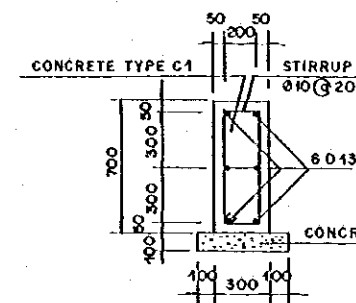
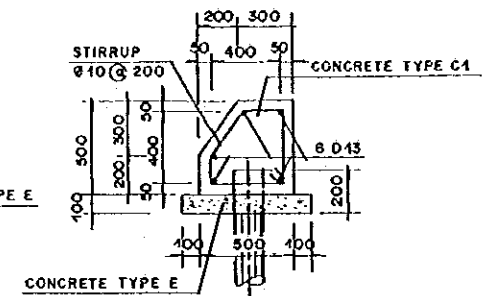


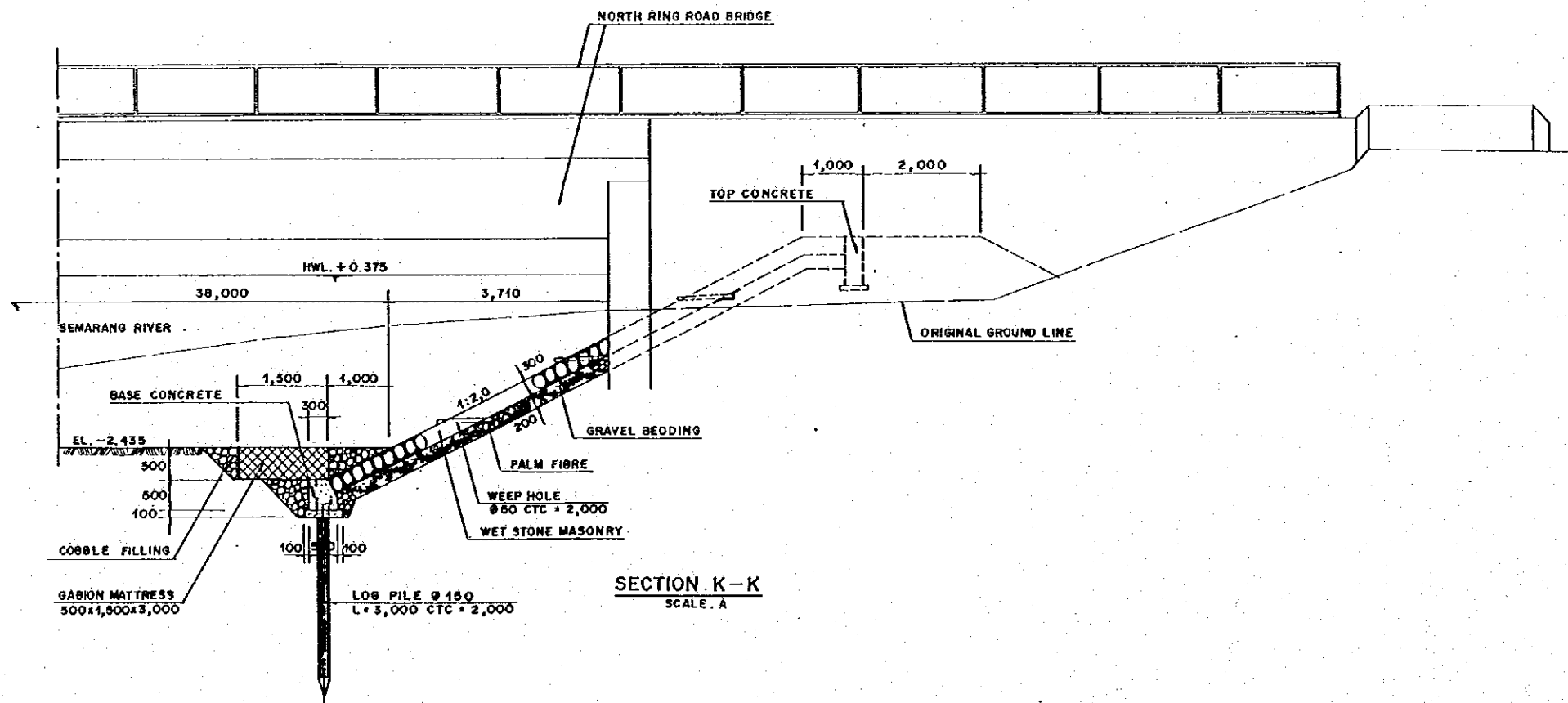
SECTION J-J
SCALE A



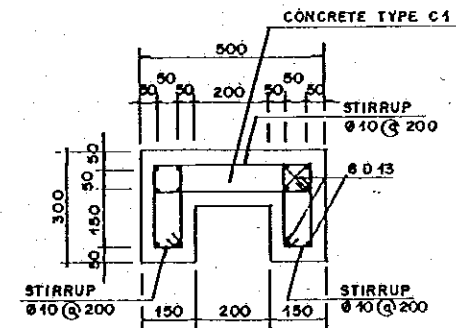
TOP CONCRETE
SCALE B



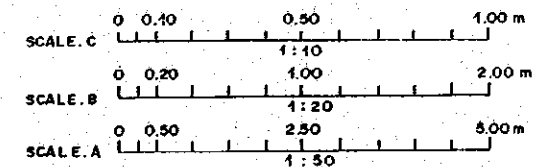
BASE CONCRETE
SCALE B



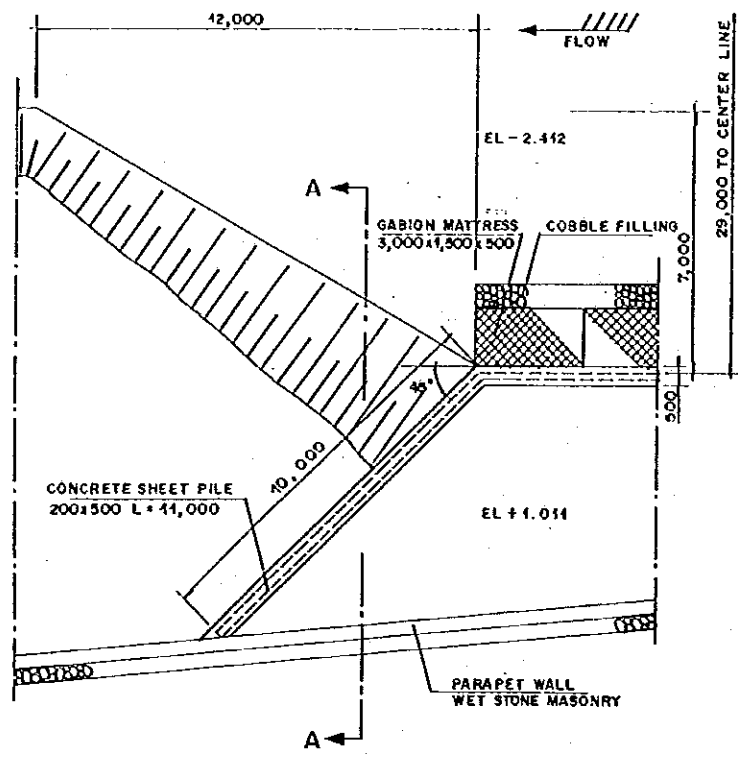
SECTION K-K
SCALE A



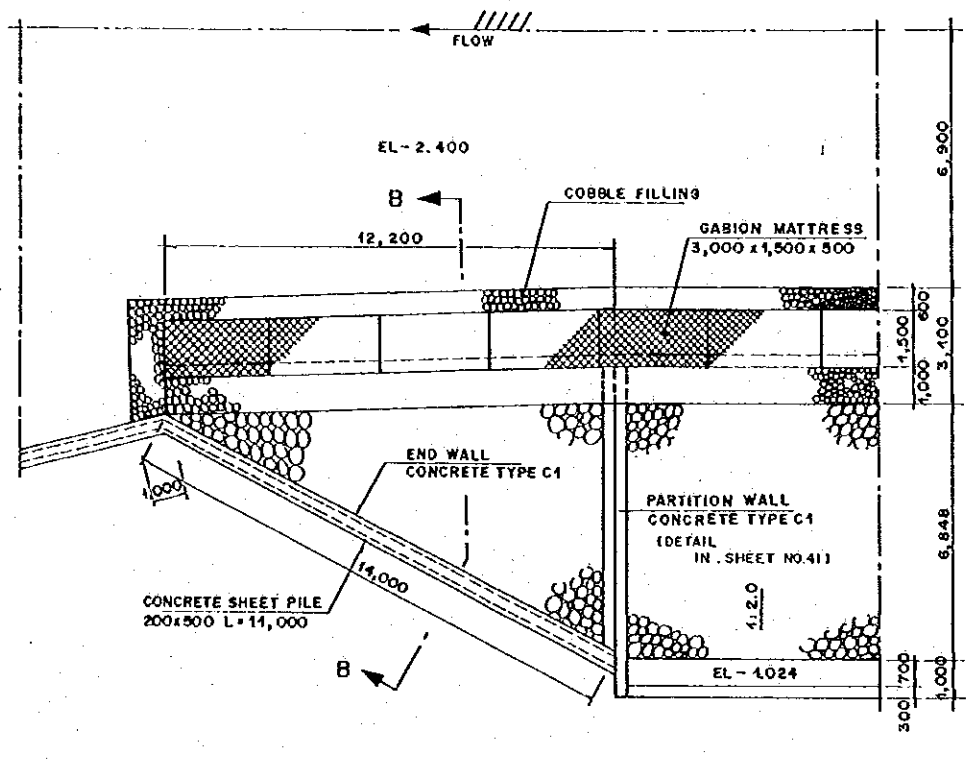
PILE CAP
SCALE C



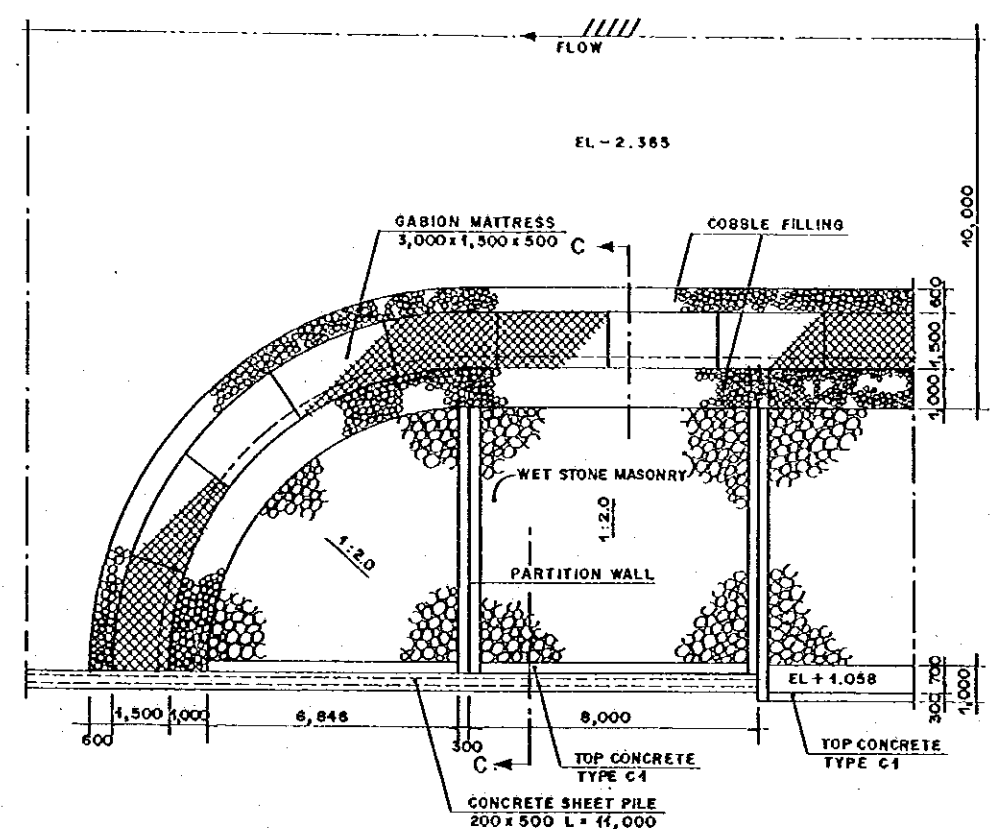
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
JATUNGLINGA FLOOD CONTROL PROJECT COMPONENT: WEST FLOODWAY / GARANG RIVER IMPROVEMENT SEMARANG RIVER ASIN RIVER DRAINAGE SYSTEM IMPROVEMENT RETENTION (S/S) SECTION J AND K		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND TAMEO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
OFFICE OF PLANNING AND DESIGN PROJECT MANAGER		DRAWING NO. U-P2-S-RV-5 SHEET NO. 25
NO. DATE REVISIONS ORIGINATED DESIGNED APPROVED		DATE CONTRACT NO.



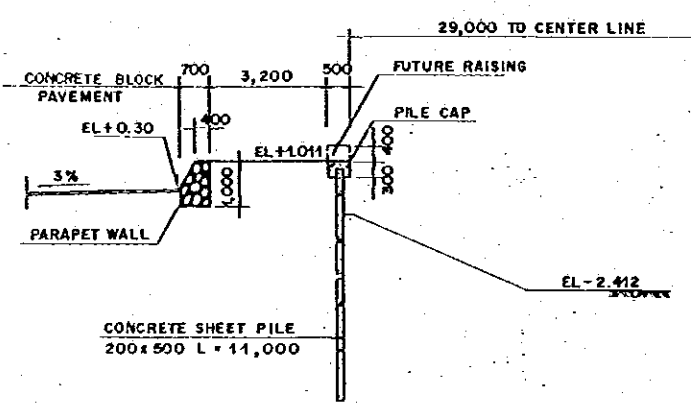
DETAIL A
SCALE A



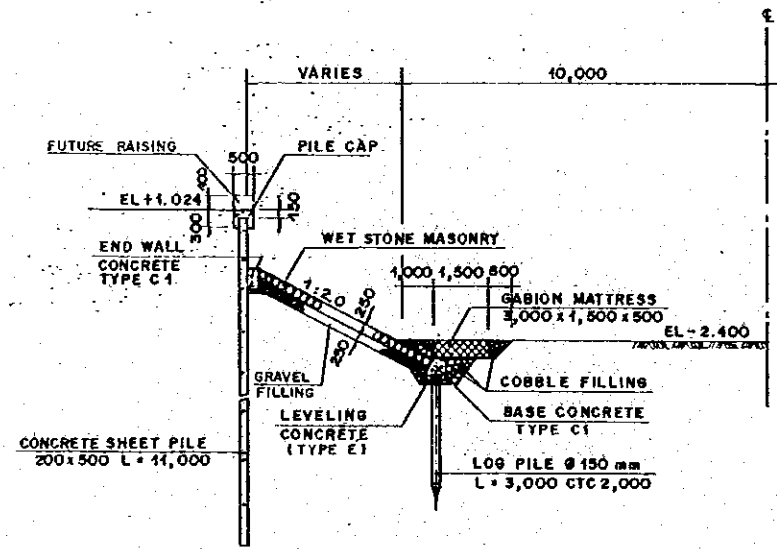
DETAIL B
SCALE A



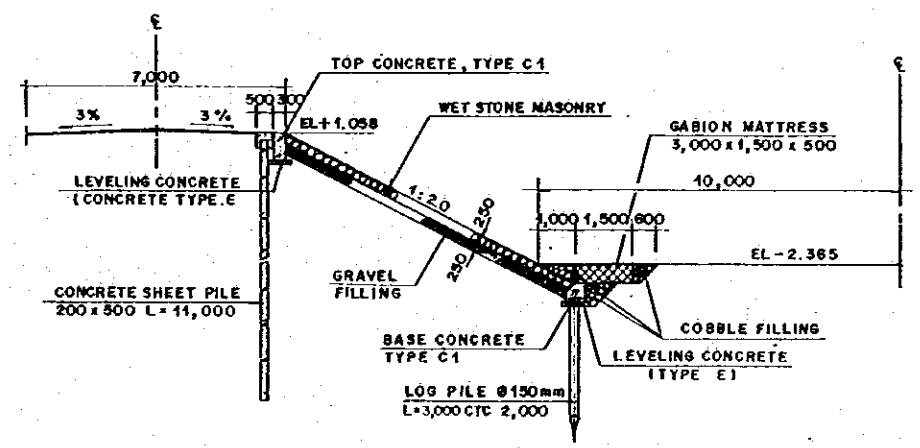
DETAIL C
SCALE A



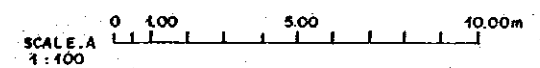
SECTION A-A
SCALE A



SECTION B-B
SCALE A



SECTION C-C
SCALE A



NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

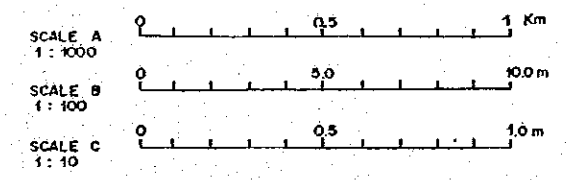
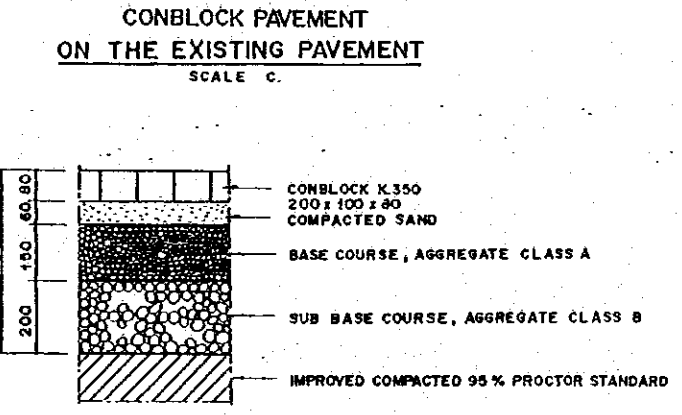
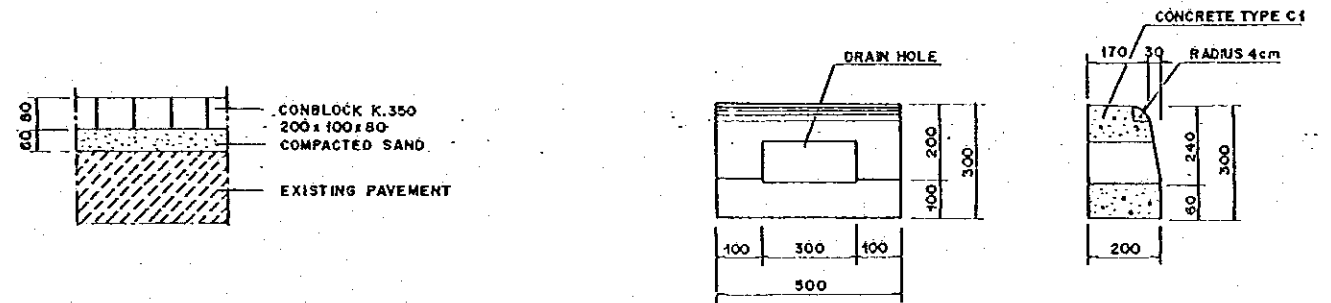
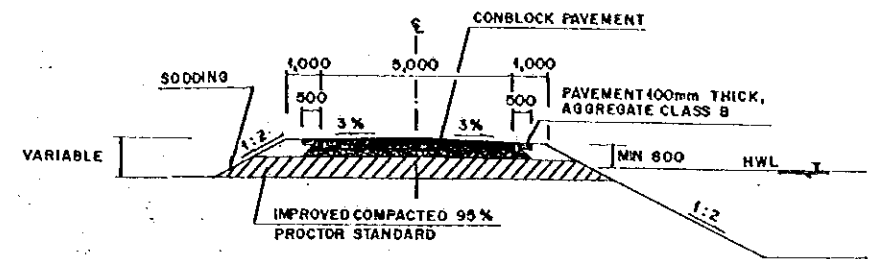
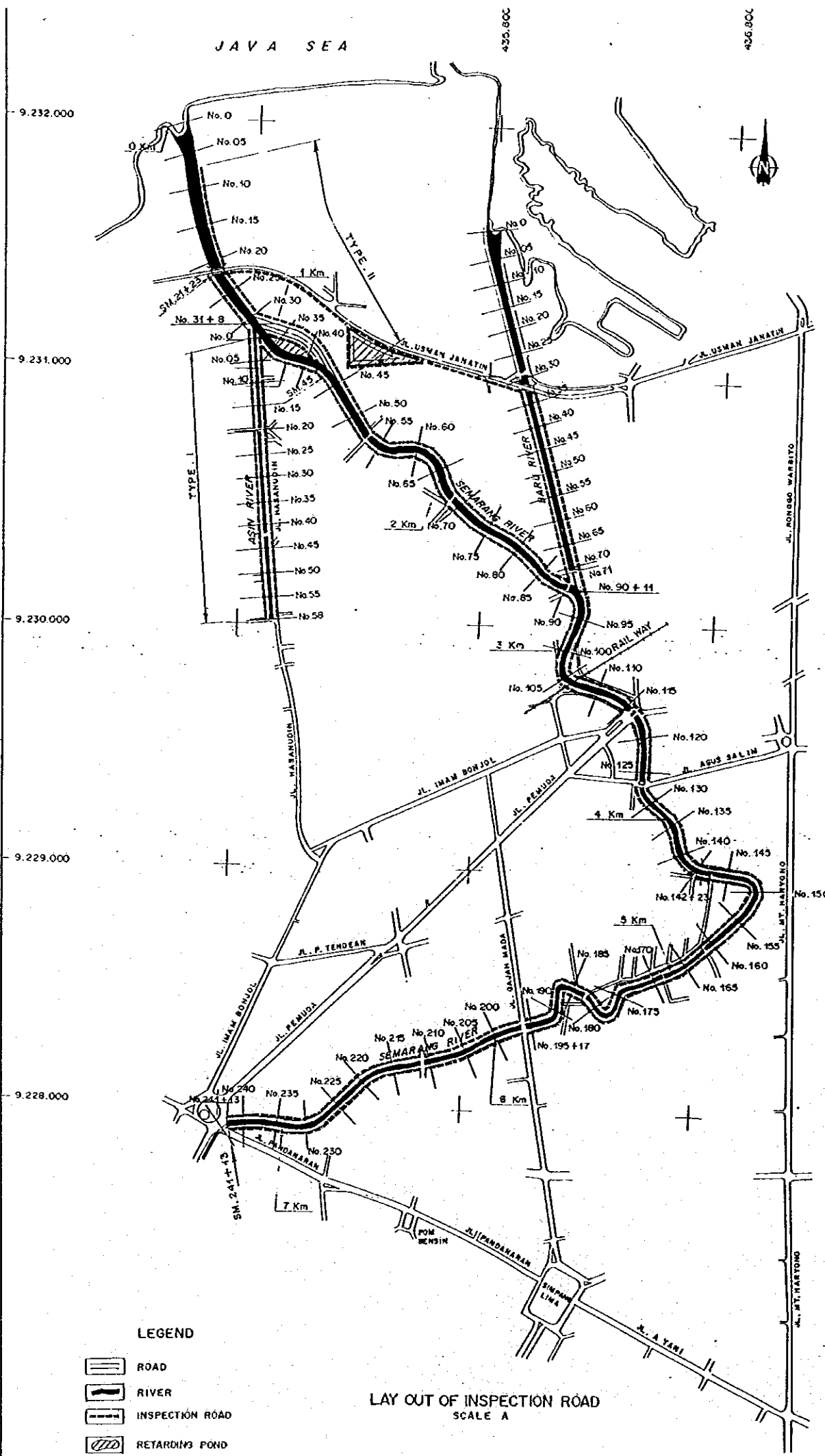
THE REPUBLIC OF INDONESIA
 MINISTRY OF PUBLIC WORKS
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
 AND DIRECTORATE GENERAL OF RURAL SETTLEMENT

JRATURUNTA FLOOD CONTROL PROJECT
 COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT
 SEMARANG RIVER
 REVETMENT (6/6) DETAILS OF TRANSITION

PROVINCE: CENTRAL JAVA
 PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG BY THE REPUBLIC OF INDONESIA
 DISTRICT: SEMARANG CITY
 DRAWING NO.: U-P2-S-RV-6
 SHEET NO.: 26

DATE: _____ CONTRACT NO.: _____

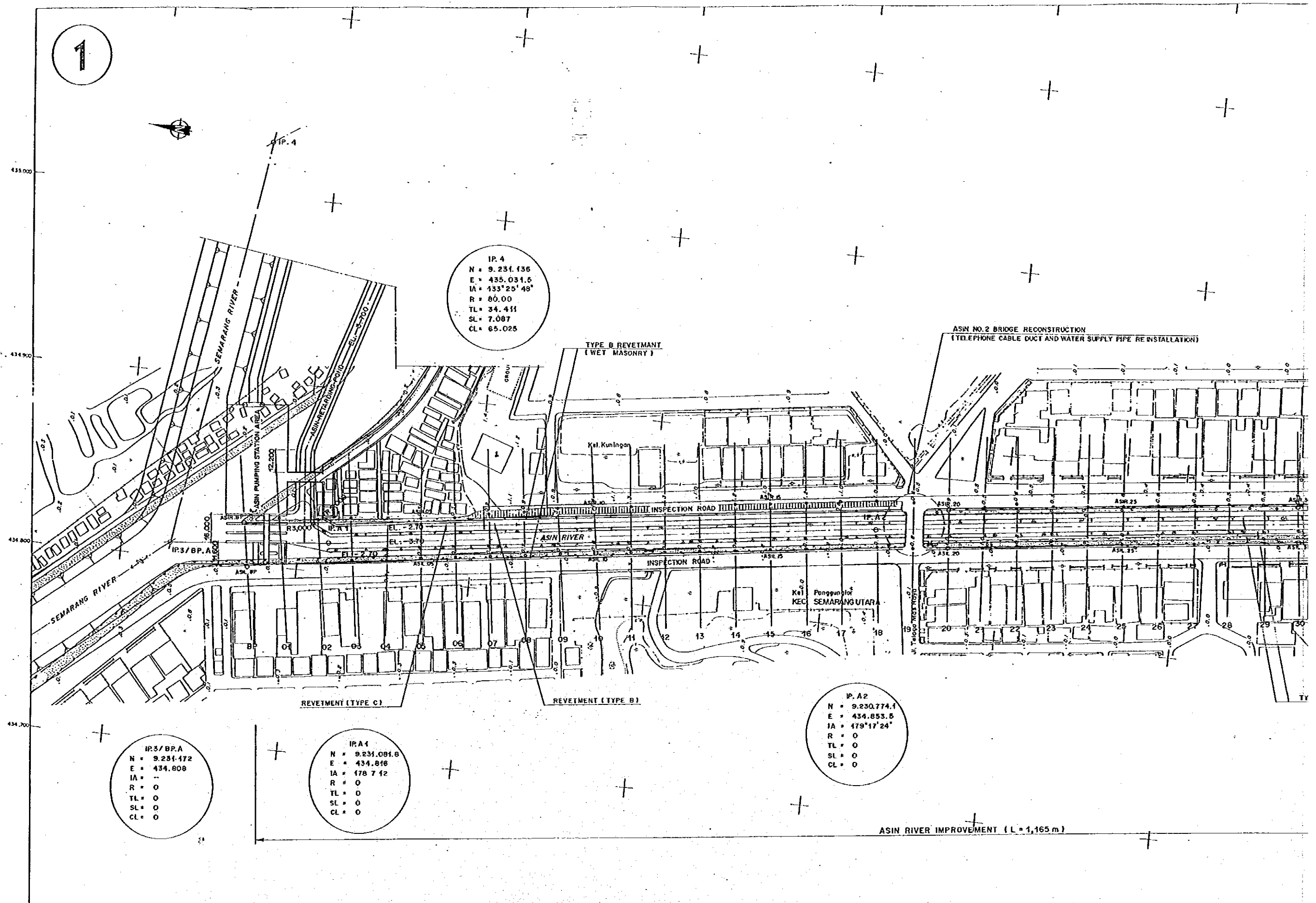
CHIEF OF PLANNING AND DESIGN: _____
 PROJECT MANAGER: _____



NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
BATUNDELUWA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT SEMARANG RIVER ASIN RIVER DRAINAGE SYSTEM IMPROVEMENT INSPECTION ROAD		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG OF THE REPUBLIC OF INDONESIA
LAYAN INTERNATIONAL COOPERATION AGENCY CITI ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND FARO INTERNATIONAL, INC.		DISTRICT SEMARANG CITY
DESIGNED CHECKED	DATE CONTRACT NO.	DRAWING NO. U-P2-S-Rd-1 SHEET NO. 27
CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		

1



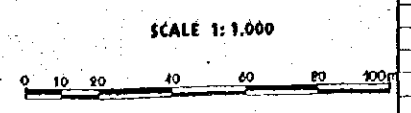
IP. 4
 N = 9.231.436
 E = 435.031.5
 IA = 133°25'48"
 R = 80.00
 TL = 34.411
 SL = 7.087
 CL = 65.025

IP.3/B.P.A
 N = 9.231.172
 E = 434.808
 IA = -
 R = 0
 TL = 0
 SL = 0
 CL = 0

IP. A 1
 N = 9.231.081.8
 E = 434.818
 IA = 178°7'12"
 R = 0
 TL = 0
 SL = 0
 CL = 0

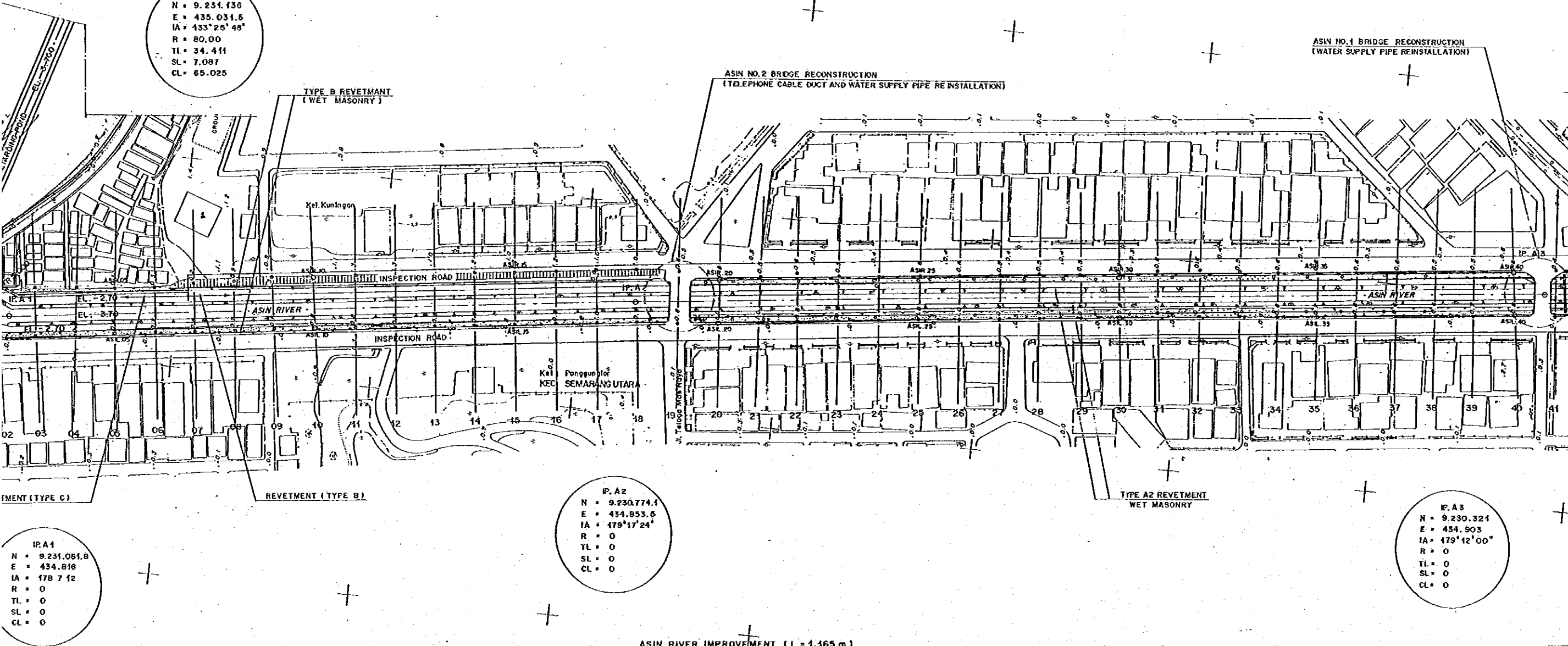
IP. A 2
 N = 9.230.774.1
 E = 434.853.5
 IA = 179°17'24"
 R = 0
 TL = 0
 SL = 0
 CL = 0

FOR REFERENCE ONLY				FOR REFERENCE ONLY			
NAME	NORTHING	EASTING	ELEVATION	NAME	NORTHING	EASTING	ELEVATION
ASILBP	9,231,128.081	434,799.670	0.890	ASIRBP	9,231,128.661	434,822.982	0.097
ASIL10	9,230,930.282	434,825.331	0.834	ASIR10	9,230,933.516	434,849.204	1.439
ASIL20	9,230,731.486	434,847.348	0.979	ASIR20	9,230,732.853	434,868.030	0.881
ASIL30	9,230,532.742	434,870.387	0.776	ASIR30	9,230,535.088	434,889.245	0.863
ASIL40	9,230,333.885	434,891.785	0.758	ASIR40	9,230,336.101	434,911.501	0.786



