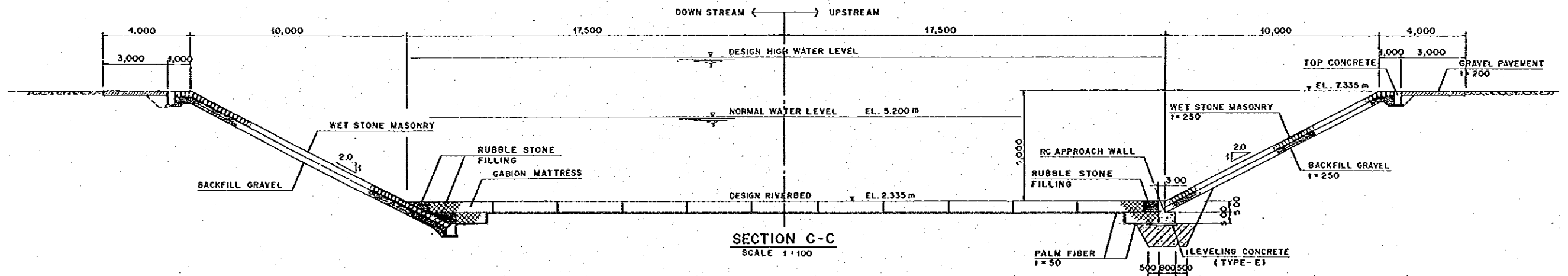
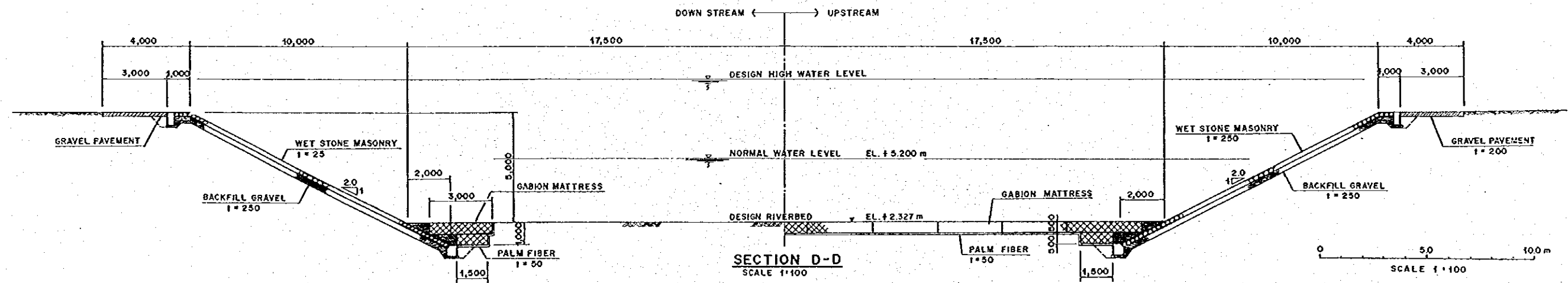


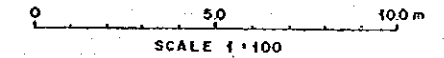
SECTION B-B  
SCALE 1:100



SECTION C-C  
SCALE 1:100



SECTION D-D  
SCALE 1:100



THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
BRATUNSELUNA FLOOD CONTROL PROJECT COMPONENT: WEST FLOODWAY / GARANG RIVER IMPROVEMENT GROUND SILL GROUND SILL WITH HEAD AT WF124 PROFILE AND CROSS SECTION (2/2)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY
JAPAN INTERNATIONAL COOPERATION AGENCY CII ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PAKO INTERNATIONAL INC.		DRAWING NO. W-PI-ES-51-4 SHEET NO. 148
DESIGNED: [Signature] CHECKED: [Signature] CHIEF OF PLANNING AND DESIGN		DATE: [Blank] CONTRACT NO.: [Blank]
APPROVED: [Signature] PROJECT MANAGER		

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED





BAR BENDING SCHEDULE

SHAPE

TYPE	SHAPE	ØA	NUMBER	LENGTH (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	R (mm)
W1	2	13	43	2,510	2,266	228				
W2	4	13	43	2,850	2,290	278	278			
W3	1	13	11	11,680	10,320	1,360				
W4	1	13	9	10,320	10,320					
W5	3	13	43	560	228	102	228			
W6	2	13	44	2,120	avg 1,890	228				
W7	1	13	6	5,130	5,128					
W7a	1	13	3	2,560	avg 2,564					
W7b	1	13	1	5,180	5,181					
W8	1	13	6	5,130	5,128					
W8a	1	13	3	2,560	avg 2,564					
W8b	1	13	1	5,180	5,181					
W9	3	13	22	560	228	102	228			
W10	2	13	42	1,380	avg 1,152	228				
W11	1	13	4	4,820	4,820					
W11a	1	13	3	2,410	avg 2,410					
W11b	1	13	1	4,870	4,872					
W12	1	13	4	4,820	4,820					
W12a	1	13	3	2,410	avg 2,410					
W12b	1	13	1	4,870	4,872					
S1	2	13	43	2,090	278	1,810				
S2	3	13	43	2,320	228	277	1,811			
S3	1	13	6	8,320	8,320					
S4	1	13	7	8,320	8,320					
S5	2	13	22	2,090	278	1,810				
S6	3	13	22	2,170	228	277	1,861			
S7	1	13	7	8,320	8,320					
S8	1	13	8	8,320	8,320					
S9	2	13	3	8,320	8,320					
S9a	3	13	3	8,320	8,320					
S10	2	13	21	8,320	8,320					
S11	3	13	21	8,320	8,320					
S12	1	13	5	8,320	8,320					
S13	1	13	5	8,320	8,320					
F1	1	13	10	8,320	8,320					
F2	1	13	10	8,320	8,320					

