	1,725,052.793	444,288.486
NO 15	1,725,020.822	444,383.238
NO 16	1,724,988.852	444,477.989
NO 17	1,724,956.881	444,572.741
BC 2	1,724,935.858	444,635.047

STATION NUMBER	COORDINATION	
	X (m)	Y (m)
NO 18	1,724,925.274	444,667.602
NO 19	1,724,898.677	444,763.981
NO 20	1,724,878.560	444,861.918
NO 21	1,724,865.012	444,960.977
NO 22	1,724,858.093	445,060.719
NO 23	1,724,857.834	445,160.700
EC 2	1,724,858.837	445,186.087
NO 24	1,724,862.392	445,260.608
NO 25	1,724,867.158	445,360.495
NO 26	1,724,871.923	445,460.381
NO 27	1,724,876.689	445,560.267
NO 28	1,724,881.454	445,660.154
NO 29	1,724,886.220	445,760.040
BC 3	1,724,888.918	445,816.598
NO 30	1,724,890.000	445,859.974
NO 31	1,724,884.397	445,959.766
NO 32	1,724,867.764	446,058.320
EC 3	1,724,842.872	446,146.727
NO 33	1,724,840.281	446,154.420
NO 34	1,724,808.365	446,249.191
NO 35	1,724,776.450	446,343.961

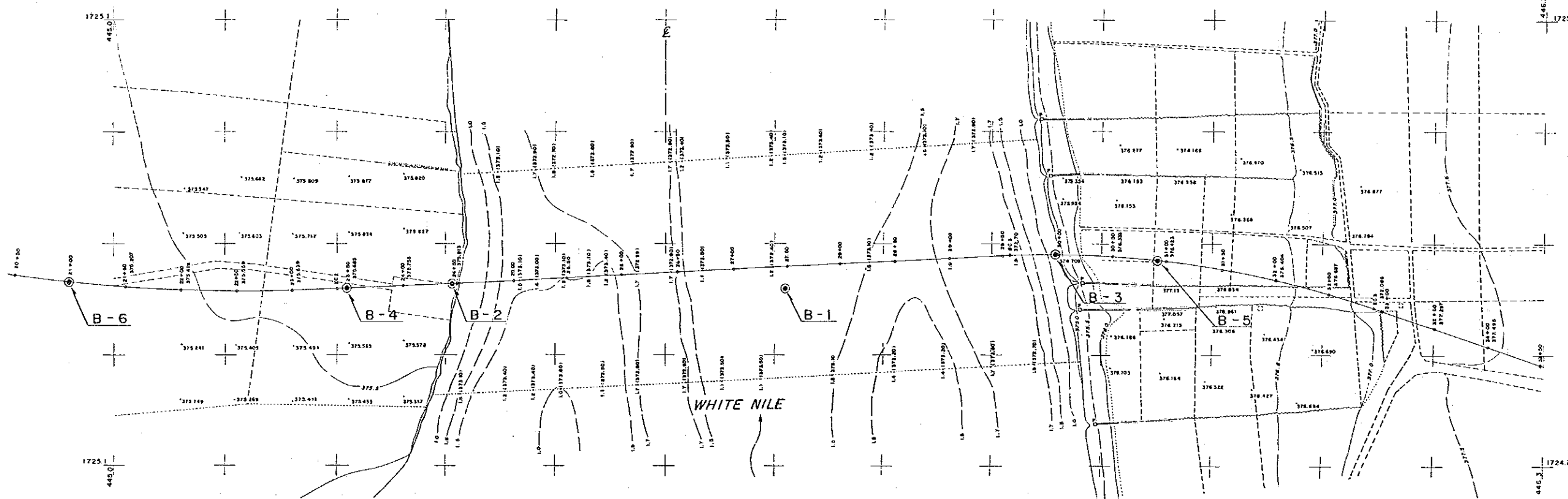
STATION NUMBER	COORDINATION	
	X (m)	Y (m)
NO 36	1,724,744.534	446,438.731
NO 37	1,724,712.618	446,533.501
NO 38	1,724,680.702	446,628.271
NO 39	1,724,648.787	446,723.041
NO 40	1,724,616.871	446,817.812
NO 41	1,724,584.955	446,912.582
NO 42	1,724,553.040	447,007.352

ITEMS	I.P. NO.		
	1	2	3
I. A	21°~32'~07"	21°~22'~36"	21°~20'~36"
R (m)	1,000.000	1,500.000	900.000
T. L (m)	190.175	283.000	169.596
C. L (m)	375.862	559.637	335.261
S. L (m)	17.927	26.483	15.840
X (m)	1,725,341.313	1,724,845.346	1,724,897.000
Y (m)	443,433.396	444,903.299	445,986.000

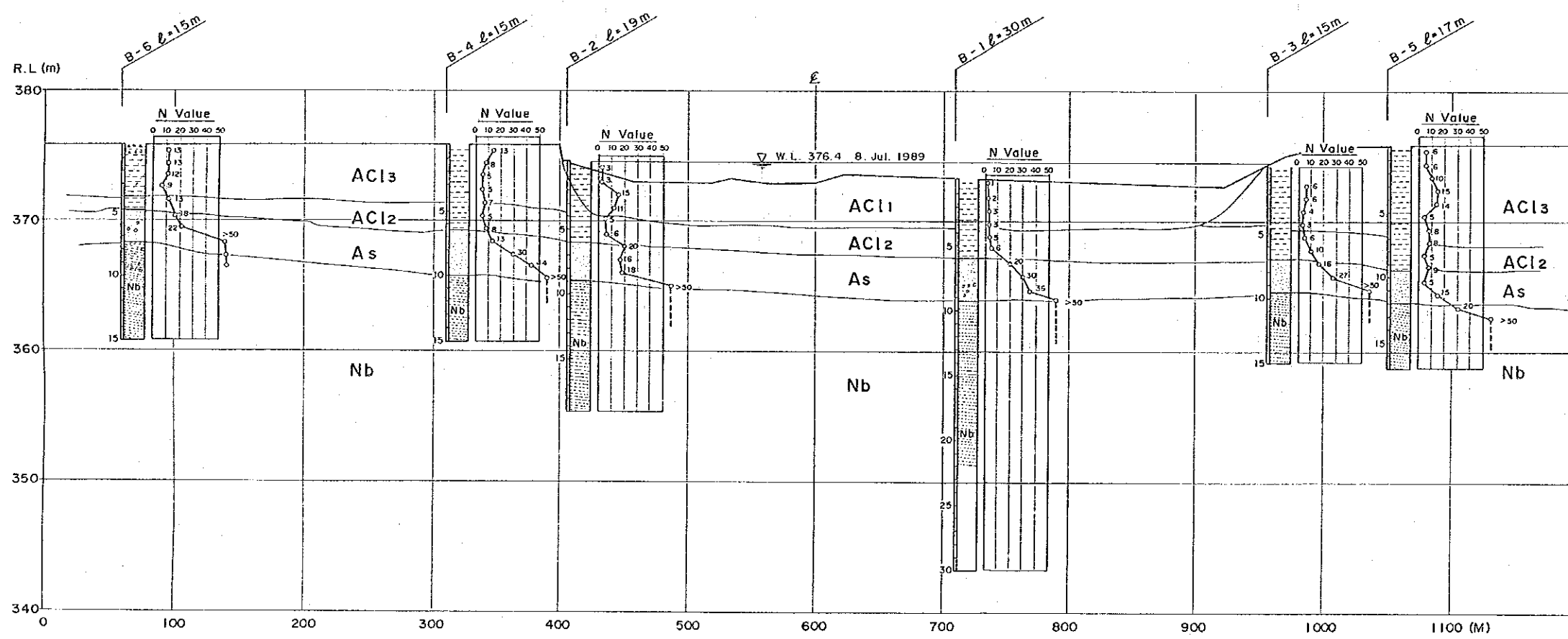
BATHYMETRIC SURVEY RESULT



DATE OF MEASUREMENT JULY 8, 1989
 HOURS FROM 10:30 TO 13:00
 HIGHT OF WATER SURFACE IS 374.60m



PLAN SCALE : 1/4000

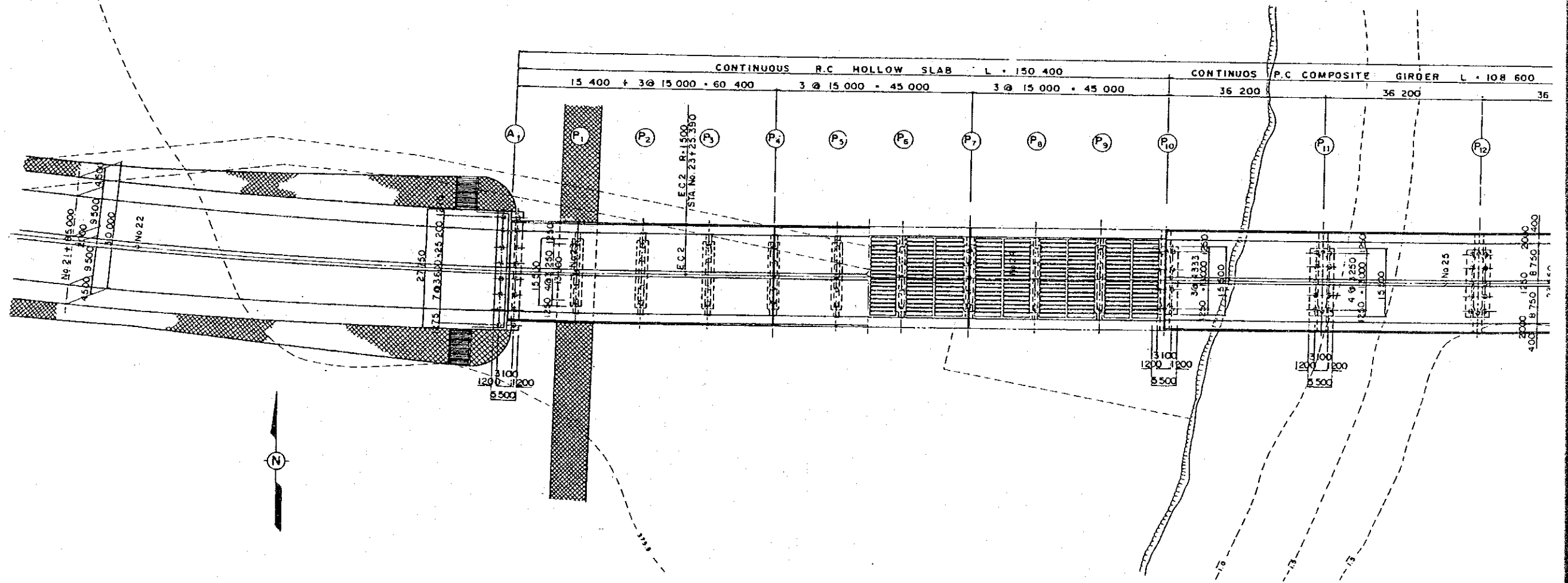
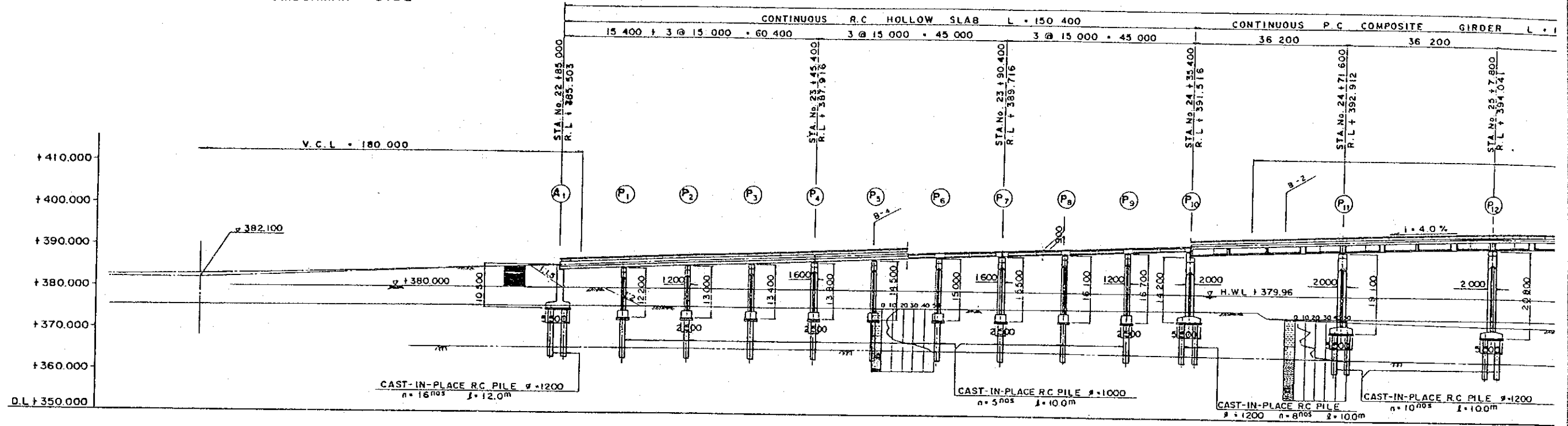


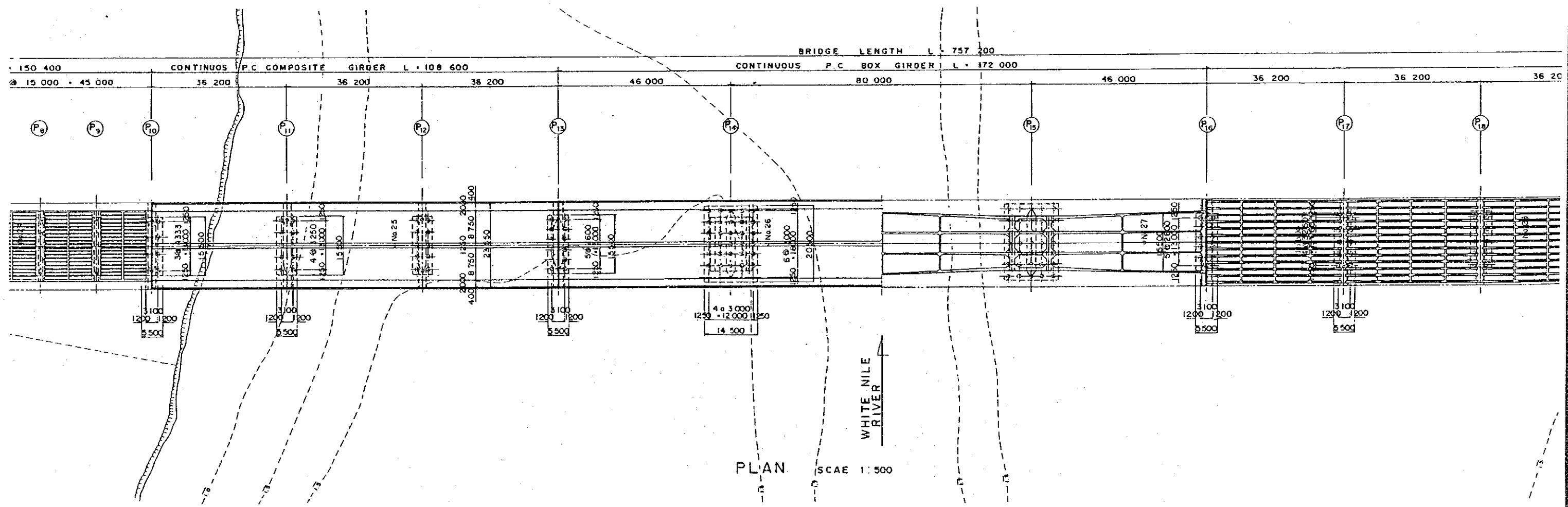
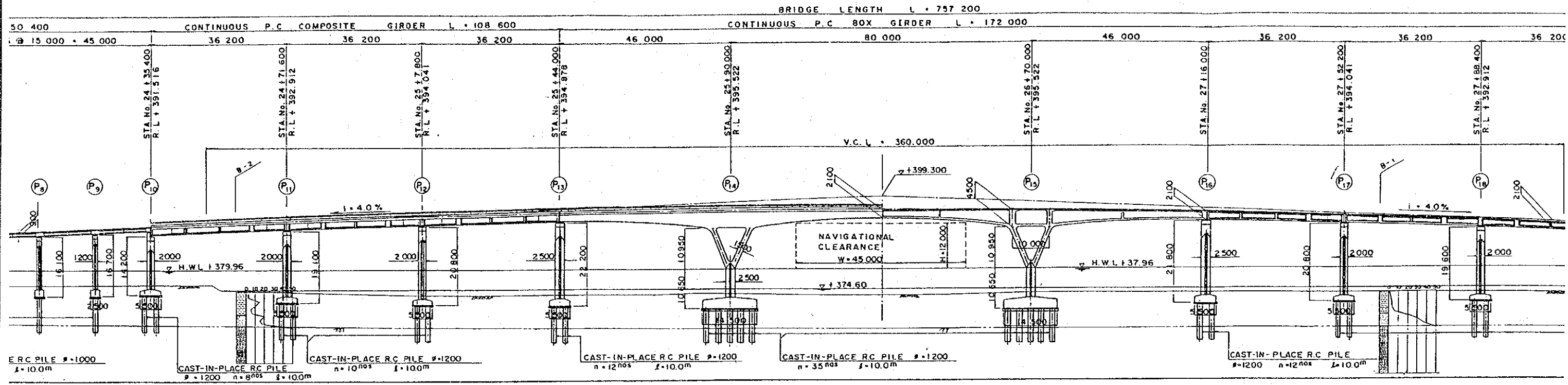
GEOLOGICAL PROFILE SCALE : V=1/400 H=1/4000