NO.	DATE	REVISIONS	ORIGINATED	DESIGN

IP. 4
 N = 9.231.136
 E = 435.031.5
 IA = 133°25'48"
 R = 80.00
 TL = 34.411
 SL = 7.087
 CL = 65.025



IP. A1
 N = 9.231.081.8
 E = 434.816
 IA = 178°7'12"
 R = 0
 TL = 0
 SL = 0
 CL = 0

IP. A2
 N = 9.230.774.1
 E = 434.853.5
 IA = 179°17'24"
 R = 0
 TL = 0
 SL = 0
 CL = 0

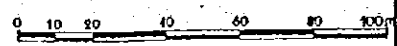
IP. A3
 N = 9.230.321
 E = 434.903
 IA = 179°12'00"
 R = 0
 TL = 0
 SL = 0
 CL = 0

ASIN RIVER IMPROVEMENT (L = 1,165 m)

FOR REFERENCE ONLY

ELEVATION	NAME	NORTHING	EASTING	ELEVATION
0.890	ASIRBP	9,231,128.661	434,822.982	0.097
0.834	ASIR10	9,230,933.516	434,849.204	1.439
0.979	ASIR20	9,230,732.853	434,868.030	0.881
0.776	ASIR30	9,230,535.088	434,889.245	0.863
0.758	ASIR40	9,230,336.101	434,911.501	0.786

SCALE 1:1,000

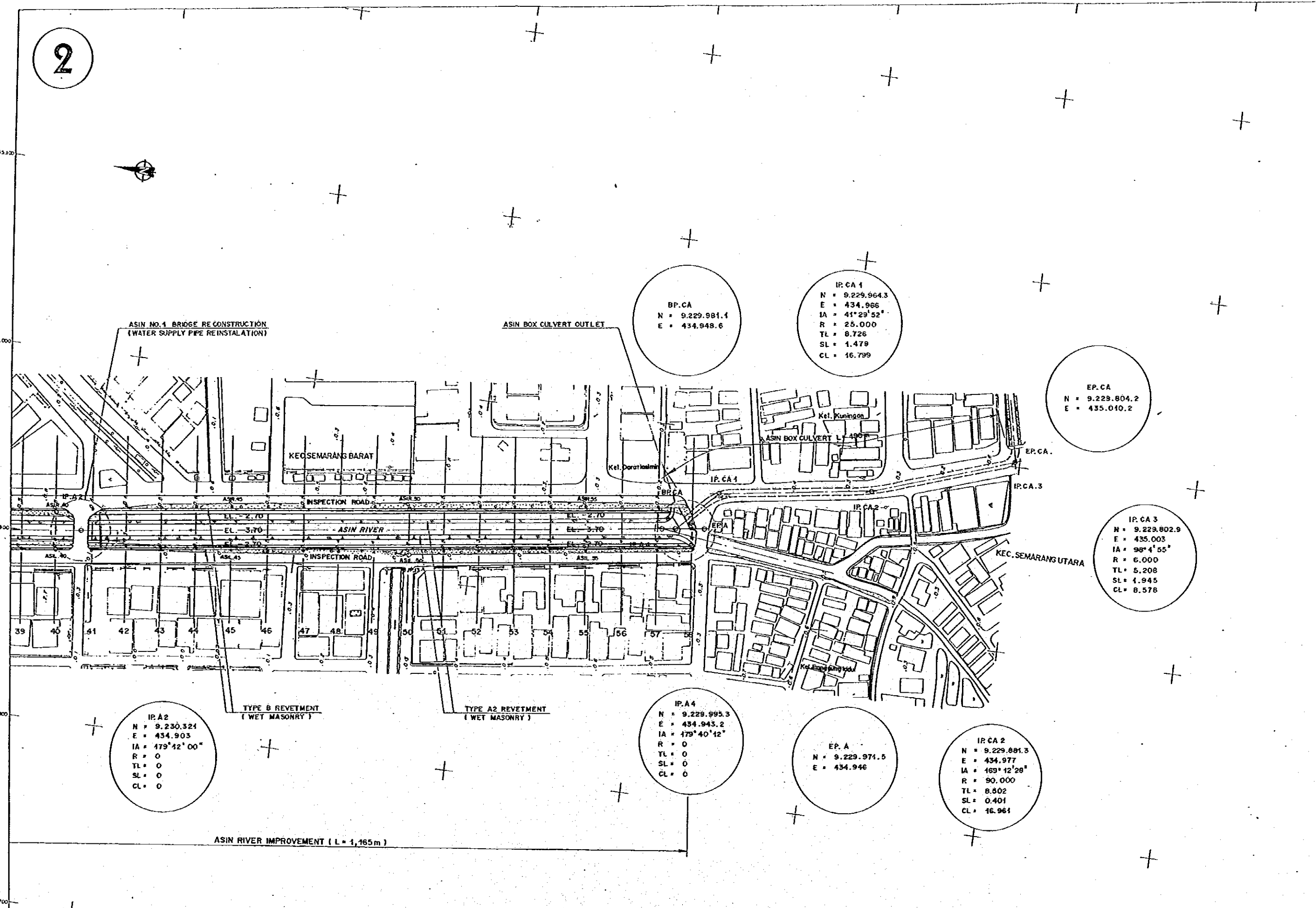


NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

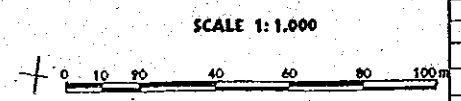
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT JRATUNSELUMA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN RIVER PLAN (1/2)		PROVINCE : CENTRAL JAVA PROJECT NAME : FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT : SEMARANG CITY DRAWING NO. : U - P2 - A - P1 - 1 SHEET NO. : 28 DATE : CONTRACT NO. :
JAPAN INTERNATIONAL COOPERATION AGENCY CIL ENGINEERING CO., LTD. PACIFIC CONSULTANTS INTERNATIONAL AND PASCO INTERNATIONAL INC.	DESIGNED : CHECKED : CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	APPROVED : PROJECT MANAGER

2

435.100
435.000
434.500
434.800
434.700



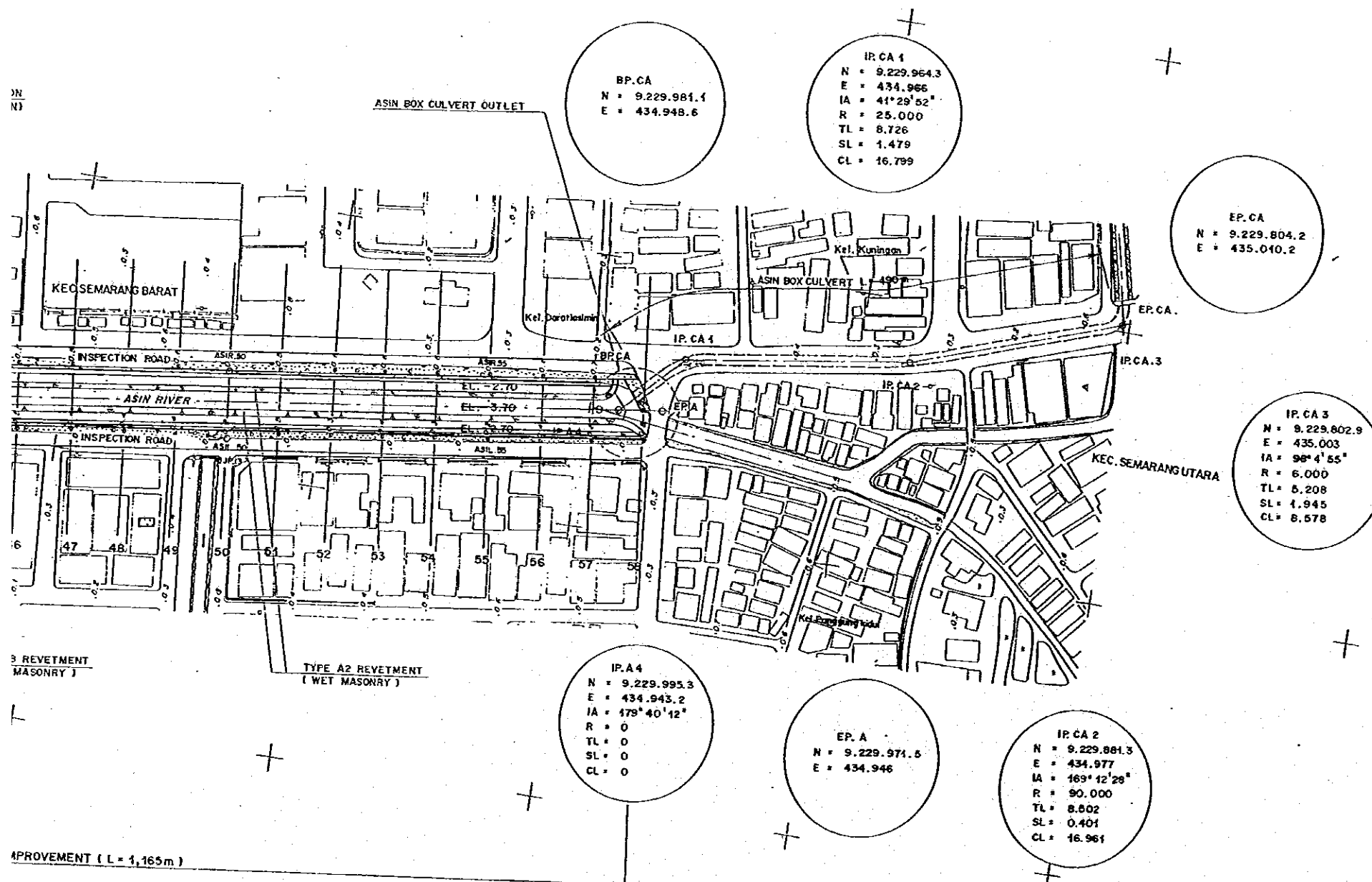
FOR REFERENCE ONLY				FOR REFERENCE ONLY			
NAME	NORTHING	EASTING	ELEVATION	NAME	NORTHING	EASTING	ELEVATION
ASIL40	9,230,333.885	434,891.785	0.758	ASIR40	9,230,336.101	434,911.501	0.786
BM-13	9,230,137.635	434,905.154	0.349	ASIR50	9,230,138.033	434,936.975	0.449
ASIL50	9,230,135.207	434,918.927	0.232	ASIR60	9,229,935.335	434,939.914	0.248
ASIL60	9,229,936.193	434,931.563	0.336				



NO.	DATE	REVISIONS	ORIGINATED	DESIGNED

9.230.1 9.230.1 9.230.1 9.230.0 9.229.9 9.229.9 9.229.9 9.229.6

DN
NI



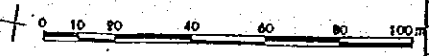
3 REVETMENT
MASONRY)
TYPE A2 REVETMENT
(WET MASONRY)

4 PROTECTION (L = 1,165m)

FOR REFERENCE ONLY

ELEVATION	NAME	NORTHING	EASTING	ELEVATION
0.758	ASIR40	9,230,336.101	434,911.501	0.786
0.349	ASIR50	9,230,138.033	434,936.975	0.449
0.232	ASIR60	9,229,935.235	434,929.914	0.248
0.326				

SCALE 1:1,000



NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

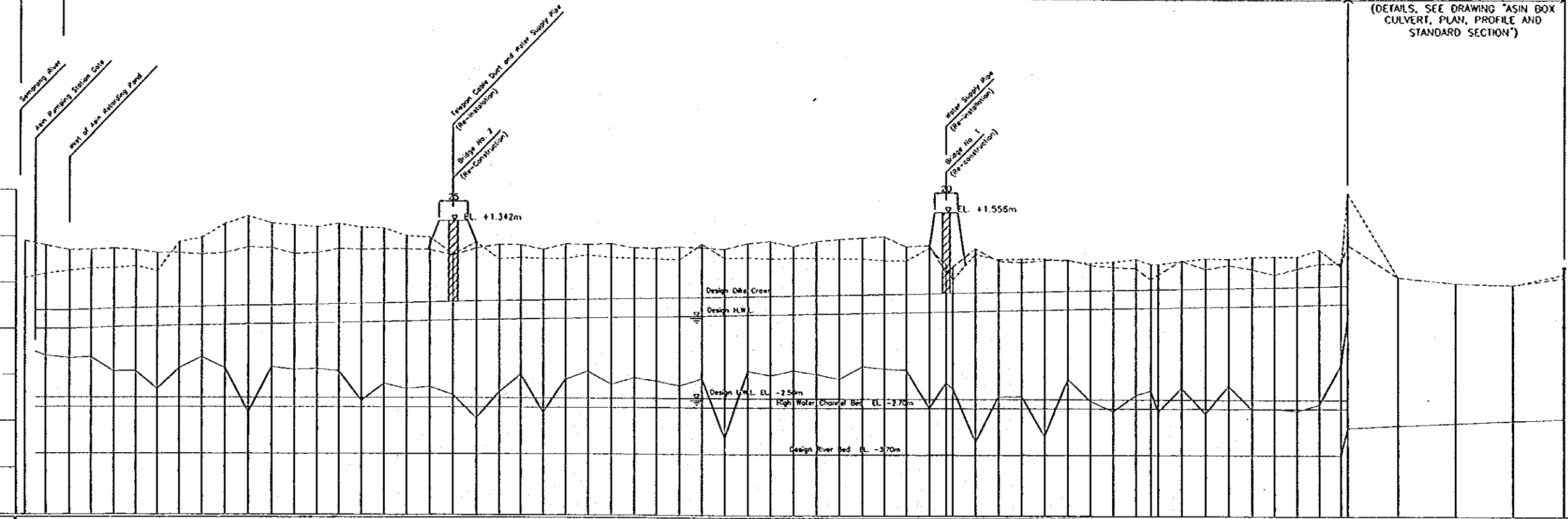
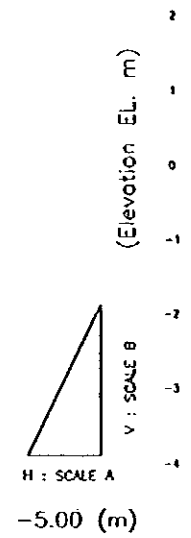
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
JATUNSELUNA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN RIVER PLAN (2/2)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO. LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PASCO INTERNATIONAL INC.		DISTRICT SEMARANG CITY DRAWING NO. U-P2-A-P1-2 SHEET NO. 29
DESIGNED CHECKED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	APPROVED	DATE CONTRACT NO.

ASIN PUMPING STATION

COMMON CHANNEL EXCAVATION AND REVETMENT (TYPE A-2, B AND C)

ASIN BOX CULVERT L=190m (UNDER HASANUDIN STREET)

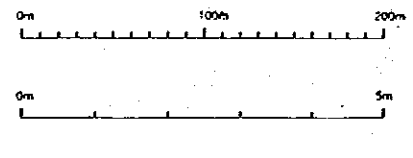
(DETAILS, SEE DRAWING 'ASIN BOX CULVERT, PLAN, PROFILE AND STANDARD SECTION')



STATION NO	DISTANCE (m)		EXISTING ELEVATION (EL. m)			DESIGN ELEVATION (EL. m)		
	ACCUMULATED	PARTIAL	RIGHT BANK	LEFT BANK	LOWEST RIVER BED	DIKE CROWN	HIGH WATER LEVEL (H.W.)	LOW WATER LEVEL
0	0.00	18.518	0.910	0.910	-1.420	-0.600	-1.000	-2.500
1	18.52	20.796	0.810	0.810	-1.590	-0.600	-1.000	-2.500
2	39.31	19.376	0.710	0.710	-1.650	-0.590	-0.981	-2.500
3	58.69	20.508	0.720	0.720	-1.620	-0.590	-0.960	-2.500
4	79.20	19.601	0.740	0.740	-1.930	-0.551	-0.951	-2.500
5	98.80	19.683	0.710	0.650	-1.920	-0.541	-0.941	-2.500
6	118.48	19.806	0.650	0.650	-2.310	-0.531	-0.931	-2.500
7	138.29	20.181	0.610	0.610	-1.860	-0.521	-0.921	-2.500
8	158.47	19.897	0.650	0.650	-1.820	-0.511	-0.911	-2.500
9	178.16	20.070	0.770	0.770	-1.850	-0.501	-0.901	-2.500
10	198.23	20.460	0.770	0.770	-2.820	-0.491	-0.891	-2.500
11	218.69	19.894	0.760	0.760	-1.830	-0.481	-0.881	-2.500
12	238.59	20.201	0.630	0.630	-1.890	-0.471	-0.871	-2.500
13	258.79	19.789	0.650	0.650	-1.870	-0.461	-0.861	-2.500
14	278.58	20.097	0.720	0.720	-1.920	-0.451	-0.851	-2.500
15	298.68	20.034	0.730	0.730	-2.560	-0.441	-0.841	-2.500
16	318.71	19.638	0.730	0.730	-2.190	-0.431	-0.831	-2.500
17	338.35	20.153	0.730	0.730	-2.300	-0.421	-0.821	-2.500
18	358.50	20.438	0.720	0.720	-2.280	-0.411	-0.811	-2.500
19	378.54	20.221	0.600	0.600	-2.430	-0.400	-0.800	-2.500
20	399.16	20.247	0.750	0.750	-2.930	-0.390	-0.790	-2.500
21	419.41	19.287	0.630	0.630	-2.370	-0.381	-0.781	-2.500
22	438.69	20.313	0.630	0.630	-1.980	-0.370	-0.770	-2.500
23	459.01	19.636	0.730	0.730	-2.810	-0.361	-0.761	-2.500
24	478.94	20.123	0.850	0.850	-2.090	-0.350	-0.750	-2.500
25	499.07	19.964	0.840	0.840	-1.910	-0.340	-0.740	-2.500
26	519.03	20.163	0.860	0.860	-2.190	-0.330	-0.730	-2.500
27	539.19	19.640	0.770	0.770	-2.050	-0.321	-0.721	-2.500
28	558.83	20.006	0.770	0.770	-2.120	-0.311	-0.711	-2.500
29	578.84	19.882	0.800	0.800	-2.220	-0.301	-0.701	-2.500
30	598.72	20.276	0.780	0.780	-2.070	-0.291	-0.691	-2.500
31	619.00	20.205	0.750	0.750	-3.360	-0.280	-0.680	-2.500
32	639.20	19.932	0.880	0.880	-1.900	-0.270	-0.670	-2.500
33	659.13	19.824	0.930	0.930	-1.990	-0.261	-0.661	-2.500
34	678.96	19.907	0.820	0.820	-1.880	-0.251	-0.651	-2.500
35	698.87	20.264	0.830	0.830	-1.960	-0.240	-0.640	-2.500
36	719.13	20.301	0.980	0.980	-2.080	-0.230	-0.630	-2.500
37	739.43	19.634	1.010	1.010	-1.790	-0.220	-0.620	-2.500
38	759.07	19.898	1.040	1.040	-1.840	-0.211	-0.611	-2.500
39	778.96	20.029	0.820	0.820	-1.860	-0.201	-0.601	-2.500
40	798.99	14.417	0.850	0.850	-2.690	-0.193	-0.593	-2.500
40+14	813.41	5.703	0.260	0.260	-2.140	-0.190	-0.590	-2.500
41	819.11	19.773	0.360	0.360	-2.260	-0.181	-0.581	-2.500
42	838.89	19.889	0.760	0.760	-3.420	-0.171	-0.571	-2.500
43	858.78	19.906	0.510	0.510	-2.440	-0.161	-0.561	-2.500
44	878.68	20.105	0.480	0.480	-2.430	-0.151	-0.551	-2.500
45	898.79	20.158	0.530	0.530	-3.290	-0.141	-0.541	-2.500
46	918.94	19.994	0.550	0.550	-2.050	-0.131	-0.531	-2.500
47	938.94	20.293	0.420	0.420	-2.530	-0.120	-0.520	-2.500
48	959.23	20.104	0.380	0.380	-2.750	-0.110	-0.510	-2.500
49	979.34	13.205	0.360	0.360	-2.400	-0.104	-0.504	-2.500
49+13	992.54	6.481	0.120	0.120	-2.300	-0.100	-0.500	-2.500
50	999.02	20.059	0.230	0.230	-2.770	-0.090	-0.490	-2.500
51	1019.08	20.475	0.530	0.530	-2.240	-0.080	-0.480	-2.500
52	1039.56	19.916	0.340	0.340	-2.800	-0.070	-0.470	-2.500
53	1059.47	20.122	0.430	0.430	-2.190	-0.060	-0.460	-2.500
54	1079.59	19.758	0.340	0.340	-2.710	-0.050	-0.450	-2.500
55	1099.35	20.089	0.230	0.230	-2.690	-0.040	-0.440	-2.500
56	1119.44	20.115	0.360	0.360	-2.740	-0.030	-0.430	-2.500
57	1139.56	19.843	0.470	0.470	-2.600	-0.020	-0.420	-2.500
58	1159.40	5.920	0.470	0.470	-1.750	-0.017	-0.417	-2.500
AS0	1165.32	43.980	0.880	0.880	-0.720			
AS1	1206.90		0.170	0.170				
AS2	1258.90	50.000	0.040	0.040				
AS3	1309.80	50.900	0.000	0.000				
AS4	1354.52	44.720	0.230	0.230				

SCALE A
1 : 2,000

SCALE B
1 : 50



NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA
 MINISTRY OF PUBLIC WORKS
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

PROVINCE: CENTRAL JAVA
 PROJECT NAME: BATUNILARA FLOOD CONTROL PROJECT
 COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT

DISTRICT: SEMARANG CITY

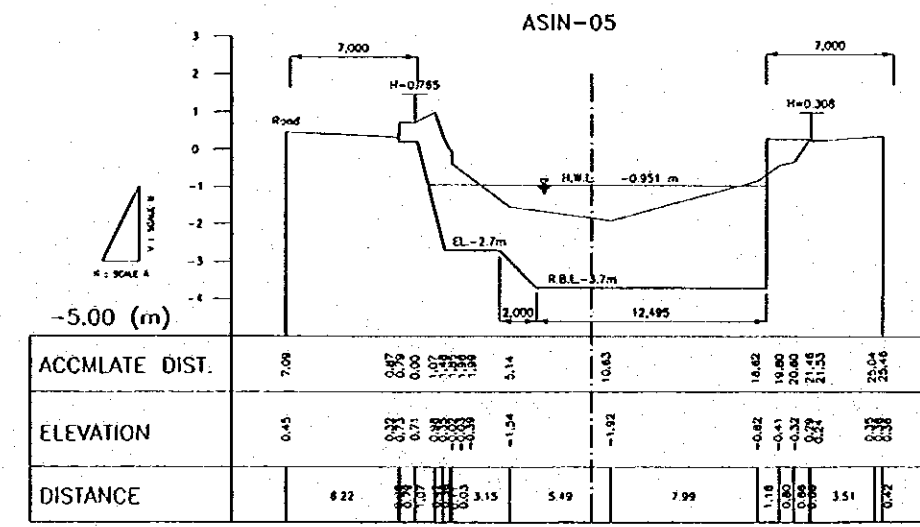
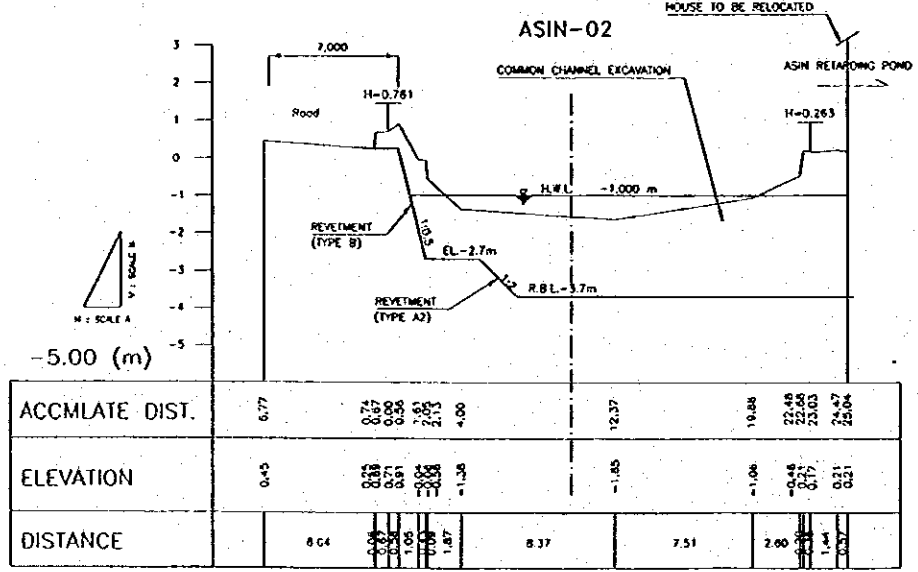
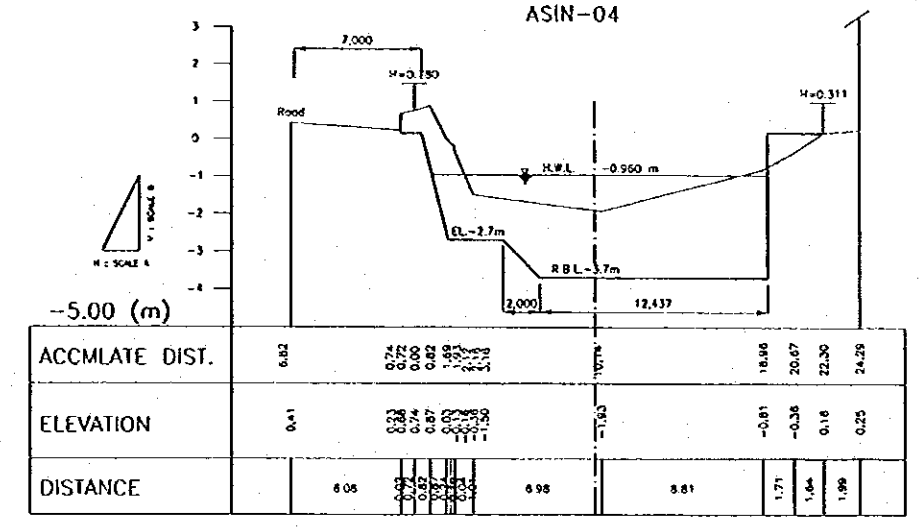
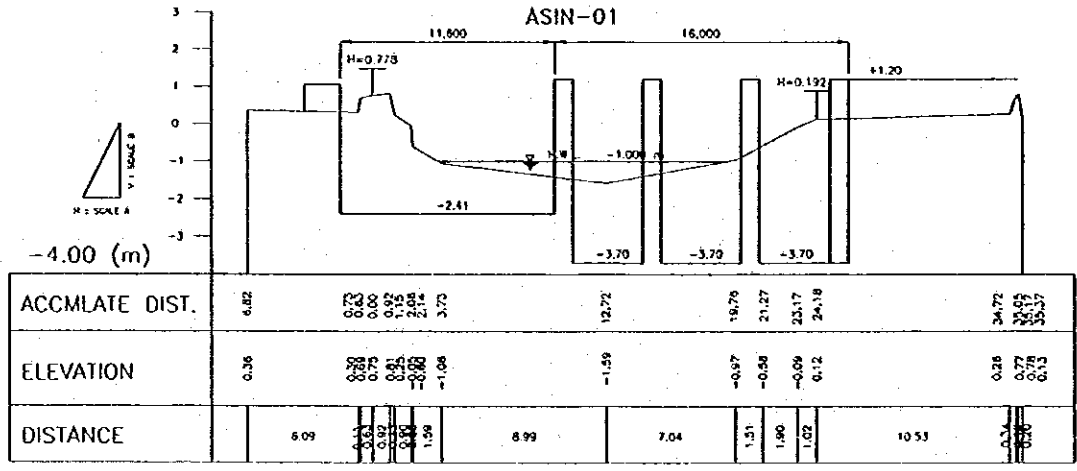
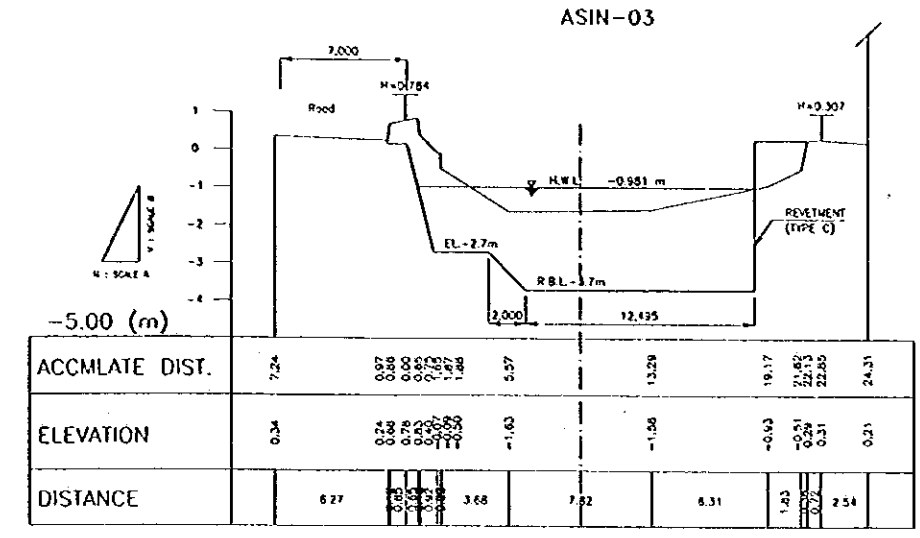
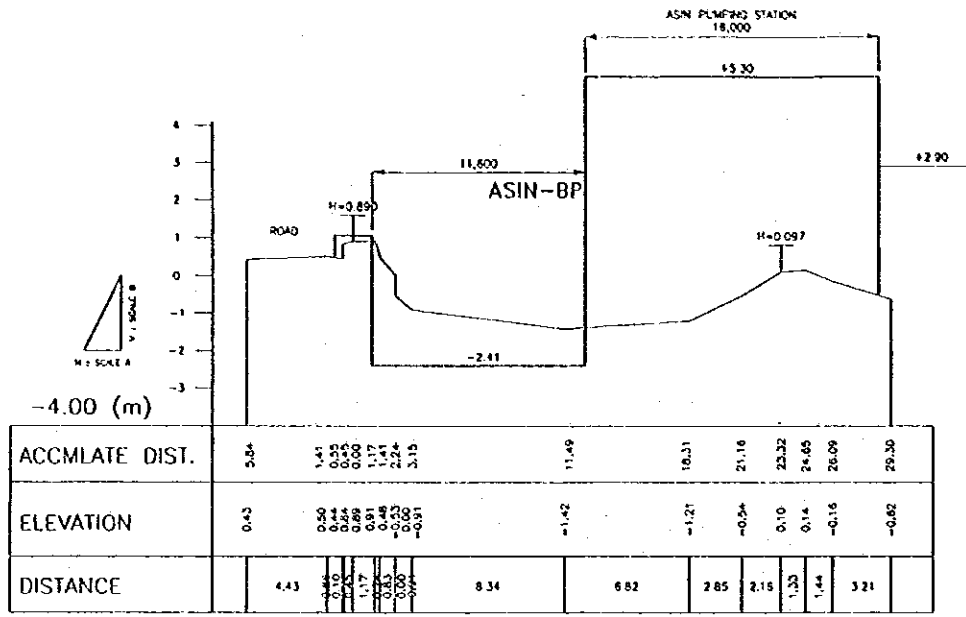
DRAWING NO. U-P2A-Lo-1
 SHEET NO. 30

DATE: CONTRACT NO.

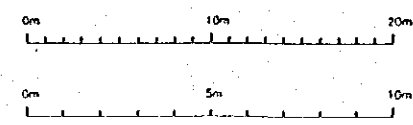
JAWA INTERNATIONAL COOPERATION AGENCY
 CITY ENGINEERING CO., LTD. IN ASSOCIATION WITH
 PACIFIC CONSULTANTS INTERNATIONAL and
 JAWA INTERNATIONAL INC.