BAR WEIGHT

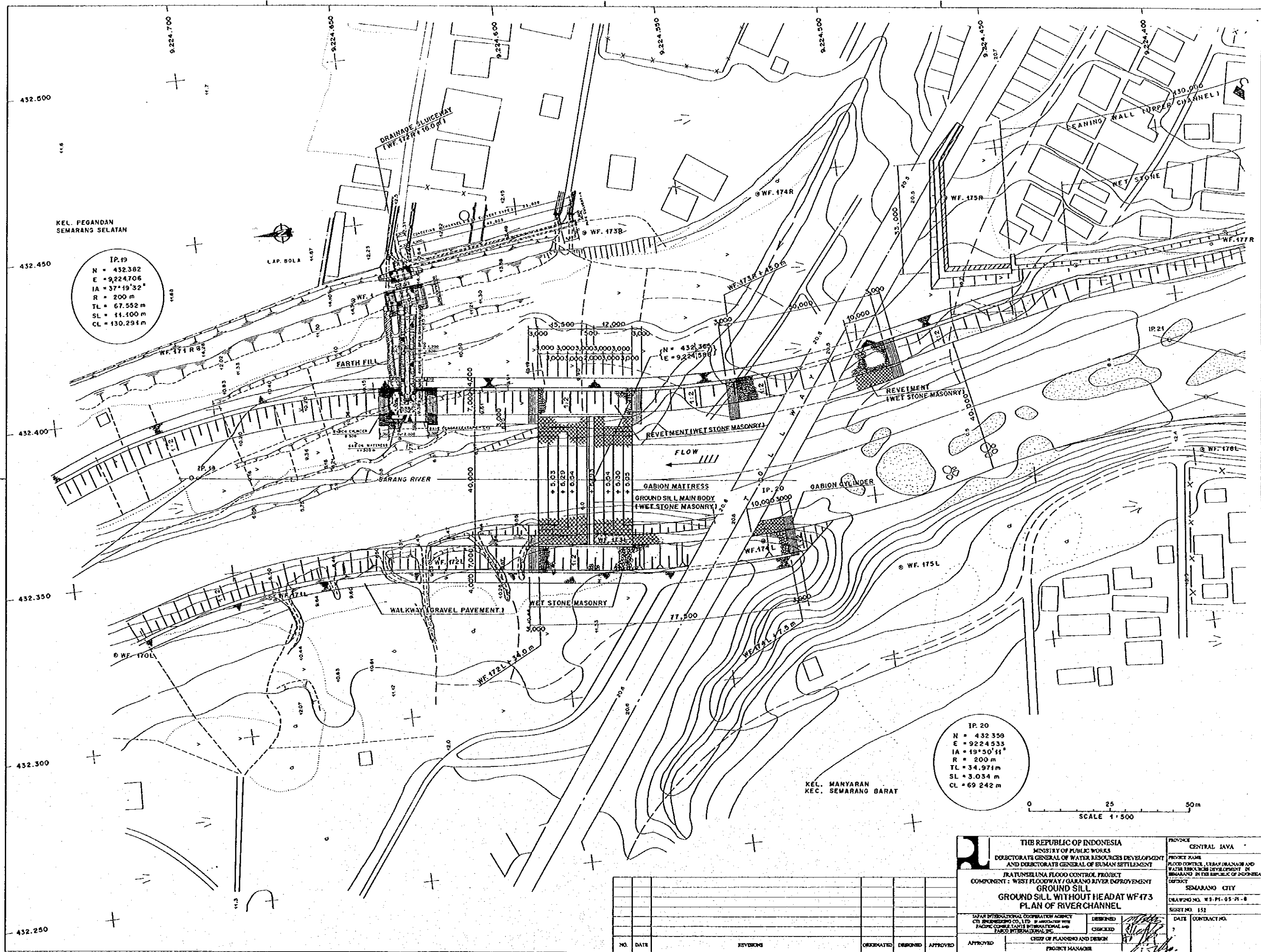
TYPE	ØA (mm)	LENGTH (mm)	NUMBER	WEIGHT PER "M" (kg)	WEIGHT PER "BAR" (kg)	WEIGHT (kg)	SHAPE
W1	13	2,510	43	104	261	11225	
W2	13	2,850	43	104	296	12745	
W3	13	11,680	11	104	1215	13362	
W4	13	10,320	9	104	1073	9660	
W5	13	560	43	104	058	2504	
W6	13	2,120	44	104	220	9701	
W7	13	5,130	6	104	534	3201	
W7a	13	2,560	3	104	265	799	
W7b	13	5,180	1	104	539	539	
W8	13	5,130	6	104	534	3201	
W8a	13	2,560	3	104	265	799	
W8b	13	5,180	1	104	539	539	
W9	13	560	22	104	058	1281	
W10	13	1,380	42	104	144	6028	
W11	13	4,820	4	104	501	2005	
W11a	13	2,410	3	104	251	752	
W11b	13	4,870	1	104	506	506	
W12	13	4,820	4	104	501	2005	
W12a	13	2,410	3	104	251	752	
W12b	13	4,870	1	104	506	506	
S1	13	2,090	43	104	217	9346	
S2	13	2,320	43	104	241	10375	
S3	13	8,320	6	104	865	5192	
S4	13	8,320	7	104	865	6057	
S5	13	2,090	22	156	326	7173	
S6	13	2,170	22	104	225	4965	
S7	13	8,320	7	104	865	6057	
S8	13	8,320	8	104	865	6922	
S9	13	8,320	3	104	865	2596	
S9a	13	8,320	3	104	865	2596	
S10	13	8,320	21	104	865	18171	
S11	13	8,320	21	104	865	18171	
S12	13	8,320	5	104	865	4326	
S13	13	8,320	5	104	865	4326	
F1	13	8,320	10	104	865	8653	
F2	13	8,320	10	104	865	8653	
TOTAL						206689	

BAR BENDING DETAIL

ØA	a	b	L1-a	R
Ø13	86	156	156	Ø2
Ø18	75	130	228	Ø4
Ø19	94	226	265	Ø5
Ø22	104	272	324	Ø6
Ø25	122	326	367	Ø8
Ø29	141	398	425	Ø10
Ø32	151	396	465	Ø6

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

<b>THE REPUBLIC OF INDONESIA</b> MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVIDER CENTRAL JAVA
JRATUNSELUNA FLOOD CONTROL PROJECT COMPONENT : WEST FLOODWAY / GARANG RIVER IMPROVEMENT GROUND SILL WITH HEAD AT WF124 LIST OF BAR ARRANGEMENT		PROJECT NAME FLOOD CONTROL, URMAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY
DRAWING NO. WG-P1-GS-Rs-7 SHEET NO. 151		DATE CONTRACT NO.
JAPAN INTERNATIONAL COOPERATION AGENCY CII ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL INC.		DESIGNED CHECKED DATE
CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		APPROVED



IP.19  
 N = 432.382  
 E = 9.224.706  
 IA = 37°19'32"  
 R = 200 m  
 TL = 67.552 m  
 SL = 41.100 m  
 CL = 130.294 m

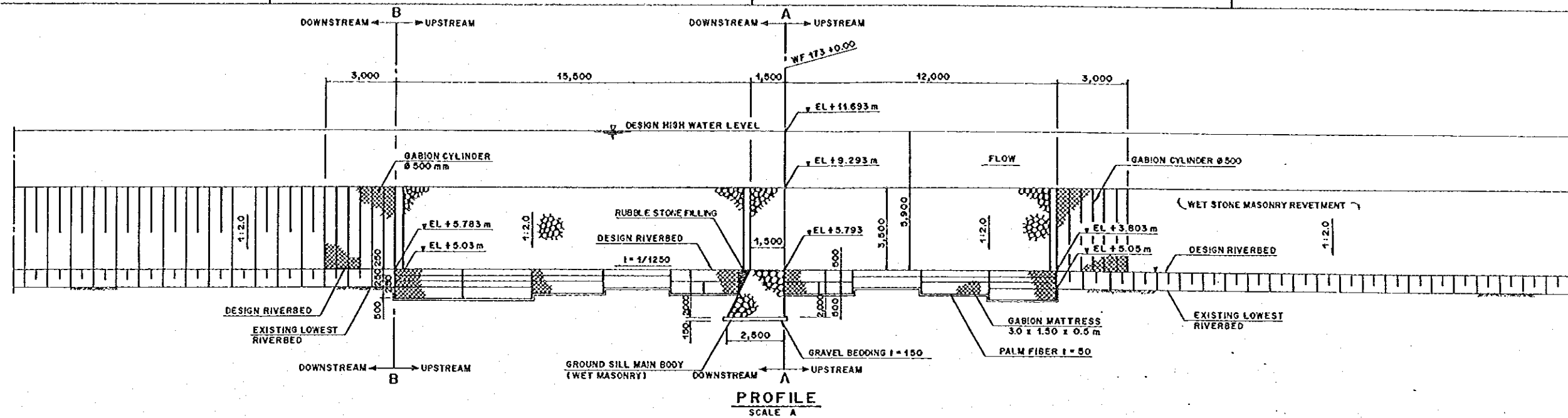
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 SL = 3.034 m  
 CL = 69.242 m