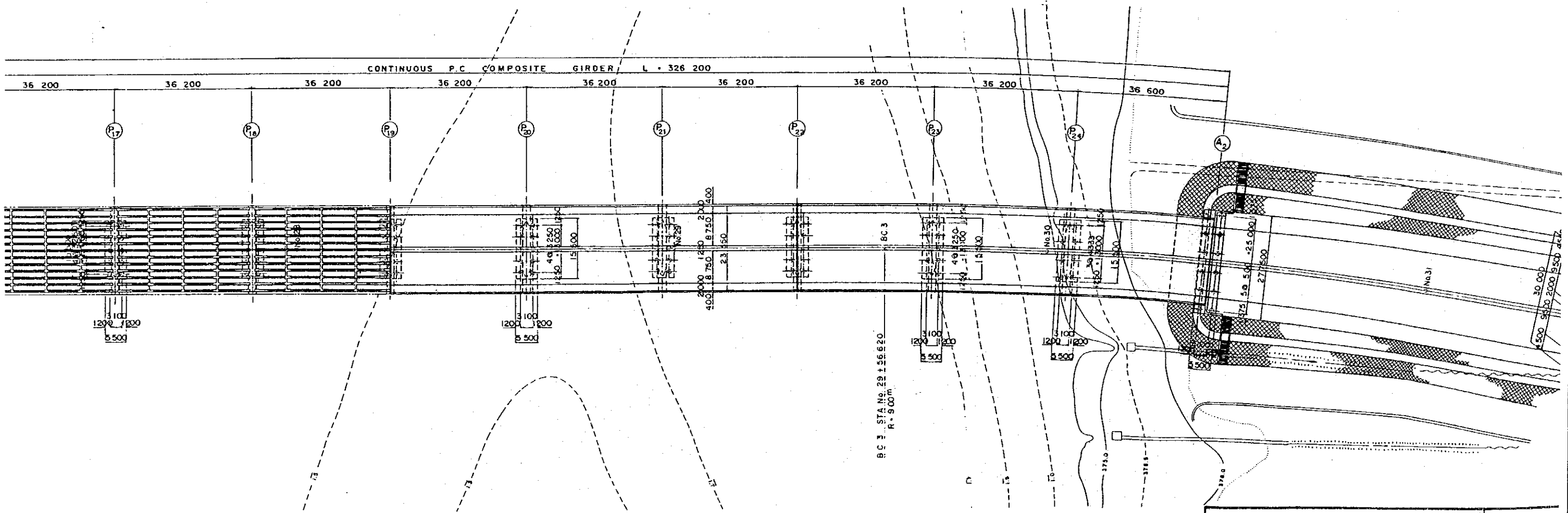
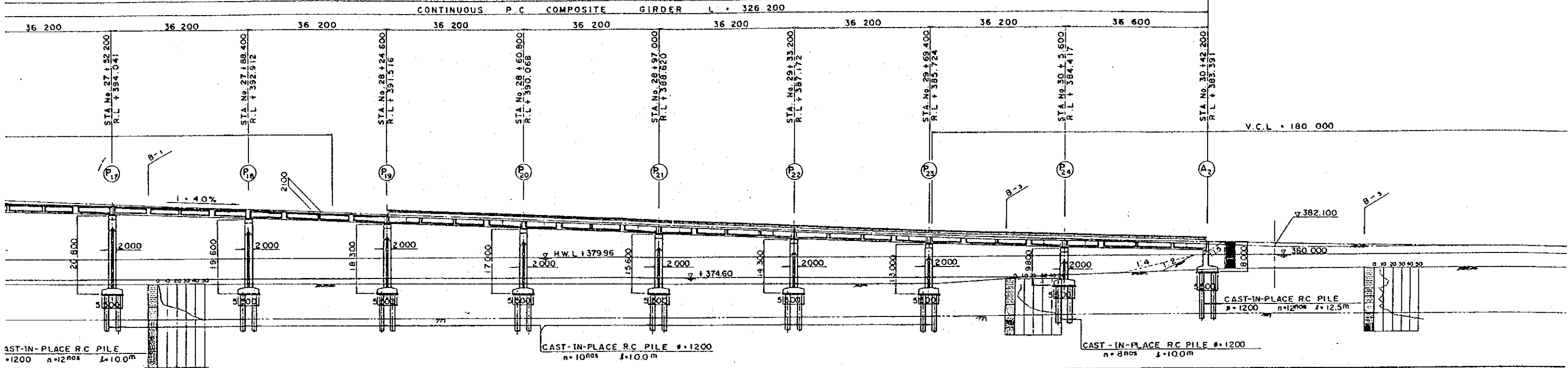
LEGEND

SYMBOL	GEO. TIME	ROCK/SOIL TYPE	CHARACTERISTICS	Engineering Properties for Design				
				N	C	φ	γ	OTHERS
ACI1	Quaternary	Clay	Present river deposit. Soft and loose clay.	2	1	0	1.4	
ACI2		Clay	Silt fraction a little. Homogeneous. Soft consistency.	5	5	0	1.6	
ACI3		Clay	Homogeneous silt clay. Similar to the condition of Terrace. Desiccated and hard.	6	5	0	1.6	
As	Cretaceous	Sand	Homogeneous fine sand. Grain size distribution poor. Medium in density.	20	0	30	1.8	
Nb		Sandstone	Base Rock Layer. Decomposed and weathered. Partly very friable.	50	50	35	2.3	Elastic Modulus c. 1250 (t/m ²)
		Mudstone	Moderately solidified.					

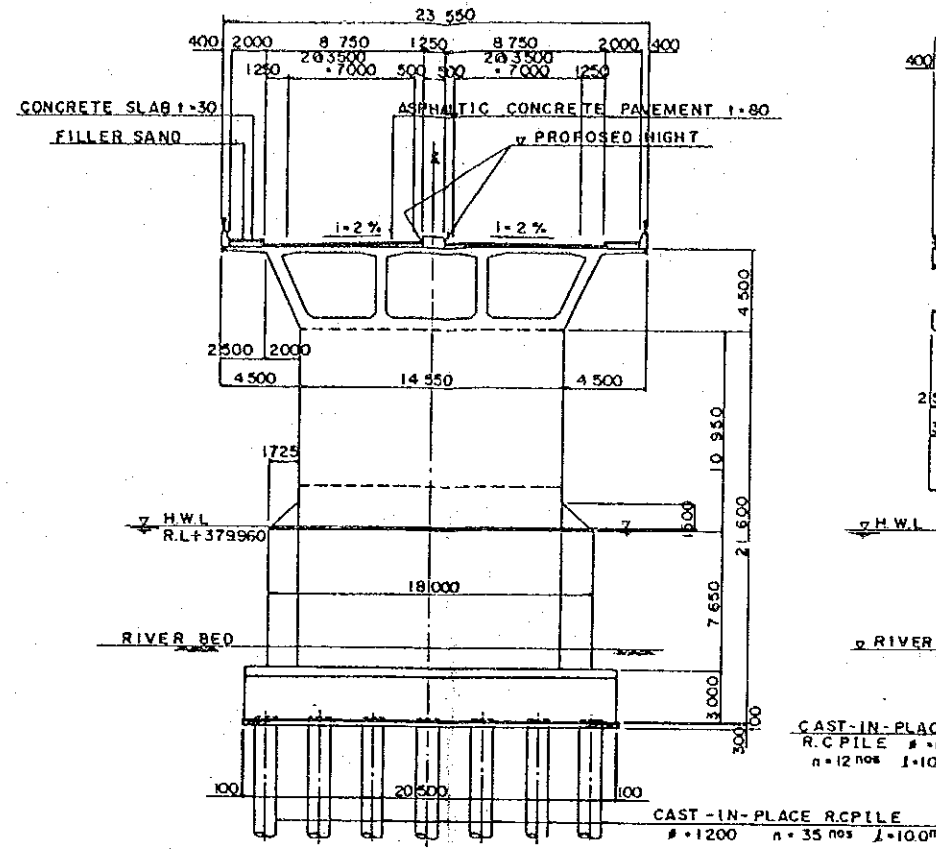
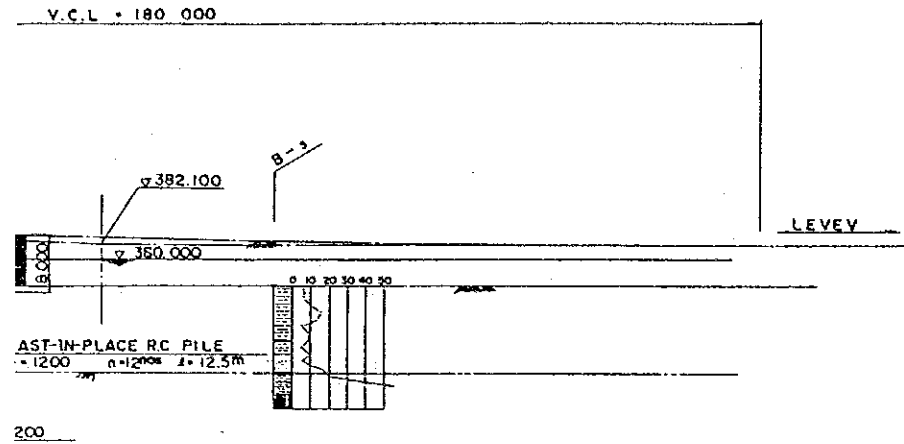
OMDURMAN SIDE



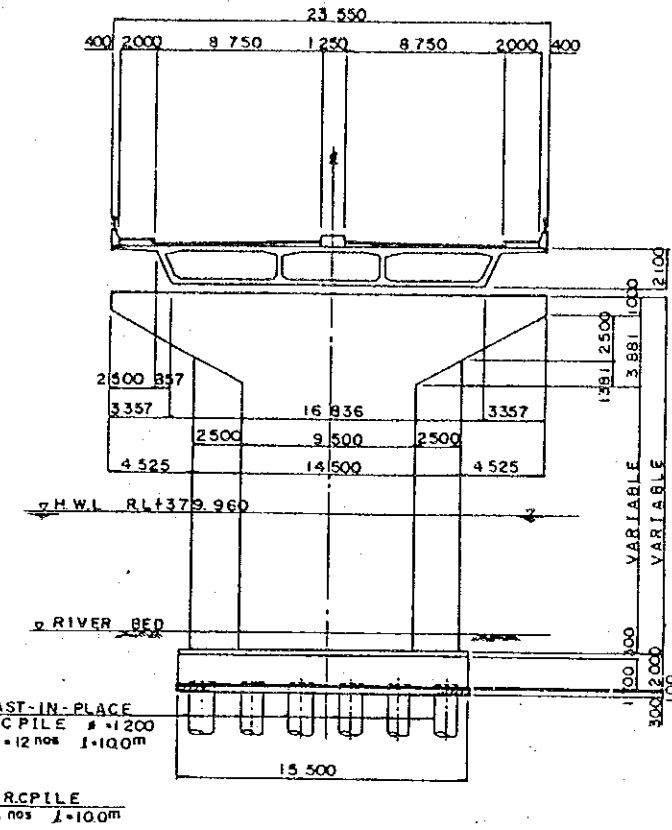




KHARTOUM SIDE

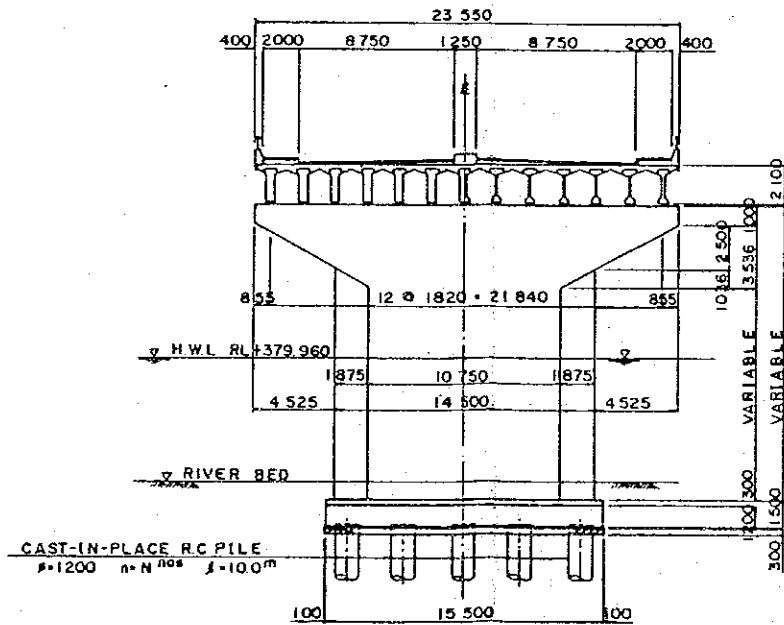
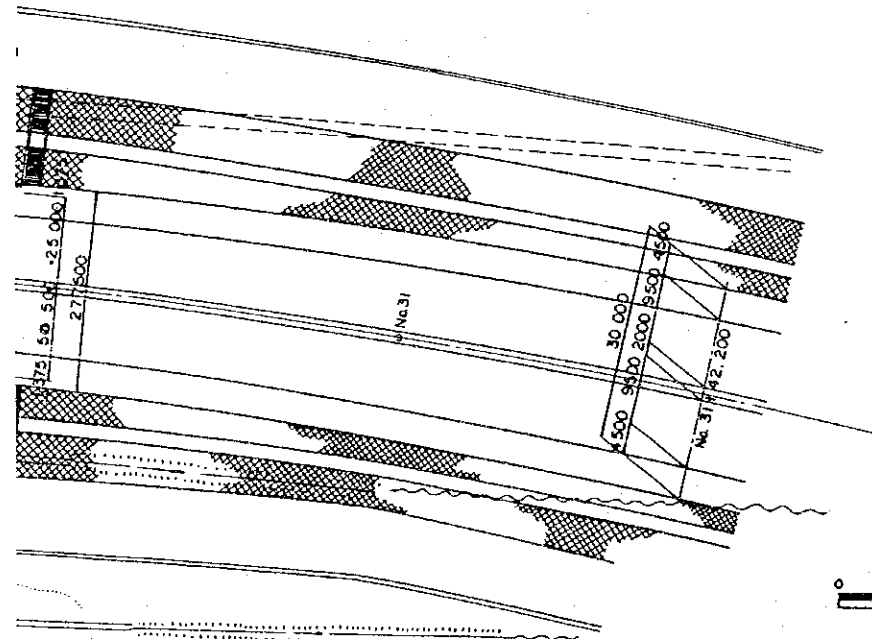


INTERMEDIATE PIER

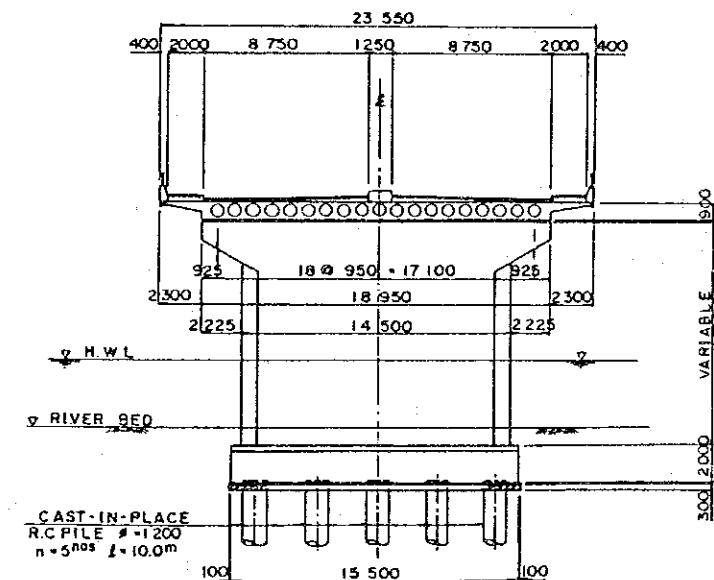


END PIER

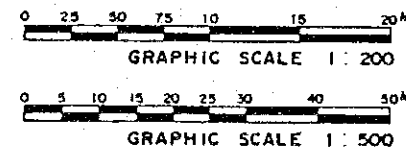
PIER OF P.C. BOX GIRDER



PIER OF P.C. COMPOSITE GIRDER

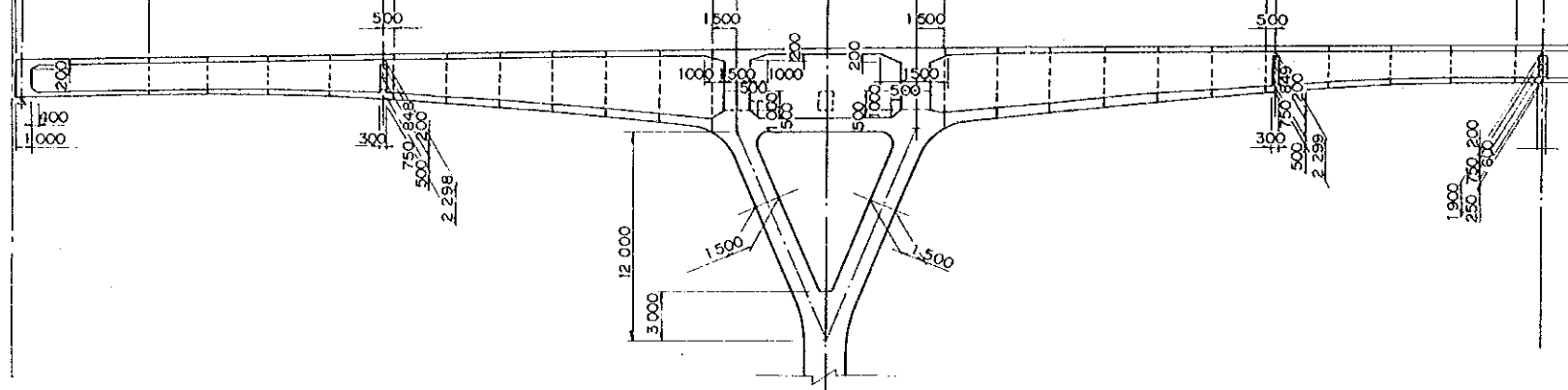


PIER OF R.C. HOLLOW SLAB



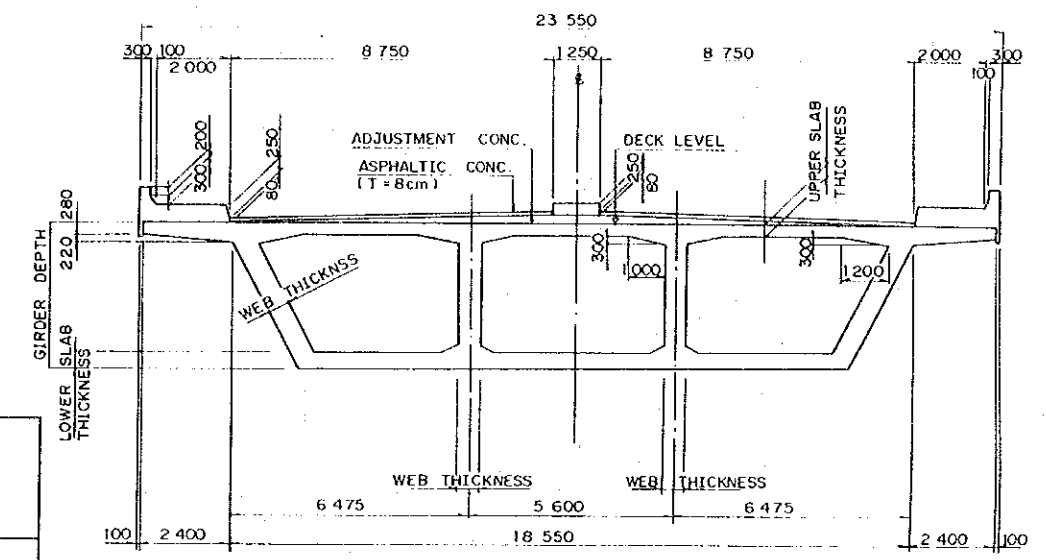
CROSS SECTION SCALE 1:200

GIRDER LENGTH 60
 SPAN LENGTH 500
 DIAPHRAGM SPACING 20 940 45 500 20 000 10 000 20 000 80 000
 SEGMENT IN-SITU 7.440 4 @ 3 500 = 14 000 6 @ 3 000 = 18 000 13 000 6 @ 3 000 = 18 000 4 @ 3 500 = 14 000 3 000