CHECKED: CHECKED: DATE:

CHIEF OF PLANNING AND DESIGN
 PROJECT MANAGER



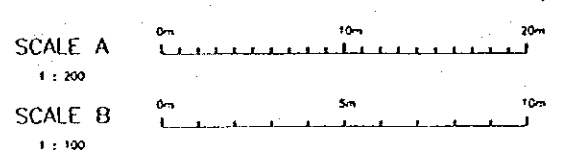
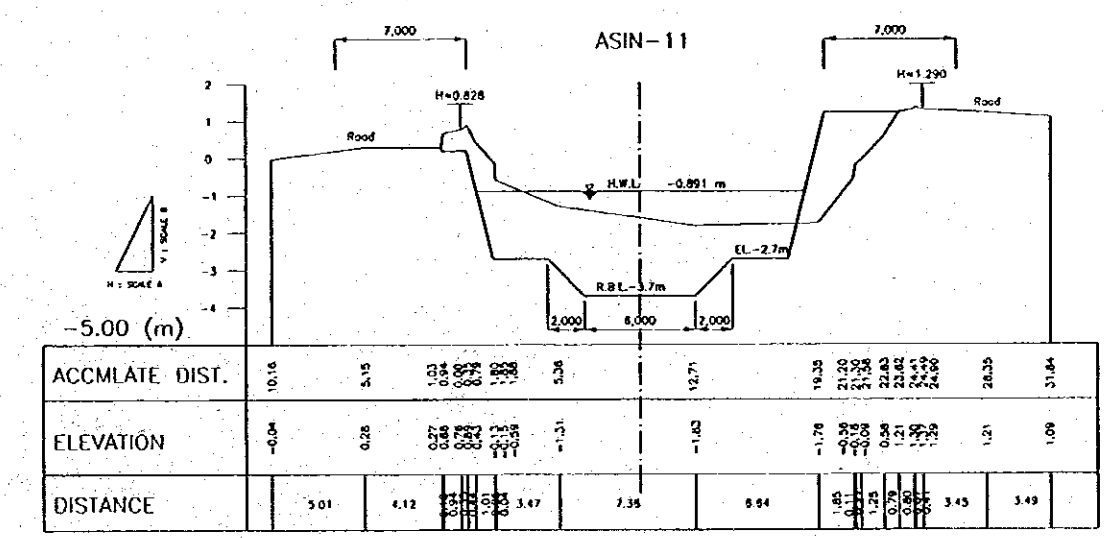
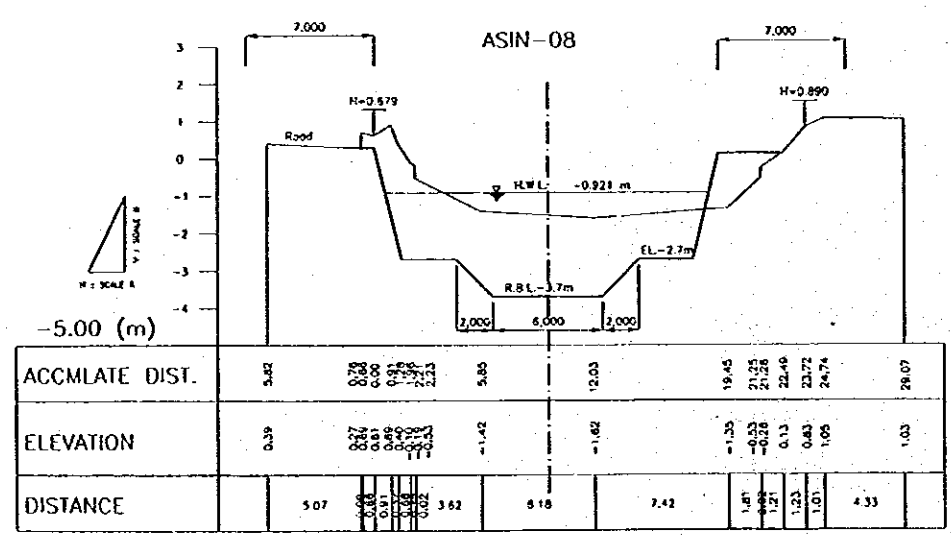
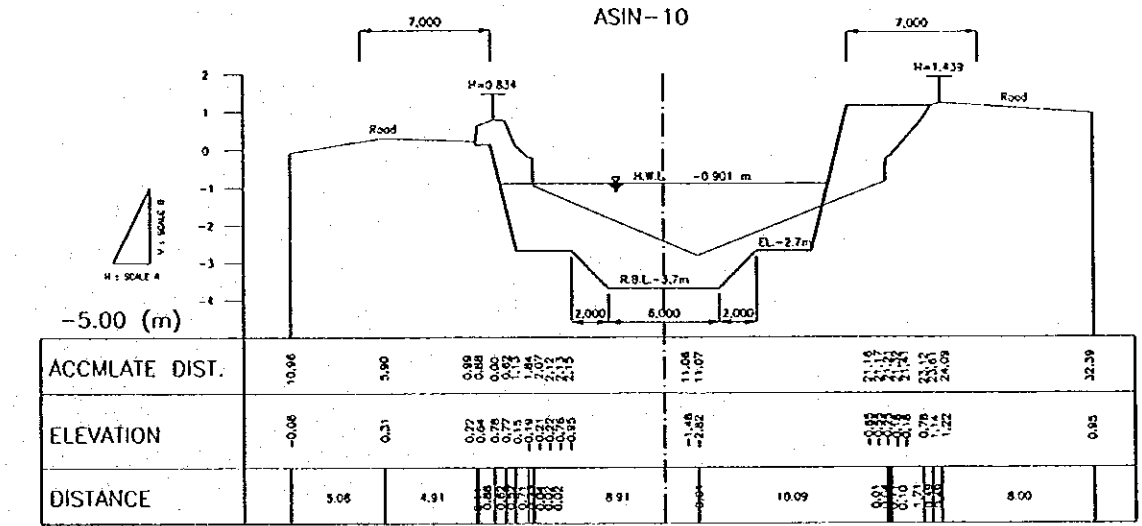
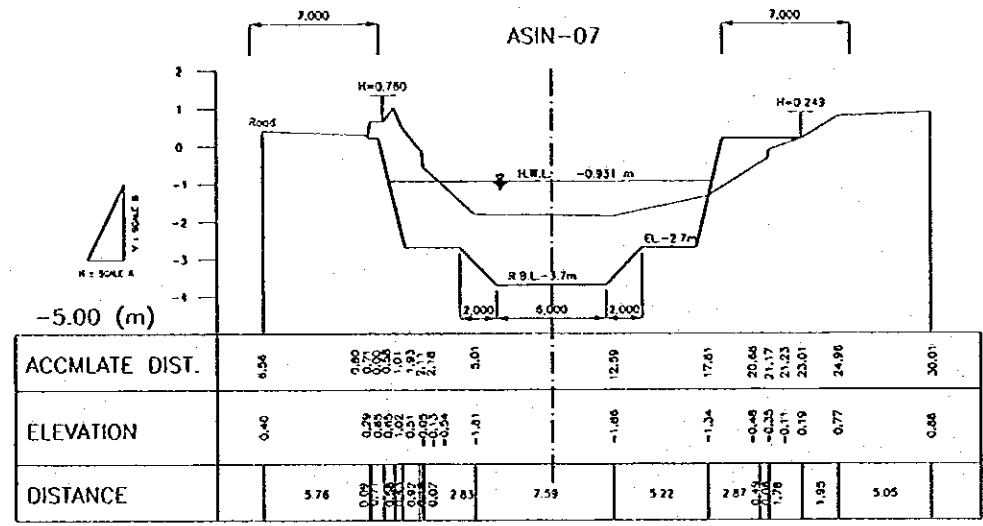
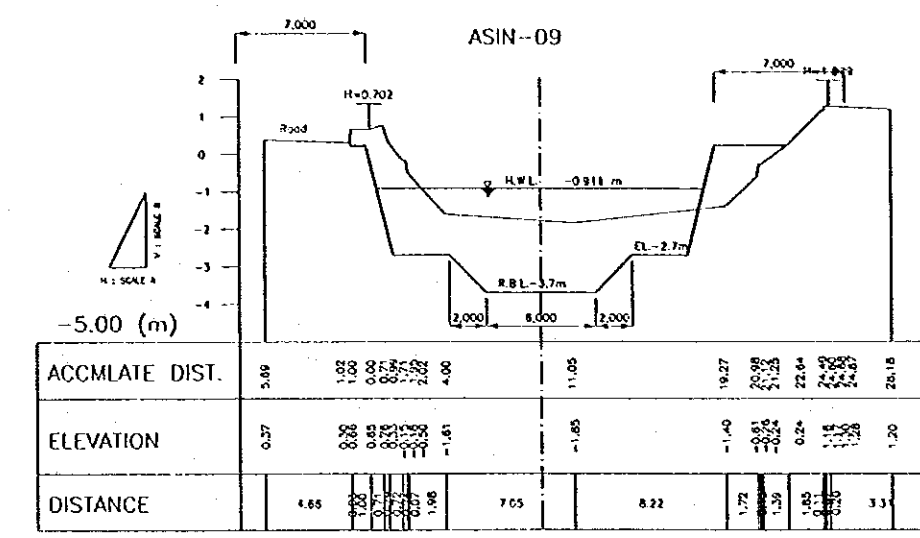
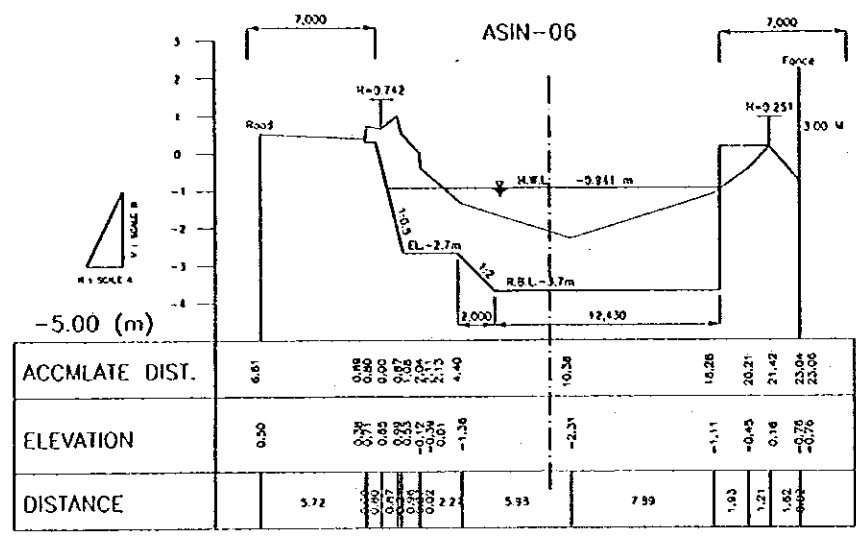
SCALE A
1 : 200
SCALE B
1 : 100



H.W.L. : DESIGN HIGH WATER LEVEL
R.B.L. : DESIGN RIVER BED LEVEL

NO.	DATE	REVISION	CONCEPTED	DESIGNED	APPROVED

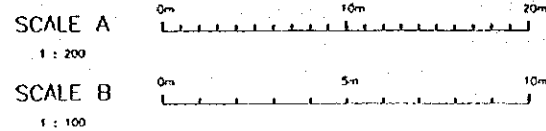
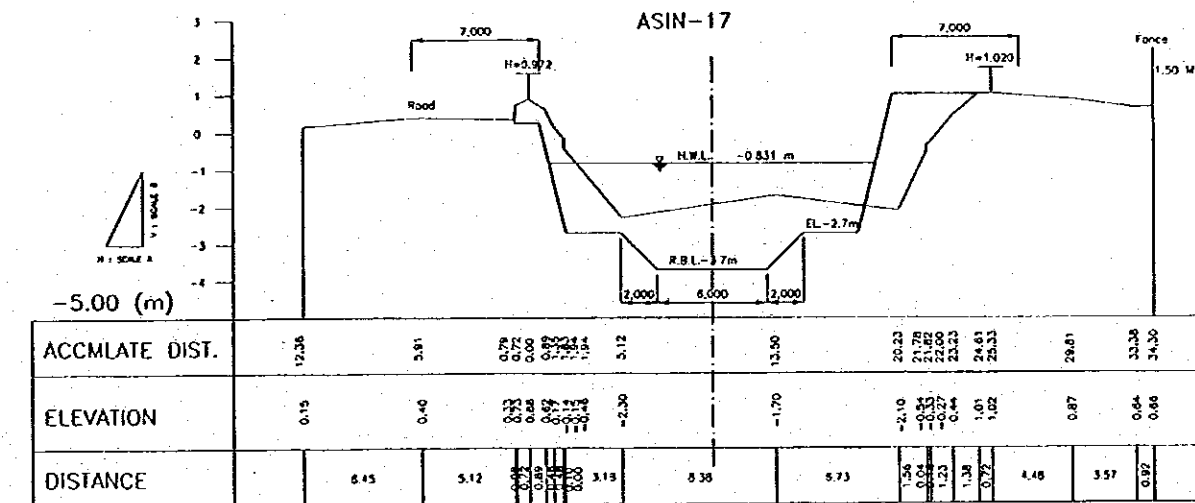
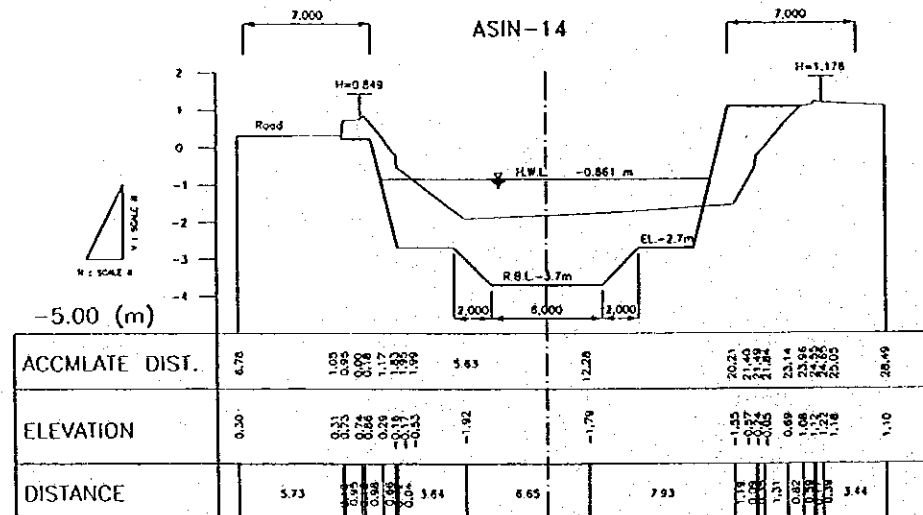
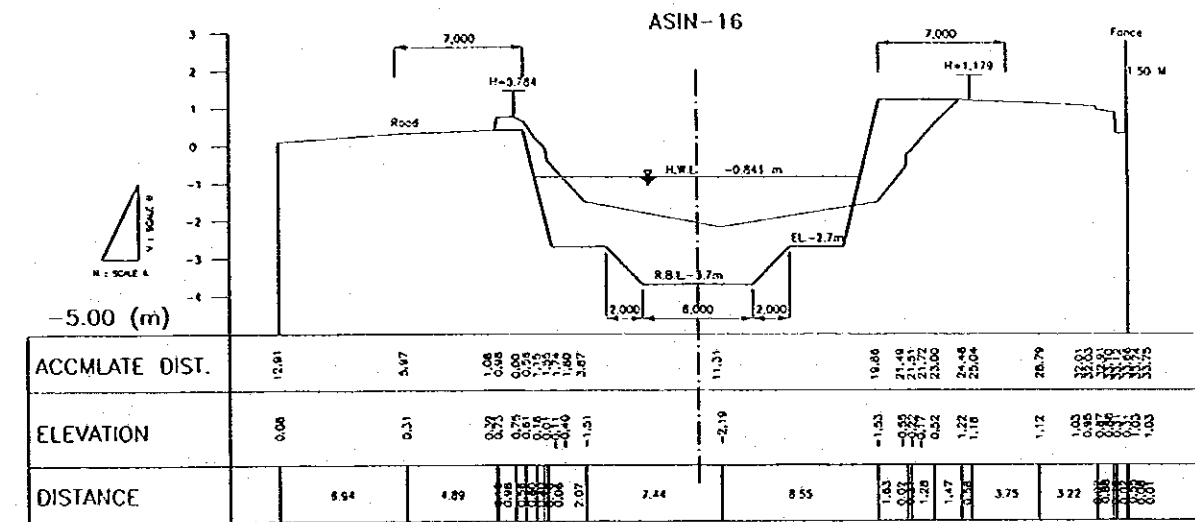
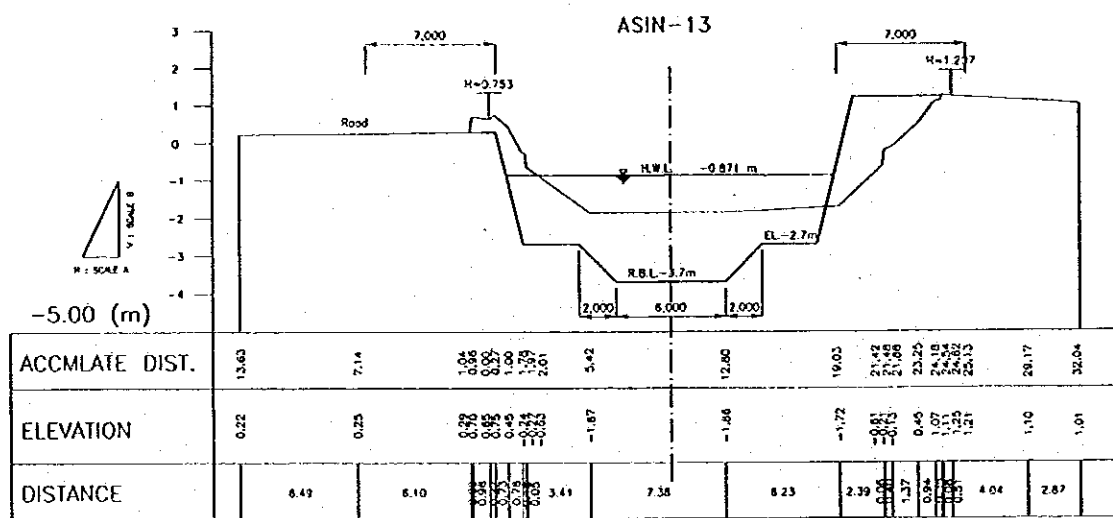
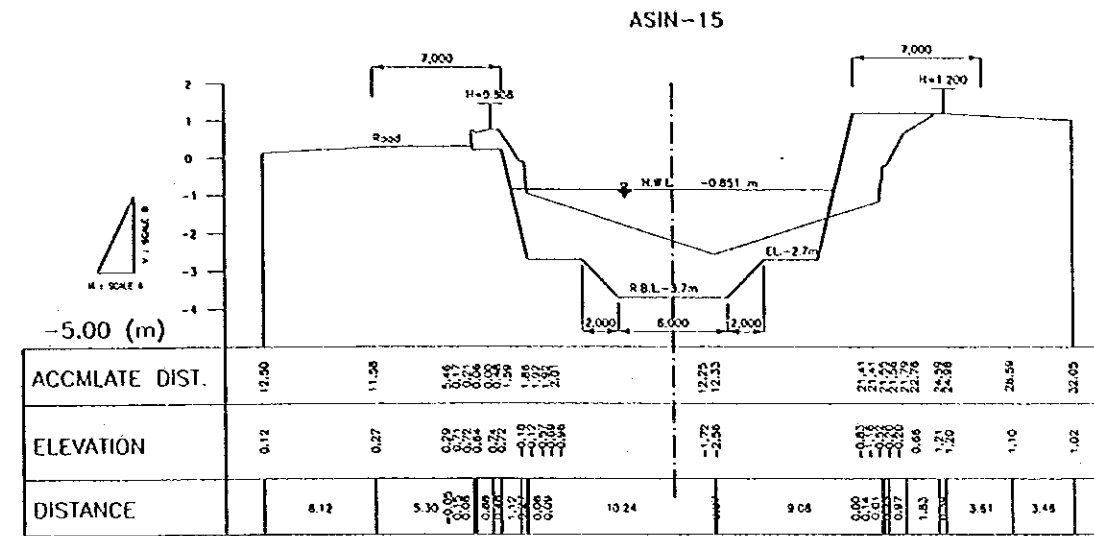
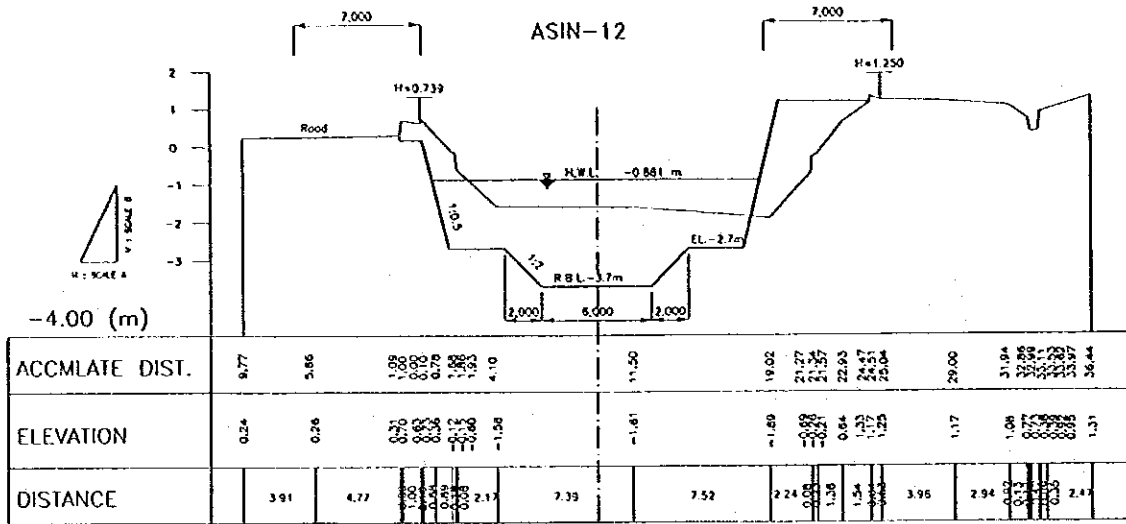
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAYA
MATURBELUNA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN RIVER CROSS SECTION (1/10)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
LEIAP INTERNATIONAL COOPERATION AGENCY CIL ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PAKO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
CHECKED DATE		DRAWING NO. U-P2-A-Cr-1
APPROVED PROJECT MANAGER		SHEET NO. 31
DATE		CONTRACT NO.



H.W.L. : DESIGN HIGH WATER LEVEL
R.B.L. : DESIGN RIVER BED LEVEL

NO.	DATE	REVISIONS	PREPARED	DESIGNED	APPROVED

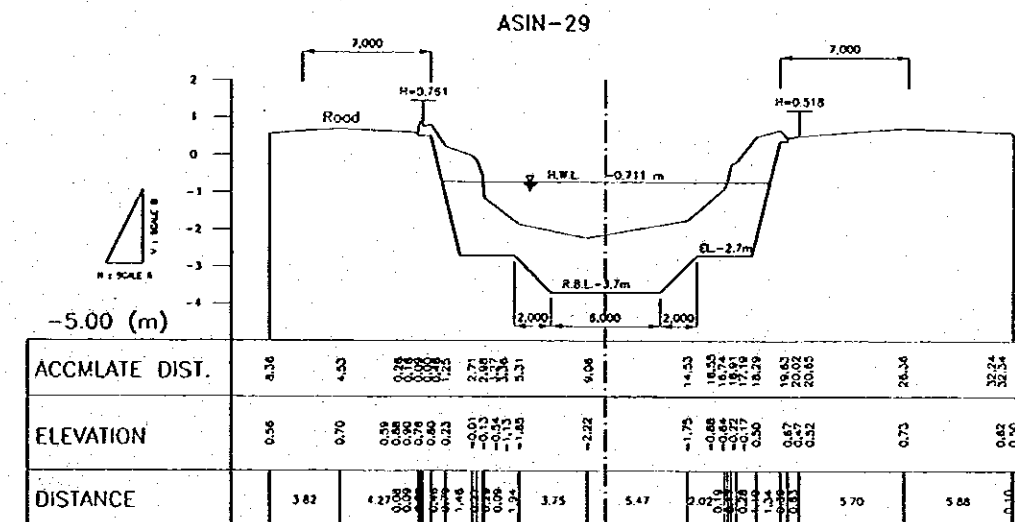
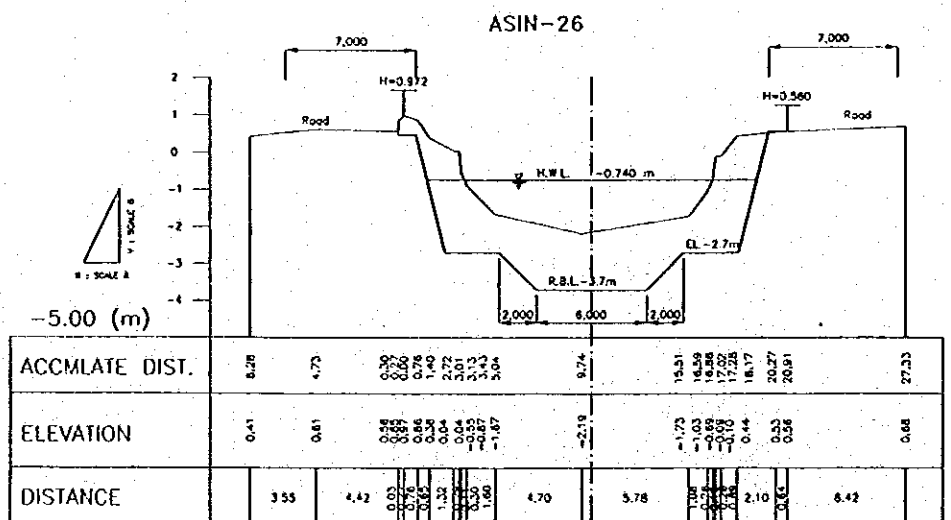
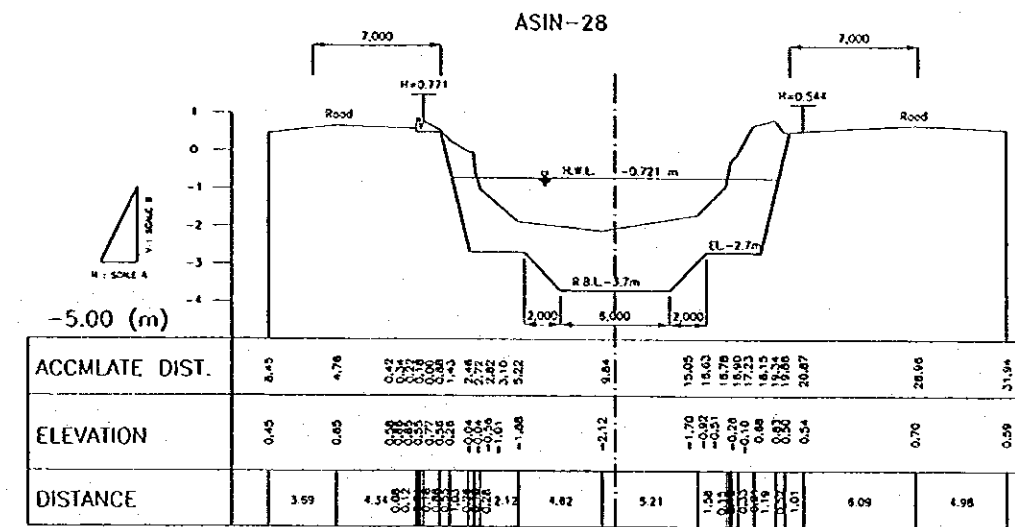
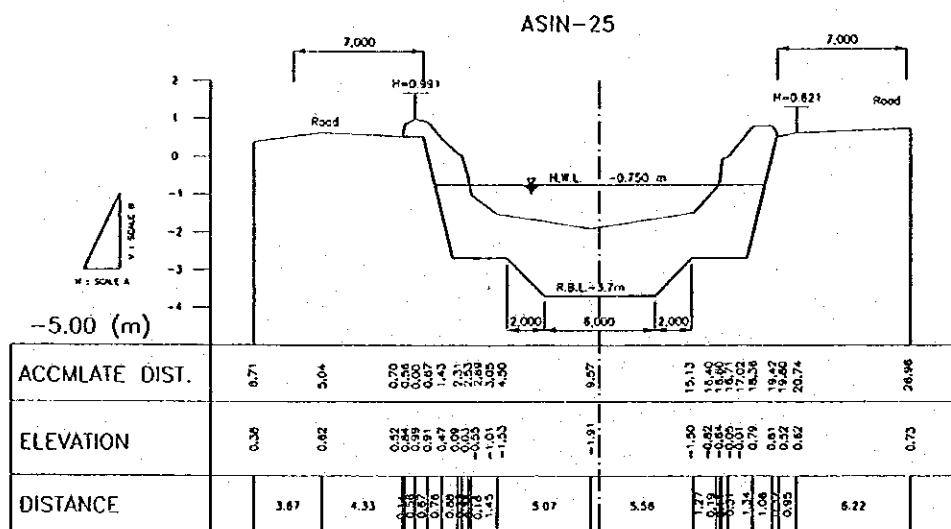
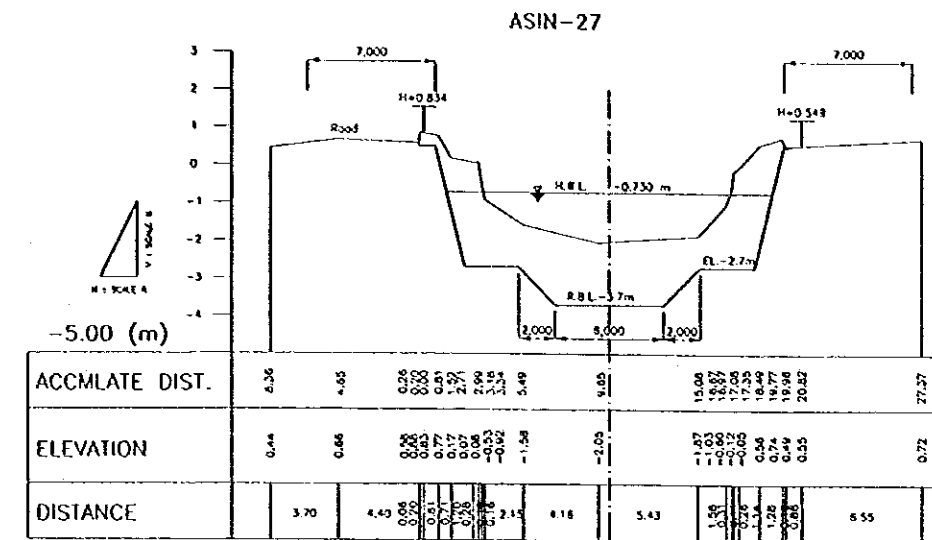
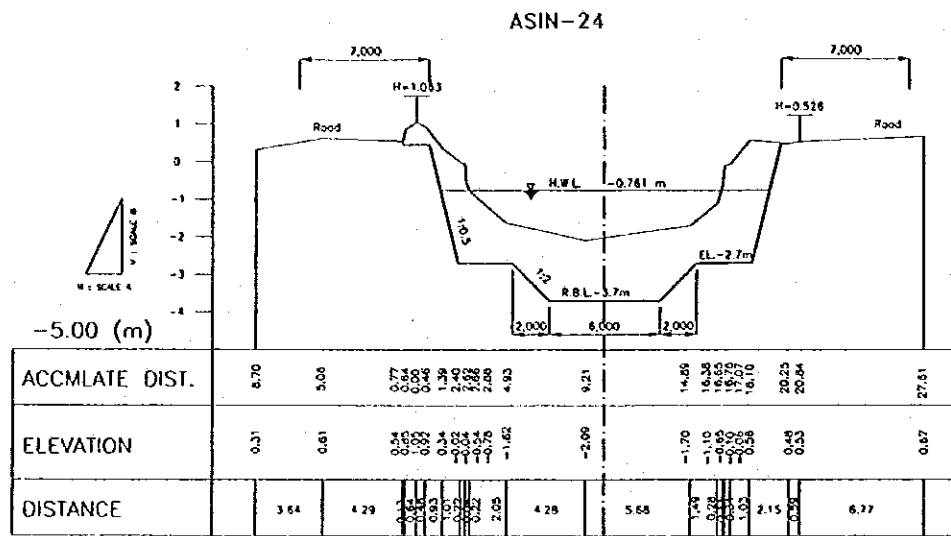
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT	PROVINCE	CENTRAL JAVA
	PROJECT NAME	FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT OF SEMARANG IN THE REPUBLIC OF INDONESIA
SEATUNJUHARA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN RIVER CROSS SECTION (2/10)	DISTRICT	SEMARANG CITY
JAPAN INTERNATIONAL COOPERATION AGENCY CITI ENGINEERING CO. LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND FARO INTERNATIONAL INC.	DRAWING NO.	U-P2-A-Cr-2
CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	SHEET NO.	32
APPROVED 	DATE	
CHECKED 	CONTRACT NO.	