0 25 50 m  
 SCALE 1:500

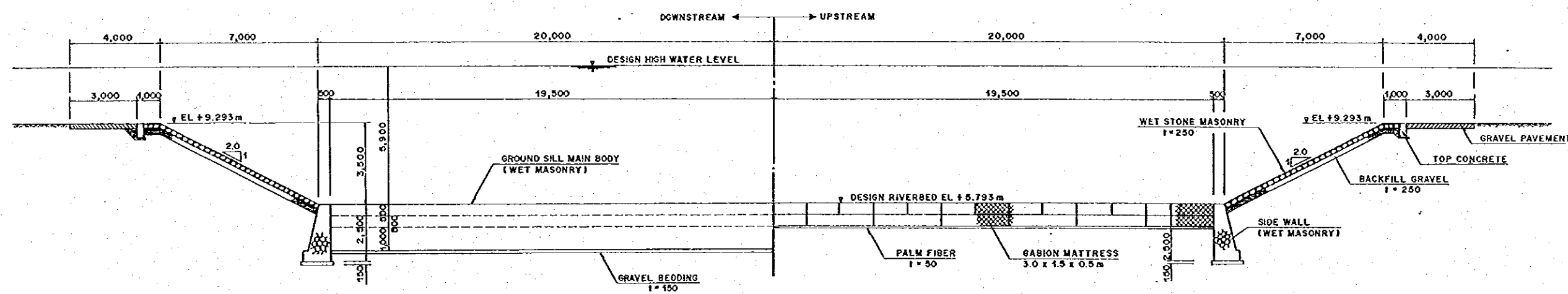
KEL. MANYARAN  
 KEC. SEMARANG BARAT

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA	
PRATUNNELUNA FLOOD CONTROL PROJECT COMPONENT : WEST FLOODWAY / GARANG RIVER IMPROVEMENT GROUND SILL WITHOUT HEADAT WF 173 PLAN OF RIVER CHANNEL		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA	
SAFARI INTERNATIONAL COOPERATION AGENCY C/O. ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND FARCO INTERNATIONAL		SEMARANG CITY DRAWING NO. W3-PI-05-PI-8 SHEET NO. 152	
DESIGNED	CHECKED	DATE	CONTRACT NO.
CROSS OF PLANNING AND DESIGN PROJECT MANAGER			

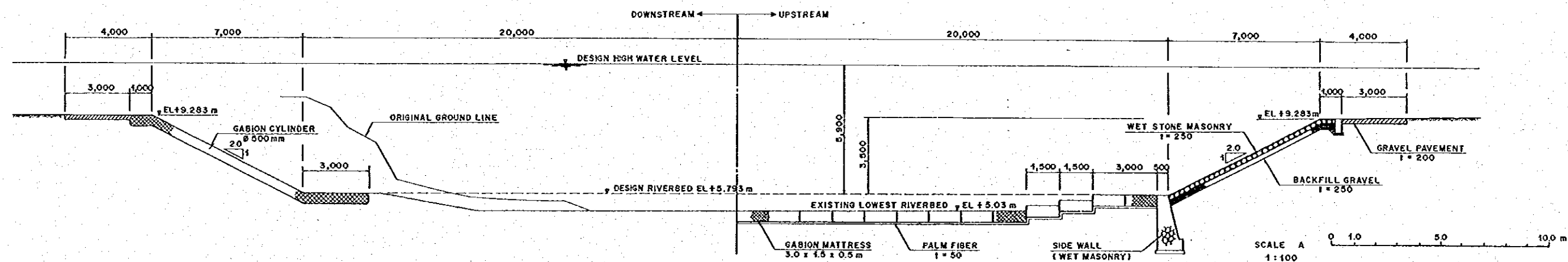
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED