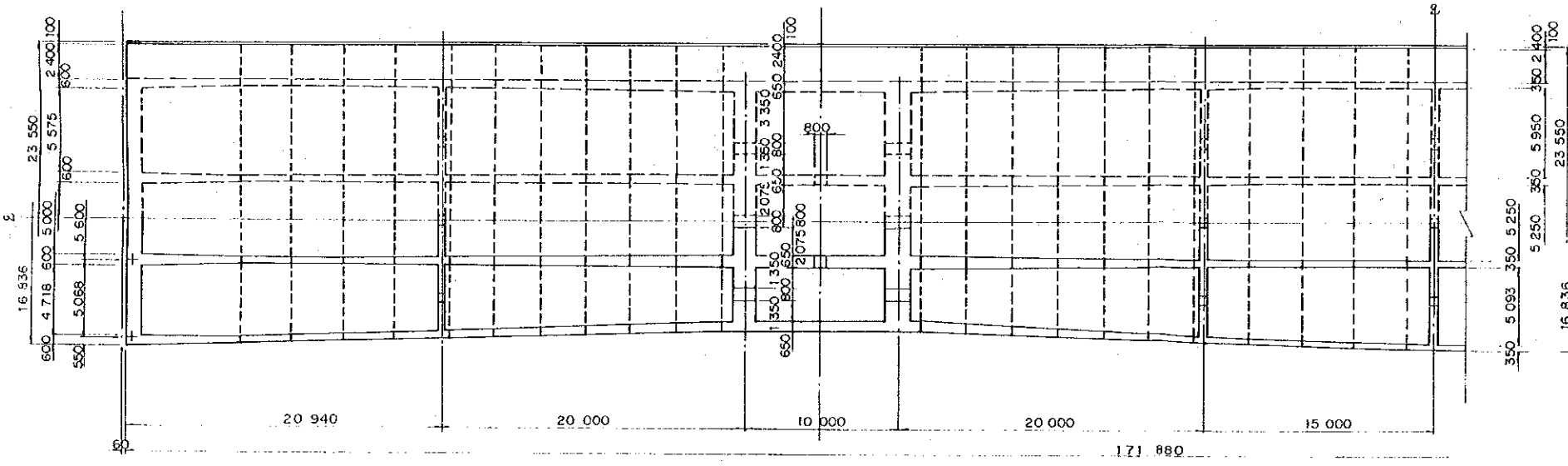


LONGITUDINAL SECTION SCALE: 1/400

DECK LEVEL (RL + m)	GIRDER DEPTH (m)	THICKNESS (m)		
		LOWER SLAB	WEB	UPPER SLAB
394.623 394.623 394.624	2.100 2.100 2.100	0.250 0.250 0.250	0.600 0.600 0.600	0.300 0.300 0.300
394.760	2.100	0.250	0.350	0.300
394.820	2.132	0.290	0.350	0.300
394.877	2.228	0.340	0.350	0.300
394.931	2.365	0.380	0.350	0.300
394.982 394.983	2.598	0.430	0.400	0.300
395.025	2.822	0.460	0.450	0.300
395.065	3.079	0.500	0.500	0.300
395.103	3.364	0.540	0.550	0.300
395.139	3.671	0.580	0.600	0.300
395.173	3.995	0.610	0.650	0.300
395.205 395.220	4.328 4.497	0.650 0.650	0.650	0.300
395.267	4.500	0.650	0.650	0.300
395.309 395.320	4.503 4.334	0.650	0.65	0.300
395.342	4.000	0.610	0.650	0.300
395.361	3.675	0.580	0.600	0.300
395.378	3.367	0.540	0.550	0.300
395.394	3.081	0.500	0.500	0.300
395.407	2.824	0.460	0.450	0.300
395.418 395.419	2.599	0.430	0.400	0.300
395.429	2.385	0.380	0.350	0.300
395.437	2.228	0.340	0.350	0.300
395.442	2.132	0.290	0.350	0.300
395.445 395.445	2.100 2.100	0.250 0.250	0.350 0.350	0.300 0.300