H.W.L. : DESIGN HIGH WATER LEVEL
R.B.L. : DESIGN RIVER BED LEVEL

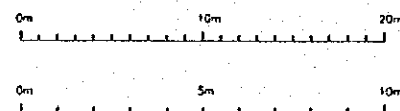
NO.	DATE	REVISIONS	OPERATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT SURABAYA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN RIVER CROSS SECTION (3/16)		PROVINCE CENTRAL JAYA PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SURABAYA IN THE REPUBLIC OF INDONESIA DISTRICT SURABAYA CITY DRAWING NO. U-P2-A-Cr-3 SHEET NO. 33 DATE CONTRACT NO.
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL INC.	DRAWING CHECKED DATE PROJECT MANAGER	APPROVED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER



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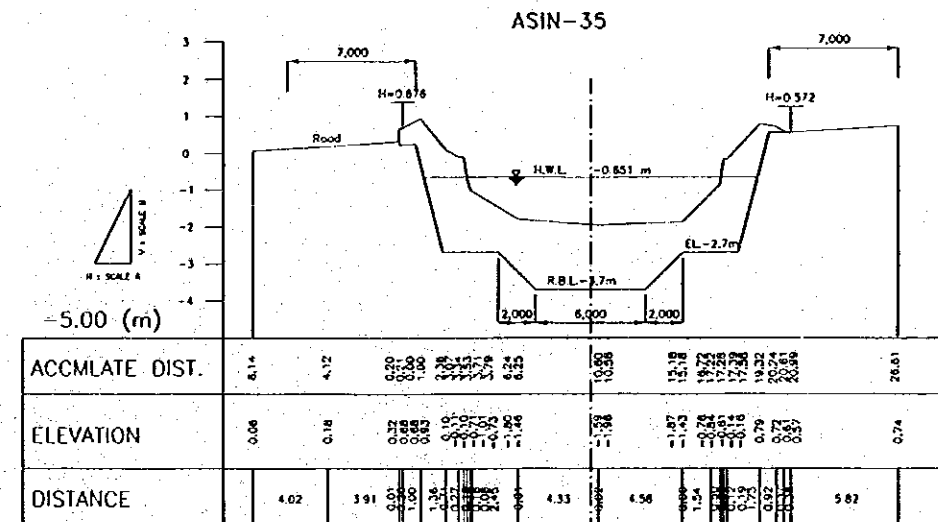
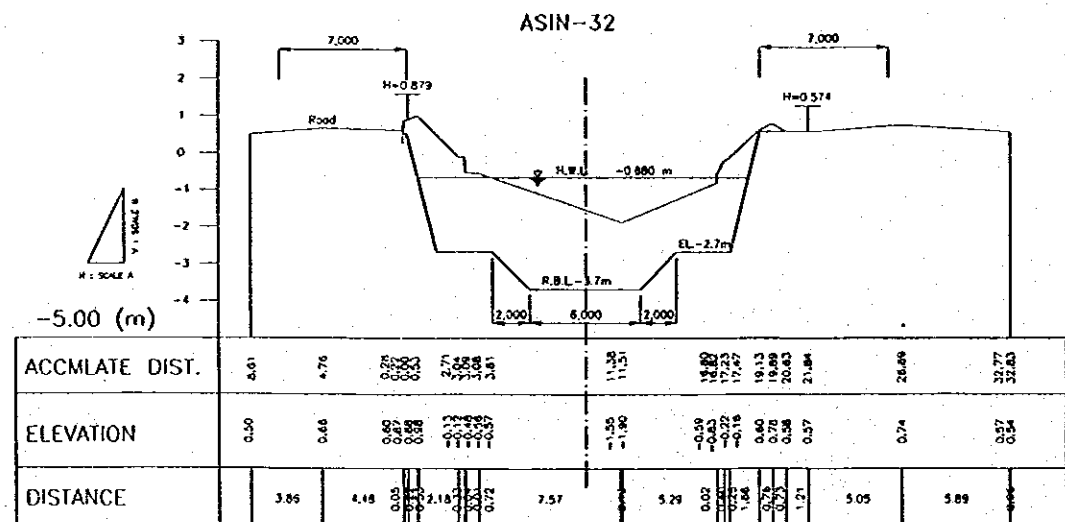
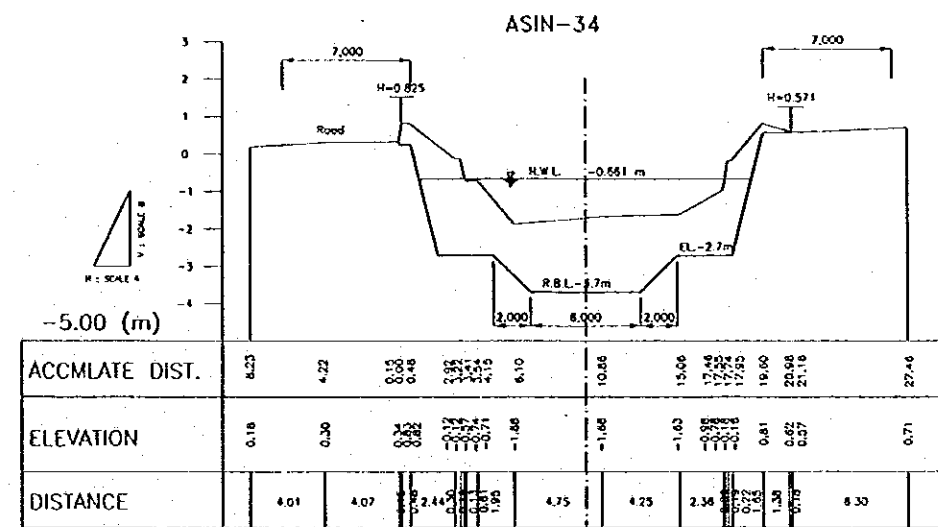
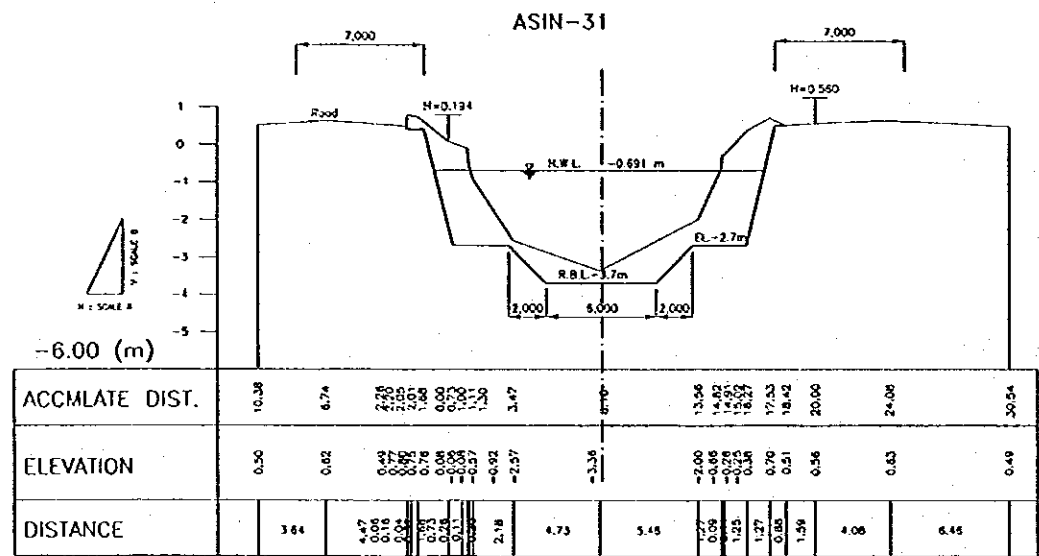
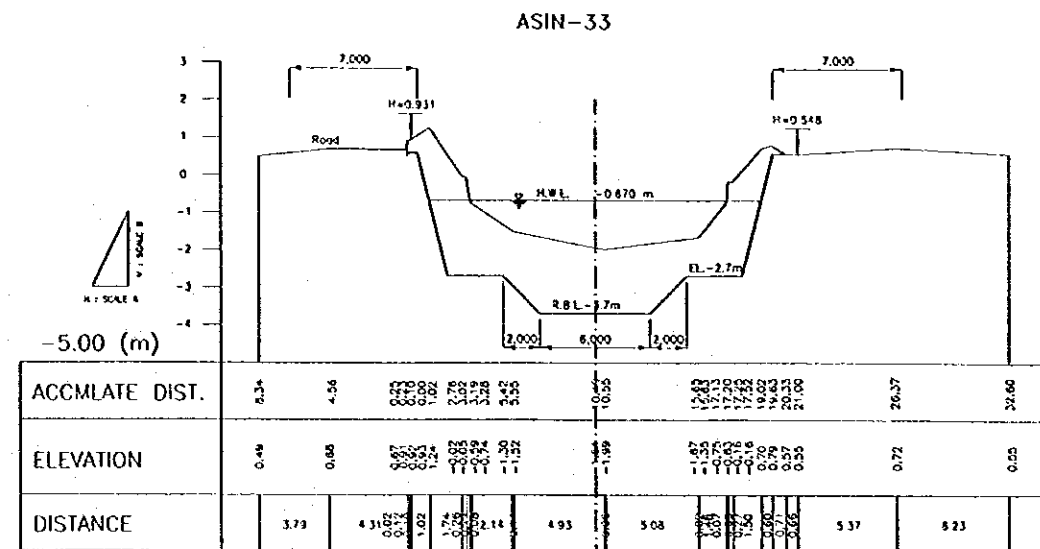
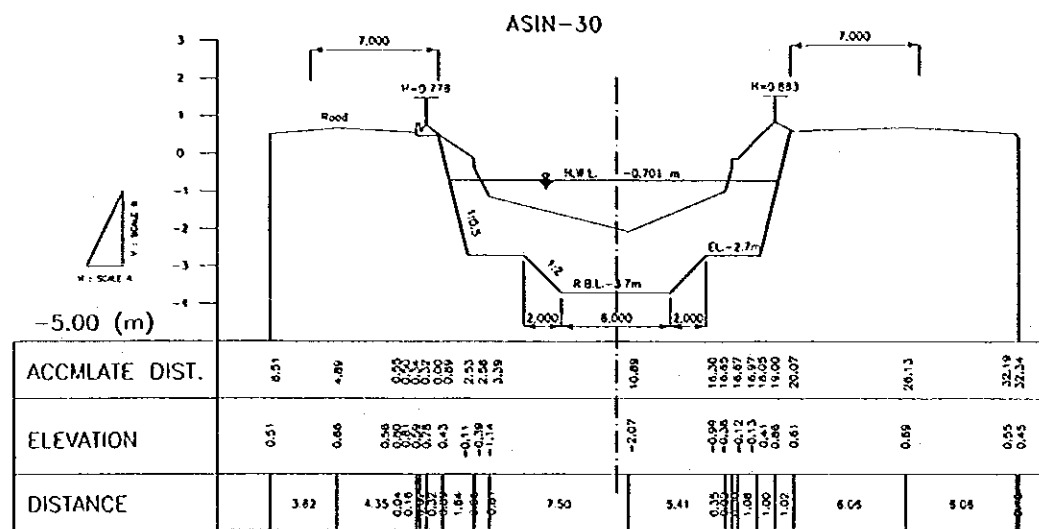
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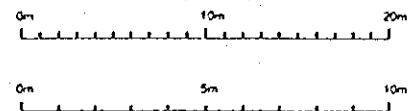
H.W.L. : DESIGN HIGH WATER LEVEL
R.B.L. : DESIGN RIVER BED LEVEL

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAWA
JATUNIBULANA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN RIVER CROSS SECTION (5/10)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND FATHER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY CEI ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
DESIGNED CHECKED APPROVED		DRAWING NO. U-P2-A-Cr-5
CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		SUBMIT NO. 35
DATE		CONTRACT NO.



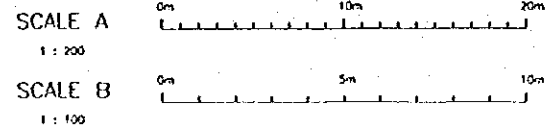
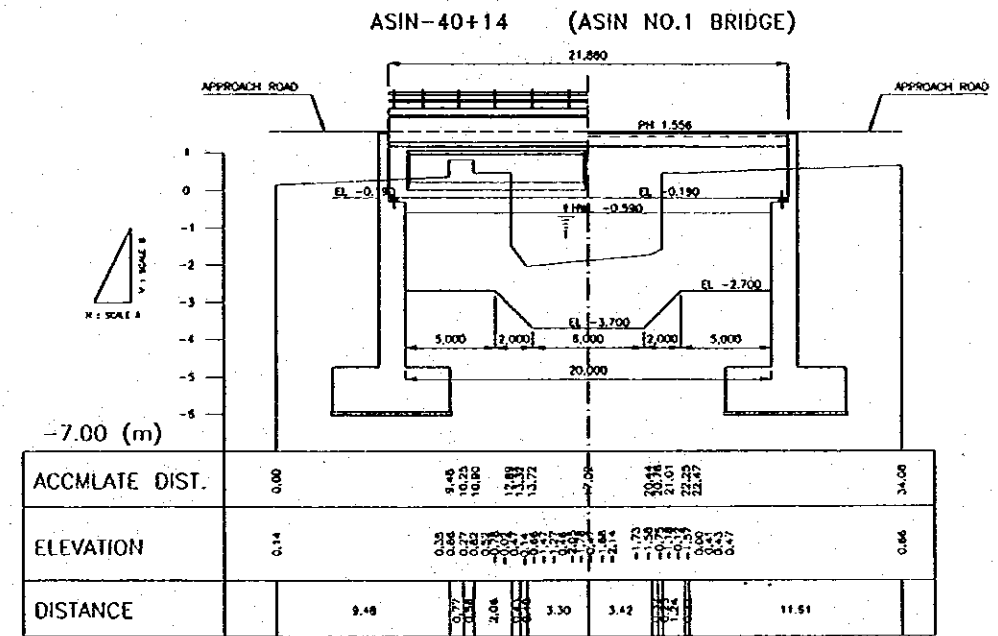
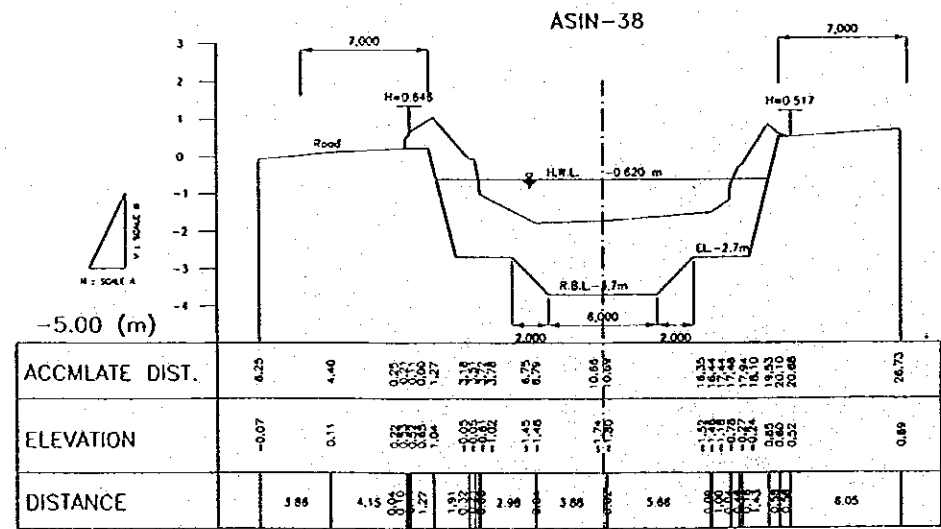
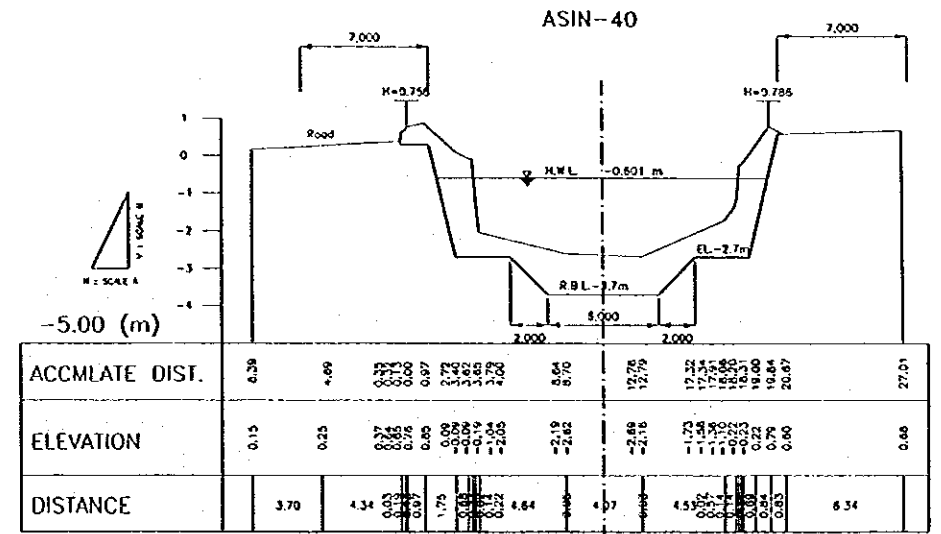
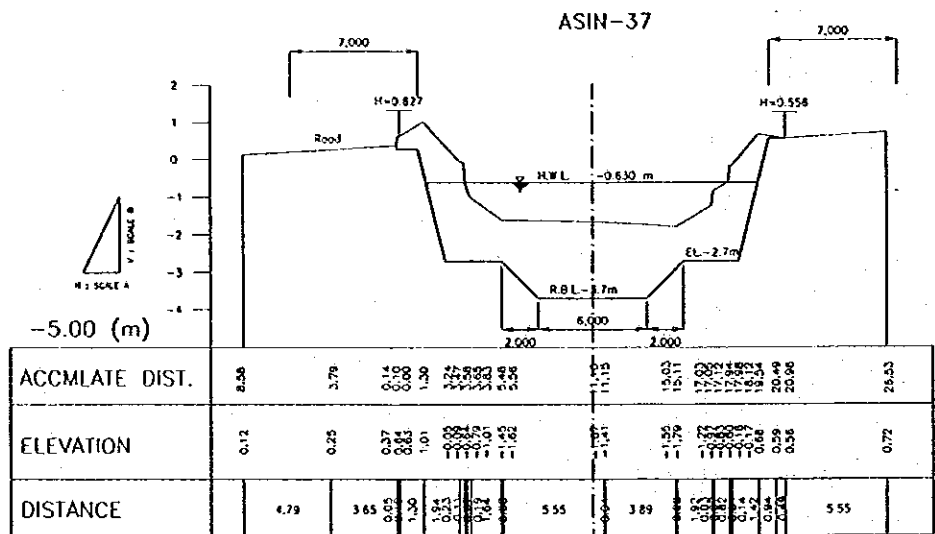
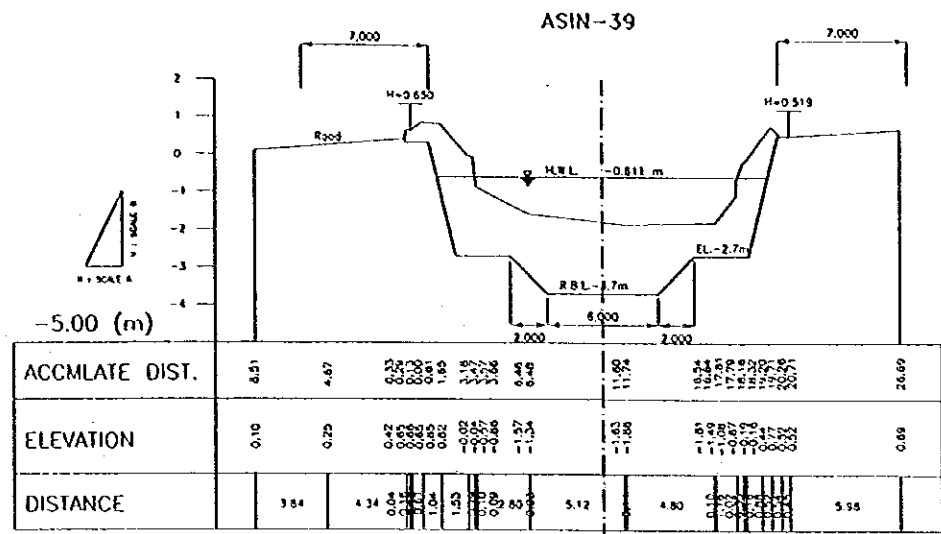
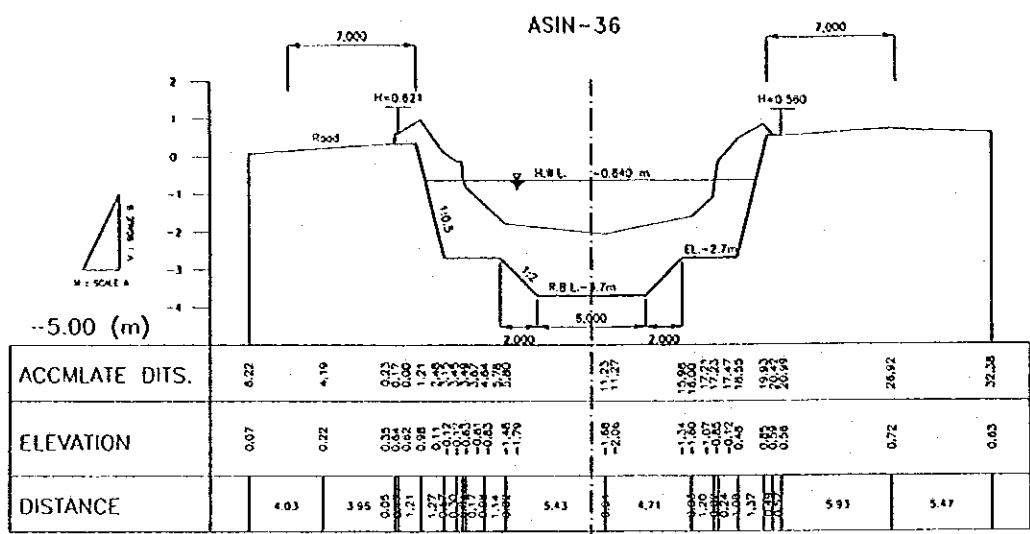
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SCALE B
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H.W.L. : DESIGN HIGH WATER LEVEL
R.B.L. : DESIGN RIVER BED LEVEL

NO.	DATE	REVISIONS	ORGANIZED	DRAWN	APPROVED	APPROVED

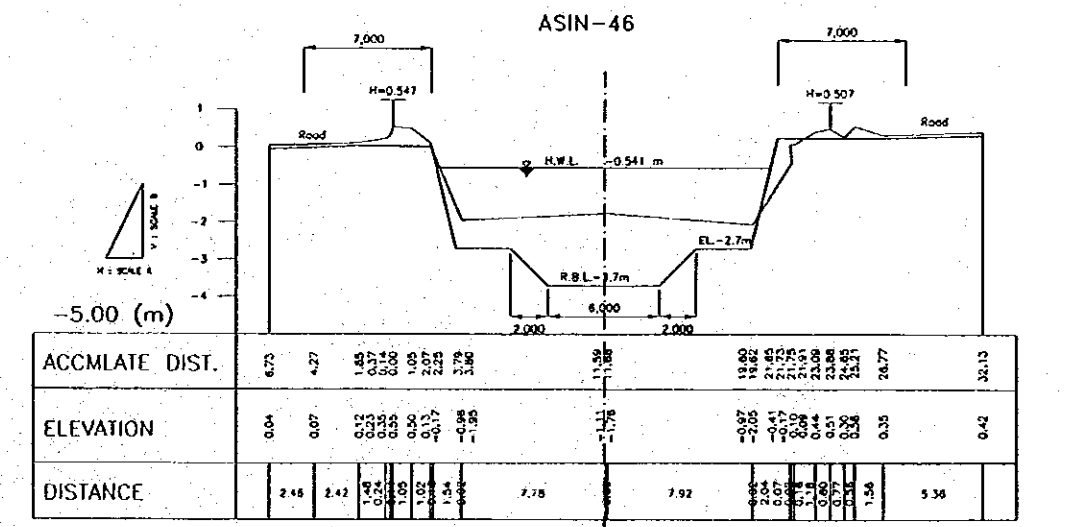
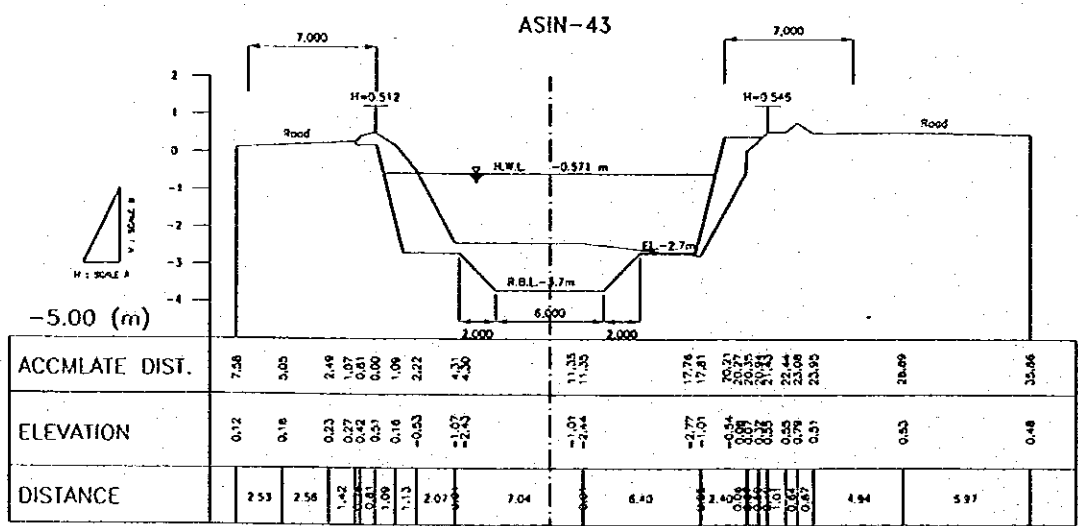
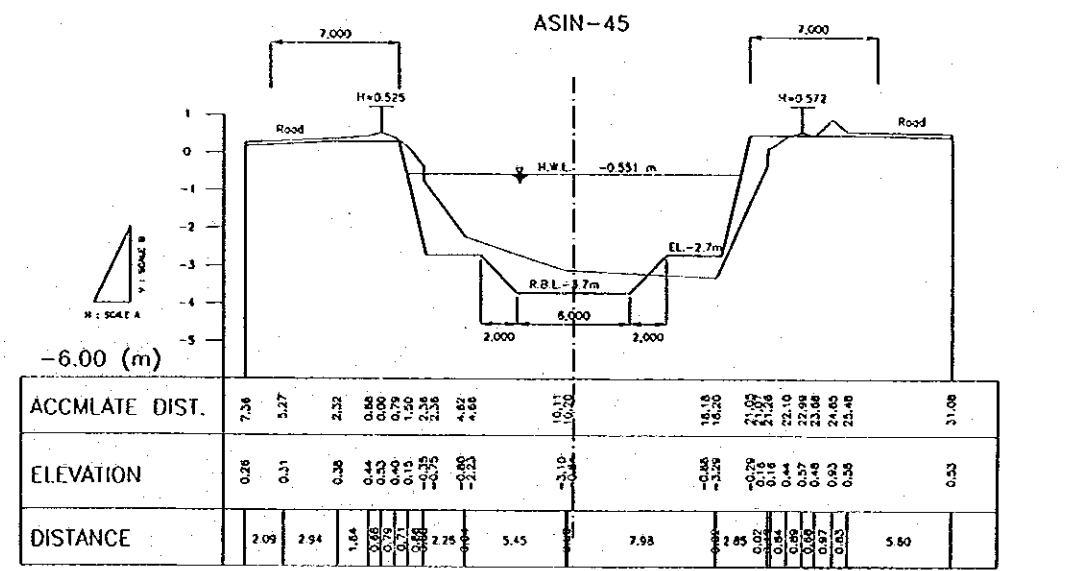
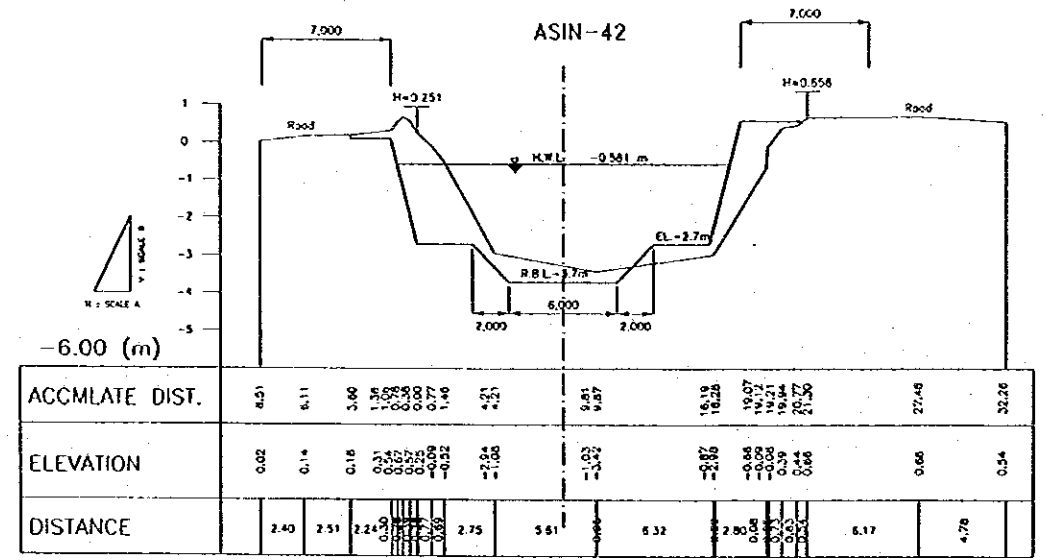
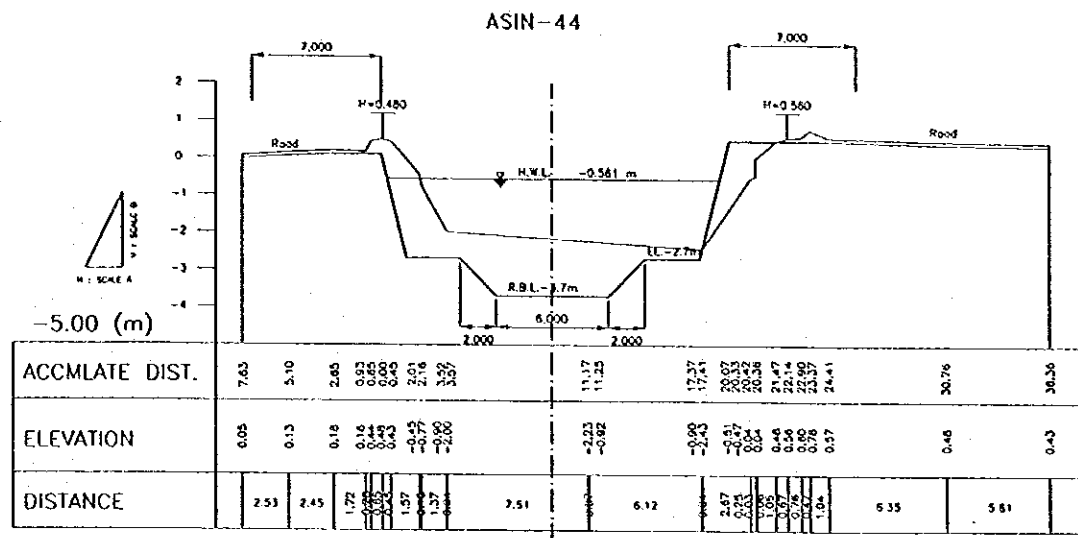
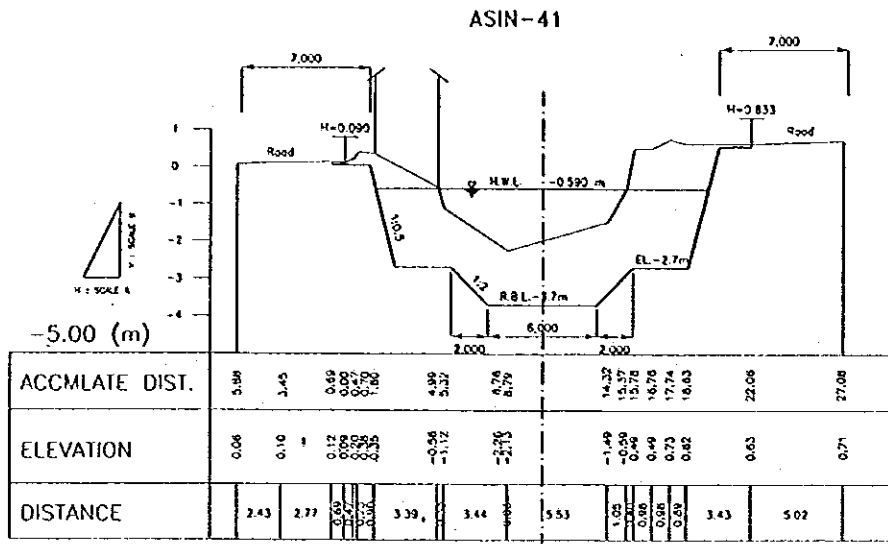
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT BRATUNGLING FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN RIVER CROSS SECTION (6/10)		PROVINCE : CENTRAL JAWA PROJECT NAME : FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN BRATUNGLING IN THE PROVINCE OF INDONESIA DISTRICT : SIEMARANG CITY DRAWING NO. : U-P2.A-Cr-6 SHEET NO. : 36 DATE : _____ CONTRACT NO. : _____
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO., LTD. PACIFIC CONSULTING INTERNATIONAL AND FARCO INTERNATIONAL INC.	DESIGNED : _____ CHECKED : _____ CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	APPROVED : _____



H.W.L. : DESIGN HIGH WATER LEVEL
R.B.L. : DESIGN RIVER BED LEVEL

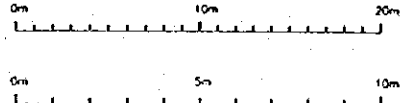
NO.	DATE	REVISION	COORDINATED	DRAWN	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
PROJECT NAME WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA		PROJECT NO. 37
COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN RIVER CROSS SECTION (7/10)		DRAWING NO. U-P2-A-Cr-7 SHEET NO. 37
JAPAN INTERNATIONAL COOPERATION AGENCY CITY DEVELOPMENT CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND TAIKOO ENGINEERING INC.	DESIGNED CHECKED IN CHARGE OF PLANNING AND DESIGN PROJECT MANAGER	DATE CONTRACT NO.