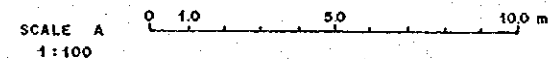
PROFILE  
SCALE A



SECTION A-A  
SCALE A



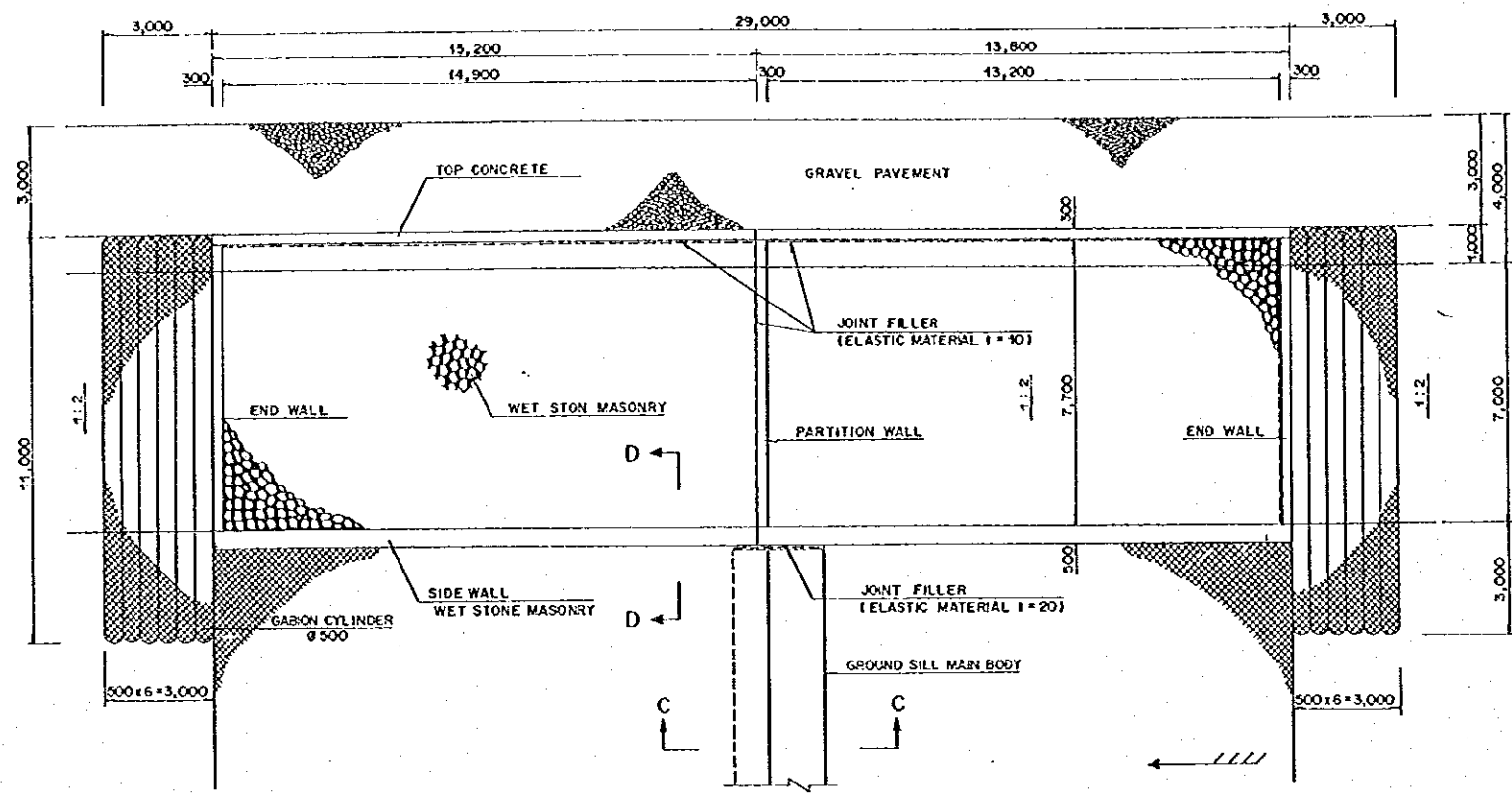
SECTION B-B  
SCALE A



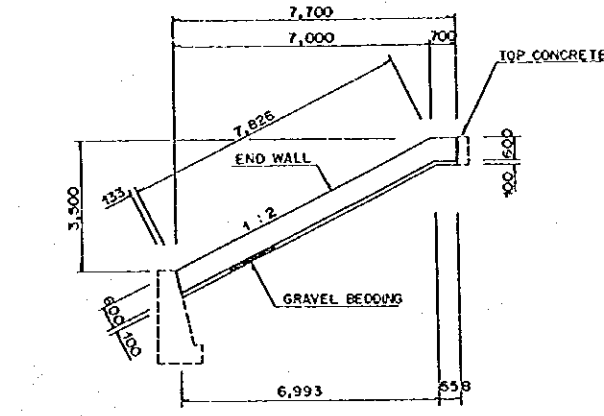
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
BRATUNGLANA FLOOD CONTROL PROJECT COMPONENT: WEST FLOODWAY / GARANG RIVER IMPROVEMENT GROUND SILL WITHOUT HEADAT WF173 PROFILE AND CROSS SECTION		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
SAJAN INTERNATIONAL COOPERATION COMPANY CIE ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PACIFIC INTERNATIONAL, INC.		DISTRICT SEMARANG CITY
CHECKED DESIGNED		DRAWING NO. WG-P4-05-51-B SHEET NO. 153
APPROVED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		DATE CONTRACT NO.