CROSS SECTION SCALE: 1/200



PLAN SCALE: 1/400

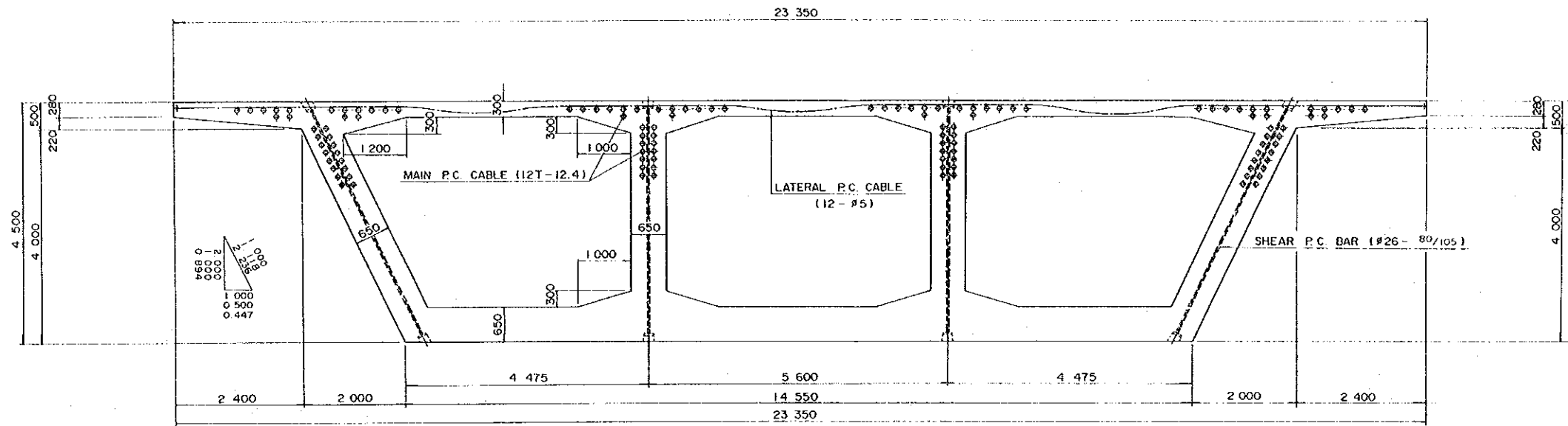
COMMISSIONERATE OF ENGINEERING AFFAIRS
 NATIONAL CAPITAL KHARTOUM

THE FEASIBILITY STUDY
 ON
 THE CONSTRUCTION OF THE NEW WHITE NILE BRIDGE
 IN
 THE REPUBLIC OF THE SUDAN

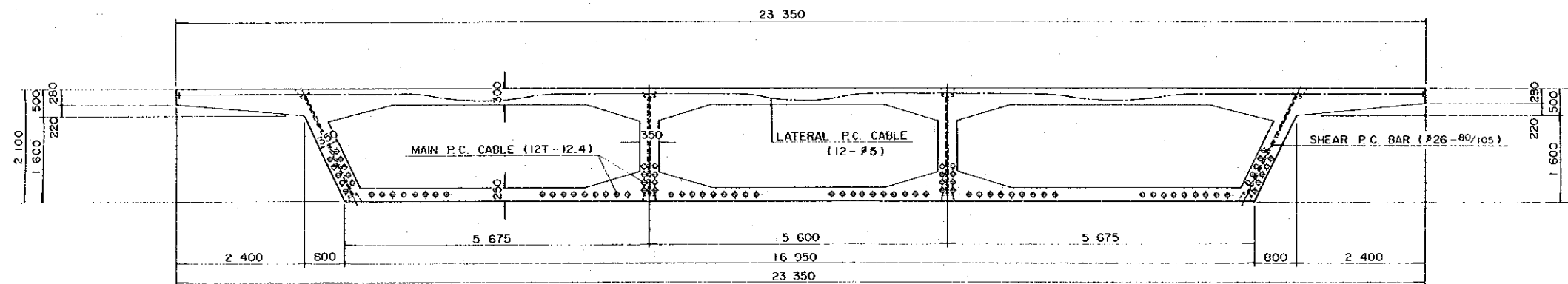
JAPAN INTERNATIONAL COOPERATION AGENCY

SUPERSTRUCTURE NO.1: P.C BOX GIRDER

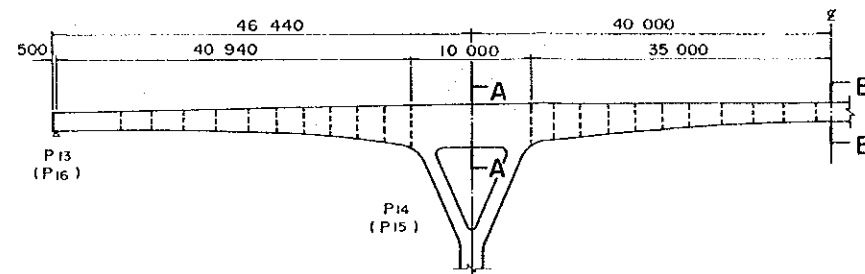
DATE	SHEET NO.
JANUARY 1990	18/32



SECTION A SCALE : 1/100

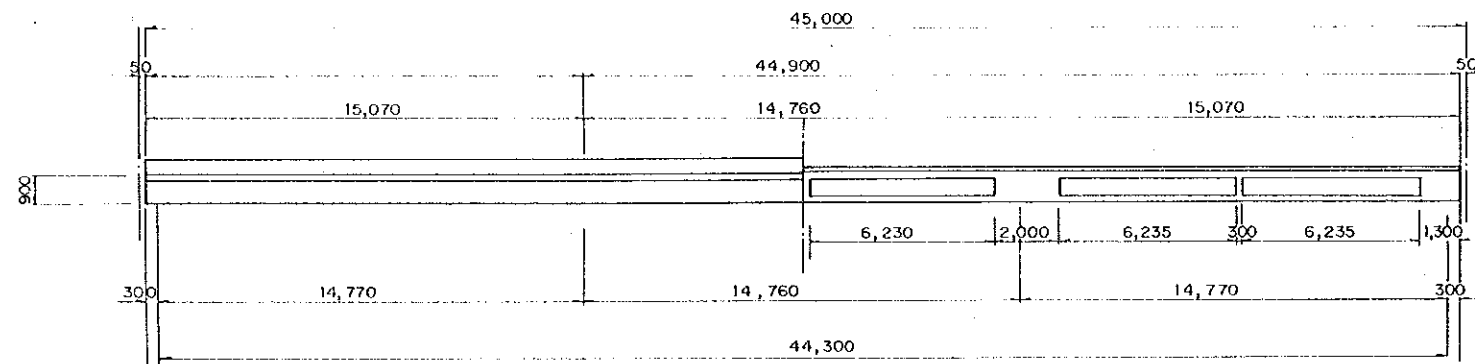


SECTION B SCALE : 1/100

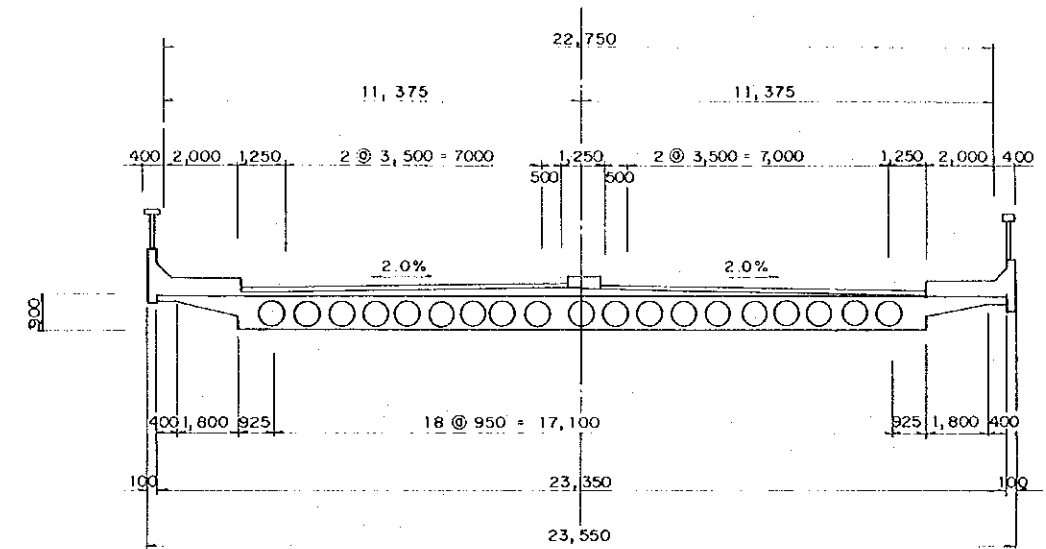


LOCATION MAP OF SECTION A & B

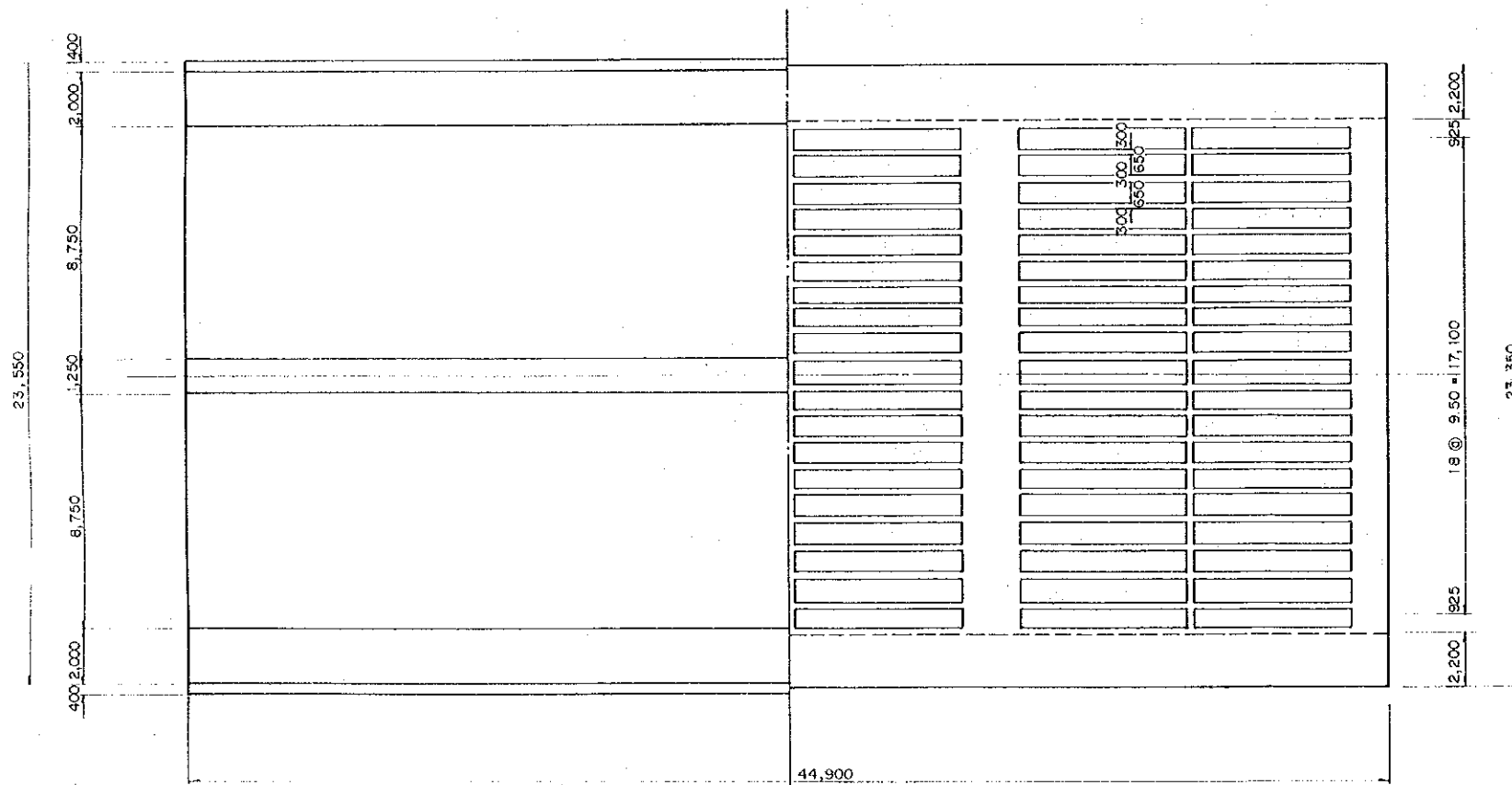
SCALE : 1/800



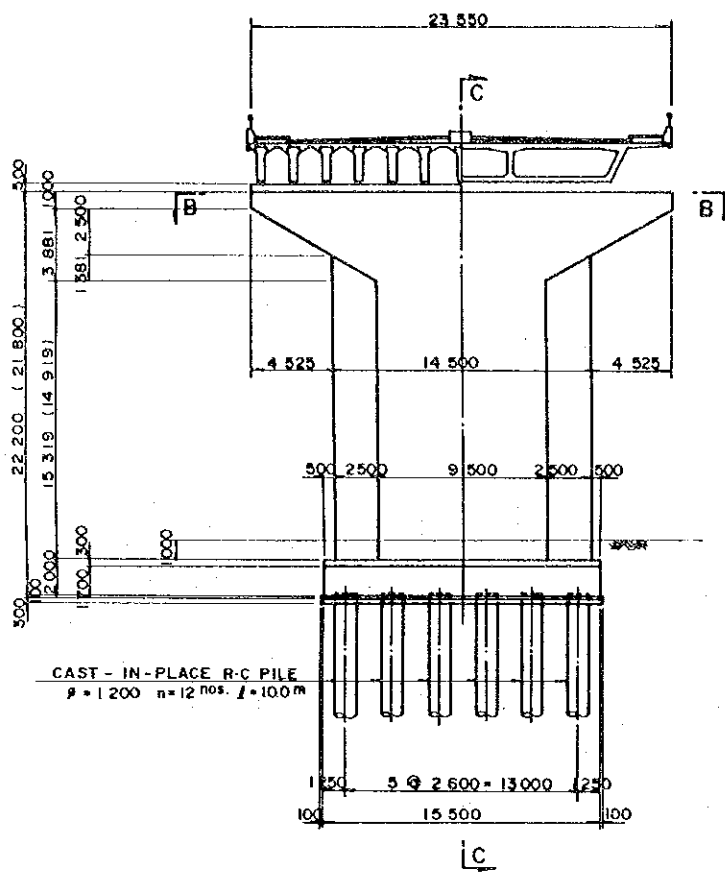
LONGITUDINAL SECTION SCALE : 1 / 250



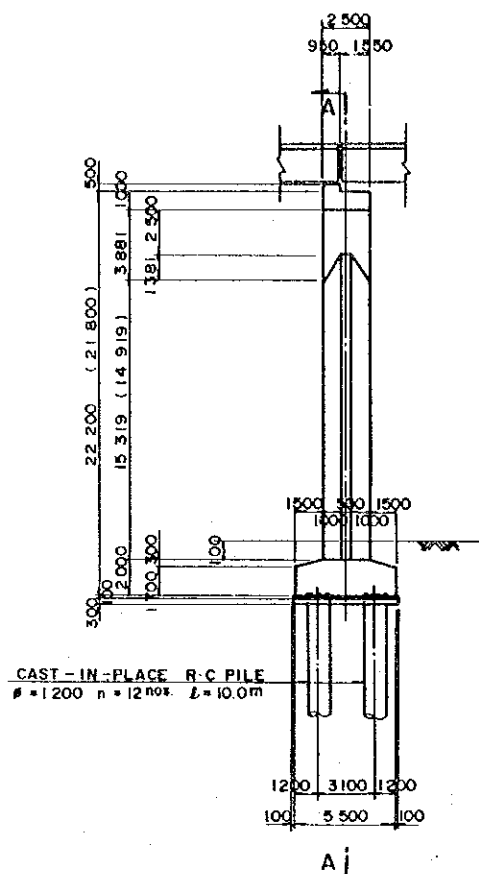
CROSS SECTION SCALE : 1 / 250



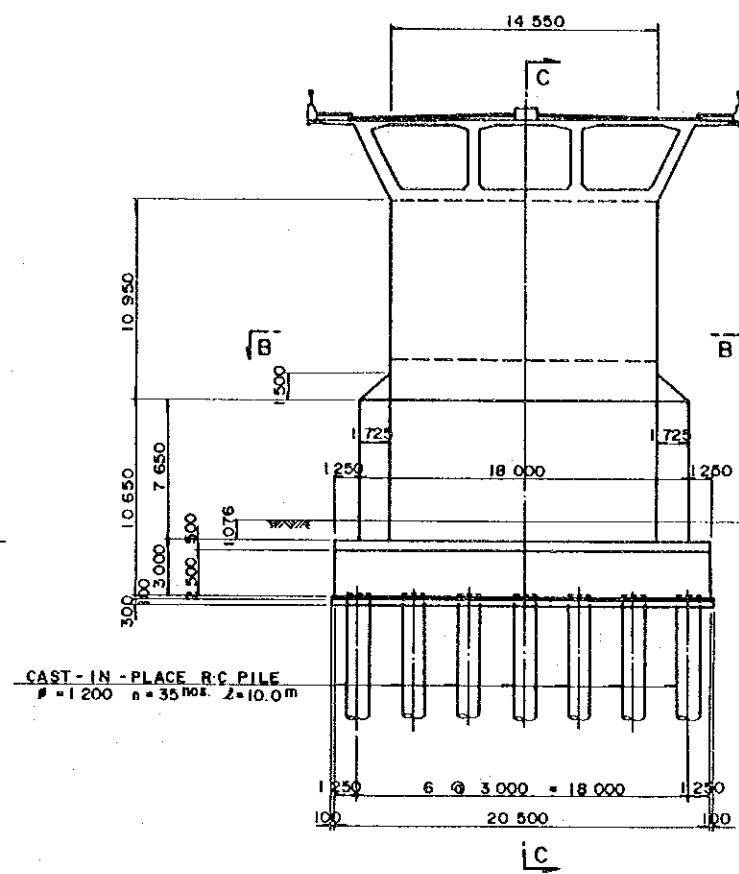
PLAN SCALE : 1 / 250



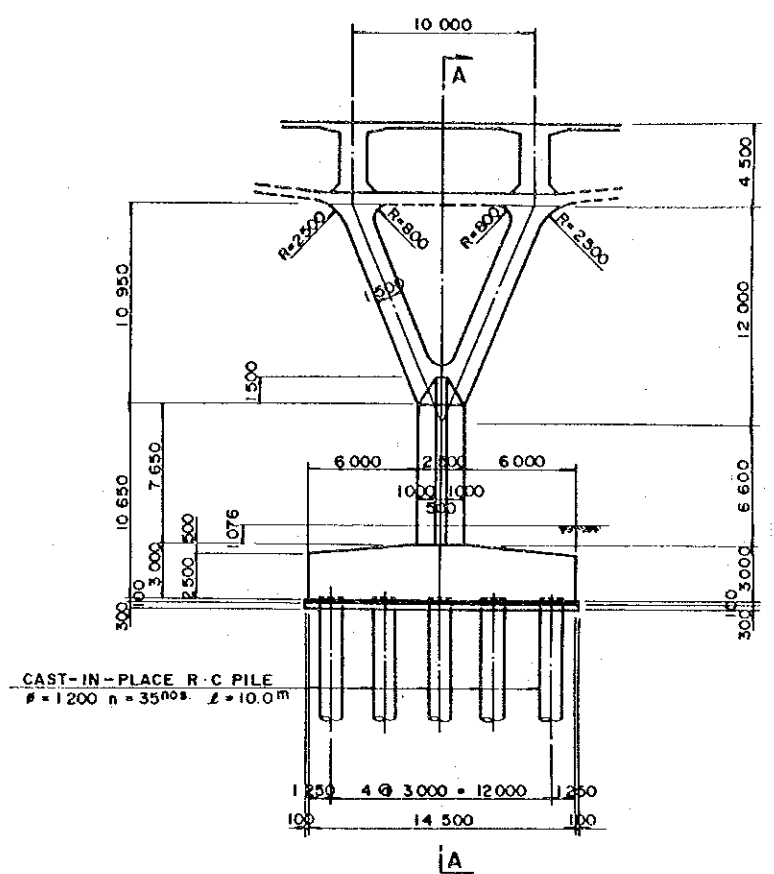
A - A CROSS SECTION SCALE 1:200



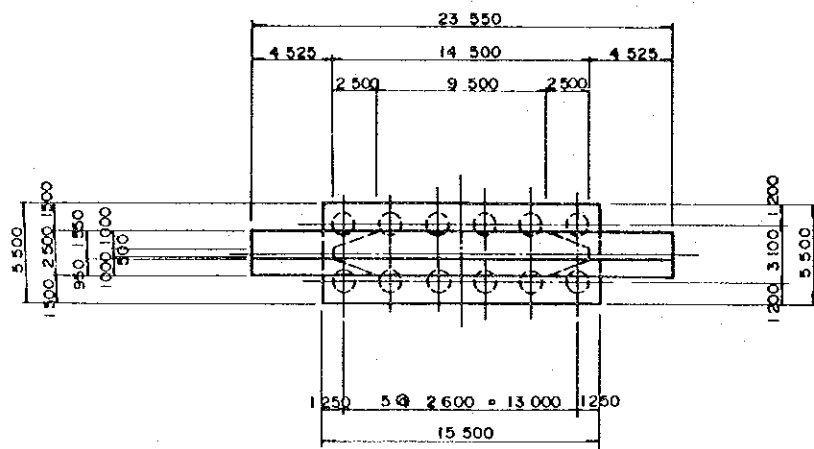
C - C CROSS SECTION SCALE 1:200



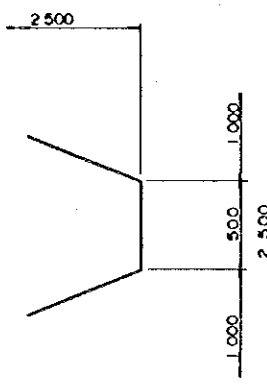
A - A CROSS SECTION SCALE 1:200



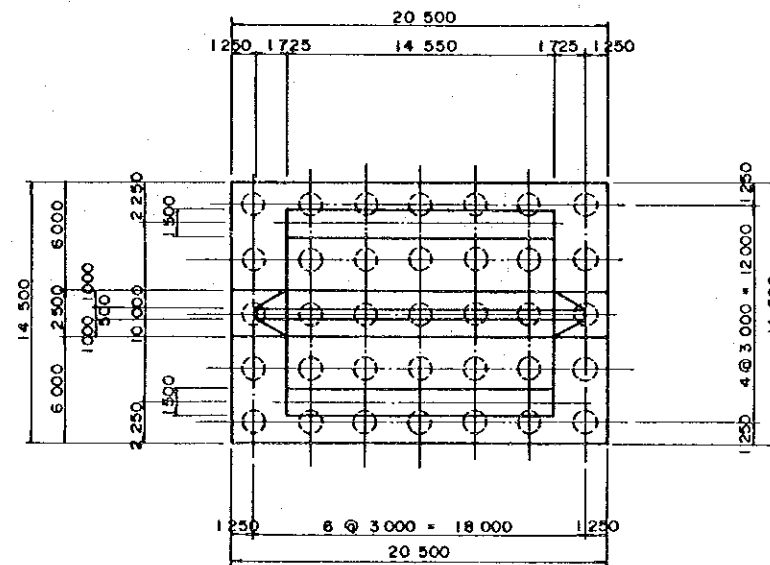
C - C CROSS SECTION SCALE 1:200



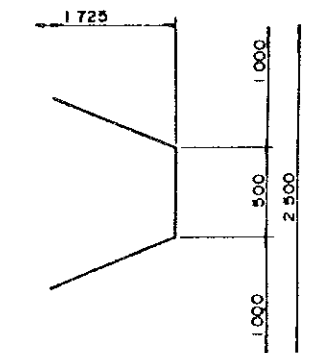
B - B CROSS SECTION SCALE 1:200



DETAIL of END Shape of WALL SCALE 1:20



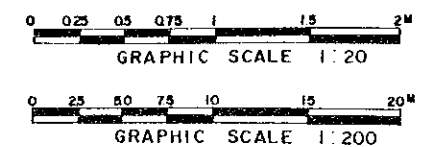
B - B CROSS SECTION SCALE 1:200

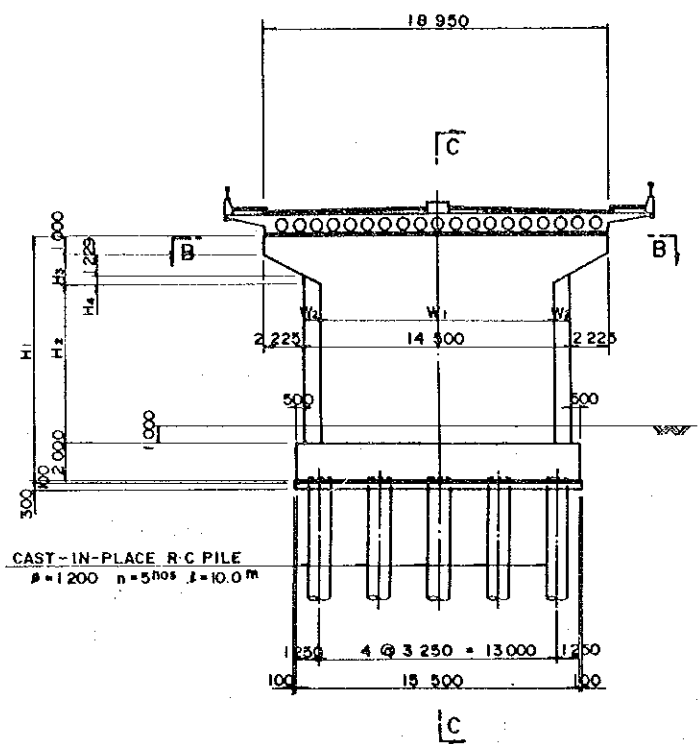


DETAIL of END Shape of WALL SCALE 1:20

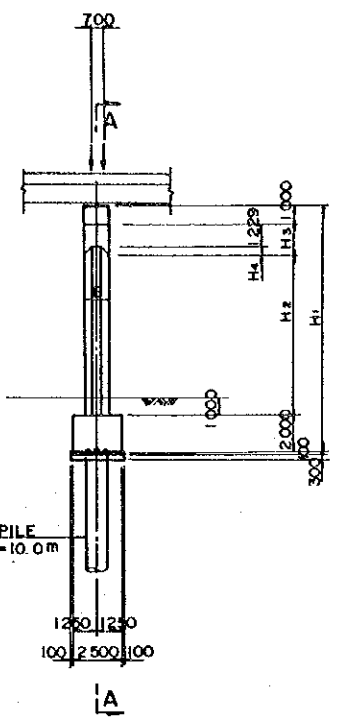
PIER for P.C BOX GIRDER

PIER for P.C BOX GIRDER

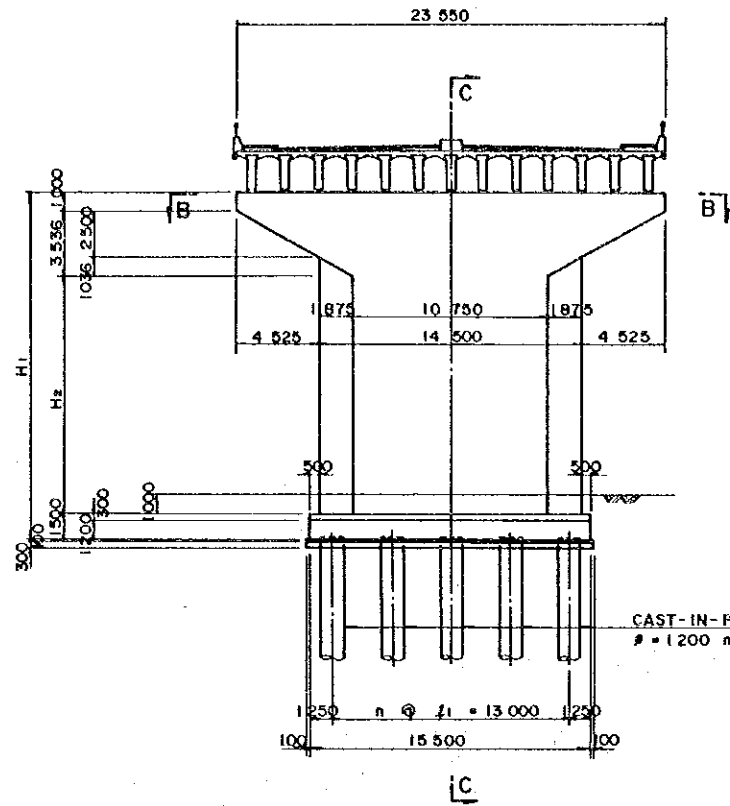