SCALE A
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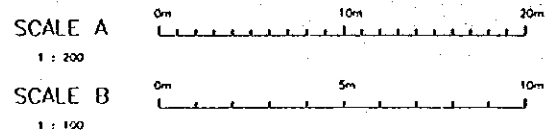
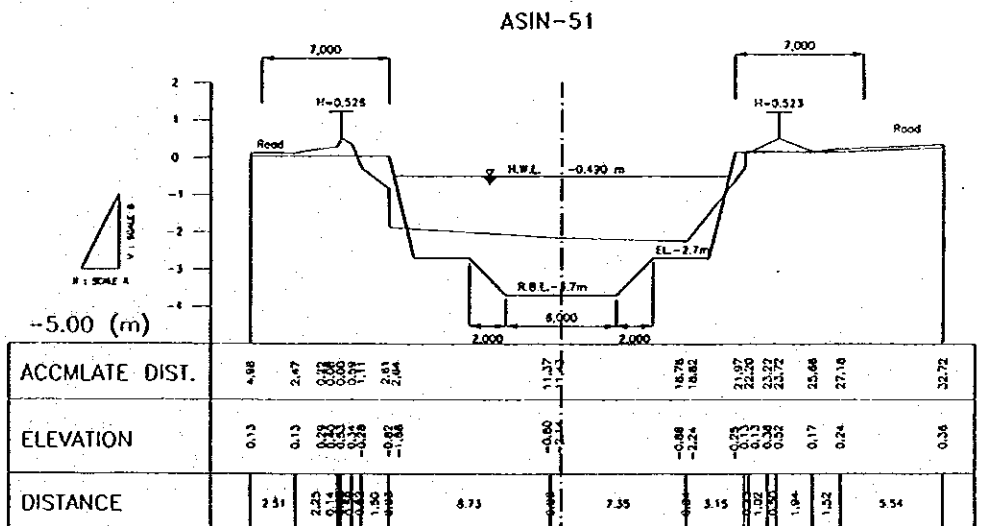
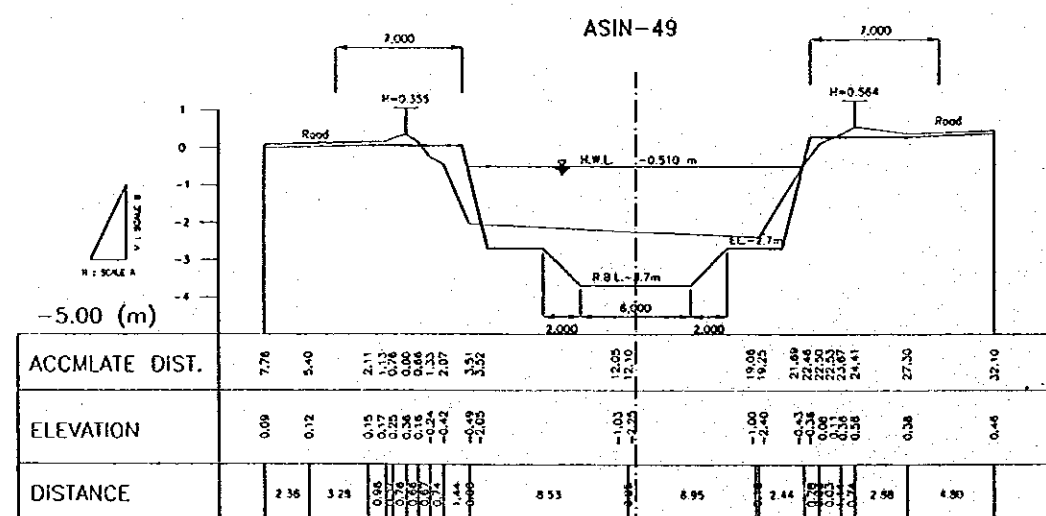
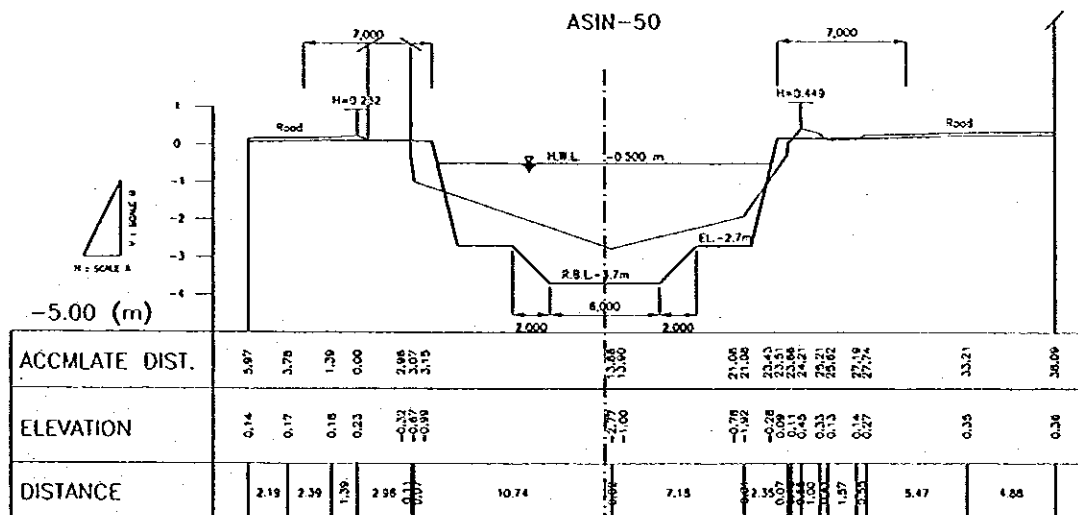
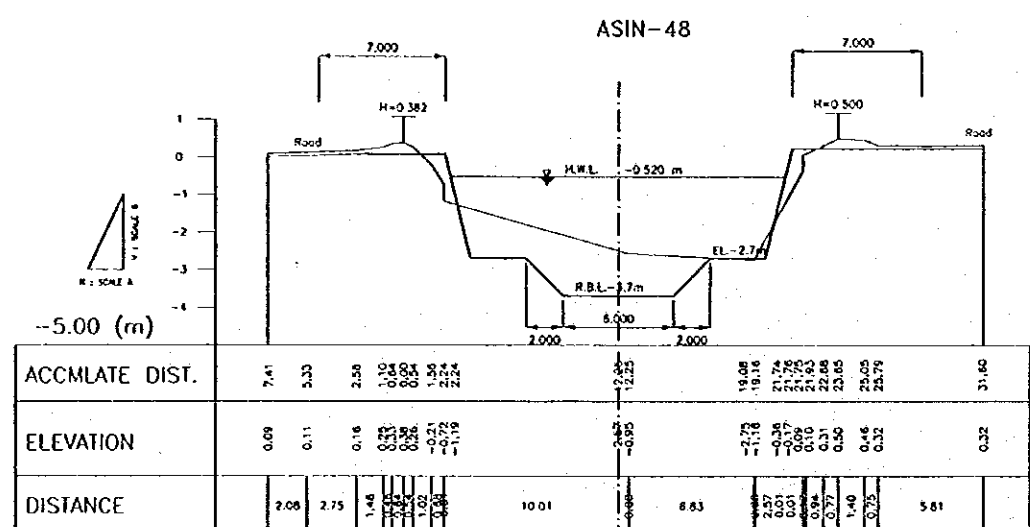
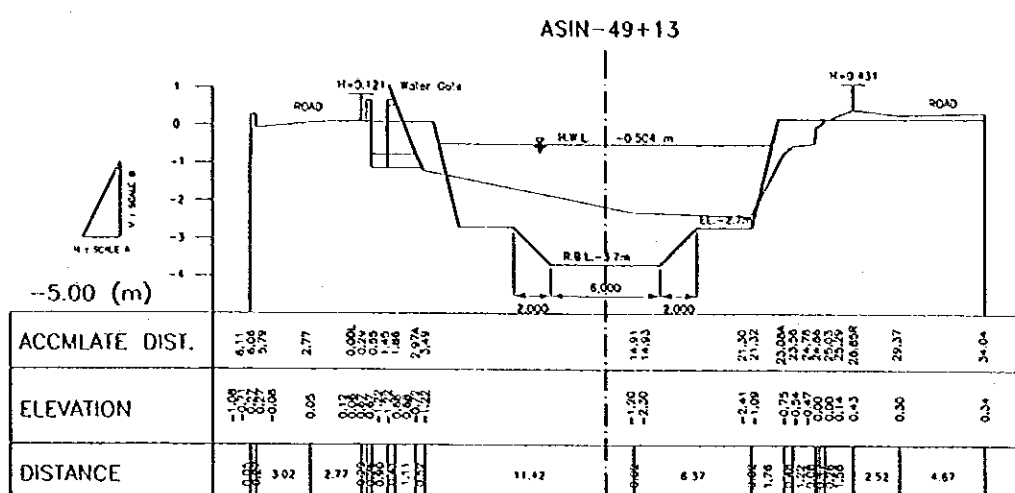
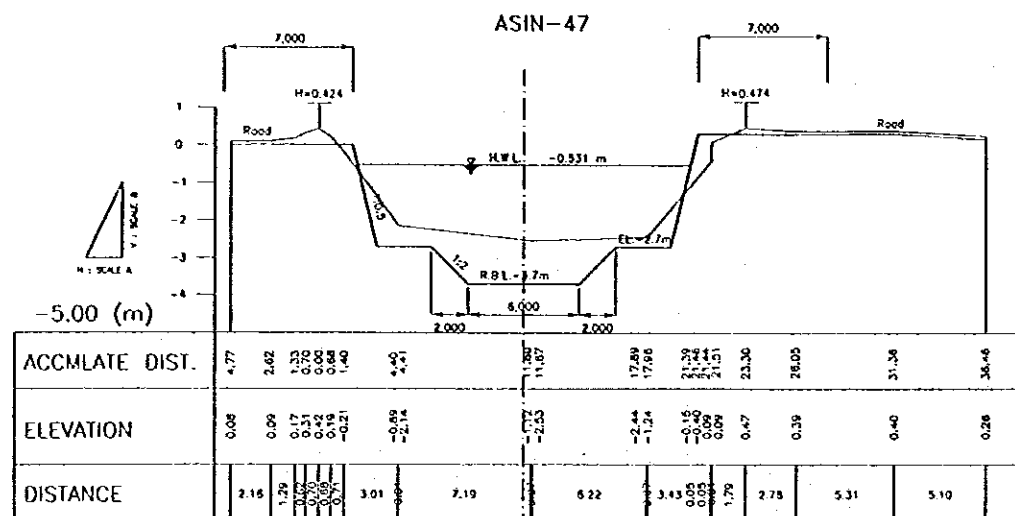
SCALE B
1 : 100



H.W.L. : DESIGN HIGH WATER LEVEL
R.B.L. : DESIGN RIVER BED LEVEL

NO.	DATE	REVISIONS	COORDINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF DAMAN SETTLEMENT		PROJECT NAME CENTRAL JAVA FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG OF THE REPUBLIC OF INDONESIA
JATUNIBUMAH FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT		OFFICE SEMARANG CITY
ASIN RIVER CROSS SECTION (S/10)		DRAWING NO. U-P2-A-Cr-8 SHEET NO. 38
JAPAN INTERNATIONAL COOPERATION AGENCY CTE (CONSULTANTS) CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PAFD INTERNATIONAL INC.	DESIGNED CHECKED DATE	PROJECT MANAGER



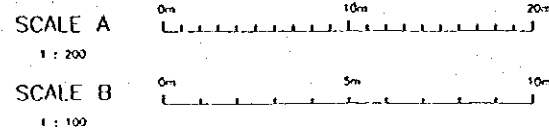
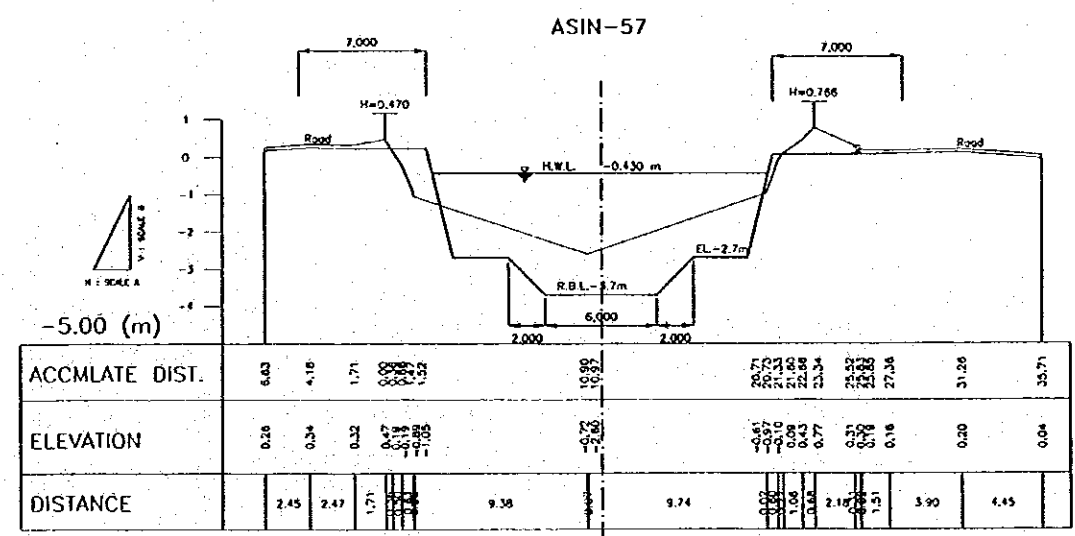
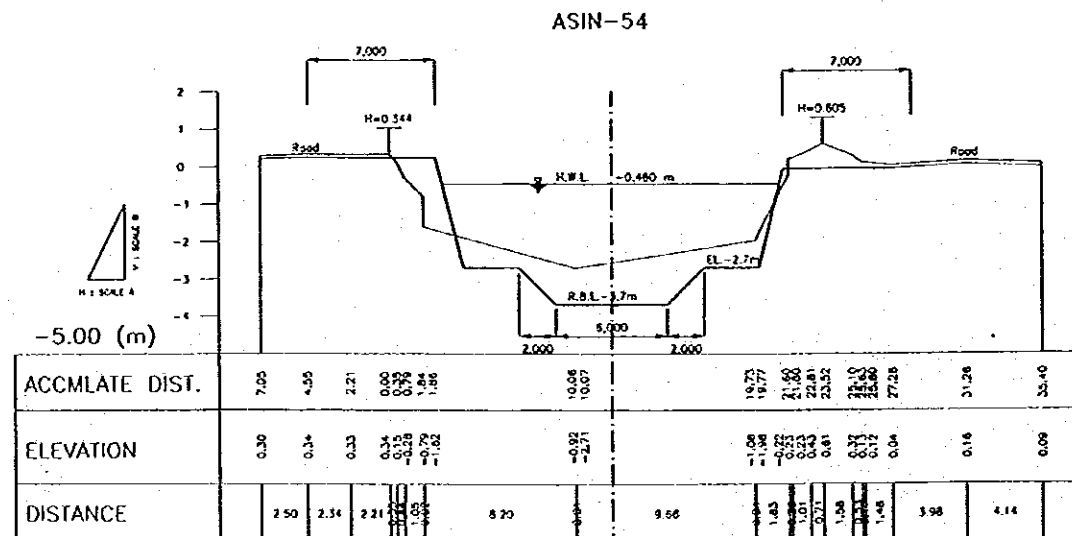
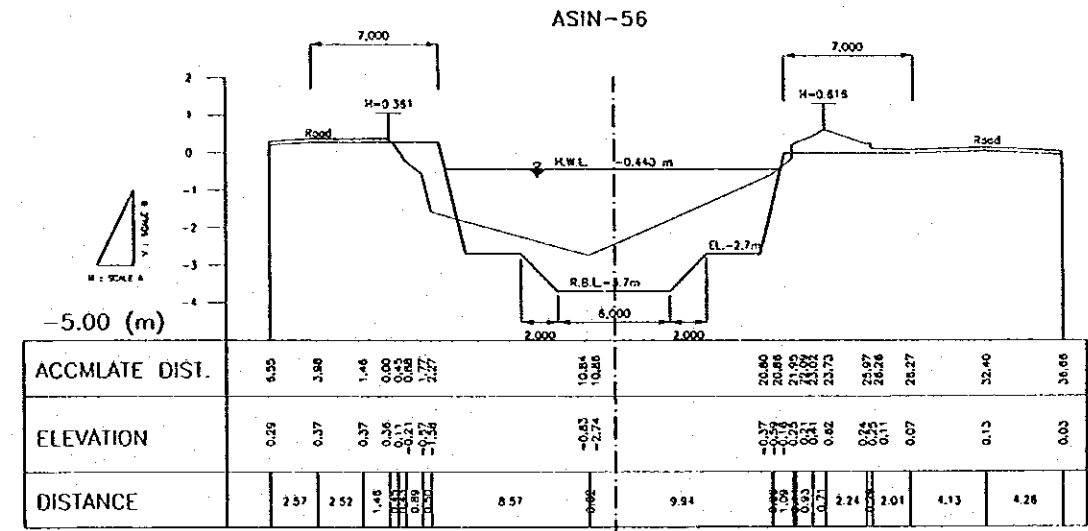
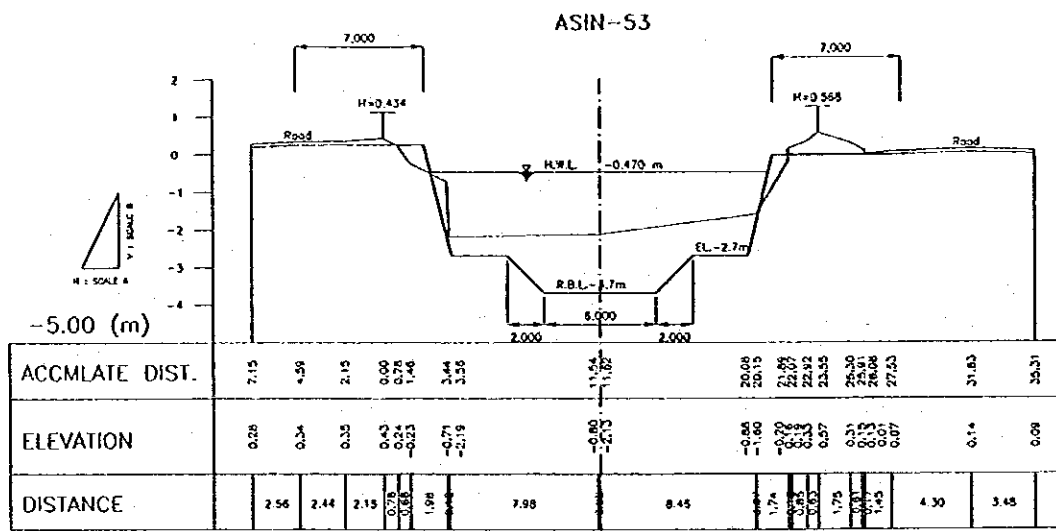
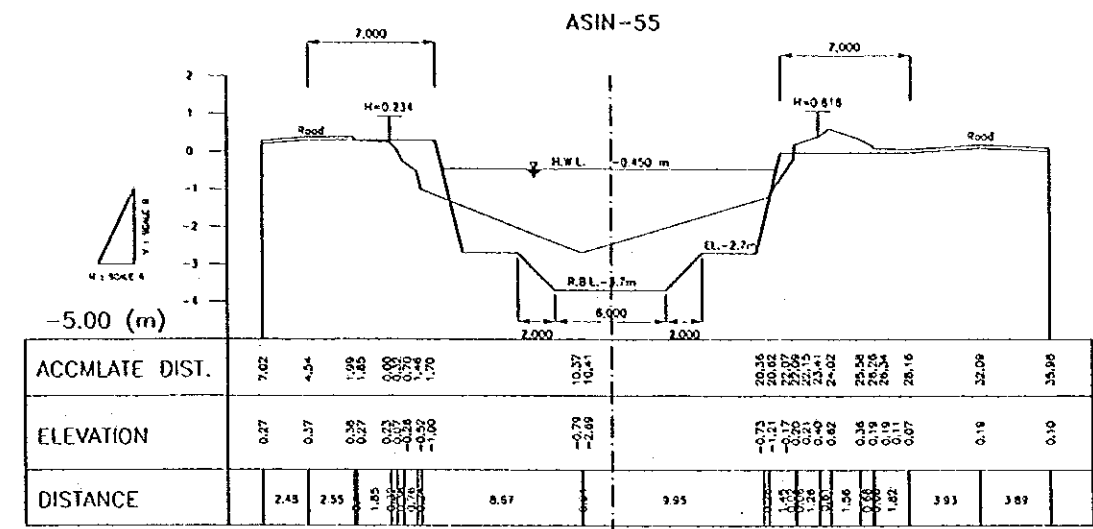
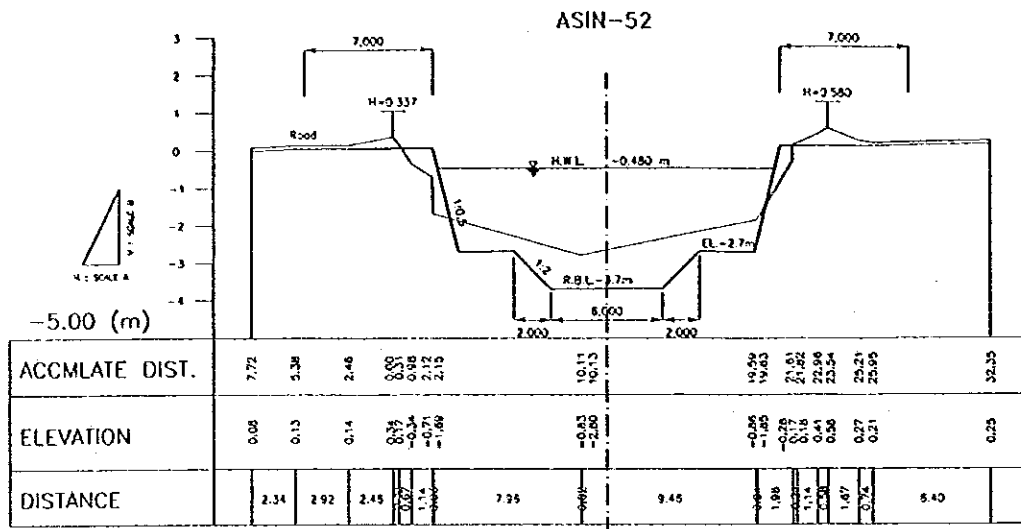
H.W.L. : DESIGN HIGH WATER LEVEL
R.B.L. : DESIGN RIVER BED LEVEL

NO.	DATE	REVISIONS	CHECKED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT
JATUNGLUNG FLOOD CONTROL PROJECT
COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT
ASIN RIVER
CROSS SECTION (9/10)

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. U-P2-A-Cr-9
SHEET NO. 39
DATE: CONTRACT NO.

DATE: PROJECT MANAGER:



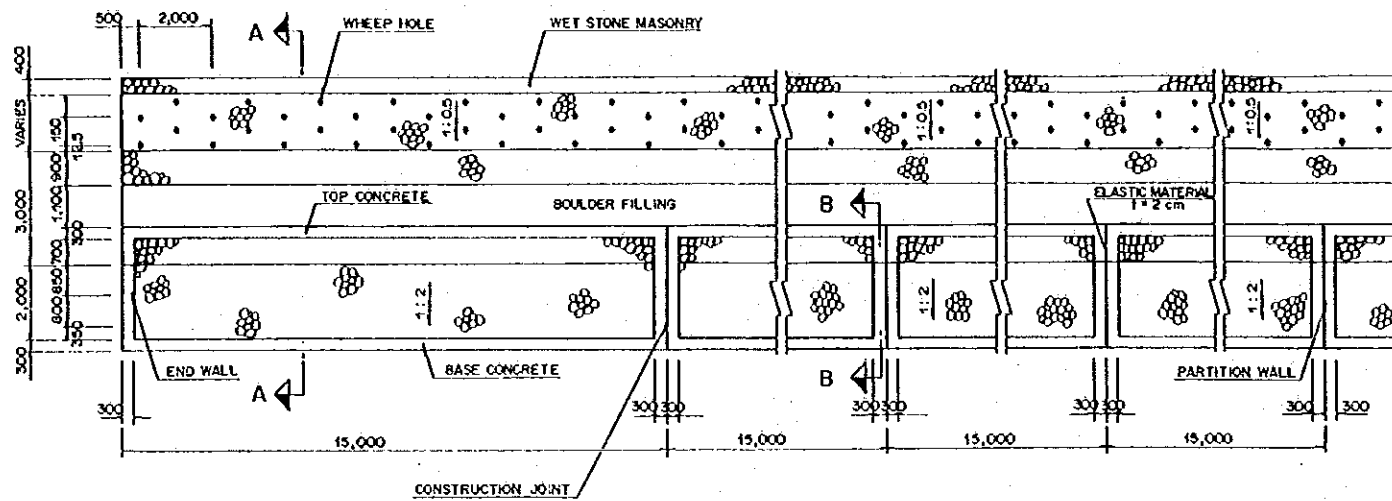
H.W.L. : DESIGN HIGH WATER LEVEL
R.B.L. : DESIGN RIVER BED LEVEL

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

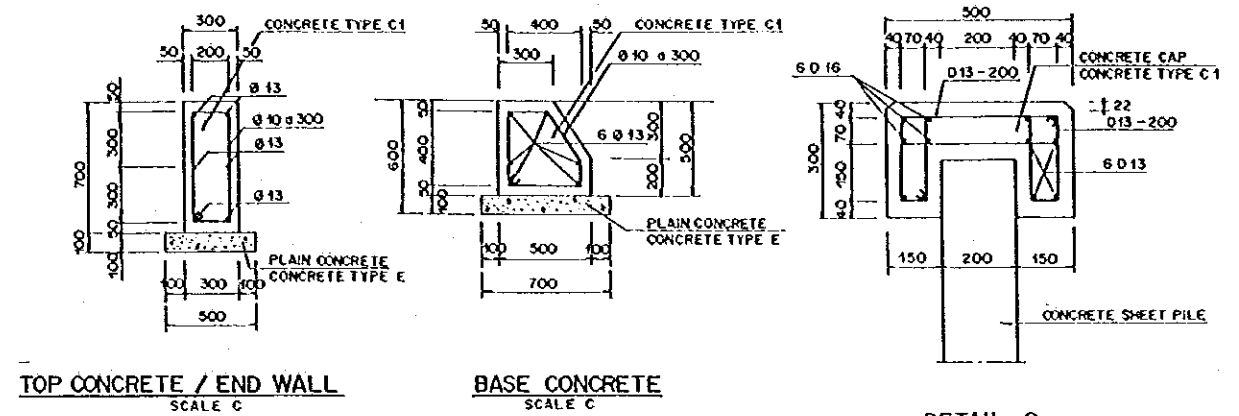
THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DREDGATION
CENTRAL JAYA
PROJECT NAME
FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT
ASIN RIVER
CROSS SECTION (10/10)
DATE CONTRACT NO.

JAPAN INTERNATIONAL COOPERATION AGENCY
CHUO KENKU GYO CO., LTD. IN ASSOCIATION WITH
PACIFIC CONSULTANTS INTERNATIONAL AND
PACIFIC INTERNATIONAL INC.
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

DISBURSED
CHECKED
DATE CONTRACT NO.



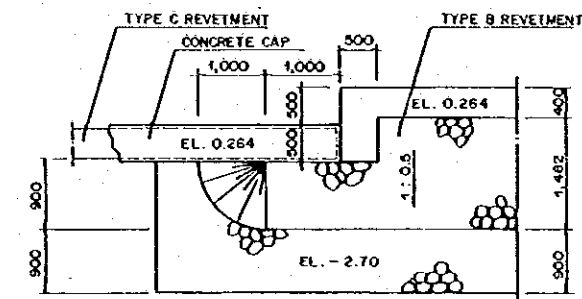
PLAN
SCALE A



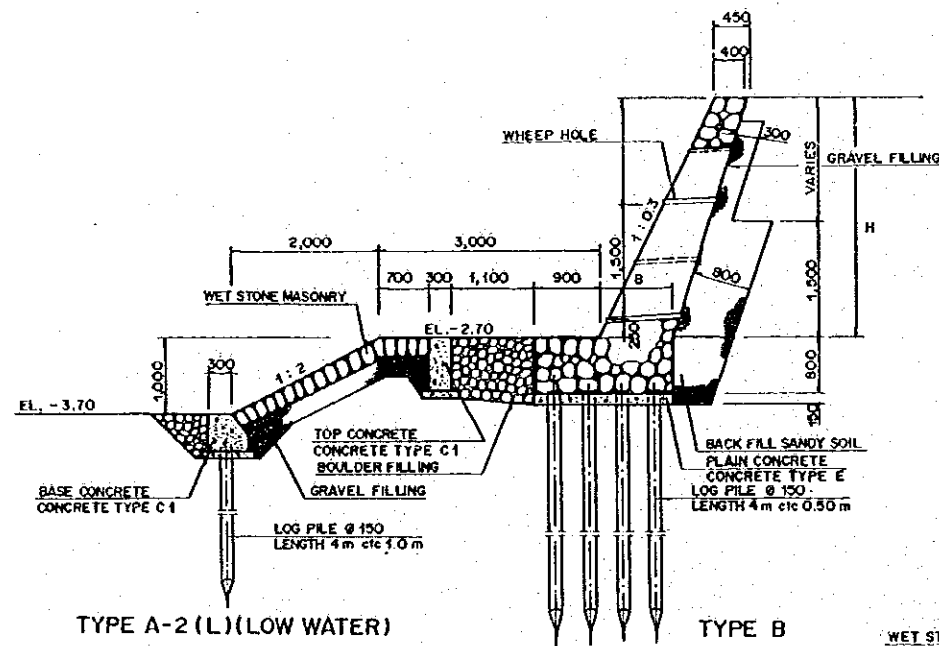
TOP CONCRETE / END WALL
SCALE C

BASE CONCRETE
SCALE C

DETAIL 2
SCALE D



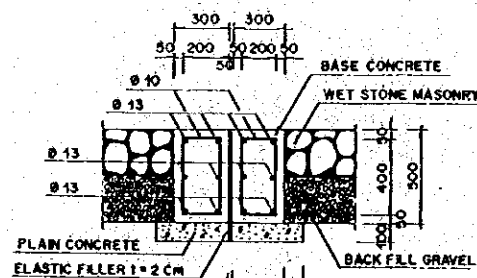
DETAIL 1
SCALE B



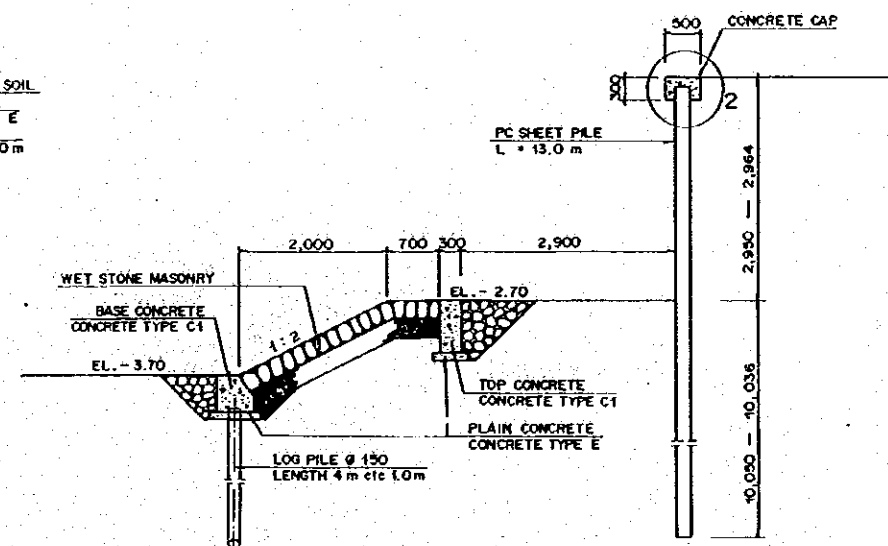
TYPE A-2(L) (LOW WATER)

TYPE B

SECTION A - A
SCALE B



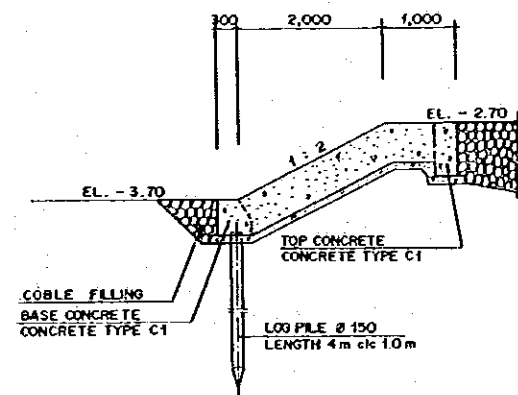
CONSTRUCTION JOINT
SCALE C



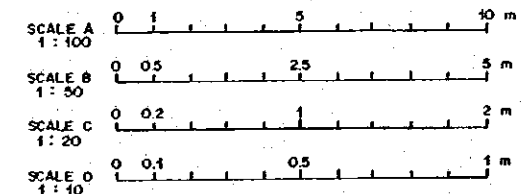
TYPE A-2(L) (LOW WATER)

TYPE C REVETMENT
(CONCRETE SHEET PILE)