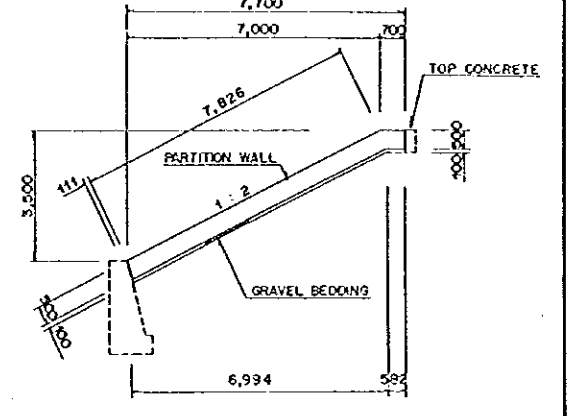




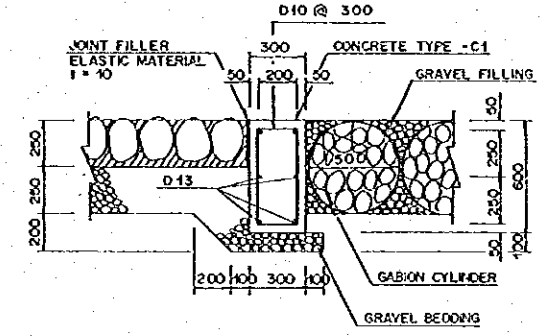
PLAN OF REVETMENT  
SCALE A



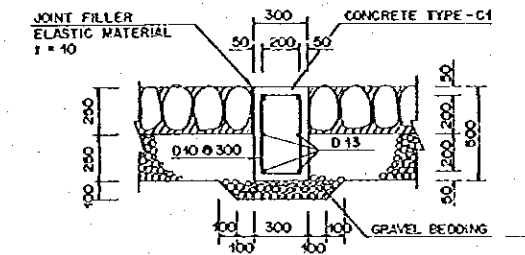
PROFILE OF END WALL  
SCALE A



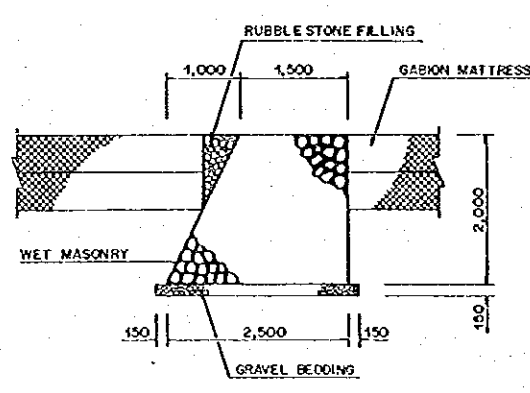
PROFILE OF PARTITION WALL  
SCALE A



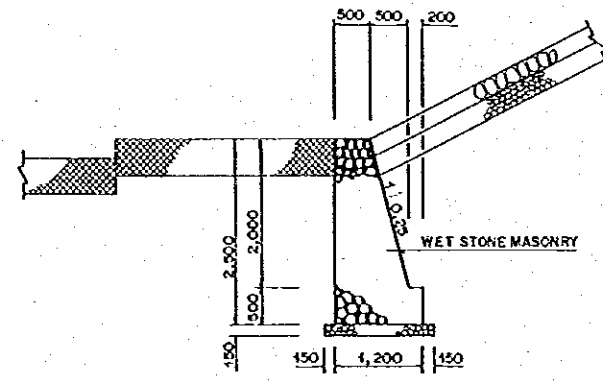
END WALL  
SCALE C



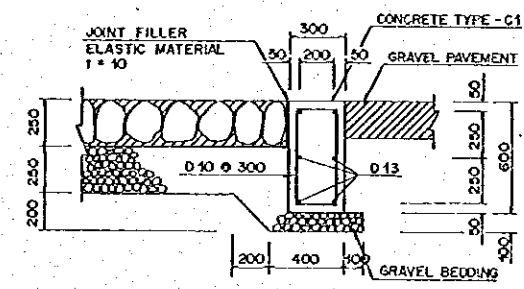
PARTITION WALL  
SCALE C



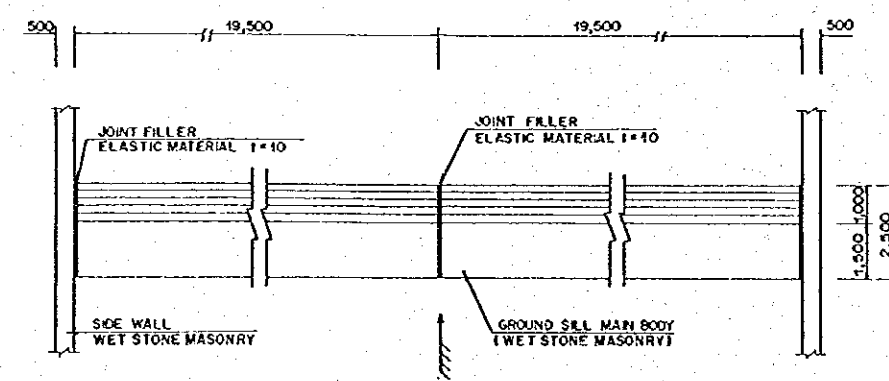
SECTION C - C  
SCALE B



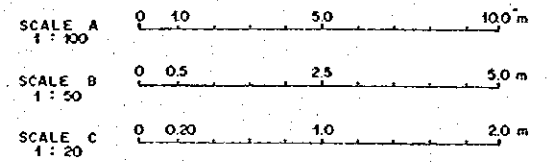
SECTION D - D  
SCALE B



TOP CONCRETE  
SCALE C

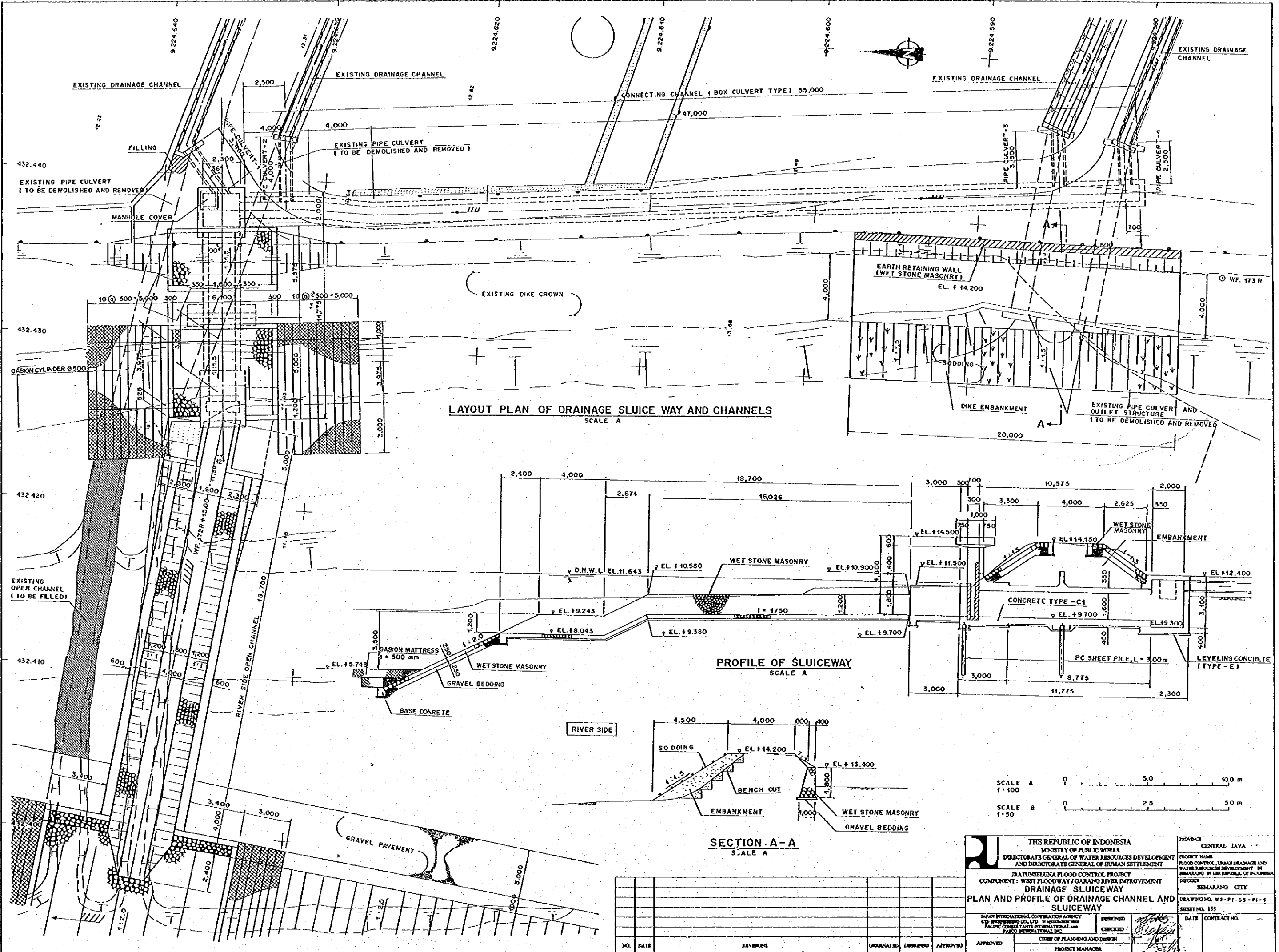


DETAIL OF JOINTING  
SCALE A



THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIREKTORAT JENDERAL PENGEMBANGAN DAN PERENCANAAN DAN DIREKTORAT JENDERAL PERENCANAAN DAN KEBANGSAHANSERUAN		PROVINSI CENTRAL JAWA
JATUNSELUNA FLOOD CONTROL PROJECT COMPONENT: WEST FLOODWAY / GARANG RIVER IMPROVEMENT GROUND SILL PLAN OF 'REVETMENT' AND PROFILE OF WALL		PROJEK RANG FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DEFISI SEMARANG CITY DRAWING NO. WG-PC-05-SI-10 SHEET NO. 154
JAPAN INTERNATIONAL COOPERATION AGENCY CEI ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND JAMES INTERNATIONAL INC.	DESIGNED CHECKED CURVED CURVED CURVED	DATE CONTRACT NO.
CURVED OF PLANNING AND DESIGN PROJECT MANAGER		

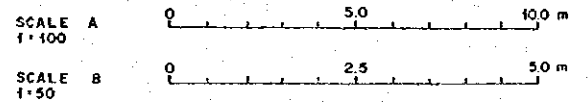
NO.	DATE	REVISION	ORGANIZED	DESIGNED	APPROVED	APPROVED



LAYOUT PLAN OF DRAINAGE SLUICWAY AND CHANNELS  
SCALE A

PROFILE OF SLUICWAY  
SCALE A

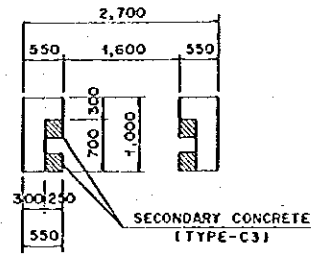
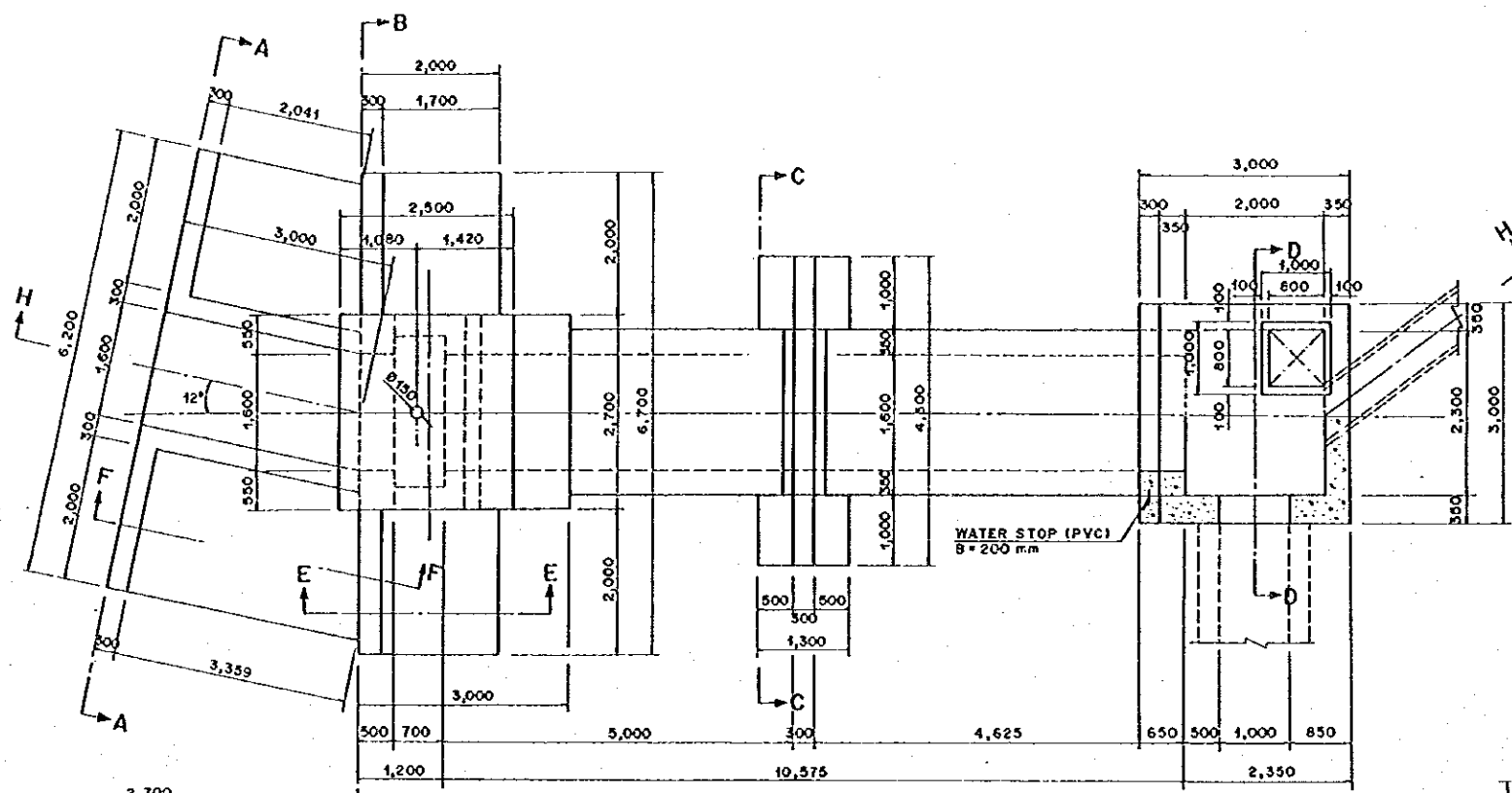
SECTION A-A  
SCALE A