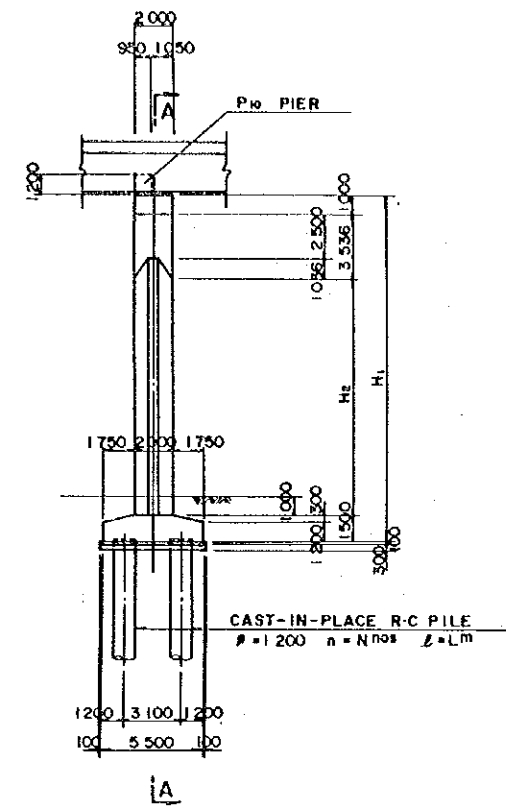
A-A CROSS SECTION SCALE 1:200



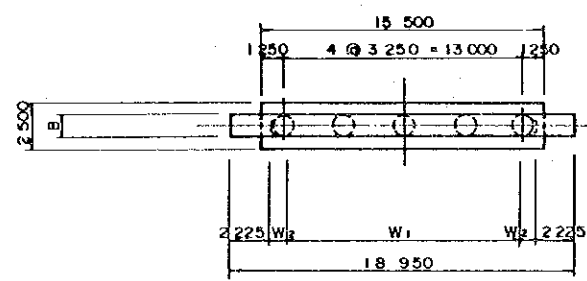
C-C CROSS SECTION SCALE 1:200



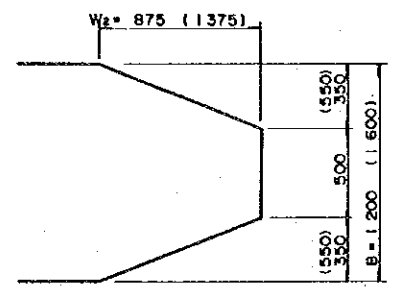
A-A CROSS SECTION SCALE 1:200



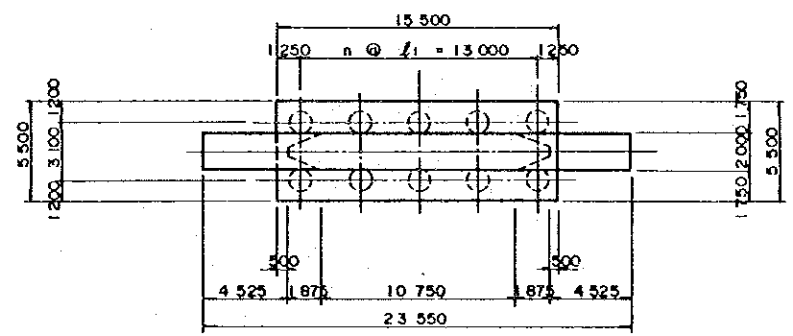
C-C CROSS SECTION SCALE 1:200



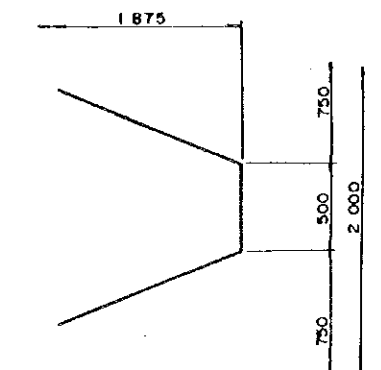
B-B CROSS SECTION SCALE 1:200



DETAIL of END SHAPE of WALL SCALE 1:20



B-B CROSS SECTION SCALE 1:200



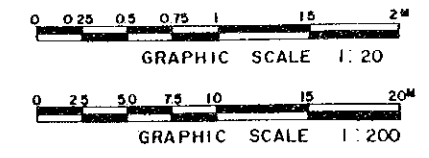
DETAIL of END SHAPE of WALL SCALE 1:20

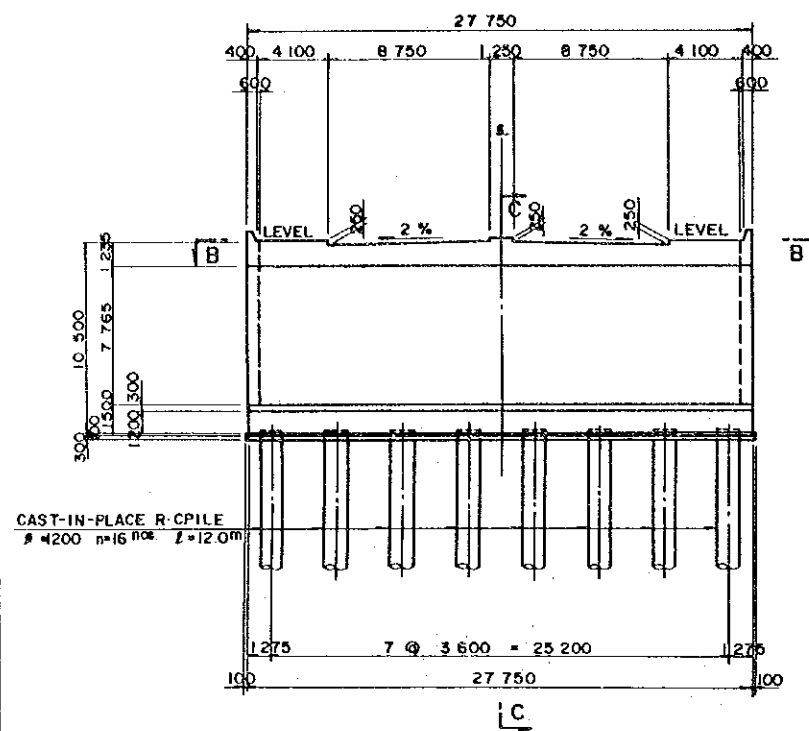
PIER No.	COLOUMN				Width		
	H ₁ (m)	H ₂ (m)	H ₃ (m)	H ₄ (m)	W ₁ (m)	W ₂ (m)	B (m)
P ₁	12.20	7.488	1.712	0.483	12.75	0.875	1.20
P ₂	13.00	8.288	1.712	0.483	12.75	0.875	1.20
P ₃	13.40	8.688	1.712	0.483	12.75	0.875	1.20
P ₄	13.80	8.811	1.989	0.760	11.75	1.375	1.60
P ₅	14.50	9.788	1.712	0.483	12.75	0.875	1.20
P ₆	15.00	10.288	1.712	0.483	12.75	0.875	1.20
P ₇	15.50	10.511	1.989	0.760	11.75	1.375	1.60
P ₈	16.10	11.388	1.712	0.483	12.75	0.875	1.20
P ₉	16.70	11.988	1.712	0.483	12.75	0.875	1.20

PIER for R.C HOLLOW SLAB

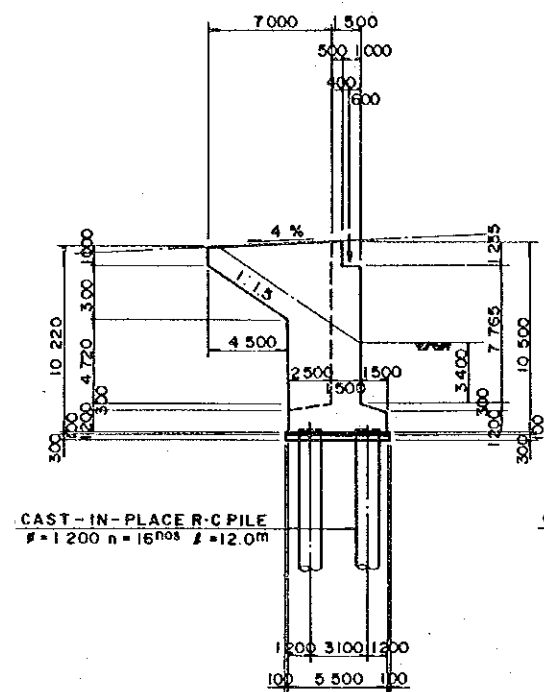
PIER No.	COLOUMN		Nos. or Pile N	PILE Length L (m)	PILE ARRANGEMENT	
	H ₁ (m)	H ₂ (m)			n	ℓ ₁
P ₁₀	14.20	8.164	8	10.0	3	4.333
P ₁₁	19.10	13.064	10	10.0	4	3.250
P ₁₂	20.80	14.764	10	10.0	4	3.250
P ₁₇	20.80	14.764	10	10.0	4	3.250
P ₁₈	19.60	13.564	10	10.0	4	3.250
P ₁₉	18.30	12.264	10	10.0	4	3.250
P ₂₀	17.00	10.964	10	10.0	4	3.250
P ₂₁	15.60	9.564	10	10.0	4	3.250
P ₂₂	14.30	8.264	10	10.0	4	3.250
P ₂₃	13.00	6.964	10	10.0	4	3.250
P ₂₄	9.80	3.764	8	10.0	3	4.333