SCALE B



SECTION B - B
SCALE B



NO.	DATE	REVISIONS	ORGANIZED	DESIGN	APPROVED

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

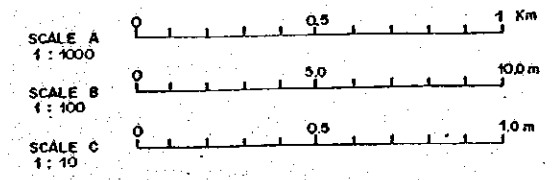
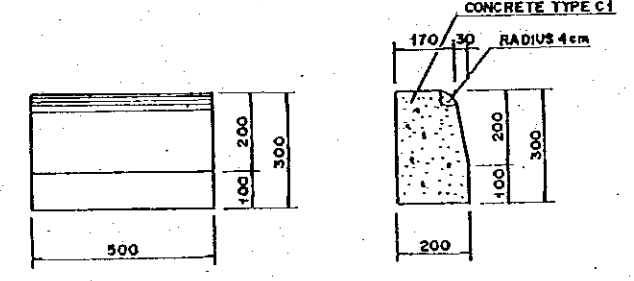
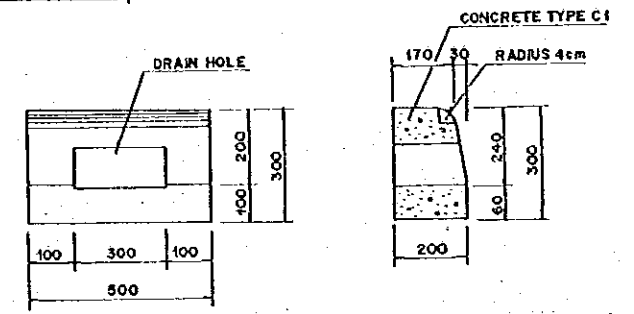
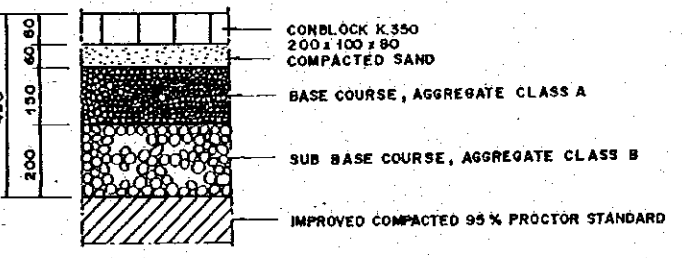
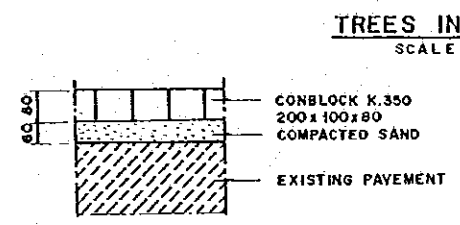
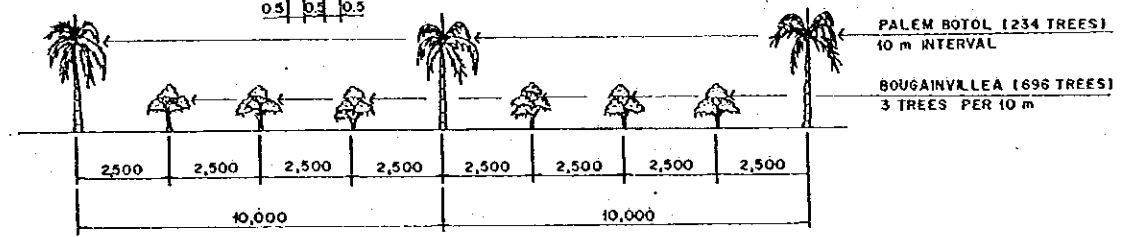
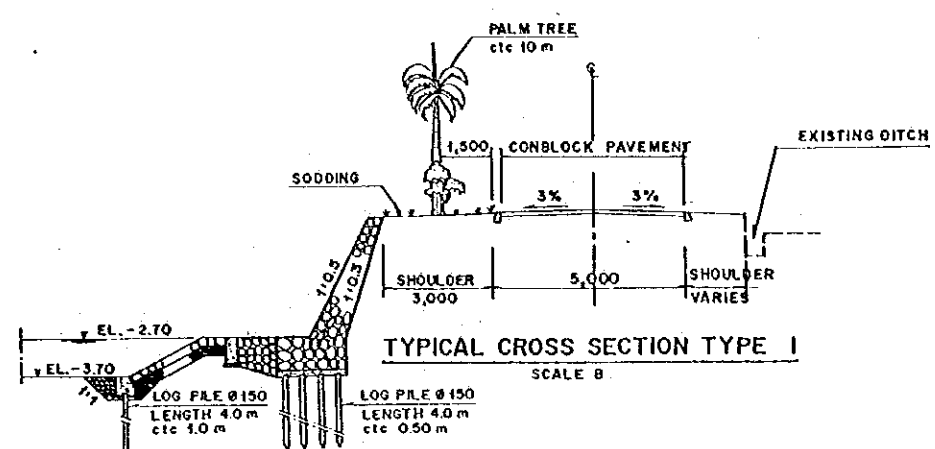
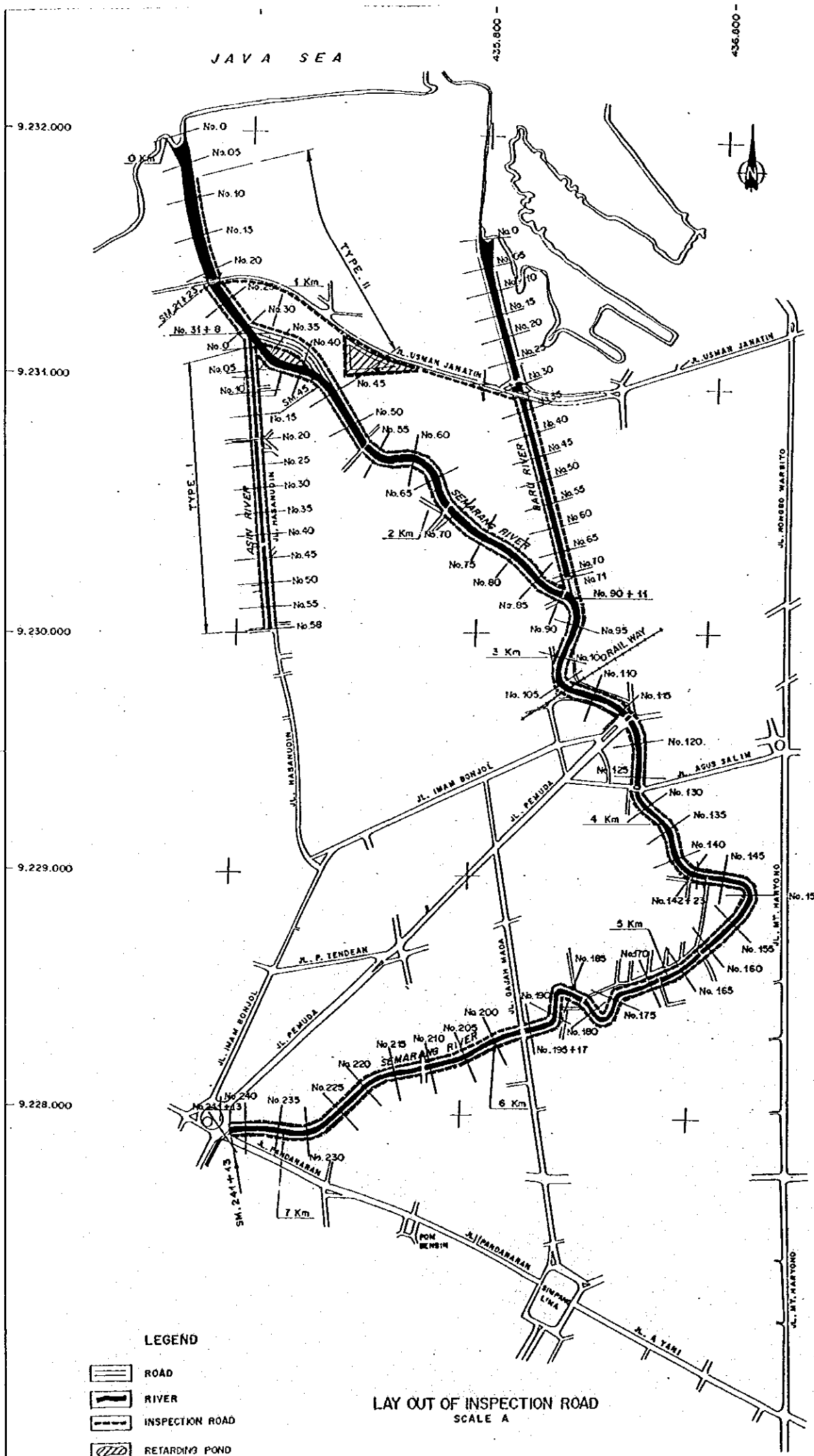
IRATUNNELUNA FLOOD CONTROL PROJECT
COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT

**ASIN RIVER
REVETMENT**

LAPAN INTEGRASIONAL COORDINATION AGENCY
CI (INDONESIA) CO., LTD. IN ASSOCIATION WITH
FALCO INTERNATIONAL P.C.

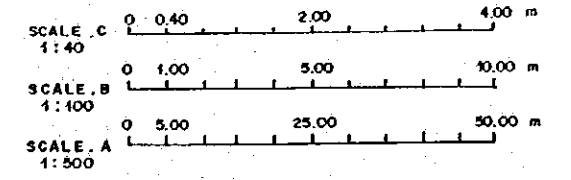
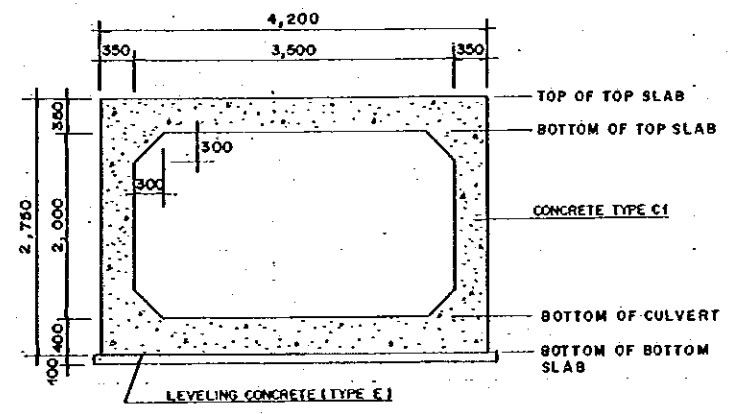
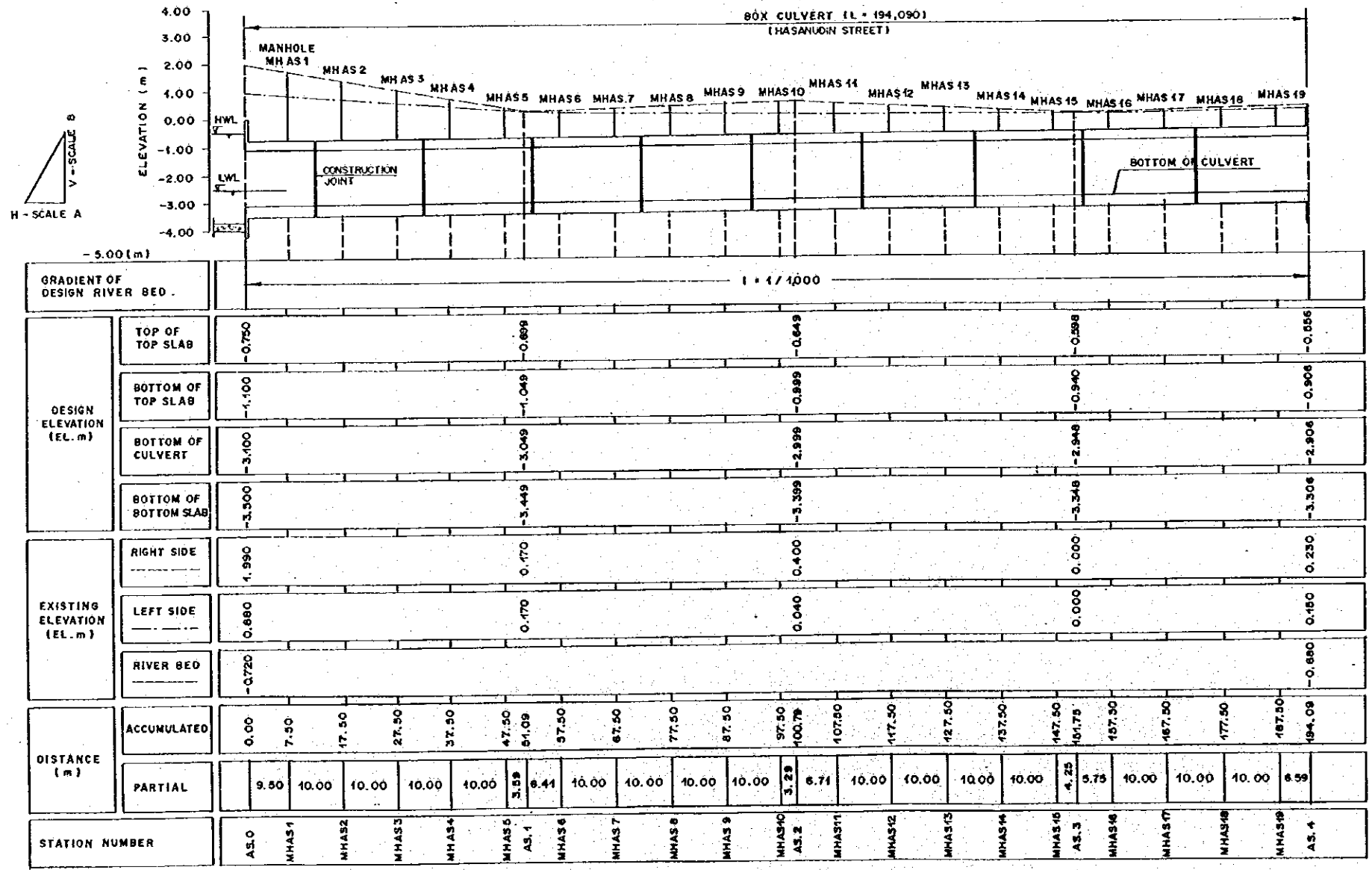
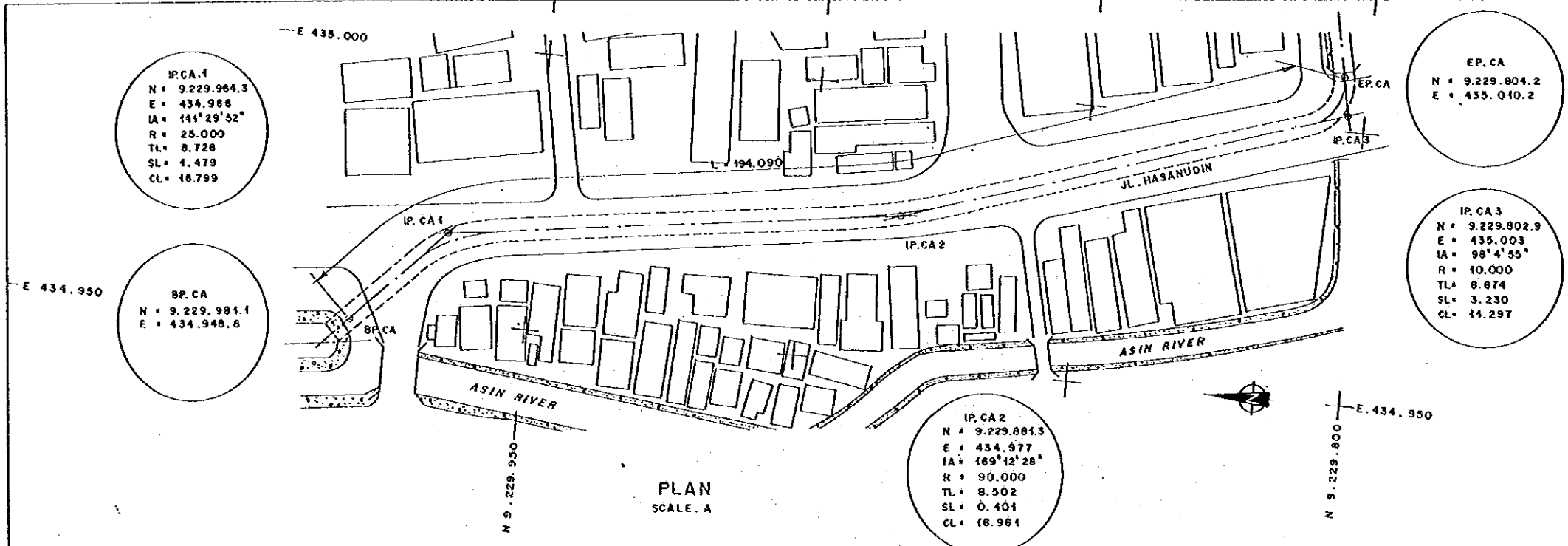
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

PROVINCE: CENTRAL JAYA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN IRATUNNELUNA IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. U - P2 - A - R1 - 1
SHEET NO. 41
DATE: CONTRACT NO.



NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

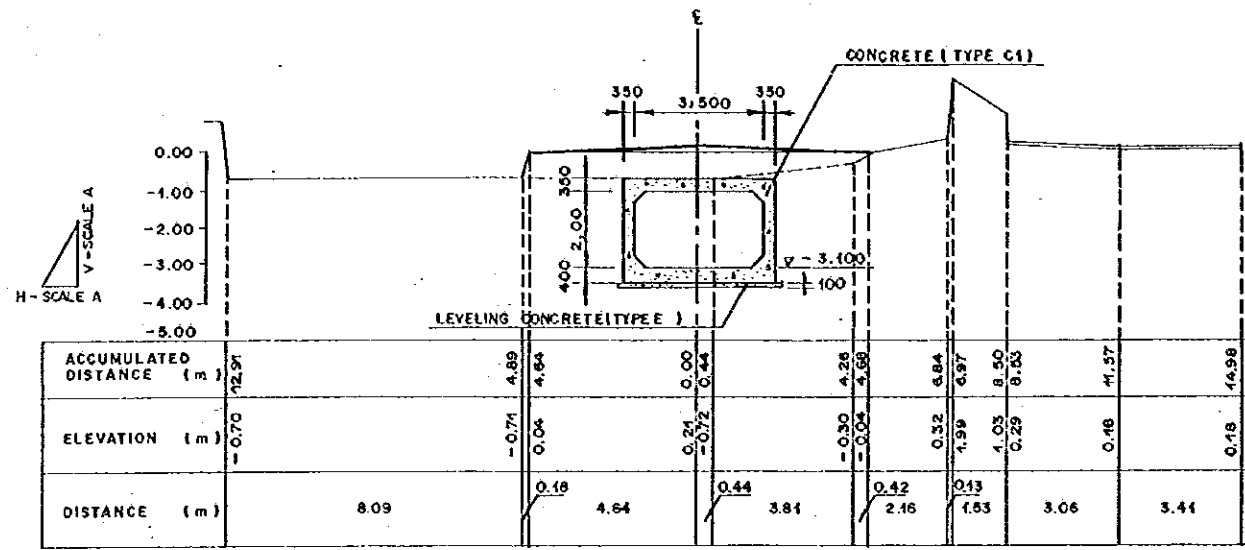
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
BRATUNSELUMA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN RIVER INSPECTION ROAD		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT OF SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT SEMARANG CITY		DRAWING NO. U-P2-A-Rd-1 SHEET NO. 42
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND TAIKOO INTERNATIONAL P.C.		DATE CONTRACT NO.
CHIEF OF PLANNING AND DESIGN		PROJECT MANAGER



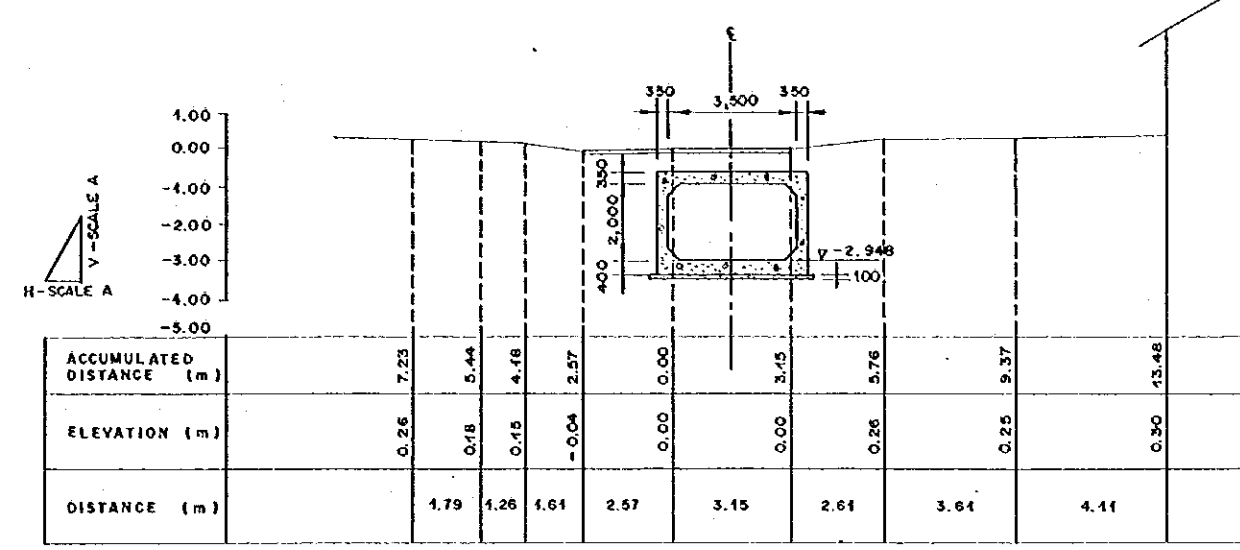
LONGITUDINAL SECTION OF CULVERT
SCALE A

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCE DEVELOPMENT AND DIRECTORATE GENERAL OF RURAL SETTLEMENT BATUNDELLA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN BOX CULVERT PLAN, PROFILE AND STANDARD SECTION		PROJECT CENTRAL JAYA PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCE DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY DRAWING NO. U-P2-A-8X-1 SHEET NO. 43 DATE CONTRACT NO.
JAPAN INTERNATIONAL COOPERATION AGENCY CI ENGINEERING CO. LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL INC.	DESIGNED CHECKED CITY OF PLANNING AND DESIGN PROJECT MANAGER	DATE CONTRACT NO.

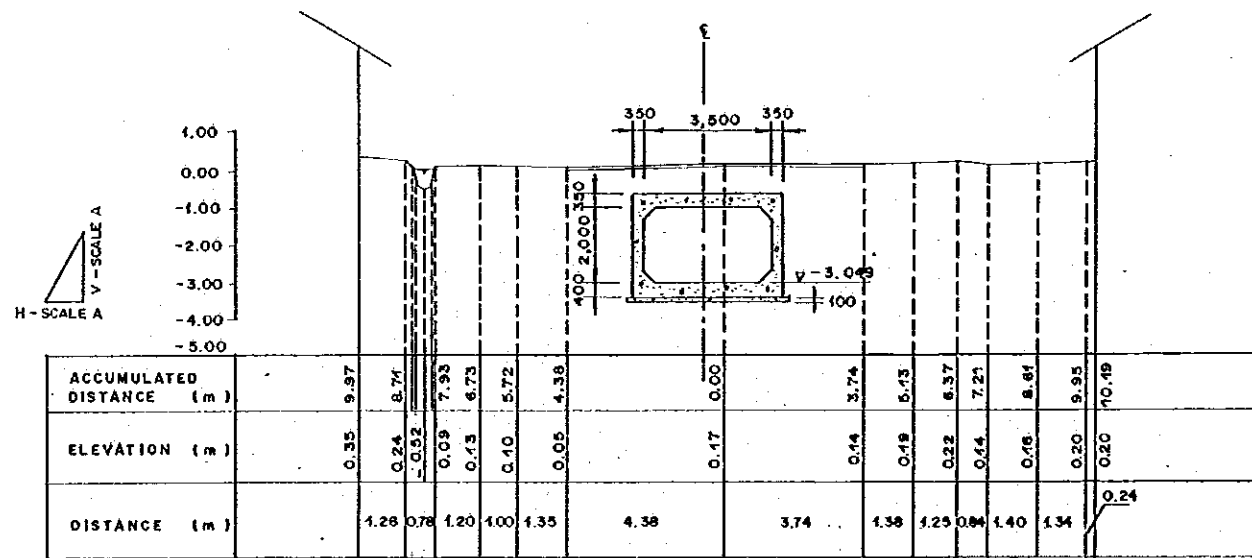
NO.	DATE	REVISIONS	DESIGNED	CHECKED	APPROVED



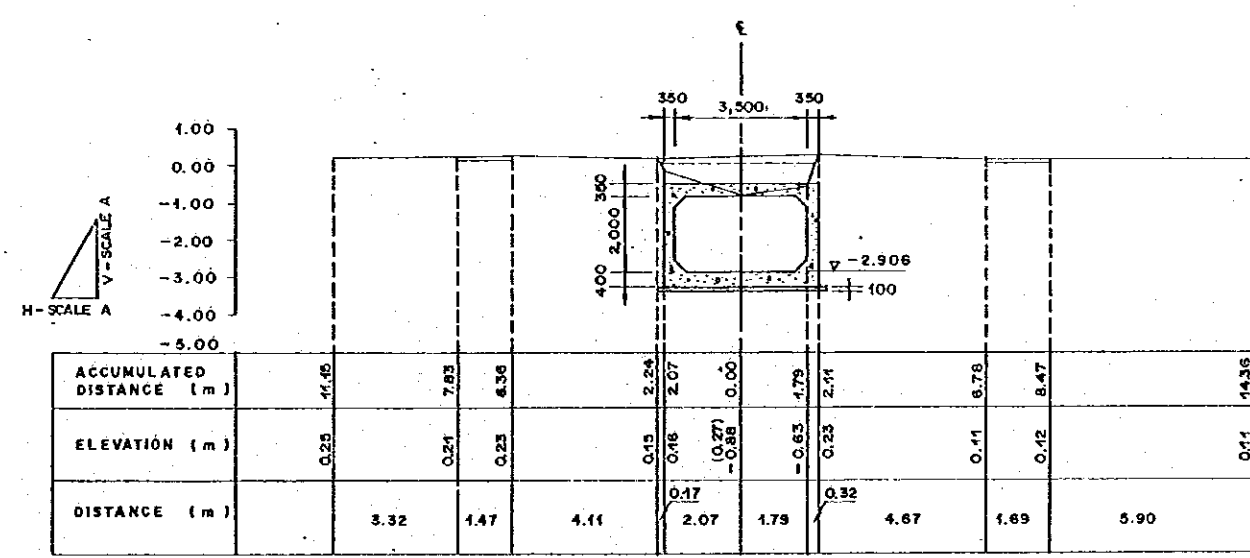
AS.0



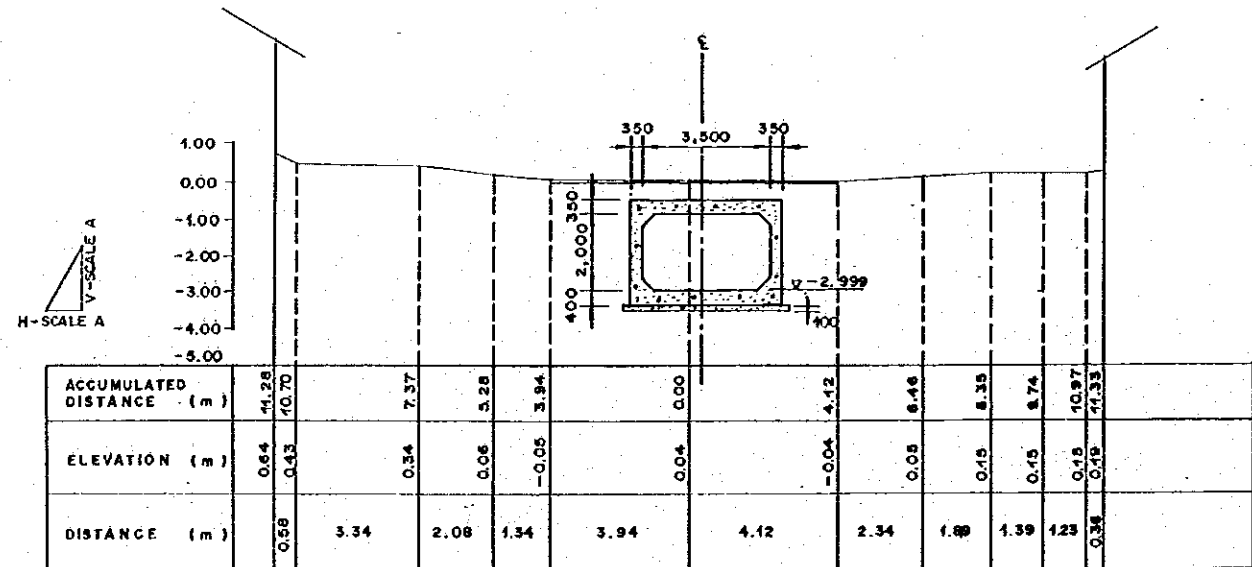
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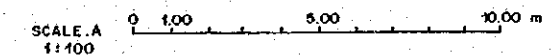
AS.1



AS.4



AS.2



THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT			PROVINCE CENTRAL JAWA			
JATUNGLUKA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN BOX CULVERT CROSS SECTION			PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA			
JAWA INTERNATIONAL COOPERATION AGENCY CTE ENGINEERING CO. LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL INC.			DISTRICT SEMARANG CITY			
CHECKED <i>[Signature]</i> CHECKED <i>[Signature]</i> CITY OF PLANNING AND DESIGN PROJECT MANAGER			DRAWING NO. U-P2-A-84-2 SHEET NO. 44			
APPROVED <i>[Signature]</i> CITY OF PLANNING AND DESIGN PROJECT MANAGER			DATE CONTRACT NO.			
NO.	DATE	REVISIONS	ORIGINATOR	DESIGNER	APPROVER	

BAR BENDING SCHEDULE

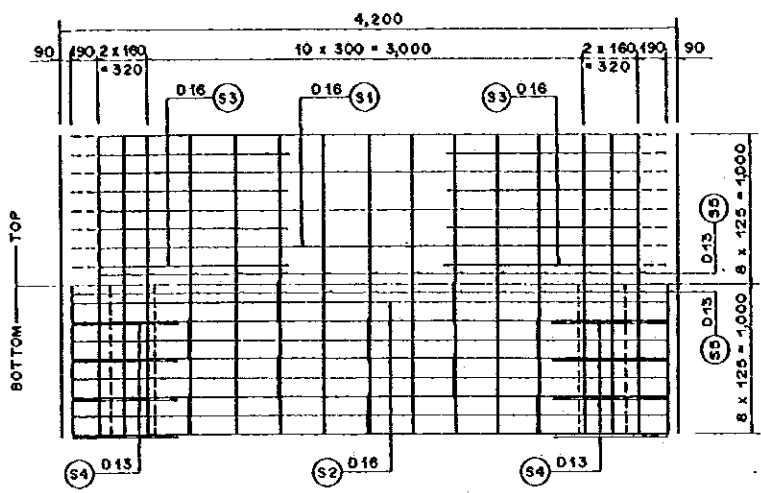
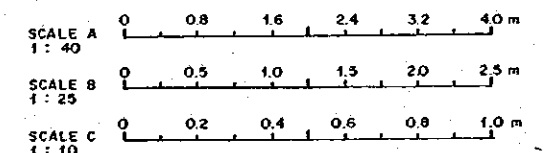
TYPE	SHAPE	DIA	NUMBER	LENGTH (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	H (mm)	R (mm)
S1	5	D16	4	6,870	1,570	220	3740	1120		140
S2	1	D16	8	4,050	4,052					
S3	4	D16	8	2,780	1,120	220	1420			140
S4	6	D13	8	1,480	100	980	100		693	
S5	1	D13	32	1,000	1,000					
S6	3	D13	10	870	100	196	276			
W1	1	D16	8	2,880	2,577					
W2	1	D13	28	1,000	1,000					
W3	2	D13	12	400	100	196	100			
F1	1	D19	8	4,050	4,052					
F2	5	D16	4	7,020	1,145	220	3740	1705		140
F3	6	D13	8	1,220	100	1,015	100		718	
F4	4	D16	8	2,360	995	220	1,145			140
F5	1	D13	32	1,000	1,000					
F6	3	D19	10	920	100	224	276			

BAR WEIGHT

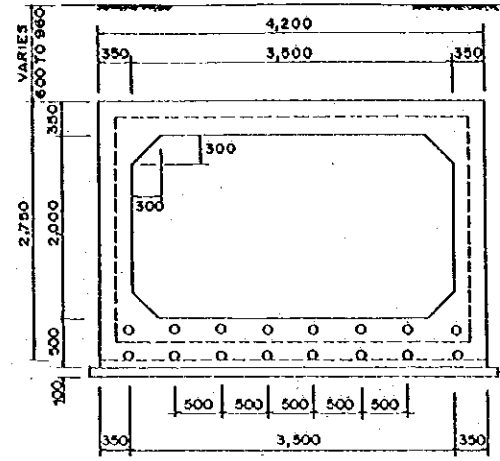
TYPE	DIA	LENGTH (mm)	NUMBER	WEIGHT PER M (kgf/m)	WEIGHT PER BAR (kgf)	WEIGHT (kgf)	SHAPE
S1	D16	6,870	4	1,580	10.855	43.418	[Diagram]
S2	D16	4,050	8	1,580	6.399	51.192	[Diagram]
S3	D16	2,780	8	1,580	4.364	34.886	[Diagram]
S4	D13	1,480	8	1,040	1.227	9.817	[Diagram]
S5	D13	1,000	32	1,040	1.040	33.280	[Diagram]
S6	D13	870	10	1,040	0.905	9.048	[Diagram]
W1	D16	2,880	8	1,580	4.078	32.611	[Diagram]
W2	D13	1,000	28	1,040	1.040	29.120	[Diagram]
W3	D13	400	12	1,040	0.416	4.992	[Diagram]
F1	D19	4,050	8	2,230	9.032	72.252	[Diagram]
F2	D16	7,020	4	1,580	11.407	44.430	[Diagram]
F3	D13	1,220	8	1,040	1.269	10.150	[Diagram]
F4	D16	2,360	8	1,580	3.729	29.830	[Diagram]
F5	D13	1,000	32	1,040	1.040	33.280	[Diagram]
F6	D19	920	10	2,230	2.052	20.516	[Diagram]