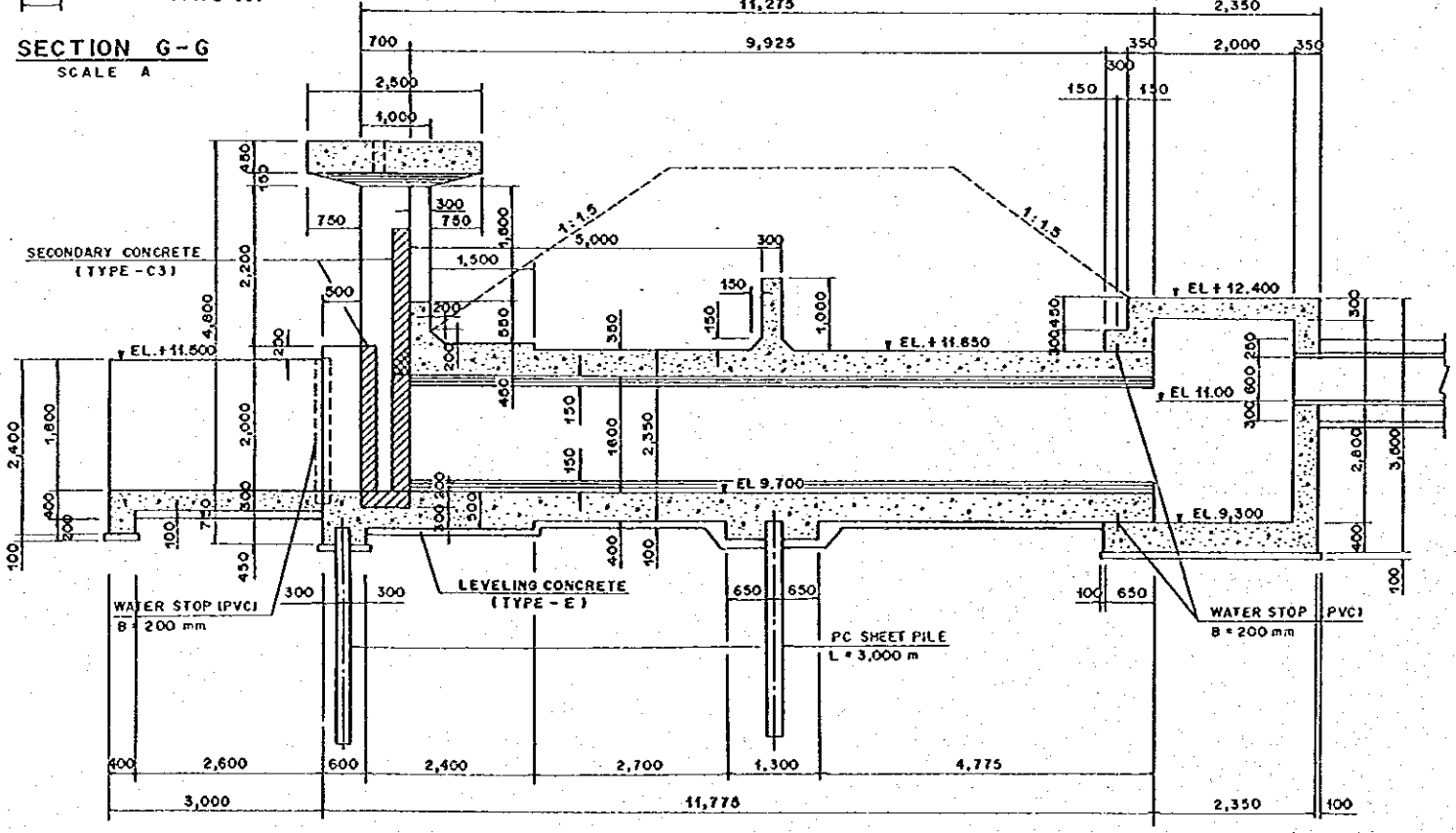
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
DRATUNSELUNA FLOOD CONTROL PROJECT COMPONENT: WEST FLOODWAY / GARANO RIVER IMPROVEMENT DRAINAGE SLUICWAY PLAN AND PROFILE OF DRAINAGE CHANNEL AND SLUICWAY		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY OCEAN ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL, INC. PACO ENGINEERING, INC.		CITY SEMARANG CITY
DESIGNED CHECKED DATE		DRAWING NO. W3-P1-03-P1-4 SHEET NO. 155
CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		CONTRACT NO.