PIER for P.C T-GIRDER

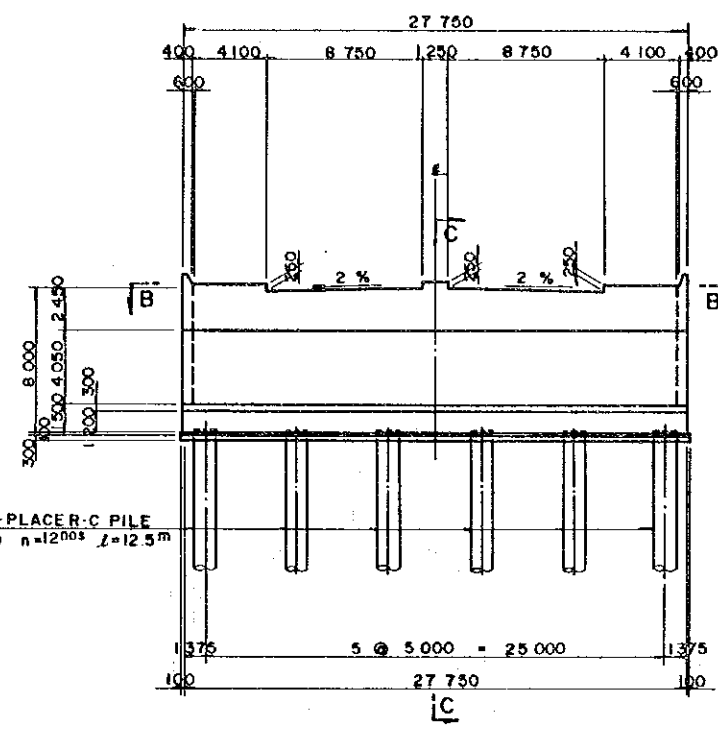




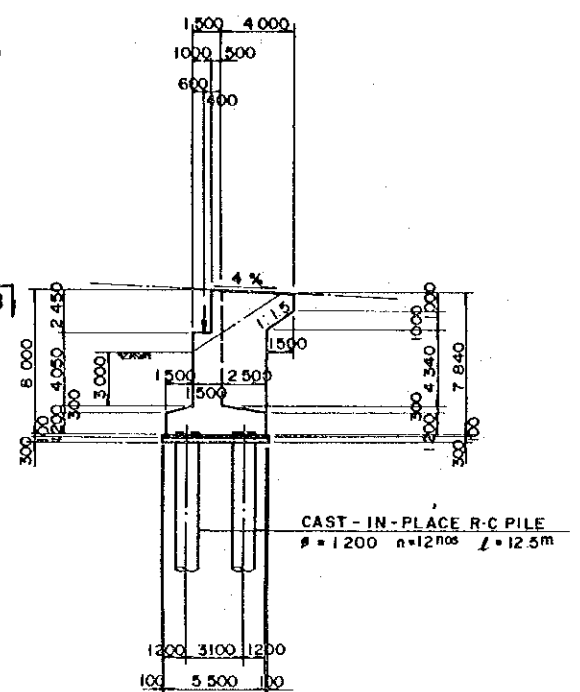
A-A CROSS SECTION SCALE 1:200



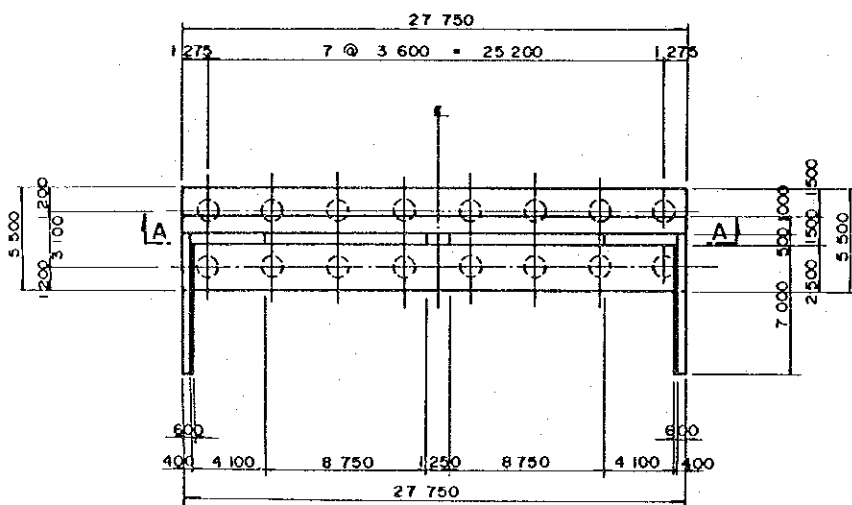
C-C CROSS SECTION SCALE 1:200



A-A CROSS SECTION SCALE 1:200

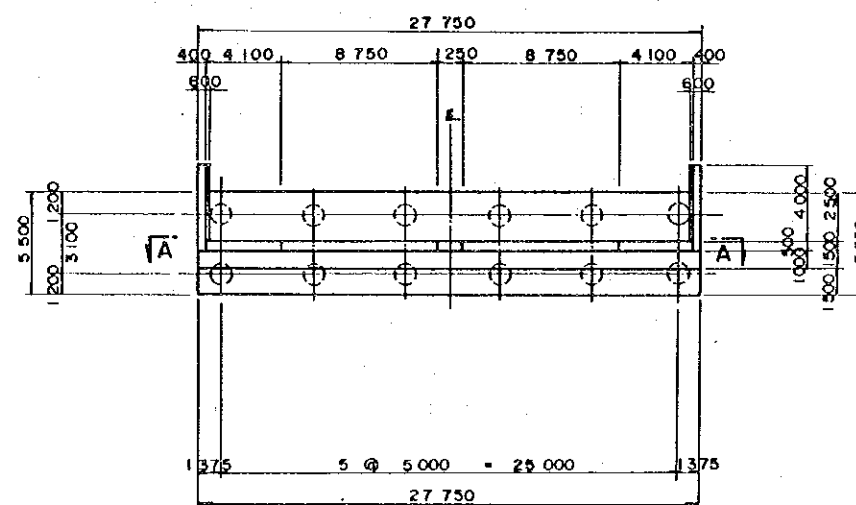


C-C CROSS SECTION SCALE 1:200



B-B CROSS SECTION SCALE 1:20

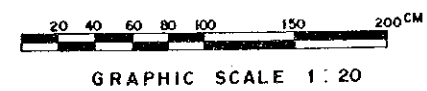
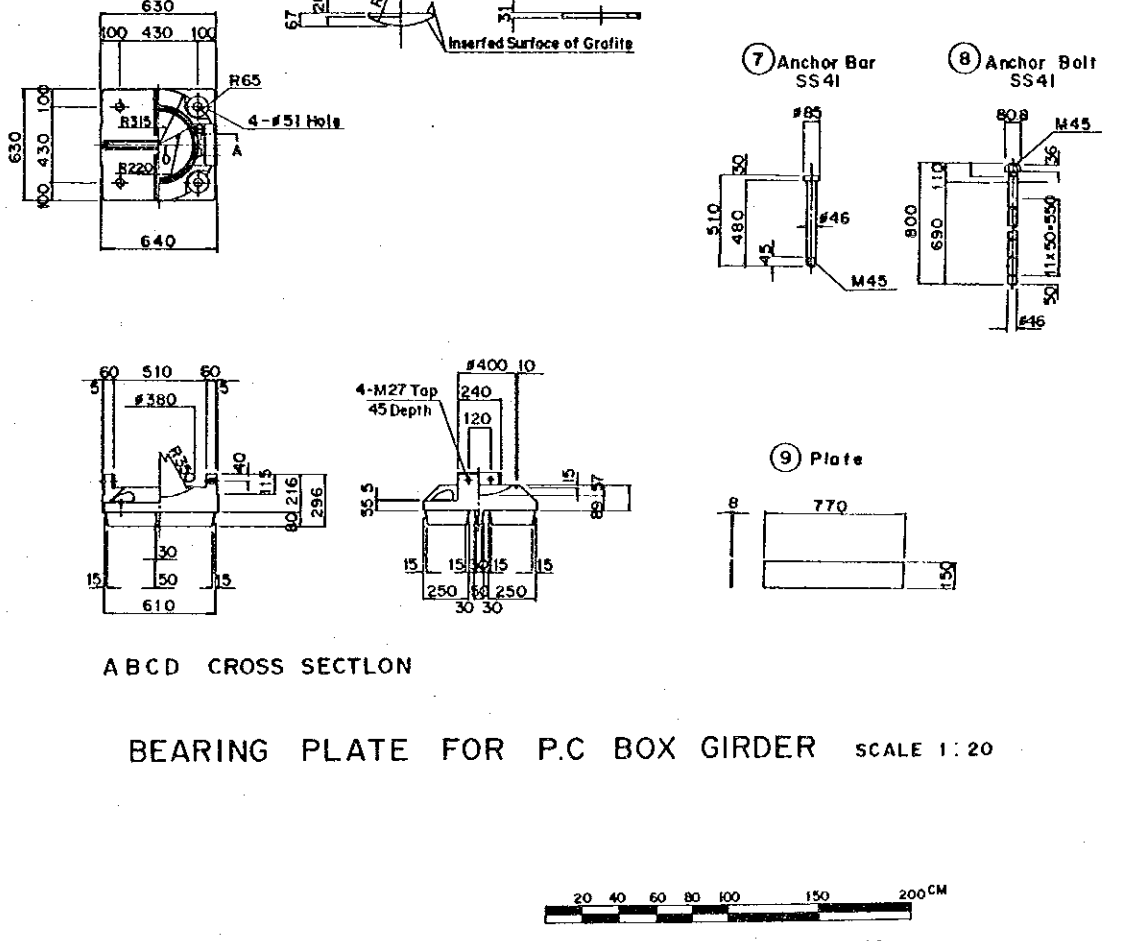
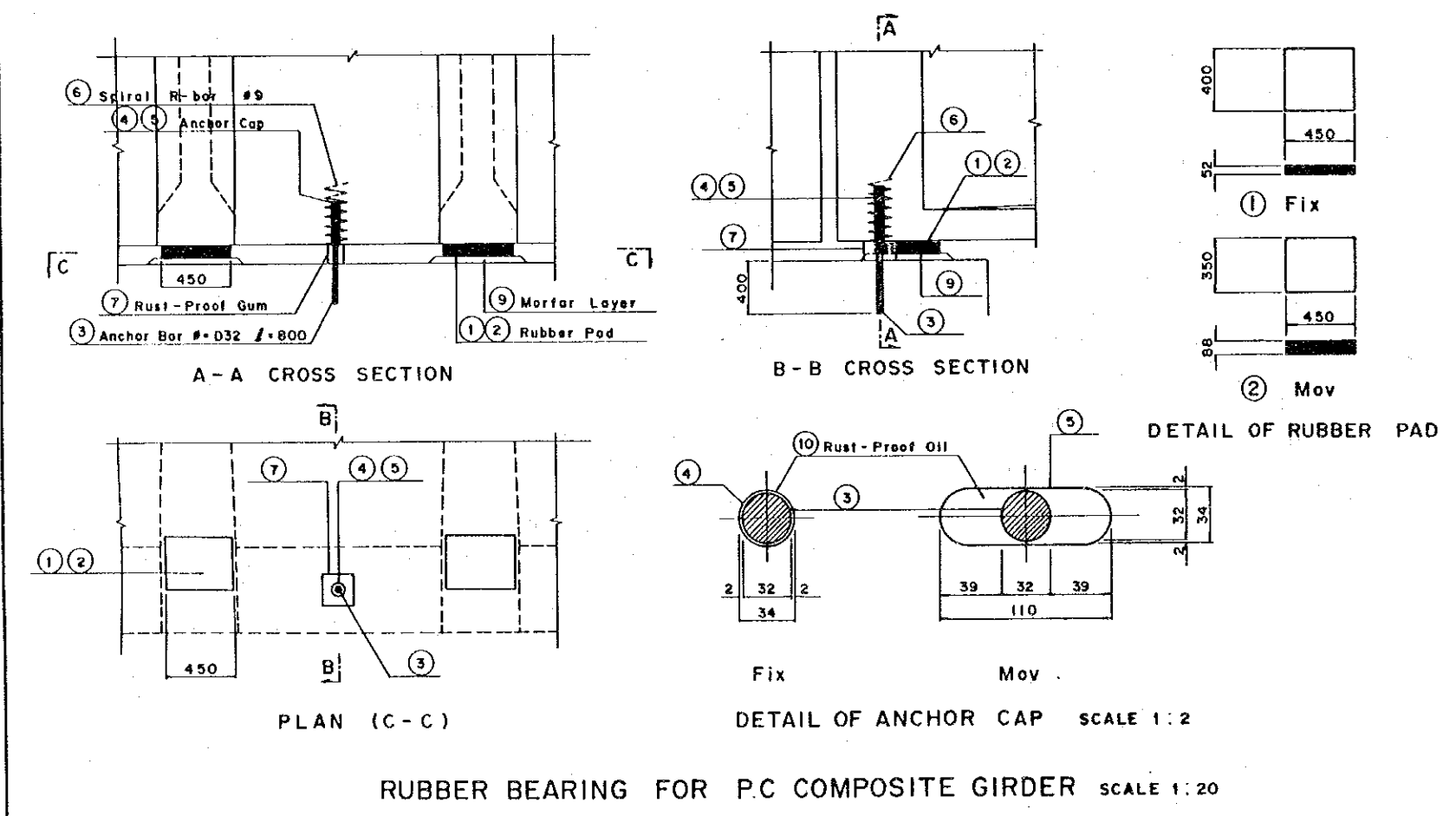
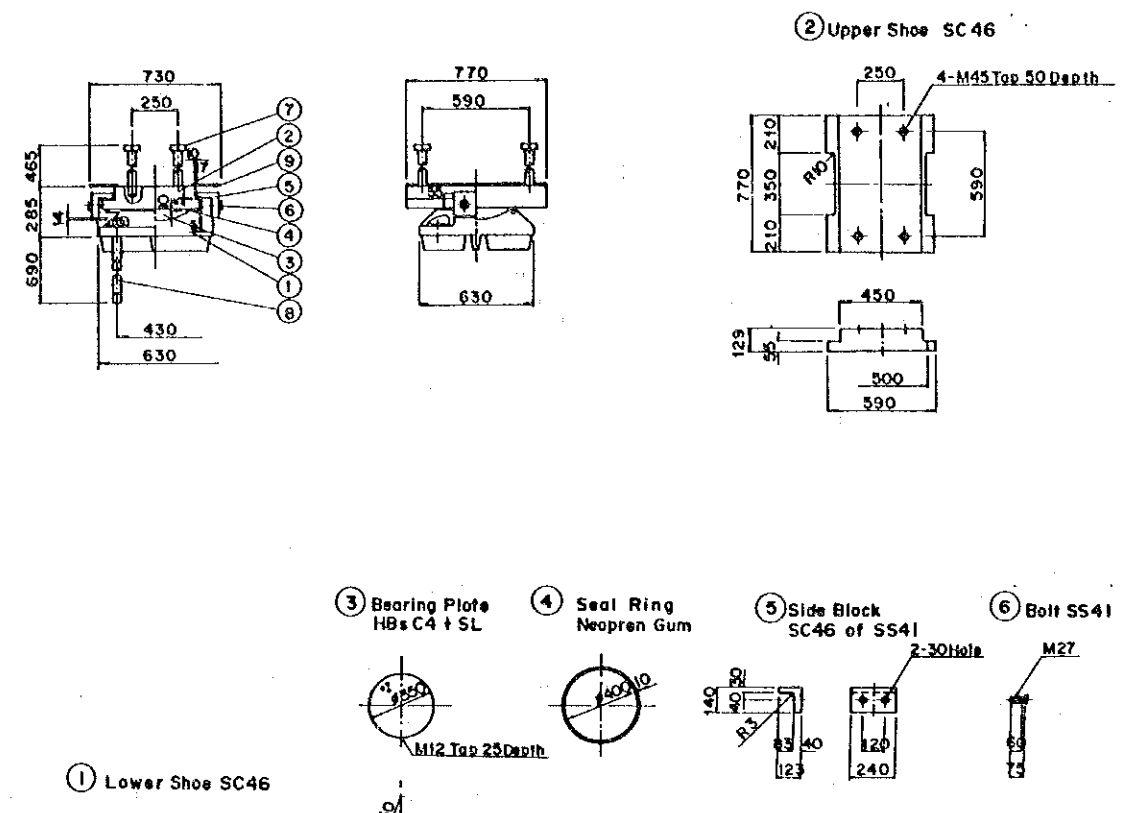
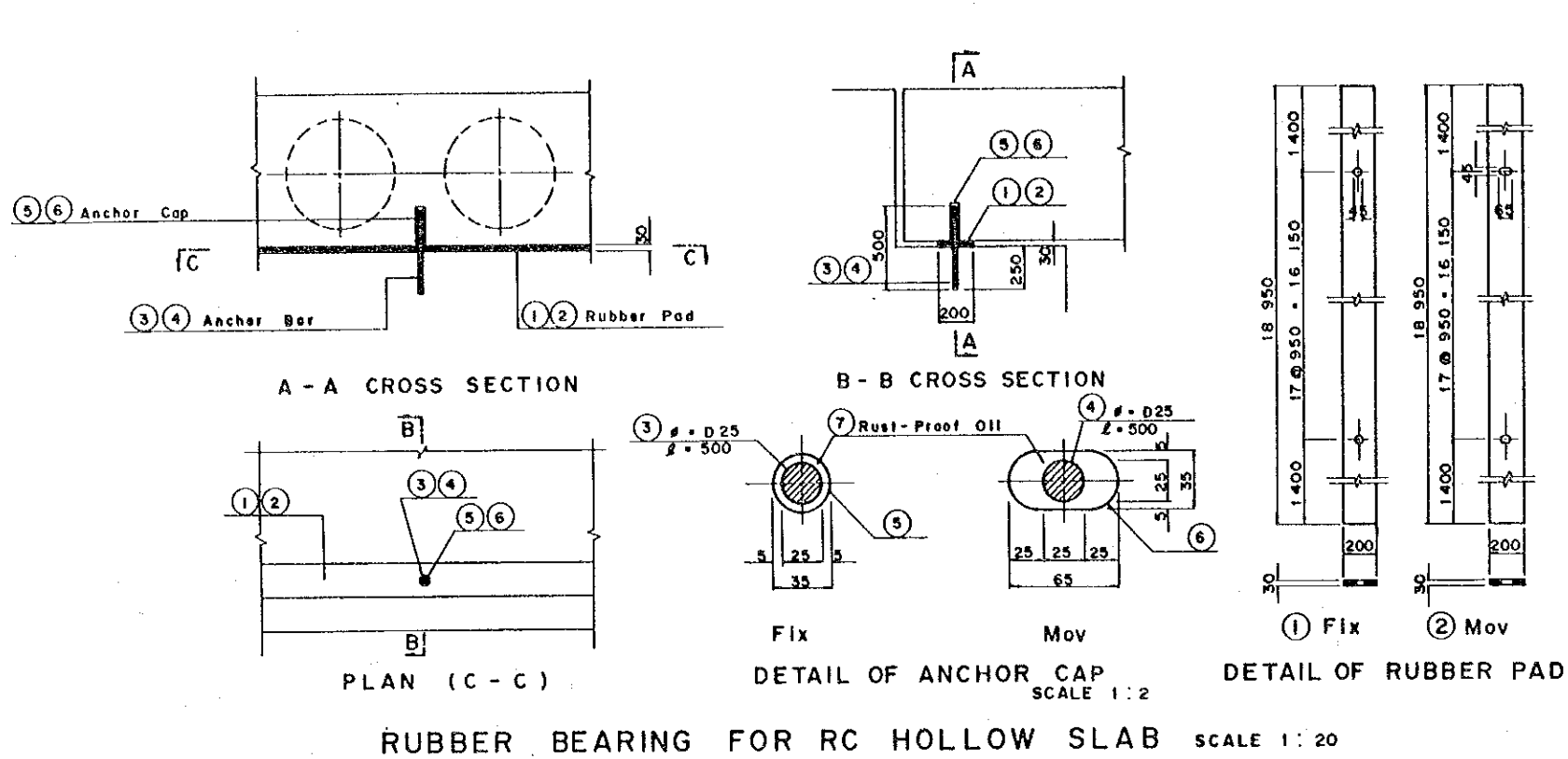
A1 ABUTMENT SCALE 1:200

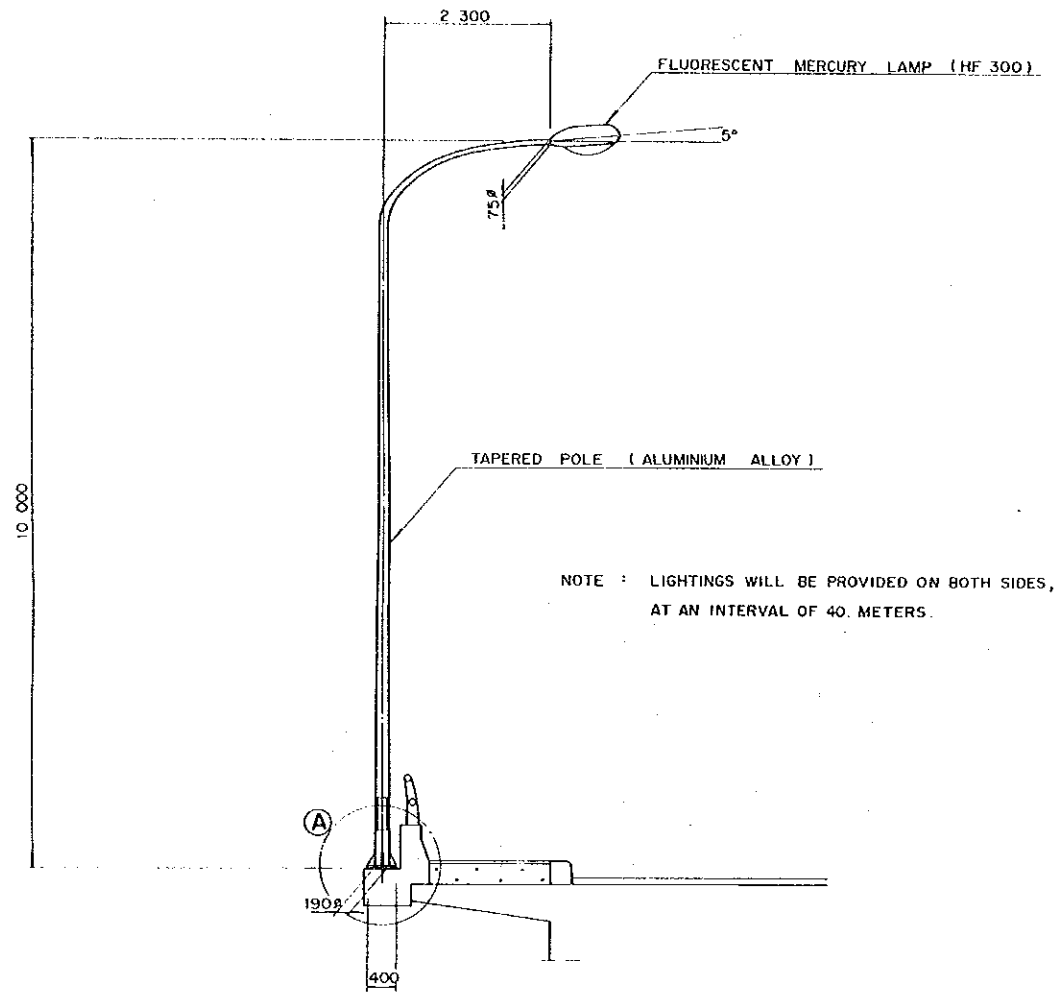


B-B CROSS SECTION SCALE 1:200

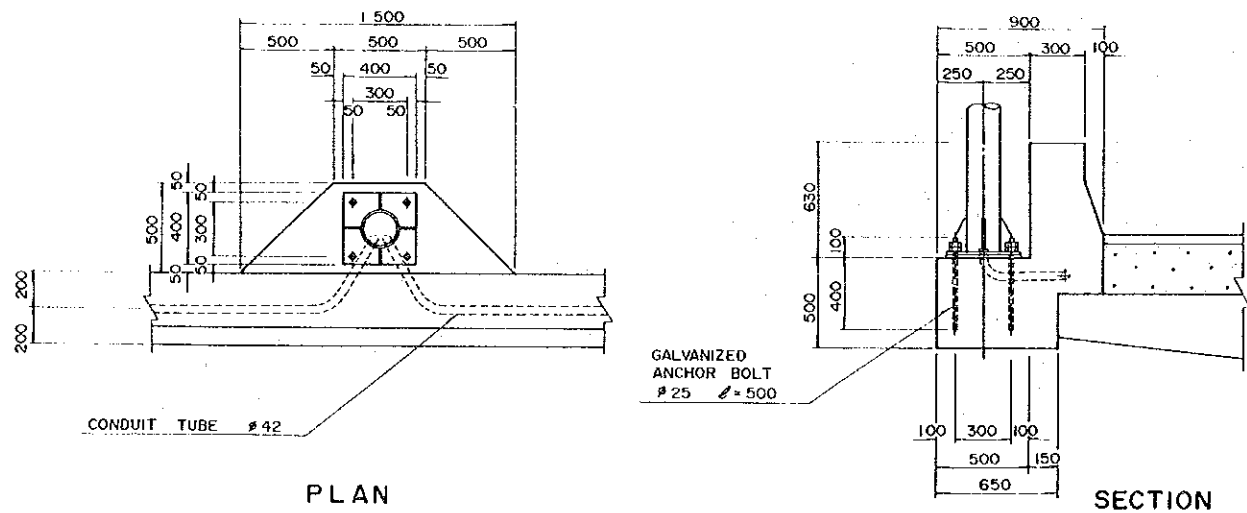
A2 ABUTMENT SCALE 1:200



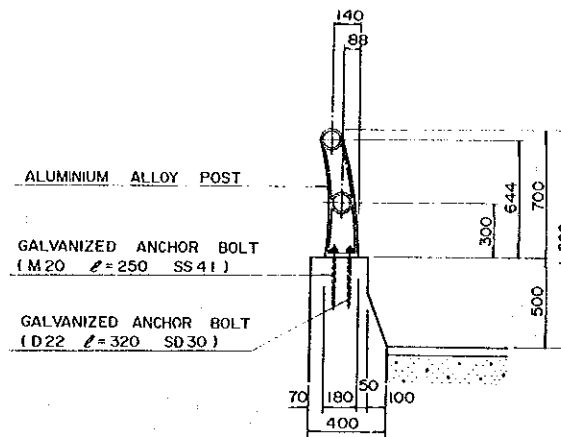




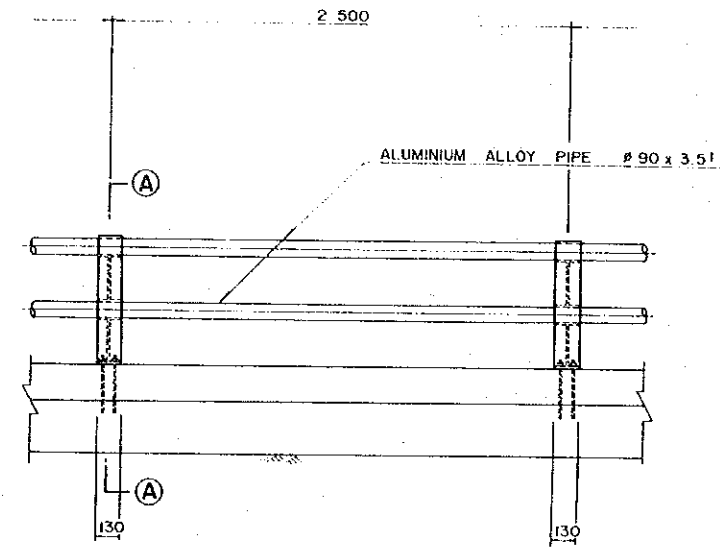
ELEVATION SCALE : 1 / 100



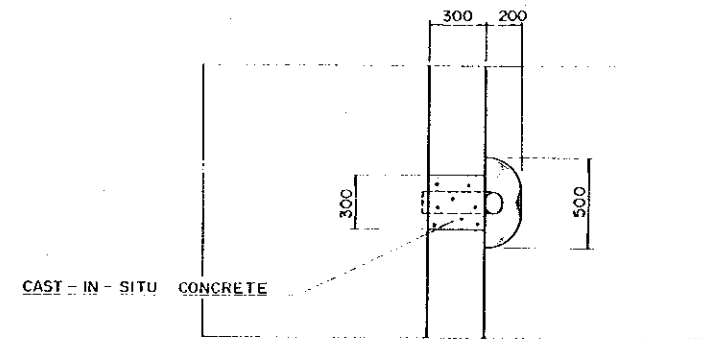
DETAIL OF (A) SCALE : 1 / 40
LIGHTING FACILITIES