BAR BENDING DETAIL

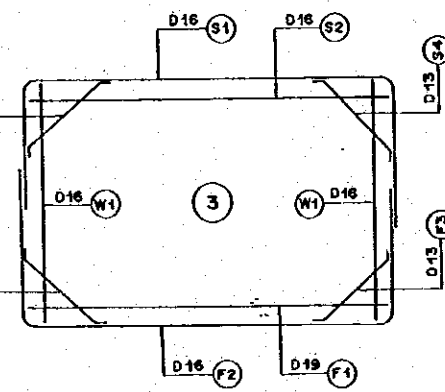
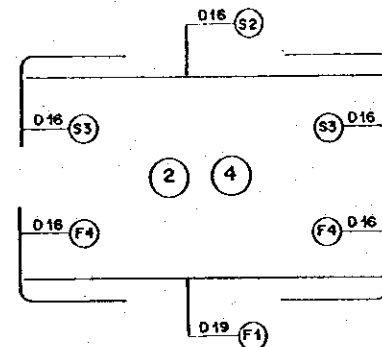
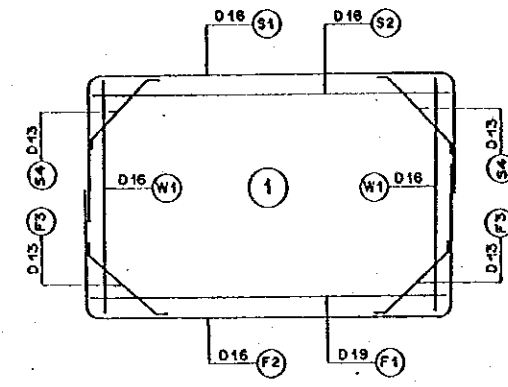
DIA	a	b	l	R	OVERLAP	
					L	WEIGHT (kgf)
D13	66	156	222	42	455	0.473
D16	75	193	269	48	560	0.885
D19	94	236	330	60	665	1.483



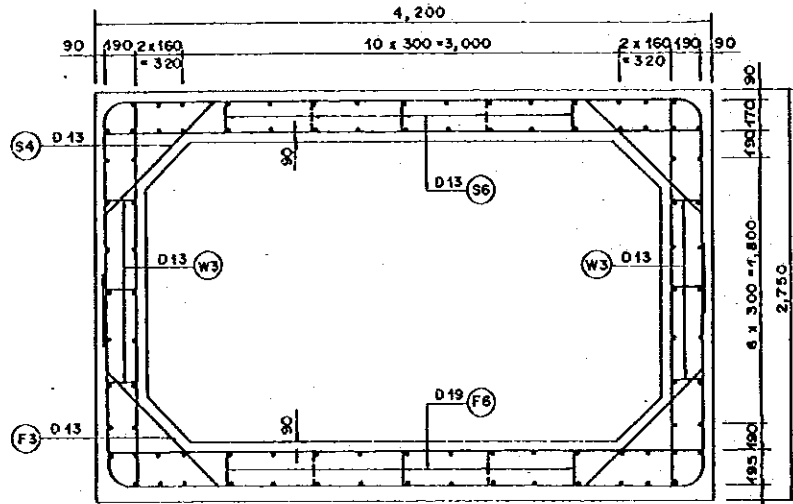
TOP SLAB
SCALE B



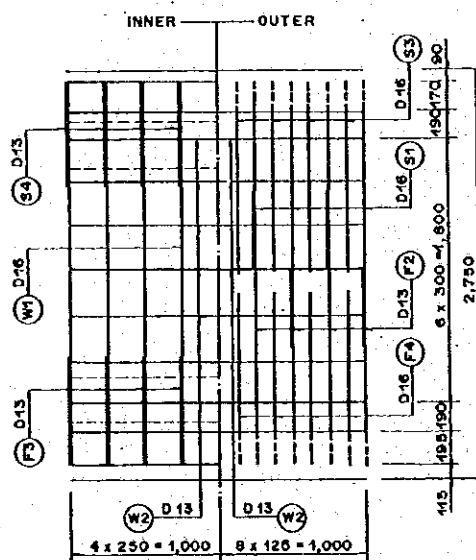
GENERAL CROSS SECTION
SCALE A



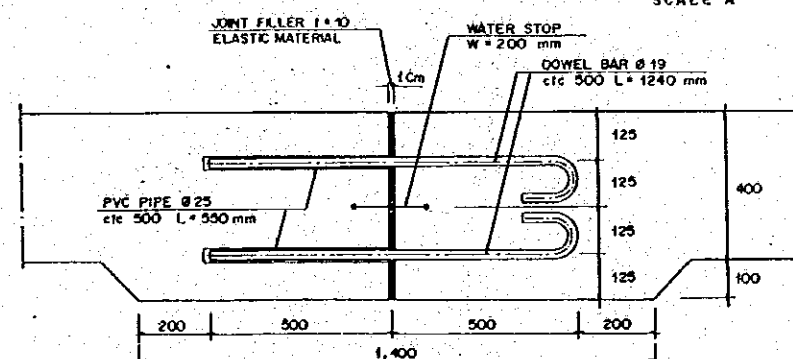
BAR LAY OUT
SCALE A



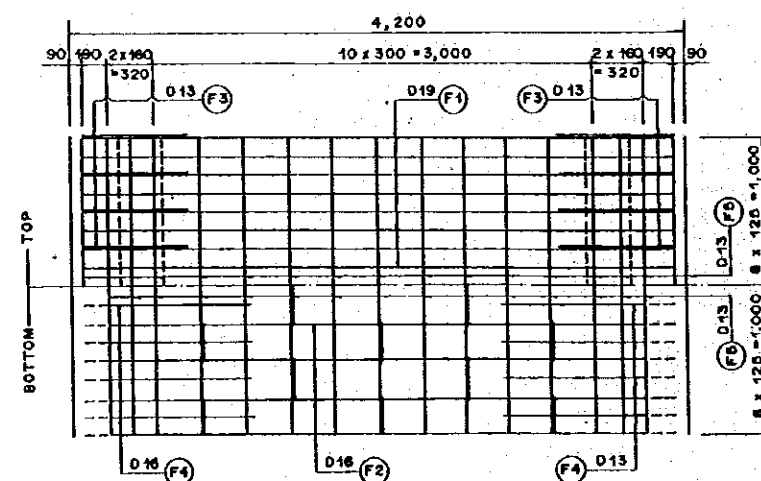
CROSS SECTION
SCALE B



SIDE WALL
SCALE B



DETAIL OF JOINTING
SCALE C



BOTTOM SLAB
SCALE B

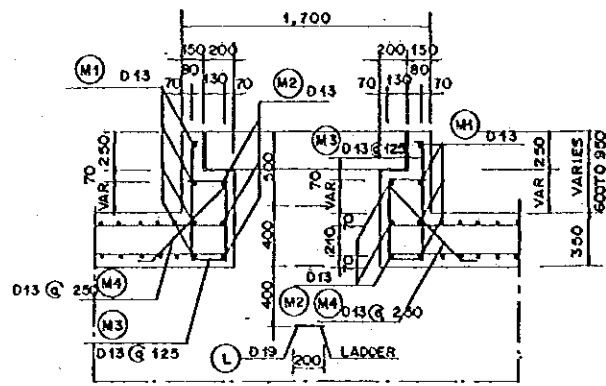
NO.	DATE	REVISIONS	CREATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

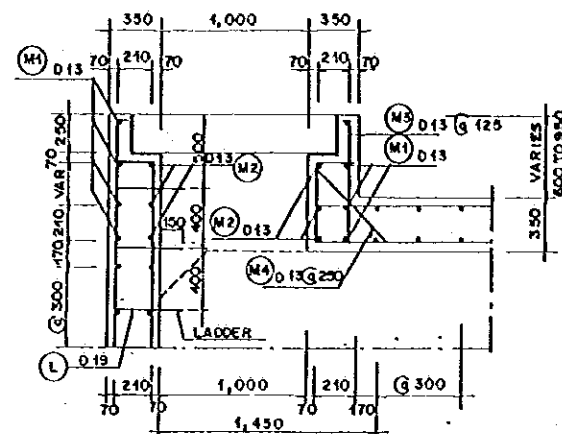
JAKARTA
ASIN BOX CULVERT
REINFORCING BAR ARRANGEMENT

PROVINCE: CENTRAL JAWA
PROJECT NAME: JAWA BARAT FLOOD CONTROL PROJECT
COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT
DISTRICT: SEMARANG CITY
DRAWING NO. U-P2-A-BK-3
SHEET NO. 45
DATE: [Signature]
CONTRACT NO. [Signature]

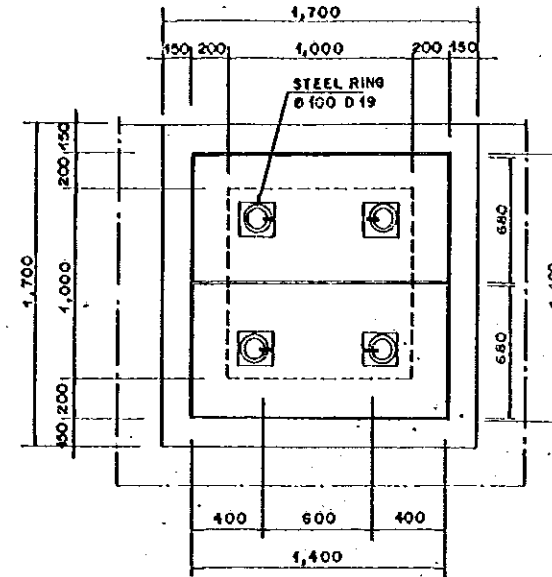
DESIGNED: [Signature]
CHECKED: [Signature]
DATE OF PLACING AND DESIGN: [Signature]
PROJECT MANAGER: [Signature]



SECTION A-A
SCALE B



SECTION C-C
SCALE B



DETAIL OF COVER
SCALE C

BAR BENDING SCHEDULE

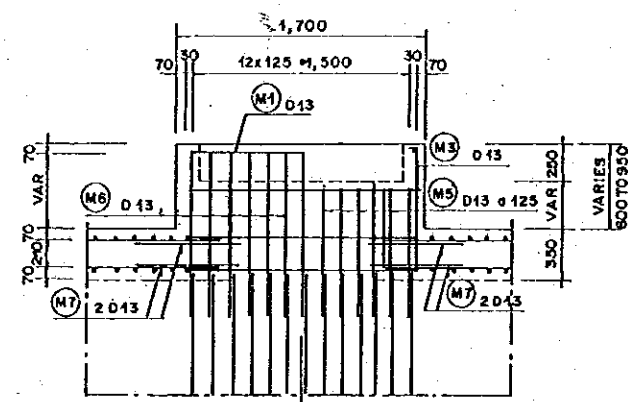
TYPE	SHAPE	DIA	NUMBER	SHAPE 3		SHAPE 5		SHAPE 6		SHAPE 7
				LENGTH (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	H (mm)	
M1	3	13	4	6,440	1,254	220	50			140
M2	3	13	3	4,760	4,000	110	50			70
M3	5	13	33	2,260	210	758	250	50		
M4	4	13	15	1,260	100	4,058	100			748
M5	7	13	13	1,095	853	240				
M6	7	13	13	1,210	1,160	50				
M7	1	13	4	875	875					
M8	4	13	4	1,200	1,200					
C1	2	19	7	1,780	100	150	1,280			
C2	1	13	4	1,320	320					
C3	1	13	5	610	610					
C4	2	13	5	610	610					
C5	6	19	2	770	200	188	120	30		60
L	2	19	7	1,150	50	426	200			

BAR WEIGHT

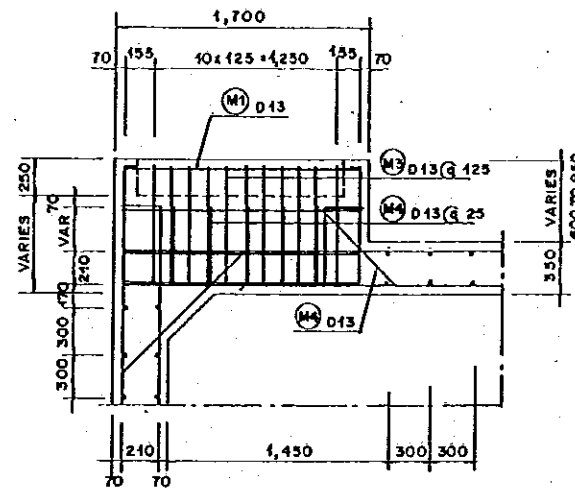
TYPE	DIA	LENGTH (mm)	NUMBER	WEIGHT/M (Kg/m)	WEIGHT/BAR (Kg)	WEIGHT (Kg)	SHAPE
M1	13	6,440	4	1.040	6.698	26.790	3
M2	13	4,760	3	1.040	4.950	14.851	3
M3	13	2,260	33	1.040	2.350	77.663	5
M4	13	1,260	15	1.040	1.310	19.656	4
M5	13	1,095	13	1.040	1.139	14.804	7
M6	13	1,210	13	1.040	1.258	16.359	7
M7	13	875	4	1.040	0.910	3.640	1
M8	13	1,200	4	1.040	1.248	4.992	1
C1	19	1,780	7	2.230	3.969	27.786	2
C2	13	1,320	4	1.040	1.373	5.491	1
C3	13	610	5	1.040	0.634	3.172	1
C4	13	610	5	1.040	0.634	3.172	2
C5	19	770	2	2.230	1.717	3.434	6
L	19	1,150	7	2.230	2.565	17.953	2

BAR BENDING DETAIL

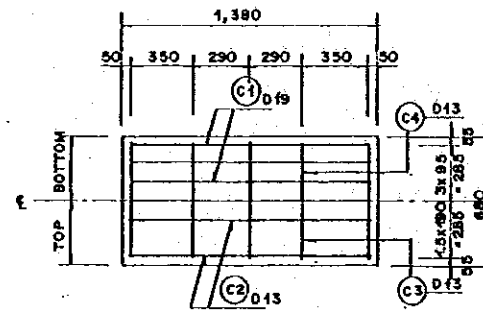
DIA	a	b	l	R	OVERLAP	
					L	WEIGHT (Kg)
D13	66	156	222	42	455	0.473
D16	75	193	268	48	560	0.885
D19	94	236	330	60	665	1.483



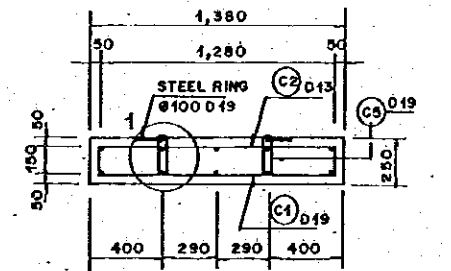
SECTION B-B
SCALE B



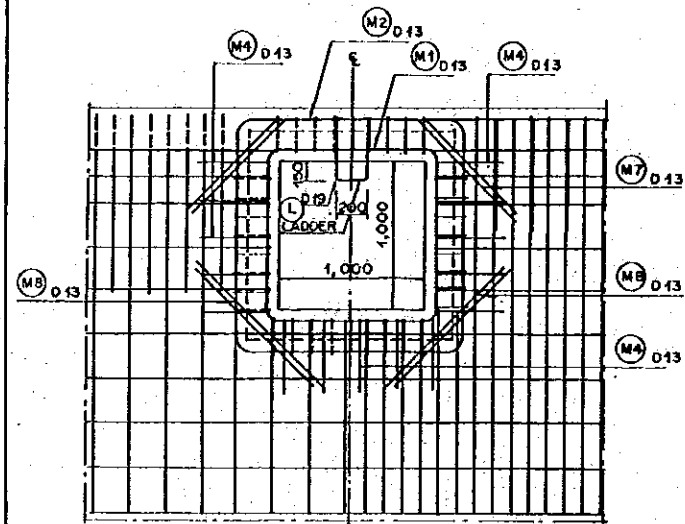
SECTION D-D
SCALE B



BAR ARRANGEMENT
OF COVER
SCALE C

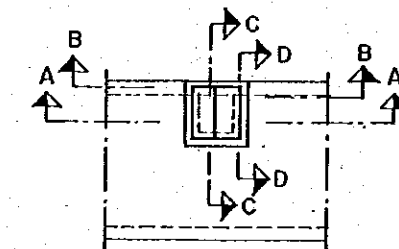


SECTION G-G
SCALE C

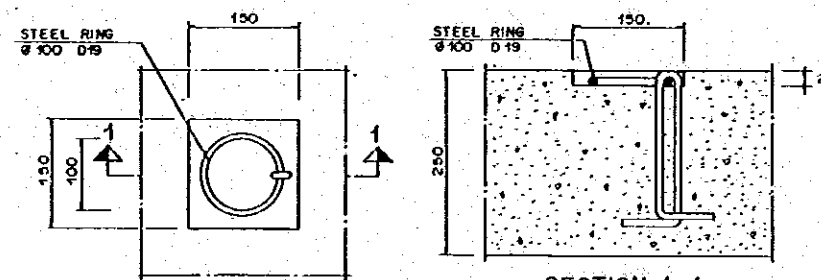


SECTION E-E
SCALE B

SECTION F-F
SCALE B

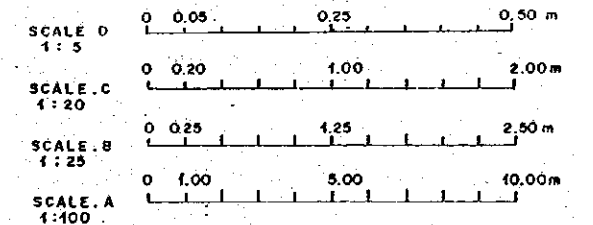


KEY PLAN
SCALE A



PLAN

DETAIL 1
SCALE D



NO.	DATE	REVISIONS	PROPOSED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

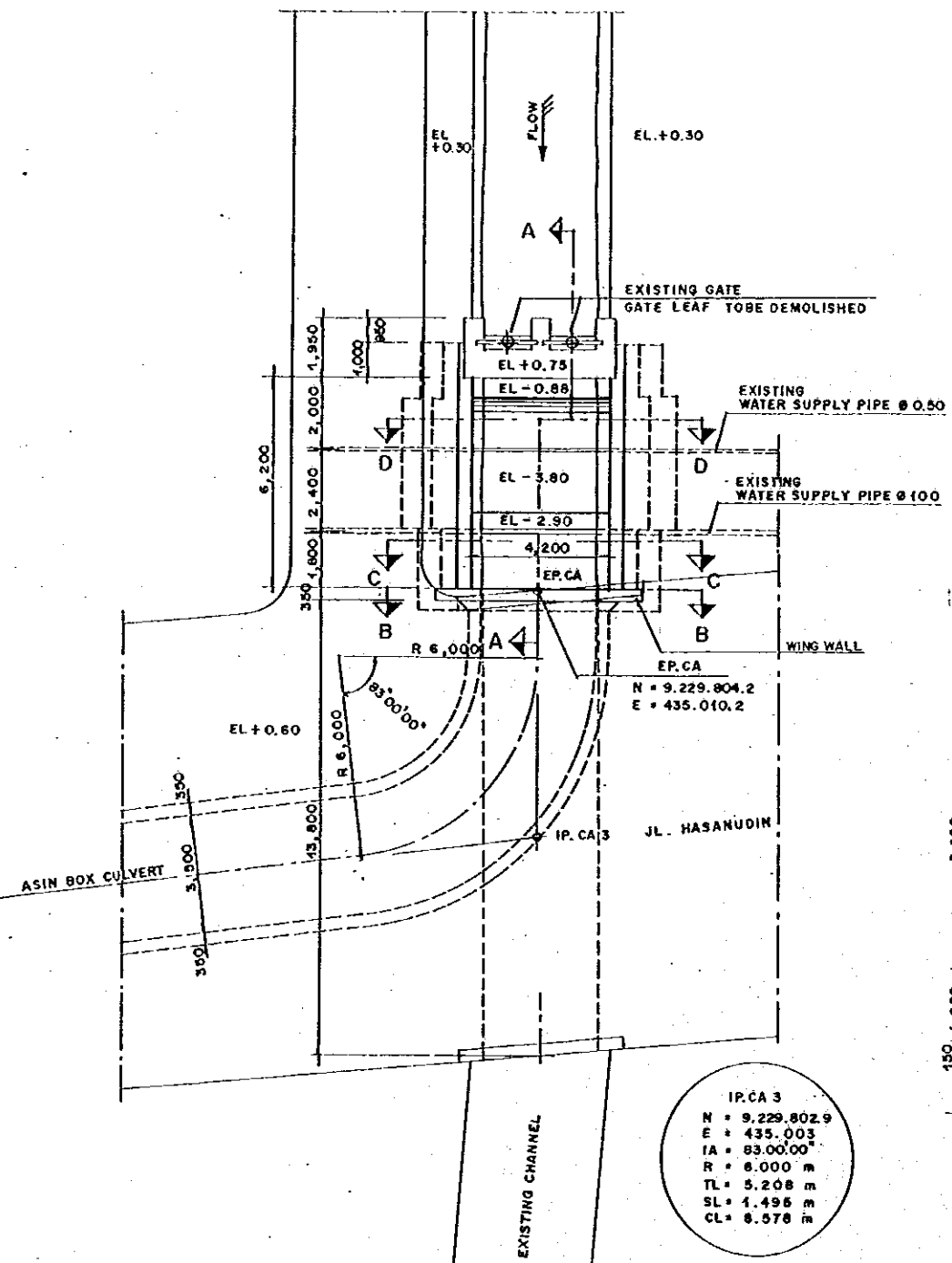
JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT
ASIN BOX CULVERT
MANHOLE REINFORCING BAR ARRANGEMENT

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. U-P2-A-BX-4
SHEET NO. 46

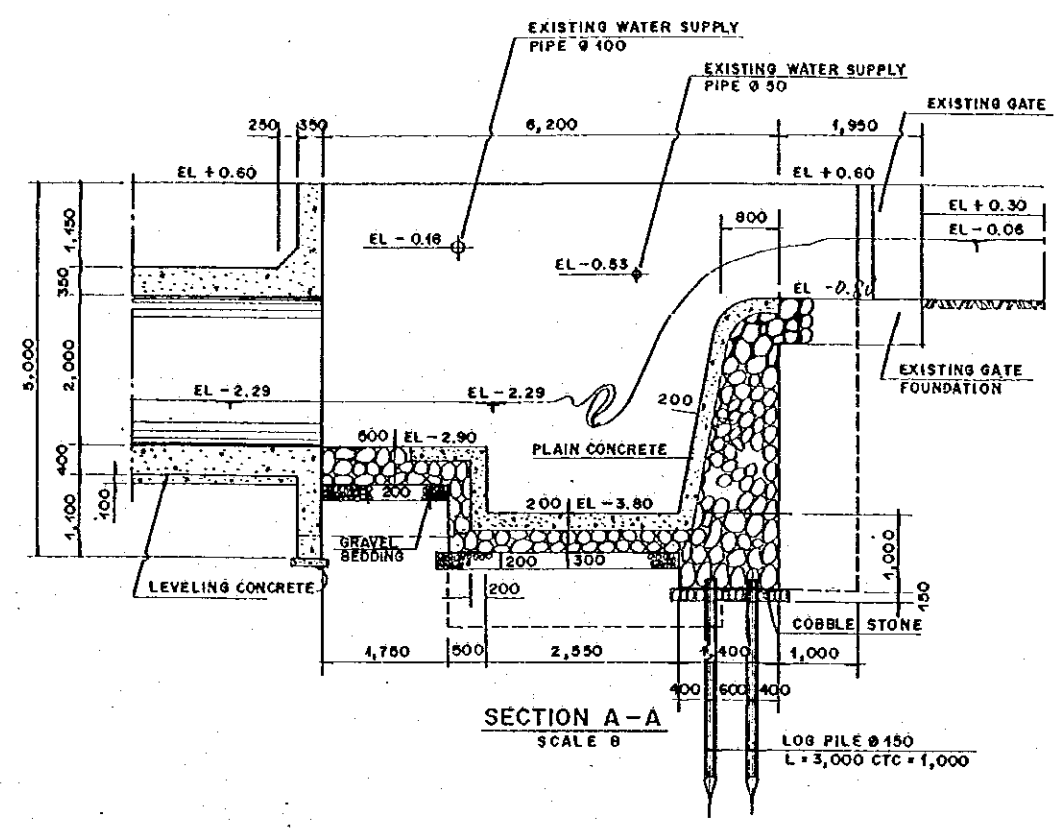
DATE: CONTRACT NO.

DESIGNED: CHECKED: DATE:

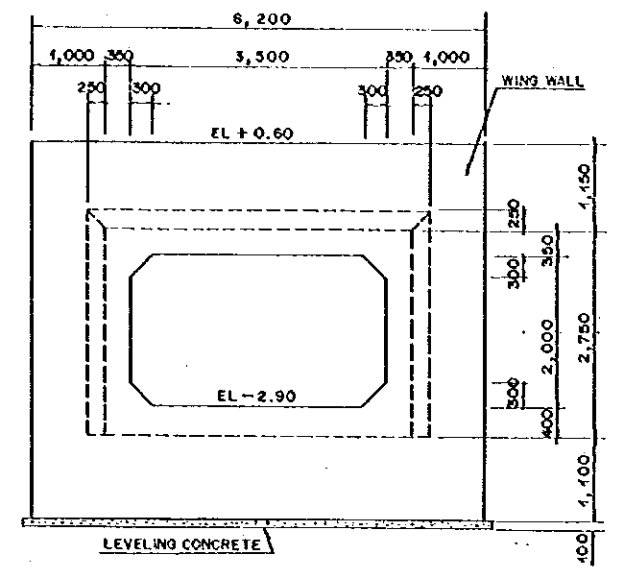
APPROVED: CHIEF OF PLANNING AND DESIGN PROJECT MANAGER



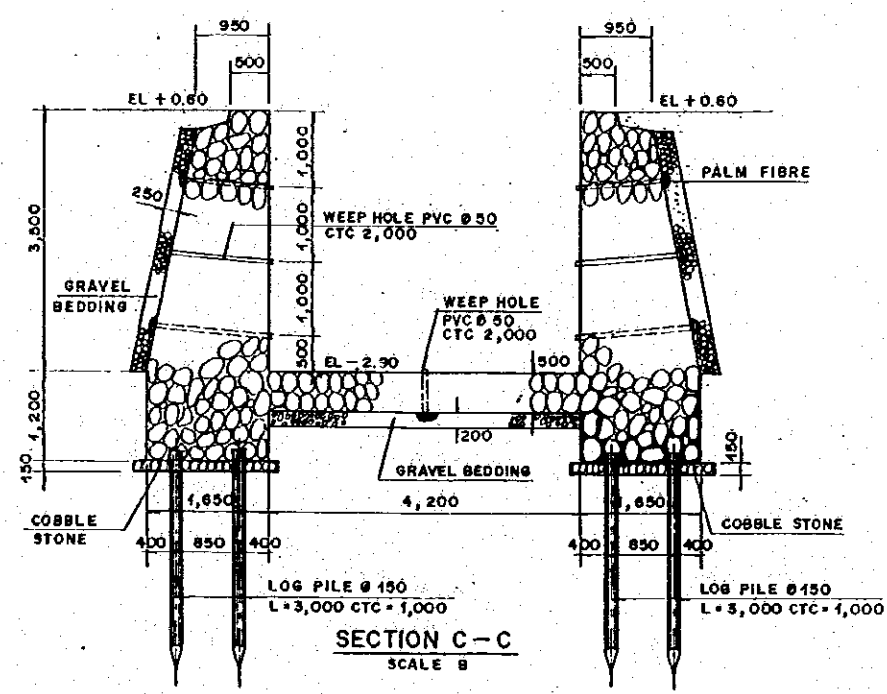
PLAN
SCALE A



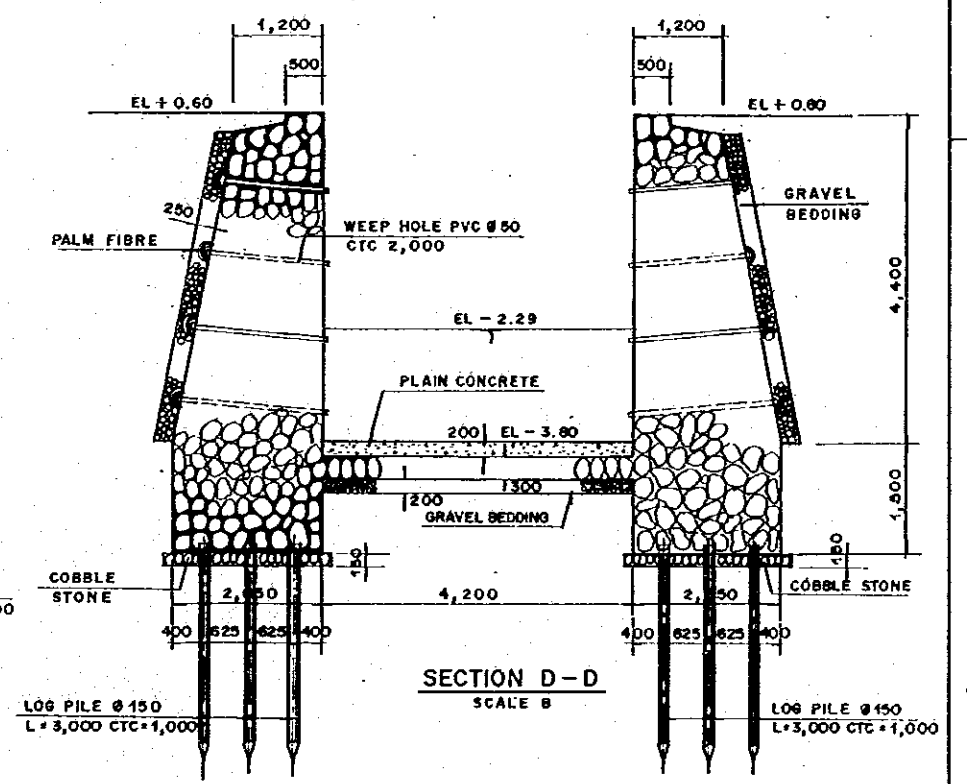
SECTION A-A
SCALE B



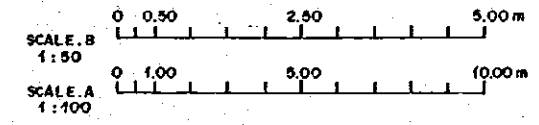
SECTION B-B
SCALE B



SECTION C-C
SCALE B

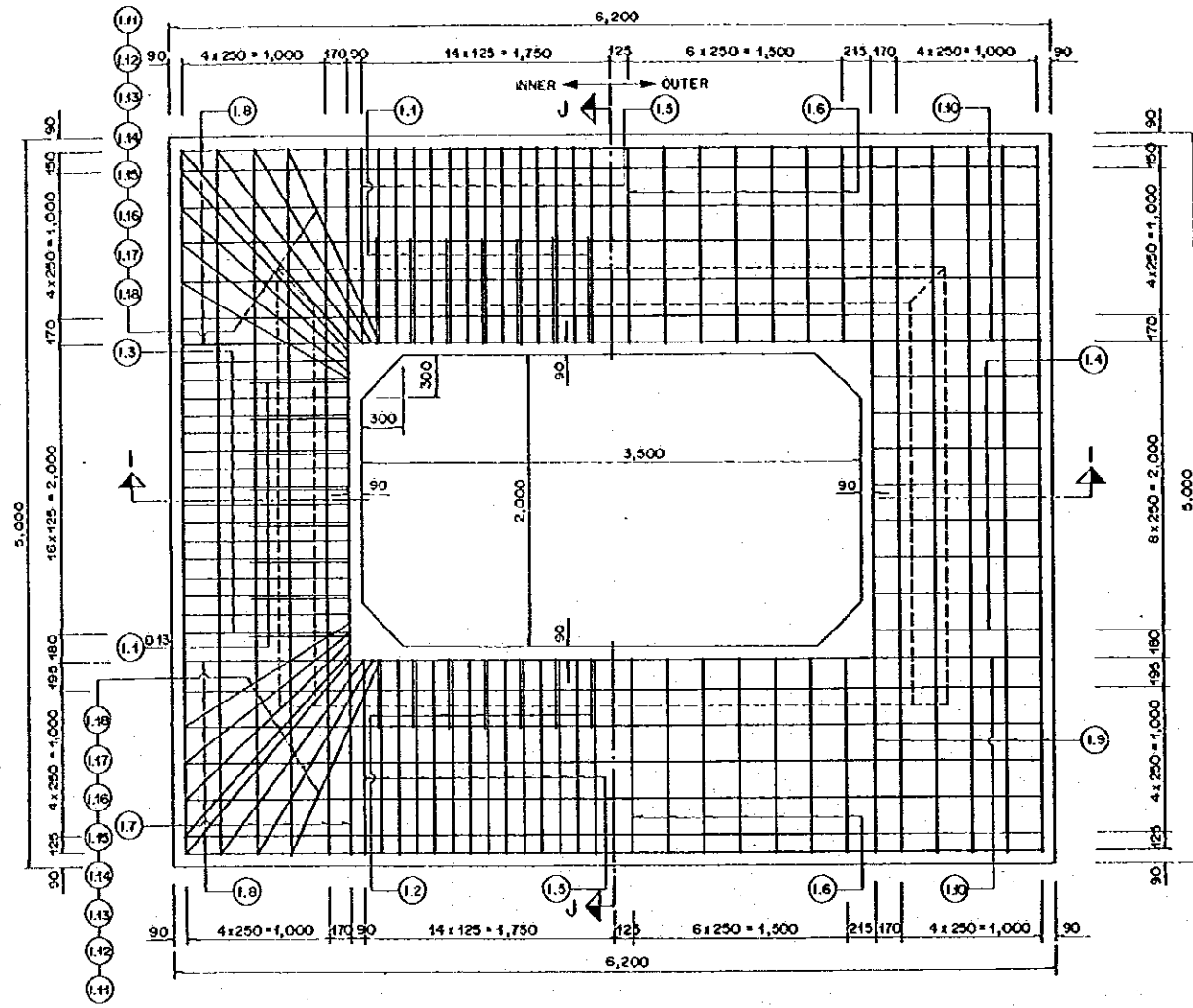


SECTION D-D
SCALE B

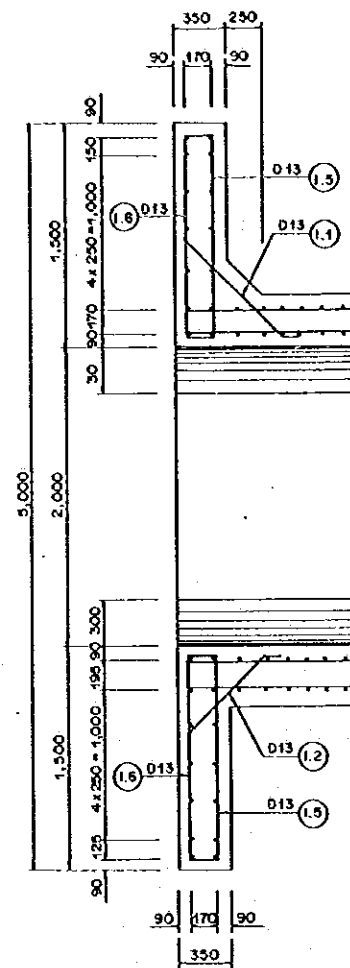


NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

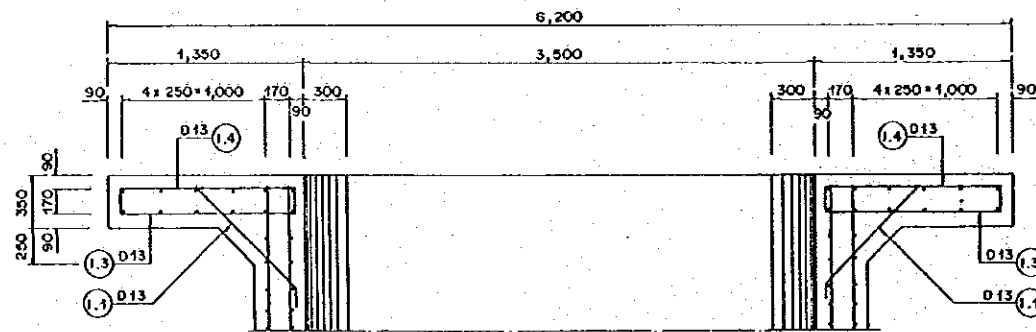
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF URBAN SETTLEMENT		PROVINCE CENTRAL JAWA
JATIMULYUWA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN BOX CULVERT INLET STRUCTURE PLAN AND SECTIONS (1/2)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SURABAYA IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) CONSULTANTS FOR MATERIALS AND PACIFIC CONSULTANTS INTERNATIONAL AND PACO INTERNATIONAL INC.		DISTRICT SURABAYA CITY
DRAWING NO. U-P2-A-81-5 SHEET NO. 47		DATE (CONTRACT NO.)
CHECKED <i>[Signature]</i>	DESIGNED <i>[Signature]</i>	DATE (CONTRACT NO.)
CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		