NO.	DATE	REVISIONS	ORIGINATOR	DRAWN	APPROVED	APPROVED

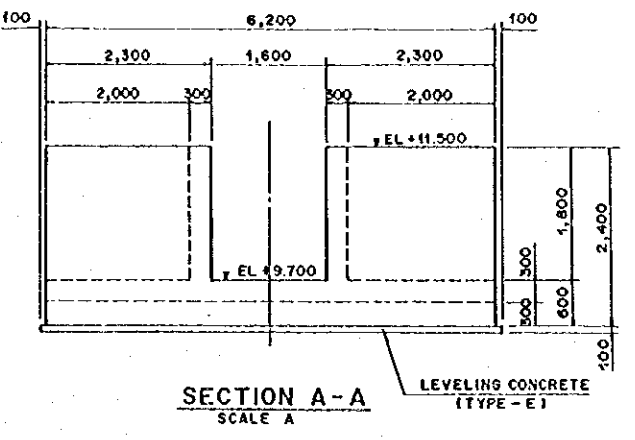




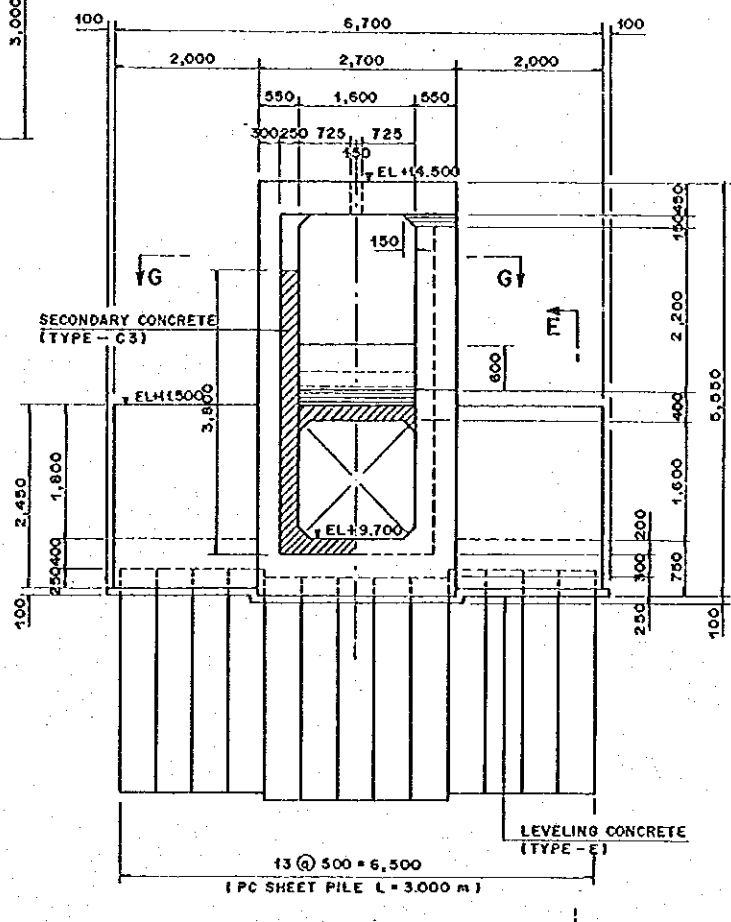
SECTION G-G SCALE A



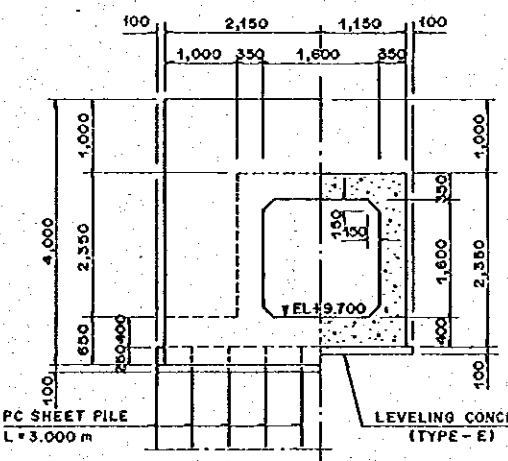
SECTION H-H SCALE A



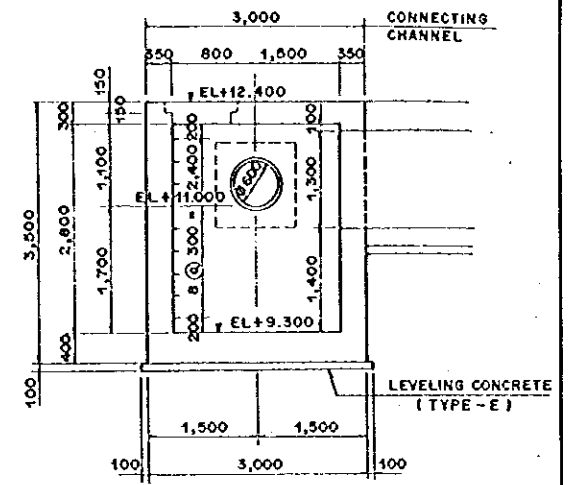
SECTION A-A SCALE A



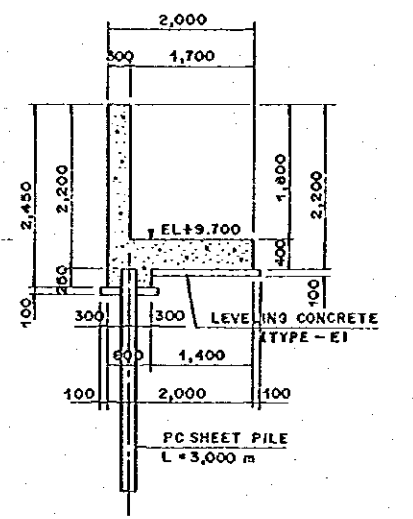
SECTION B-B SCALE A



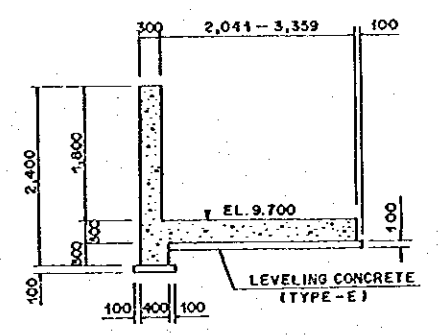
SECTION C-C SCALE A



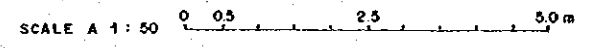
SECTION D-D SCALE A



SECTION E-E SCALE A



SECTION F-F 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 HUMAN SETTLEMENT