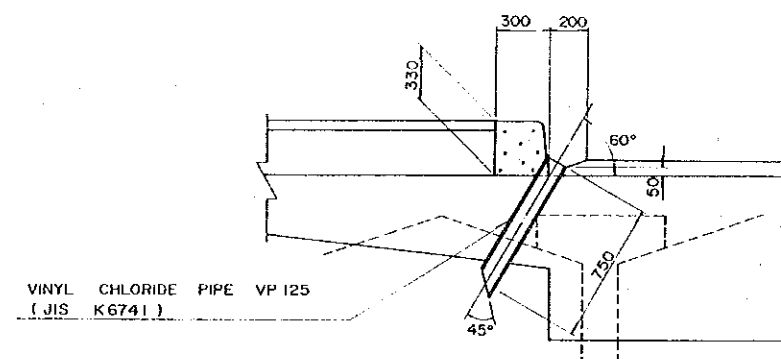
SECTION (A) - (A)



ELEVATION RAILING SCALE : 1 / 40

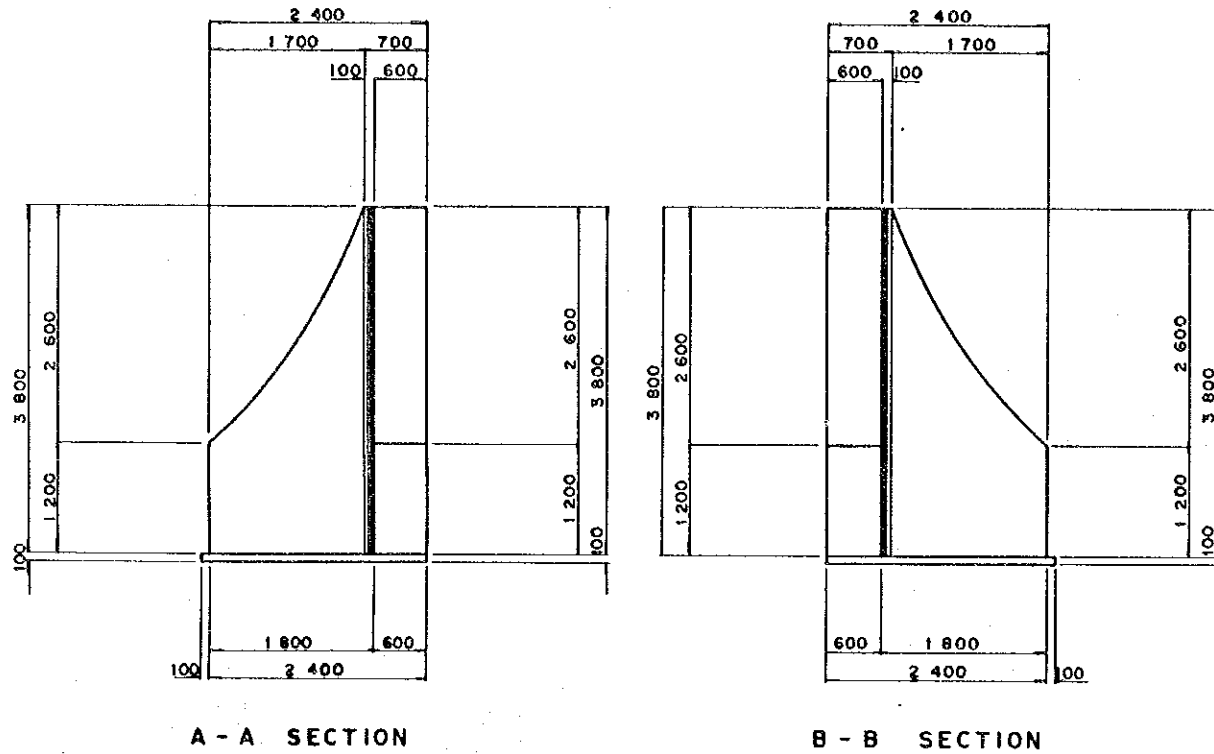


PLAN



SECTION DRAIN PIPE SCALE : 1 / 40

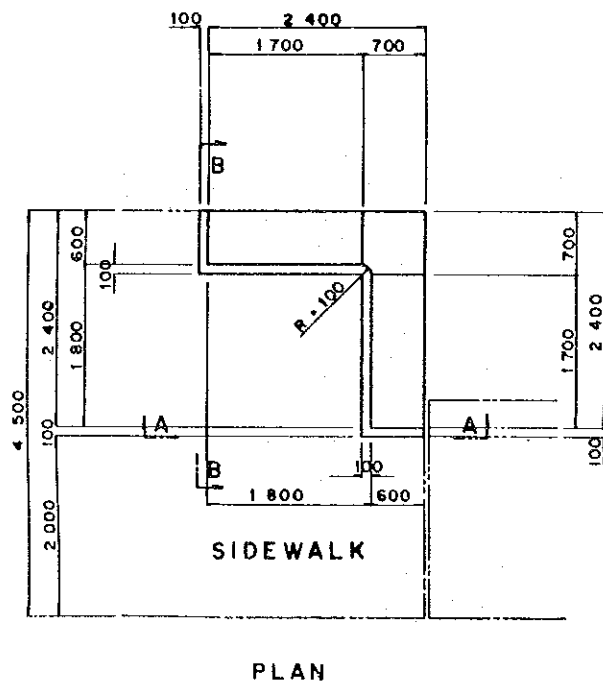
NOTE : DRAIN PIPES WILL BE PROVIDED ON BOTH SIDES, AT AN INTERVAL OF 40. METERS.



A - A SECTION

B - B SECTION

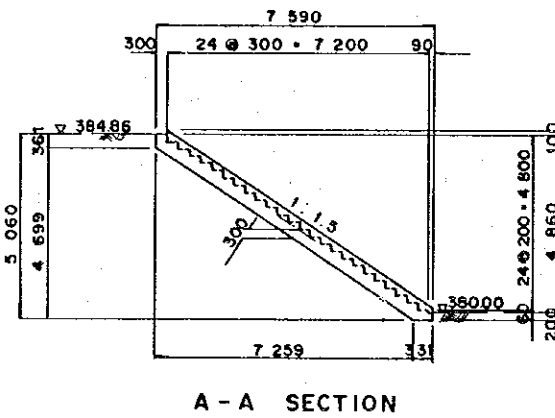
Note) Newel Post is made of Granite



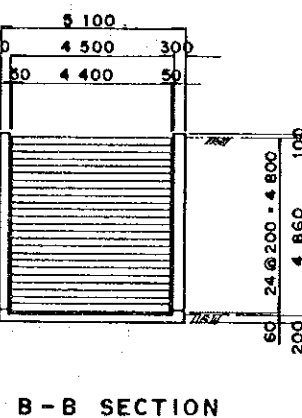
SIDEWALK

PLAN

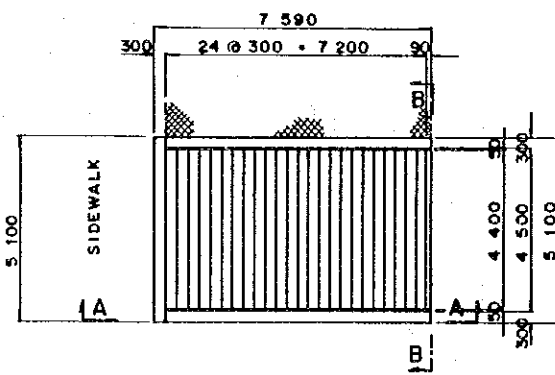
NEWEL POST SCALE 1:40



A - A SECTION



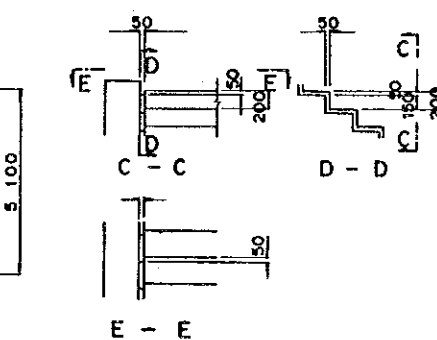
B - B SECTION



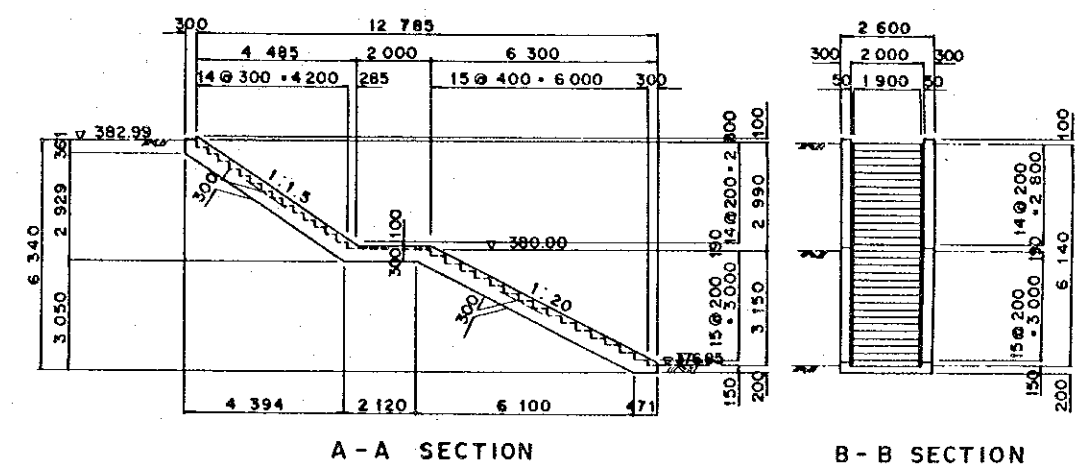
SIDEWALK

PLAN

OMDURMAN SIDE

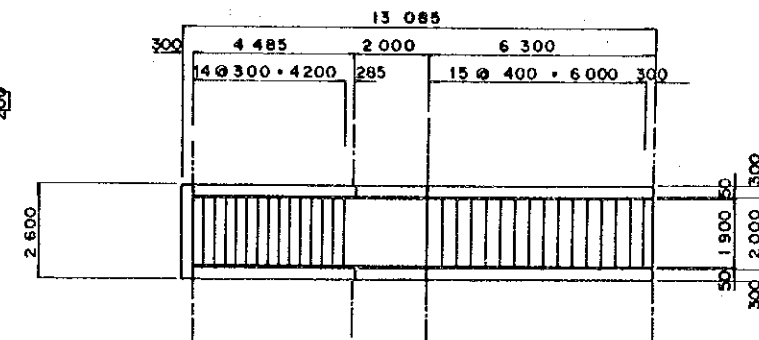


DETAIL OF STEP EDGE SCALE 1:40



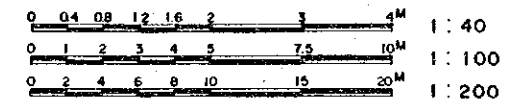
A - A SECTION

B - B SECTION



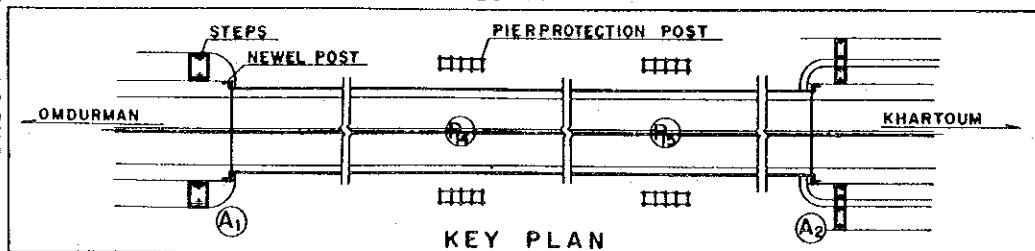
PLAN

GRAPHIC SCALE



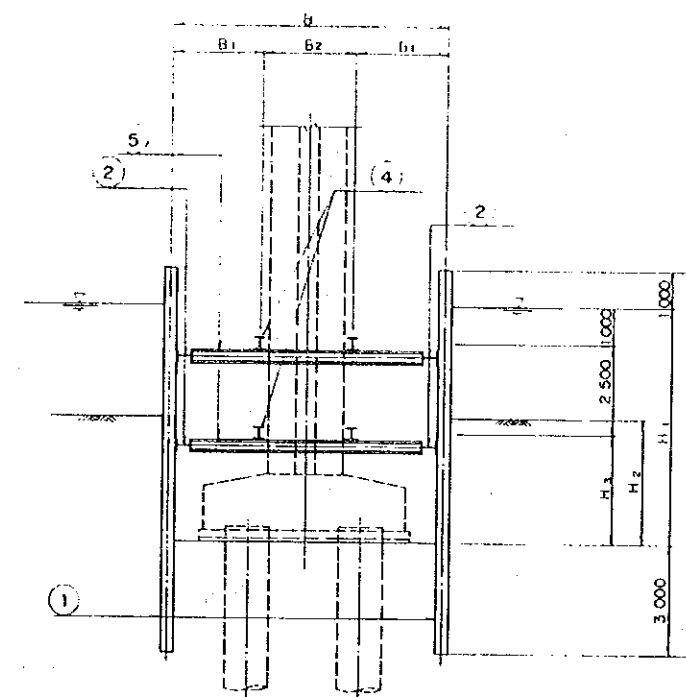
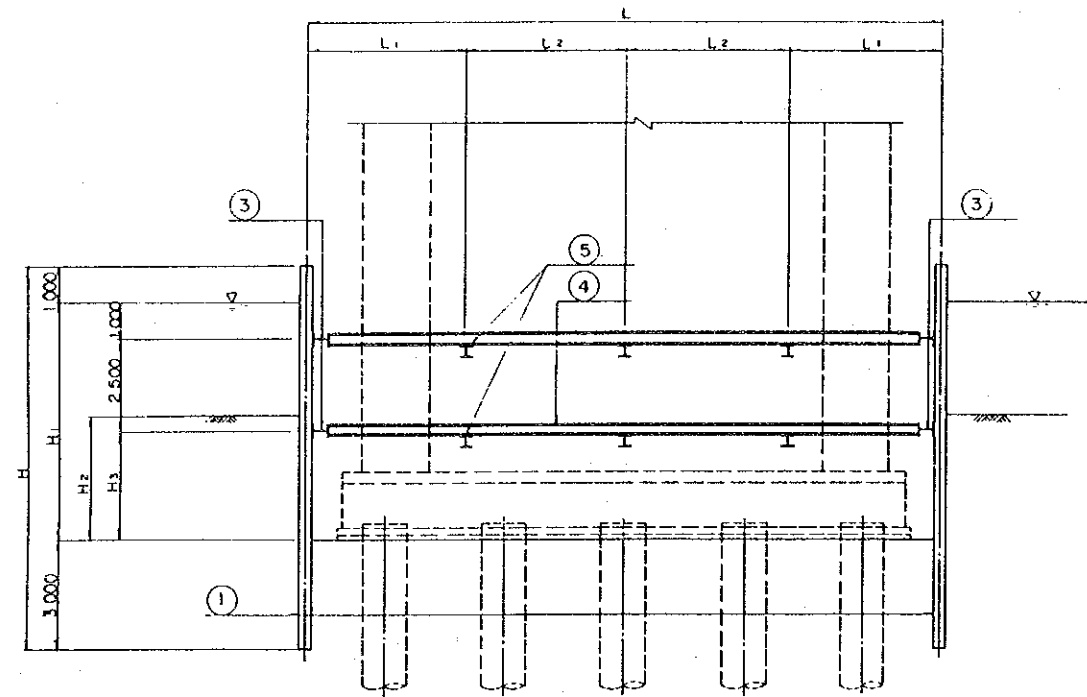
STEPS SCALE 1:100