REINFORCING BAR ARRANGEMENT OF WING WALL



SECTION J - J



SECTION I - I

BAR BENDING SCHEDULE

TYPE	SHAPE	DIA	NUMBER	LENGTH (mm)	L1 (mm)	L2 (mm)	L3 (mm)	H (mm)
I. 1	3	13	30	1,180	100	977	100	693
I. 2	3	13	14	830	100	626	100	443
I. 3	2	13	32	1,730	100	170	1,183	
I. 4	1	13	16	1,190	1,183			
I. 5	2	13	56	1,880	100	170	1,333	
I. 6	1	13	28	1,340	1,333			
I. 7	2	13	12	5,360	100	170	4,820	
I. 8	2	13	14	6,540	100	144	6,046	
I. 9	1	13	12	4,850	4,846			
I. 10	1	13	14	6,050	6,046			
I. 11	2	13	4	1,950	100	196	1,357	
I. 12	2	13	4	2,050	100	196	1,461	
I. 13	2	13	4	2,180	100	196	1,582	
I. 14	2	13	4	2,310	100	196	1,716	
I. 15	2	13	4	2,360	100	196	1,764	
I. 16	2	13	4	2,280	100	196	1,662	
I. 17	2	13	4	2,150	100	196	1,555	
I. 18	2	13	4	2,060	100	196	1,465	

BAR WEIGHT

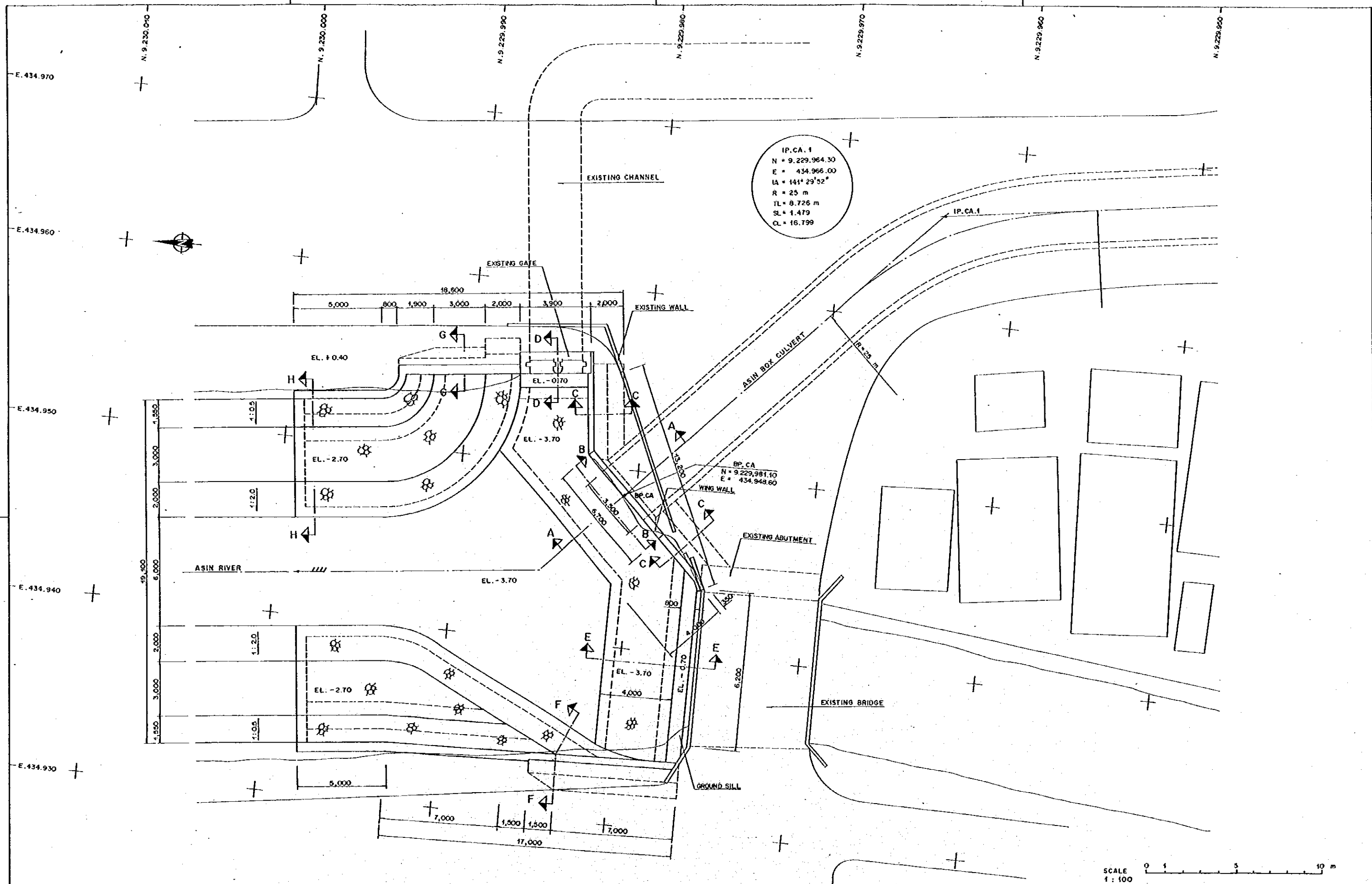
TYPE	DIA	LENGTH (mm)	NUMBER	WEIGHT PER M (kg/m)	WEIGHT PER BAR (kg)	WEIGHT (kg)	SHAPE
I. 1	13	1,180	30	1.040	1.227	36.816	3
I. 2	13	830	14	1.040	0.863	12.085	3
I. 3	13	1,730	32	1.040	1.799	57.574	2
I. 4	13	1,190	16	1.040	1.238	19.802	1
I. 5	13	1,880	56	1.040	1.955	109.491	2
I. 6	13	1,340	28	1.040	1.394	39.021	1
I. 7	13	5,360	12	1.040	5.574	66.893	2
I. 8	13	6,540	14	1.040	6.802	95.228	2
I. 9	13	4,850	12	1.040	5.044	60.528	1
I. 10	13	6,050	14	1.040	6.292	88.088	1
I. 11	13	1,950	4	1.040	2.028	8.112	2
I. 12	13	2,050	4	1.040	2.132	8.528	2
I. 13	13	2,180	4	1.040	2.267	9.069	2
I. 14	13	2,310	4	1.040	2.402	9.610	2
I. 15	13	2,360	4	1.040	2.454	9.818	2
I. 16	13	2,280	4	1.040	2.350	9.402	2
I. 17	13	2,150	4	1.040	2.236	8.944	2
I. 18	13	2,060	4	1.040	2.142	8.570	2

BAR BENDING DETAIL

DIA	a	b	l	R	OVERLAP	
					L	WEIGHT (kg)
D13	66	156	222	42	455	0.473

SCALE 1 : 25

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT JATUNGGRUH FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN BOX CULVERT INLET STRUCTURE REINFORCING BAR ARRANGEMENT OF WING WALL (2/2)				PROVINCE CENTRAL JAWA PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY DRAWING NO. U - P2 - BK - 6 SHEET NO. 48 DATE CONTRACT NO.	
JAPAN INTERNATIONAL COOPERATIVE AGENCY (JICA) AND ASSOCIATION FOR SOUTHEAST ASIAN COOPERATION (ASEAN)				OBSERVED CHECKED PROJECT MANAGER	
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED



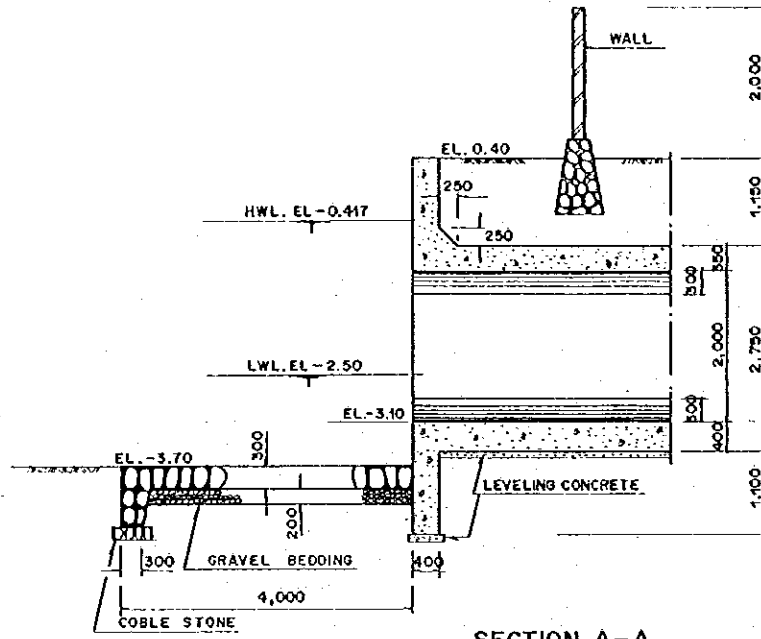
SCALE
1 : 100

NO.	DATE	REVISIONS	GRADUATED	DESIGNED	APPROVED

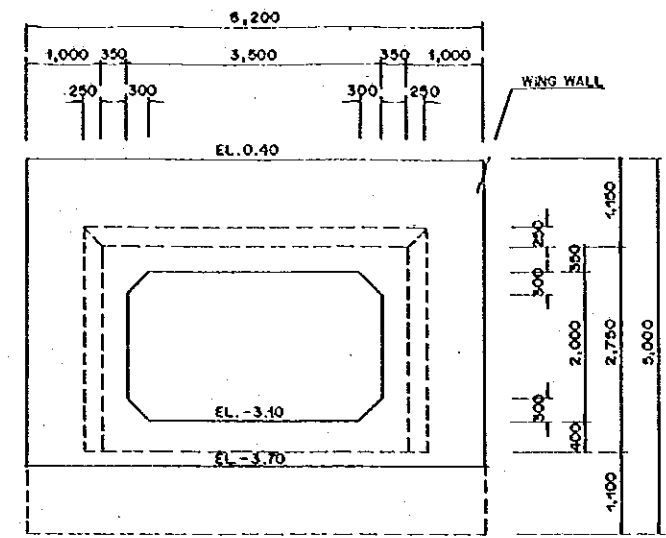
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF URBAN SETTLEMENT		PROVINCE CENTRAL JAWA
JATURNELUMAH FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN BOX CULVERT OUTLET STRUCTURE PLAN (1/3)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY CEI ENGINEERING CO. LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PAKO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
CHECKED CHECKED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		DRAWING NO. U-P2-A-84-7 SHEET NO. 49 DATE CONTRACT NO.

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E. 434.960
E. 434.950
E. 434.940
E. 434.930
E. 434.920

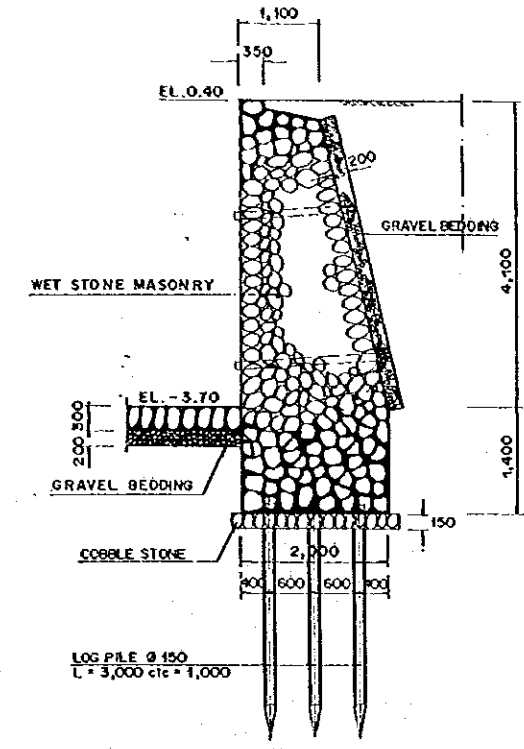
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N. 9.229.980
N. 9.229.970
N. 9.229.960
N. 9.229.950



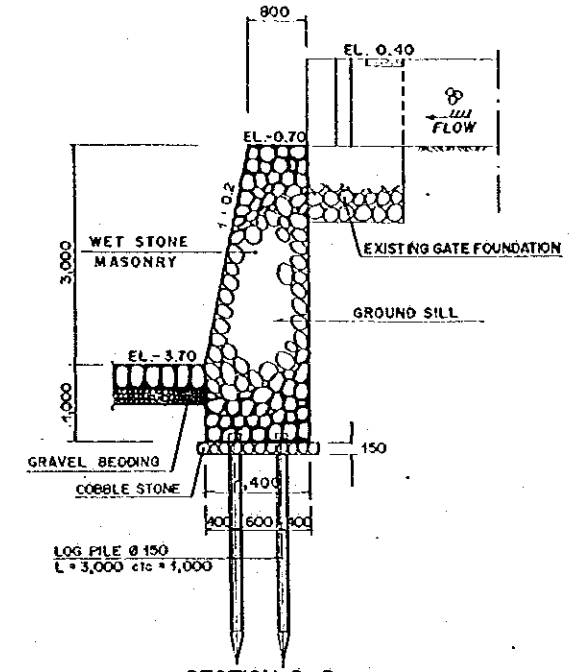
SECTION A-A
SCALE A



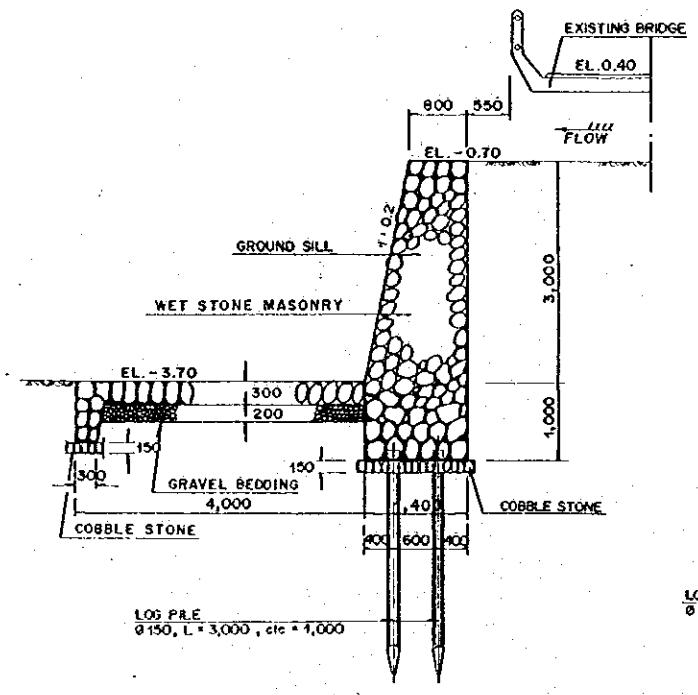
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SCALE A



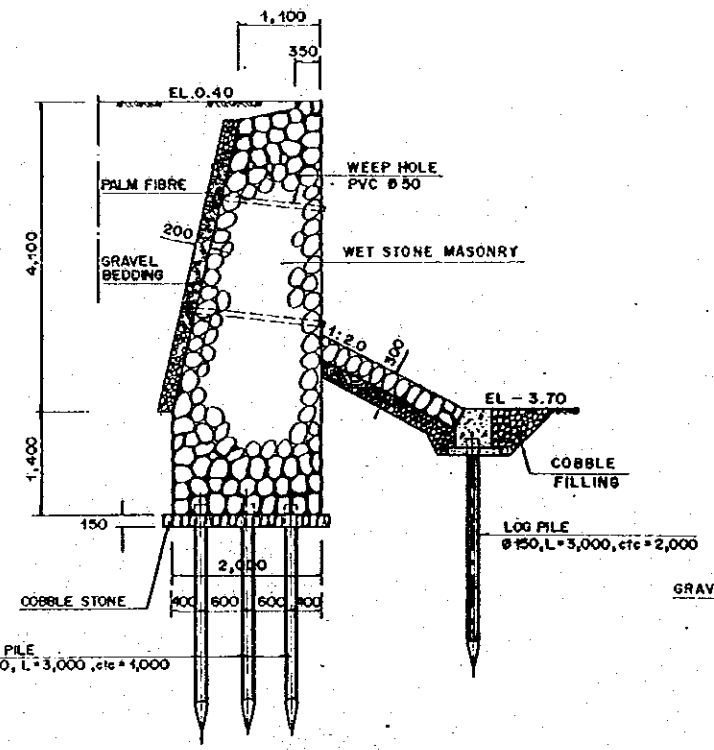
SECTION C-C
SCALE A



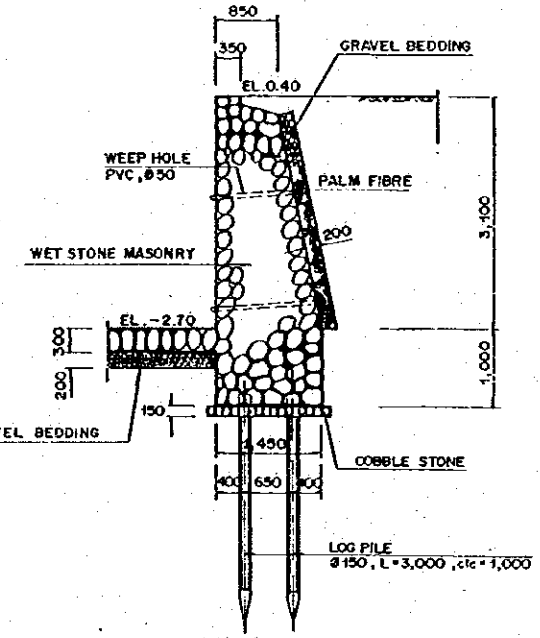
SECTION D-D
SCALE A



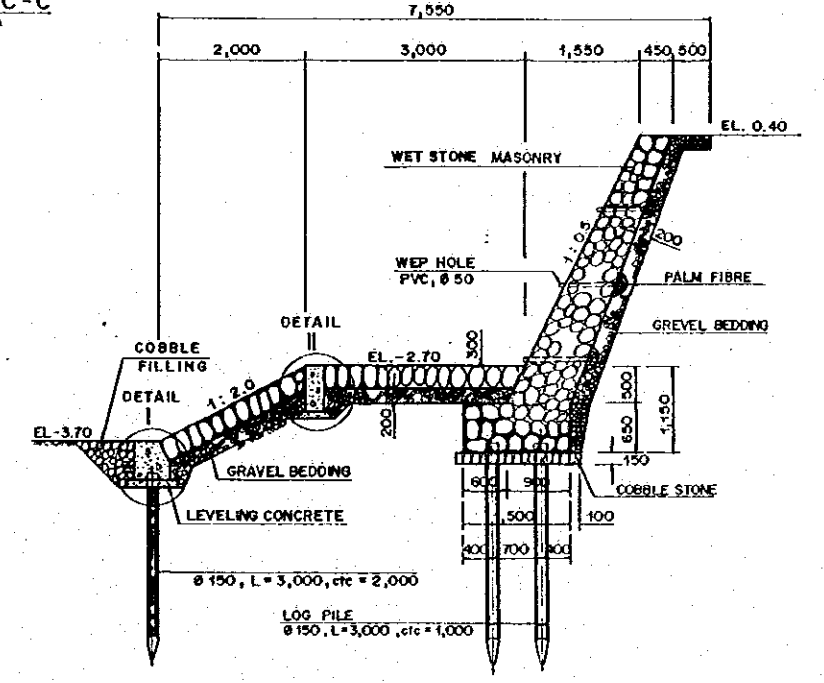
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SCALE A



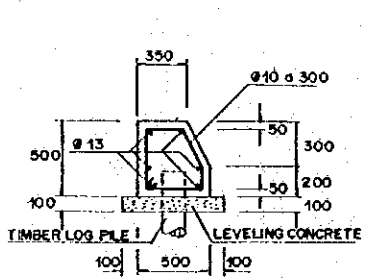
SECTION F-F
SCALE A



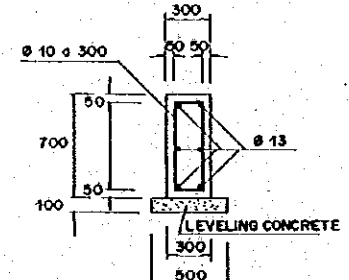
SECTION G-G
SCALE A



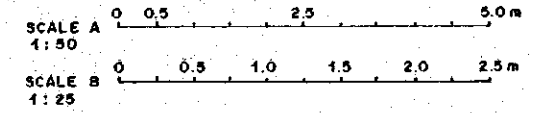
SECTION H-H
SCALE A



DETAIL I
SCALE B

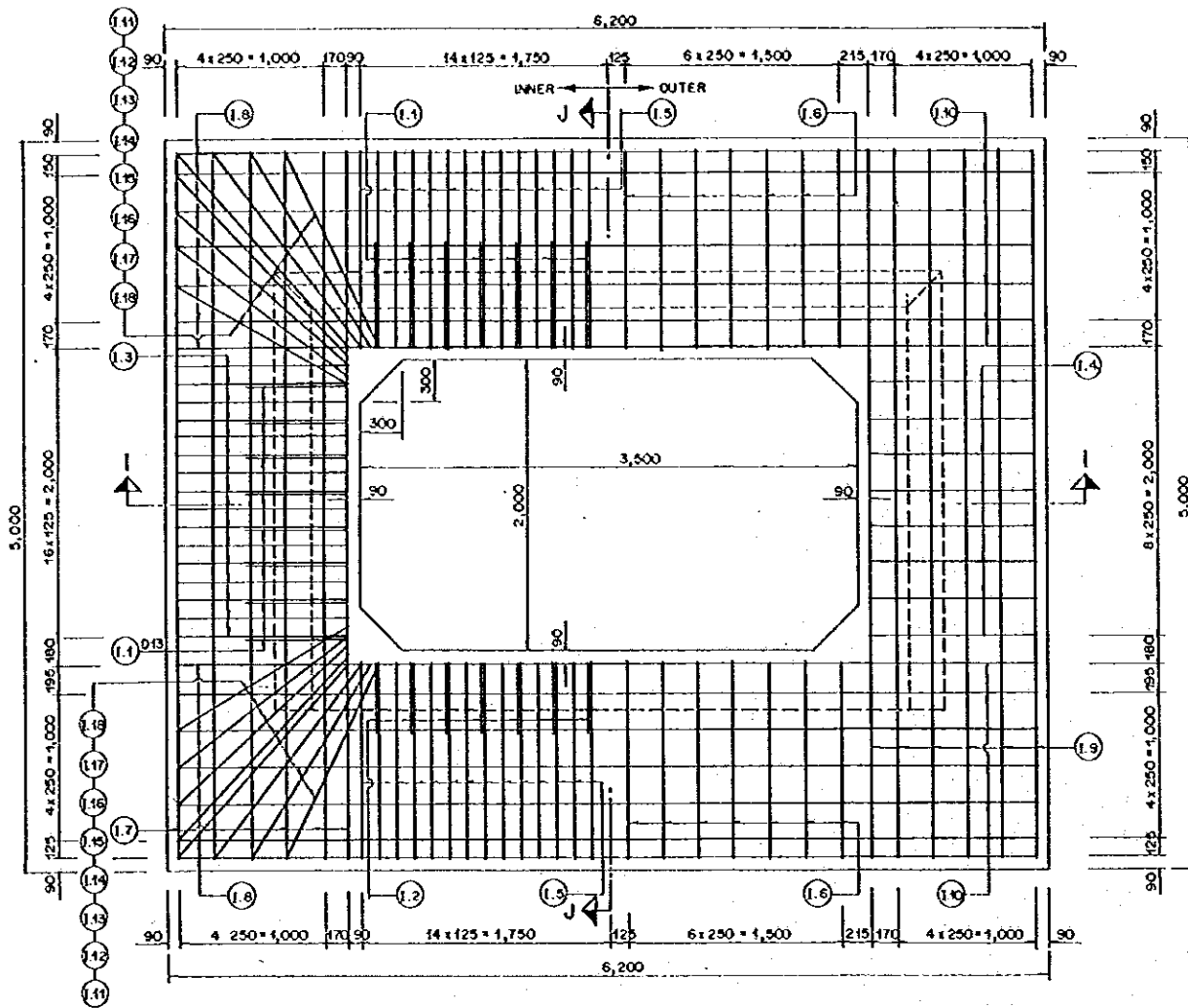


DETAIL II
SCALE B

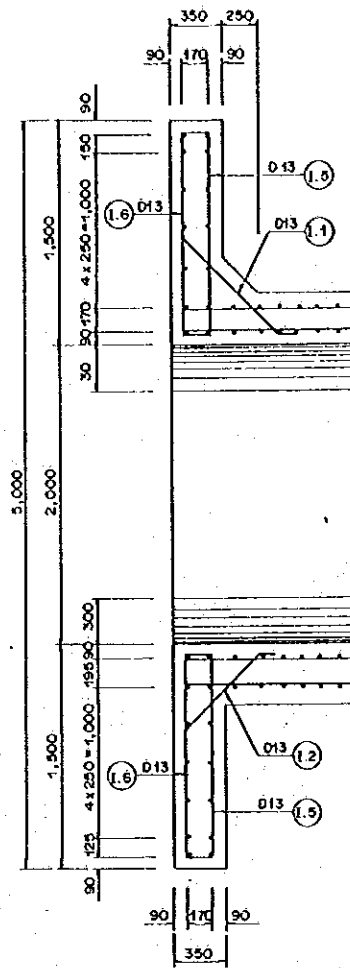


NO.	DATE	REVISION	ORIGINATED	DESIGNED	APPROVED

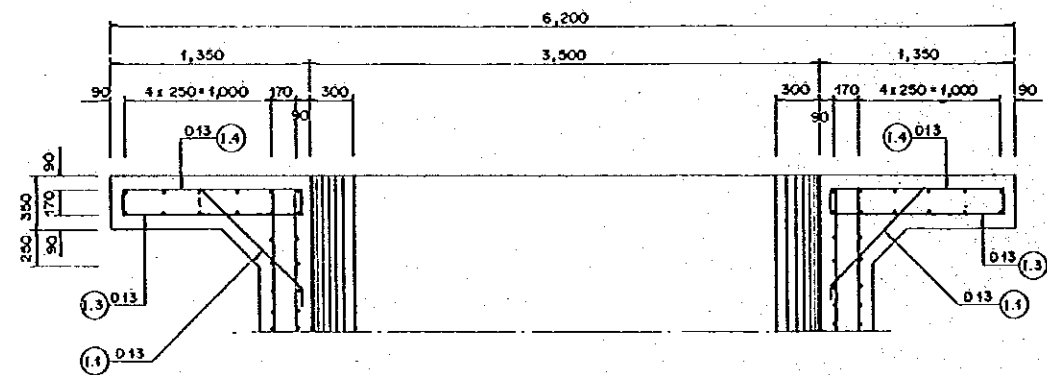
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENTS		PROVINCE CENTRAL JAVA
RATUNBELUNA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN BOX CULVERT OUTLET STRUCTURE SECTIONS (2/5)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY
LUNAR INTERNATIONAL COOPERATION AGENCY C/O SEMARANG CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PAKO INTERNATIONAL PRC	DRAWING NO. U-P2-A-81-8 SHEET NO. 50	DATE CONTRACT NO.
CHECKED DESIGNED APPROVED	PROJECT MANAGER	DATE



REINFORCING BAR ARRANGEMENT OF WING WALL



SECTION J - J



SECTION I - I

BAR BENDING SCHEDULE

TYPE	SHAPE	DIA	NUMBER	LENGTH (mm)	SHAPE 1			H (mm)
					L1 (mm)	L2 (mm)	L3 (mm)	
I. 1	3	13	30	1,180	100	977	100	693
I. 2	3	13	14	830	100	626	100	443
I. 3	2	13	32	1,730	100	170	1,183	
I. 4	1	13	16	1,190	1,183			
I. 5	2	13	56	1,880	100	170	1,333	
I. 6	1	13	28	1,340	1,333			
I. 7	2	13	12	5,360	100	170	4,820	
I. 8	2	13	14	6,540	100	144	6,046	
I. 9	1	13	12	4,850	4,846			
I. 10	1	13	14	6,050	6,046			
I. 11	2	13	4	1,950	100	196	1,357	
I. 12	2	13	4	2,050	100	196	1,461	
I. 13	2	13	4	2,180	100	196	1,582	
I. 14	2	13	4	2,310	100	196	1,716	
I. 15	2	13	4	2,360	100	196	1,764	
I. 16	2	13	4	2,260	100	196	1,662	
I. 17	2	13	4	2,150	100	196	1,555	
I. 18	2	13	4	2,060	100	196	1,465	

BAR WEIGHT

TYPE	DIA	LENGTH (mm)	NUMBER	WEIGHT PER M (kg/m)	WEIGHT PER BAR (kg)	WEIGHT (kg)	SHAPE
I. 1	13	1,180	30	1.040	1.227	36.816	3
I. 2	13	830	14	1.040	0.963	12.085	3
I. 3	13	1,730	32	1.040	1.799	57.574	2
I. 4	13	1,190	16	1.040	1.238	19.802	1
I. 5	13	1,880	56	1.040	1.955	109.491	2
I. 6	13	1,340	28	1.040	1.394	39.021	1
I. 7	13	5,360	12	1.040	5.574	66.893	2
I. 8	13	6,540	14	1.040	6.802	95.228	2
I. 9	13	4,850	12	1.040	5.044	60.528	1
I. 10	13	6,050	14	1.040	6.292	88.088	1
I. 11	13	1,950	4	1.040	2.028	8.112	2
I. 12	13	2,050	4	1.040	2.132	8.528	2
I. 13	13	2,180	4	1.040	2.267	9.069	2
I. 14	13	2,310	4	1.040	2.402	9.610	2
I. 15	13	2,360	4	1.040	2.454	9.818	2
I. 16	13	2,260	4	1.040	2.350	9.402	2
I. 17	13	2,150	4	1.040	2.236	8.944	2
I. 18	13	2,060	4	1.040	2.142	8.570	2

BAR BENDING DETAIL

DIA	a	b	c	d	OVERLAP	
					L	WEIGHTING
D13	66	156	222	42	455	0.473

SCALE 0 0.25 1.25 2.50 m
1 : 25

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA
 MINISTRY OF PUBLIC WORKS
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT
 SURABAYA FLOOD CONTROL PROJECT
 COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT,
 ASIN BOX CULVERT
 OUTLET STRUCTURE
 REINFORCING BAR ARRANGEMENT OF WING WALL (3/3)

PROVINCE: CENTRAL JAVA
 DISTRICT: SURABAYA CITY
 DRAWING NO. U-P2-A-8a-9
 SHEET NO. 51
 DATE: _____ CONTRACT NO. _____

APPROVED: _____
 PROJECT MANAGER