KHARTOUM SIDE

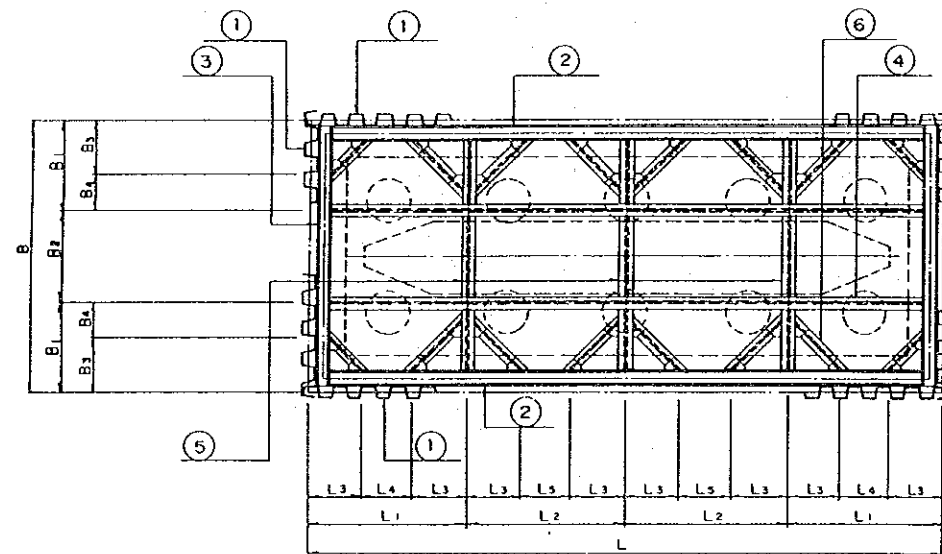


KEY PLAN

ELEVATION



PLAN

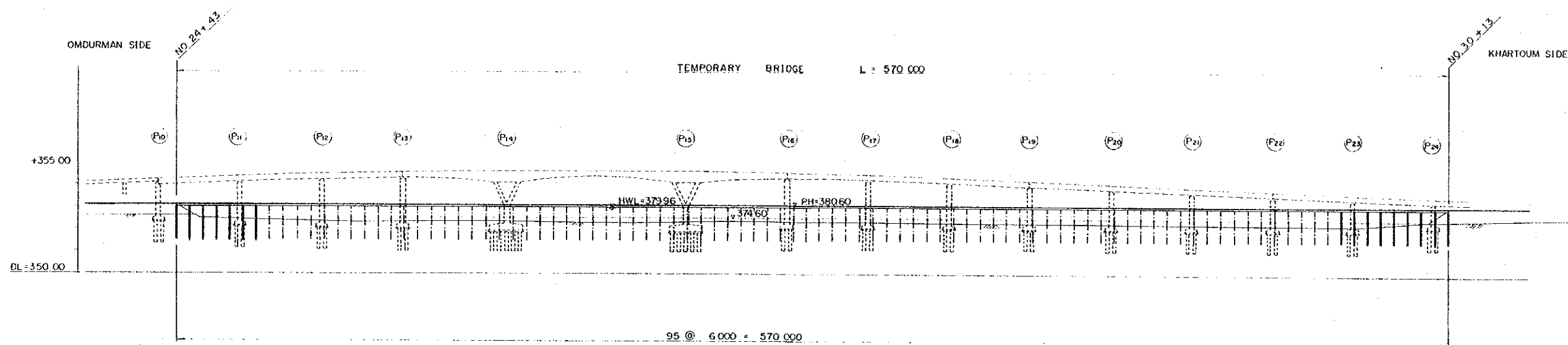


DIMENSION OF MEMBER

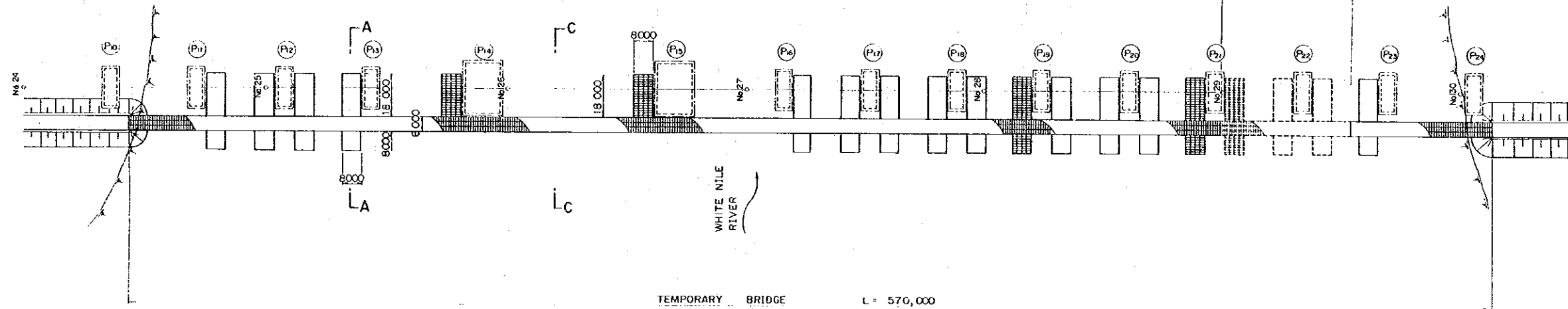
Member	Callout	TYPE 1	TYPE 2	TYPE 3
		Type III	Type IV	Type IV
Steel Sheet Pile	(1)			
Waling	Transverse Axle (2)	H-400 x 400 x 13 x 21	H-414 x 405 x 18 x 28	H-458 x 417 x 30 x 50
	Bridge Axle (3)	H-400 x 400 x 13 x 21	H-414 x 405 x 18 x 28	H-458 x 417 x 30 x 50
Strut	Transverse Axle (4)	H-400 x 400 x 13 x 21	H-400 x 400 x 13 x 21	H-458 x 417 x 30 x 50
	Bridge Axle (5)	H-300 x 300 x 10 x 15	H-300 x 300 x 10 x 15	H-428 x 407 x 20 x 35
Brace	(6)	H-300 x 300 x 10 x 15	H-300 x 300 x 10 x 15	H-300 x 300 x 10 x 15

TABLE of DIMENSION

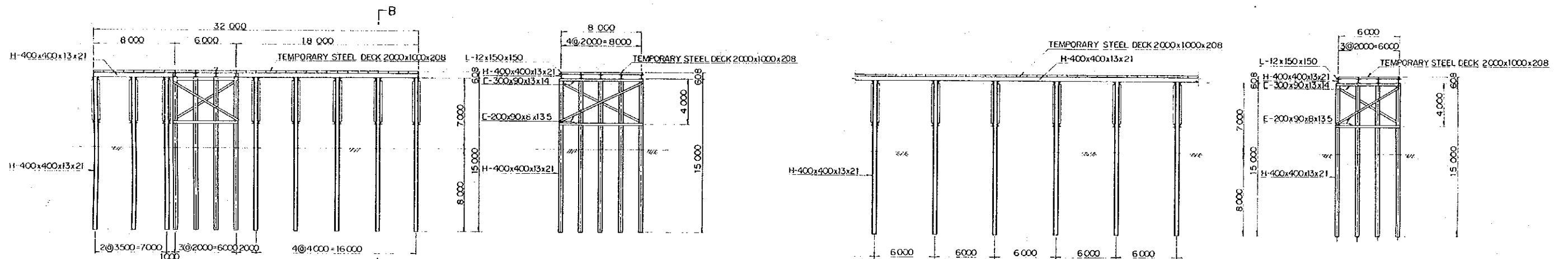
TYPE	PLASE	L	L1	L2	L3	L4	L5	B	B1	B2	B3	B4	H	UNIT Meter		
														H1	H2	H3
TYPE 1	P1, P2, P3, P4	17.5	4.375	4.375	1.50	1.375	1.375	7.50	2.50	2.50	1.50	1.00	10.00	6.00	2.90	6.50
TYPE 2	P13, P16	17.5	4.375	4.375	1.50	1.375	1.375	7.50	2.25	3.00	1.50	0.75	10.50	6.50	3.40	7.00
TYPE 3	P4, P15	22.5	5.625	5.625	2.00	1.625	1.625	16.50	6.00	4.50	2.00	4.00	11.50	7.50	4.40	8.00



LONGITUDINAL SECTION SCALE: 1/2,000



PLAN SCALE: 1/2,000

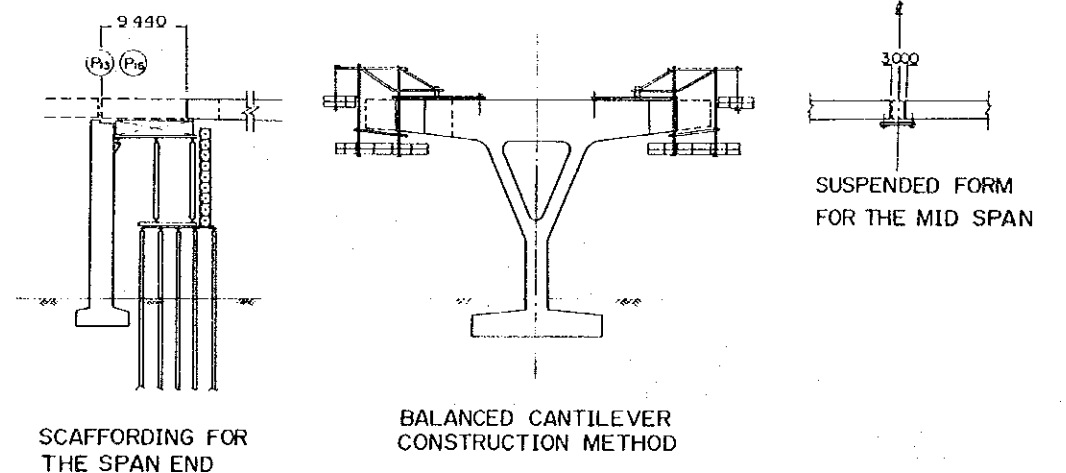
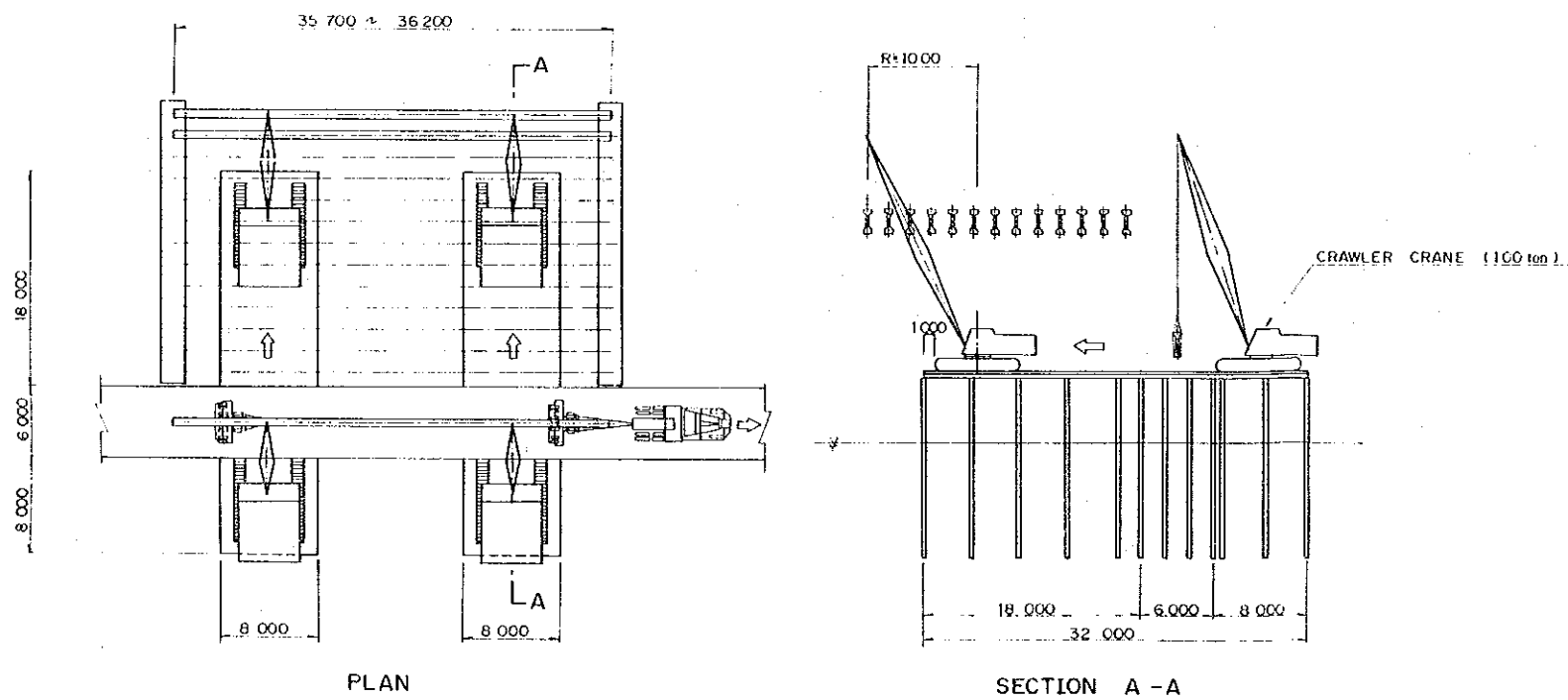
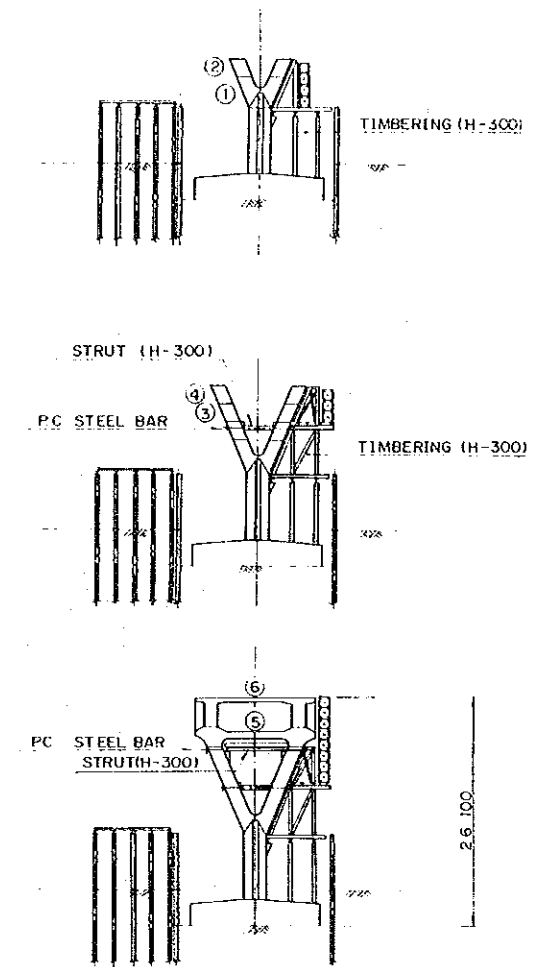
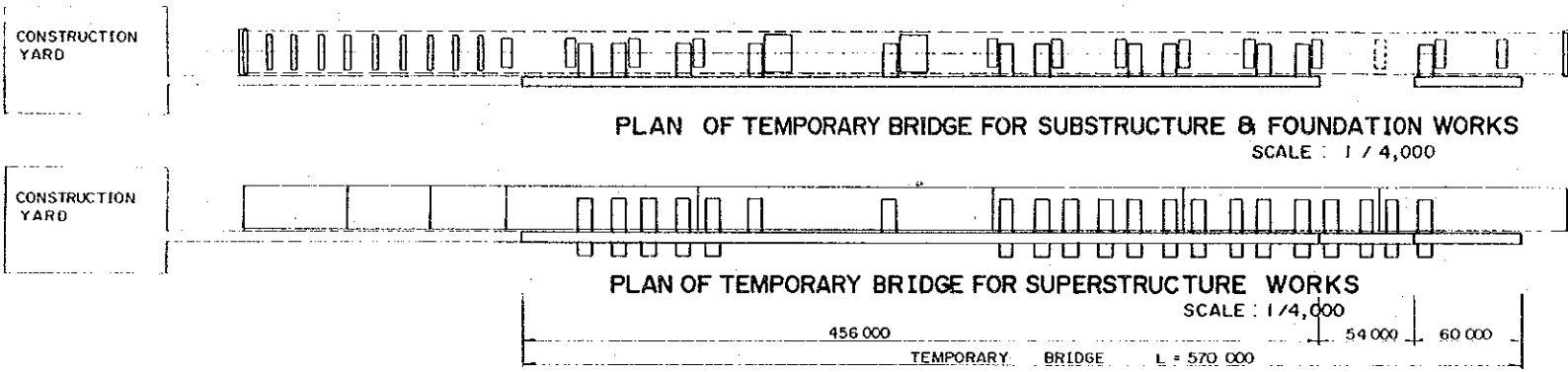
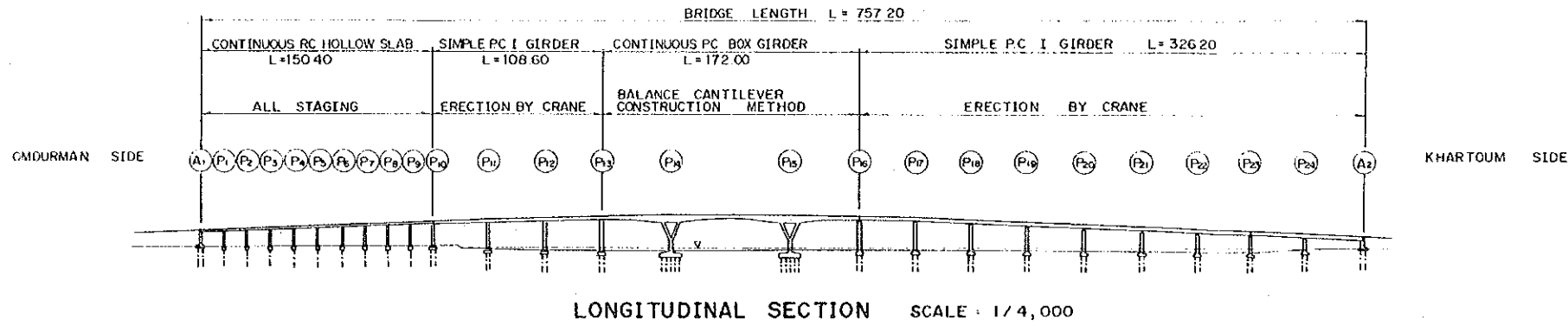


A-A CROSS SECTION SCALE: 1/400

B-B CROSS SECTION SCALE: 1/400

FRONT VIEW OF TEMPORARY BRIDGE SCALE: 1/200

C-C CROSS SECTION SCALE: 1/200



JICA