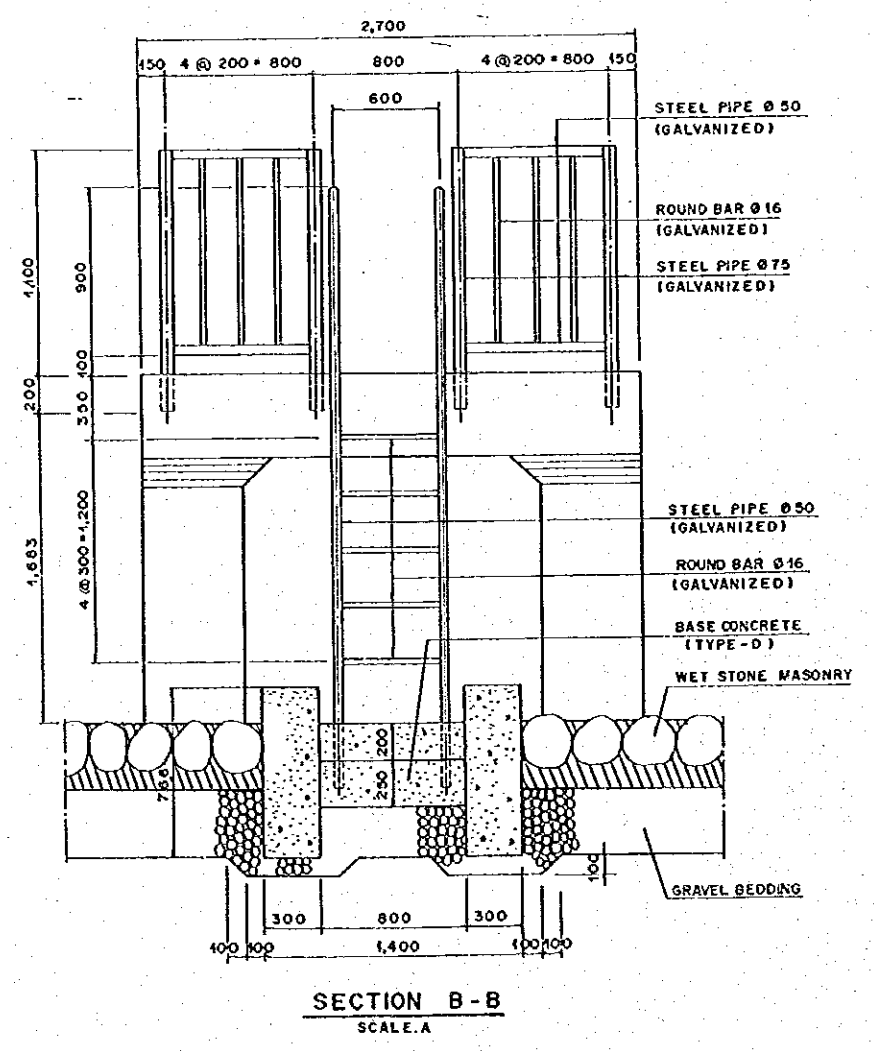
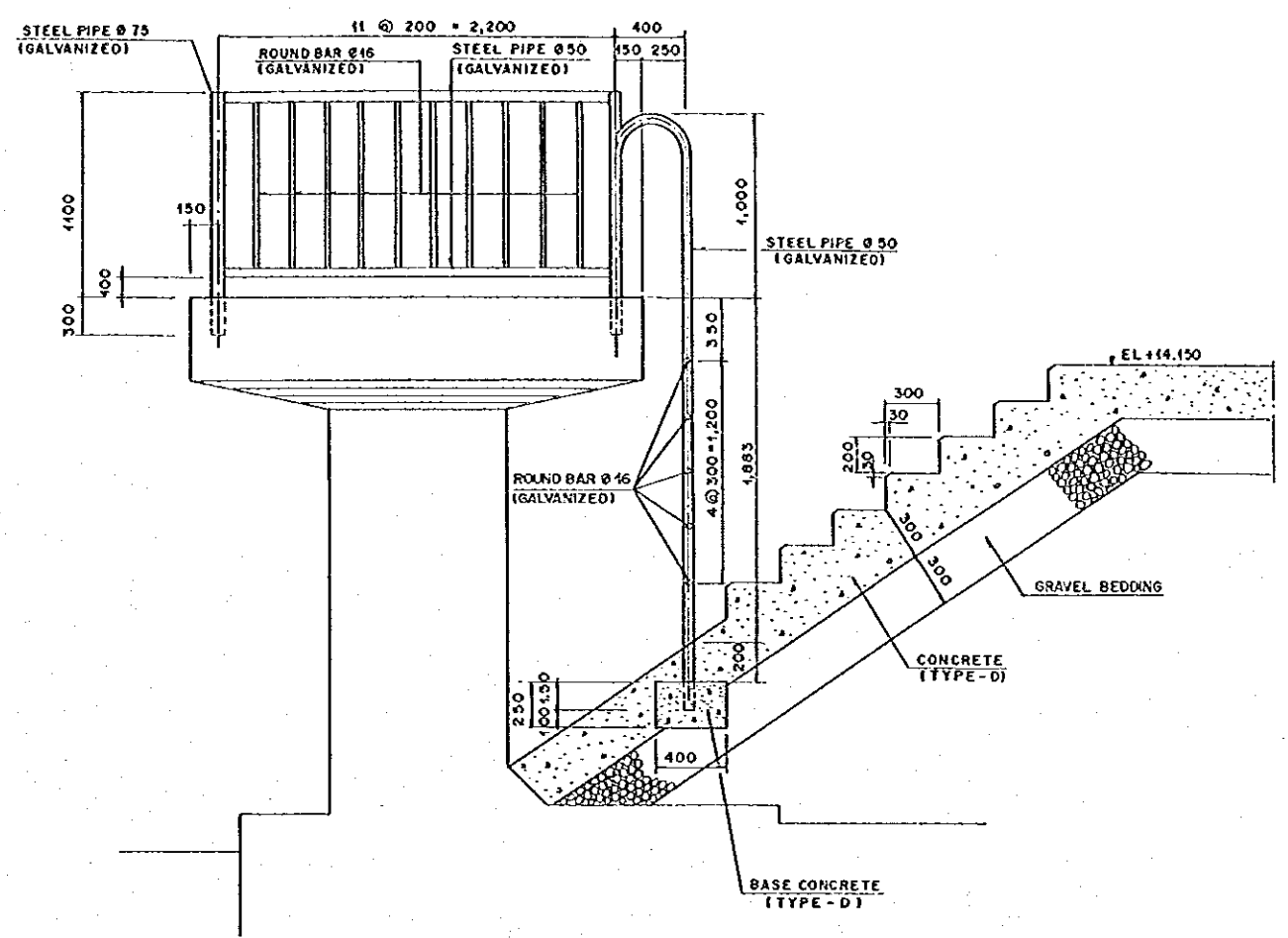
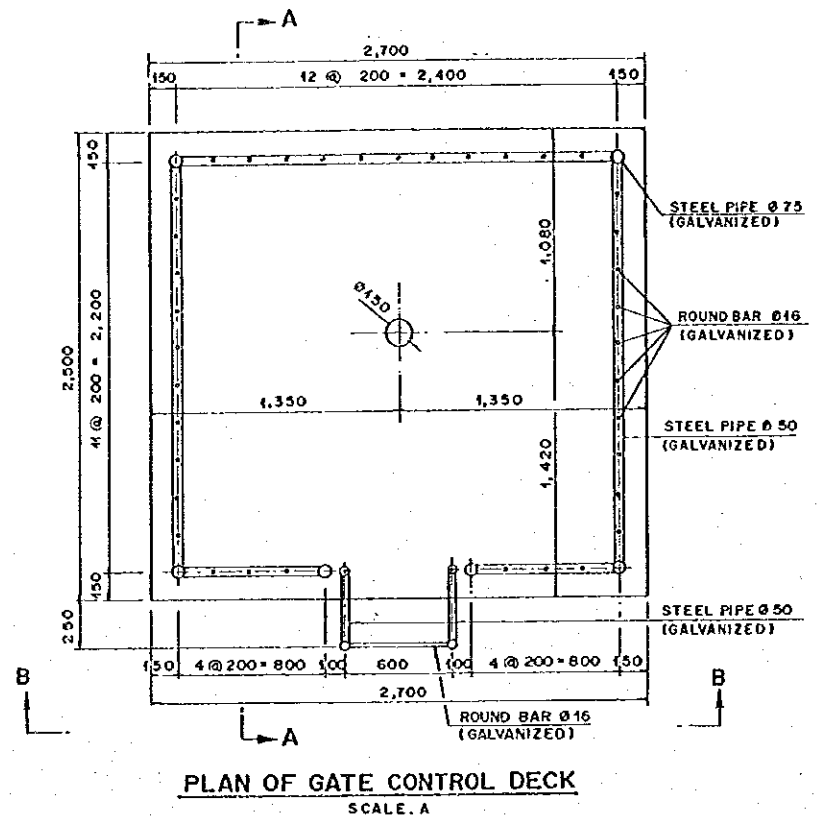
JRATUNSELUNA FLOOD CONTROL PROJECT  
 COMPONENT: WEST FLOODWAY / GARANO RIVER IMPROVEMENT  
 DRAINAGE SLUICeway  
 STRUCTURAL DETAILS OF BOX CULVERT  
 GATE PIER AND WALLS

PROVINCE: CENTRAL JAWA  
 PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER SUPPLY DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA  
 DISTRICT: SEMARANG CITY  
 DRAWING NO. W3-P4-D3-S1-2  
 SHEET NO. 156

JAPAN INTERNATIONAL COOPERATION AGENCY  
 CITY ENGINEERING CO., LTD. IN ASSOCIATION WITH  
 PACIFIC CONSULTANTS INTERNATIONAL AND  
 PARELO CONSULTING, INC.

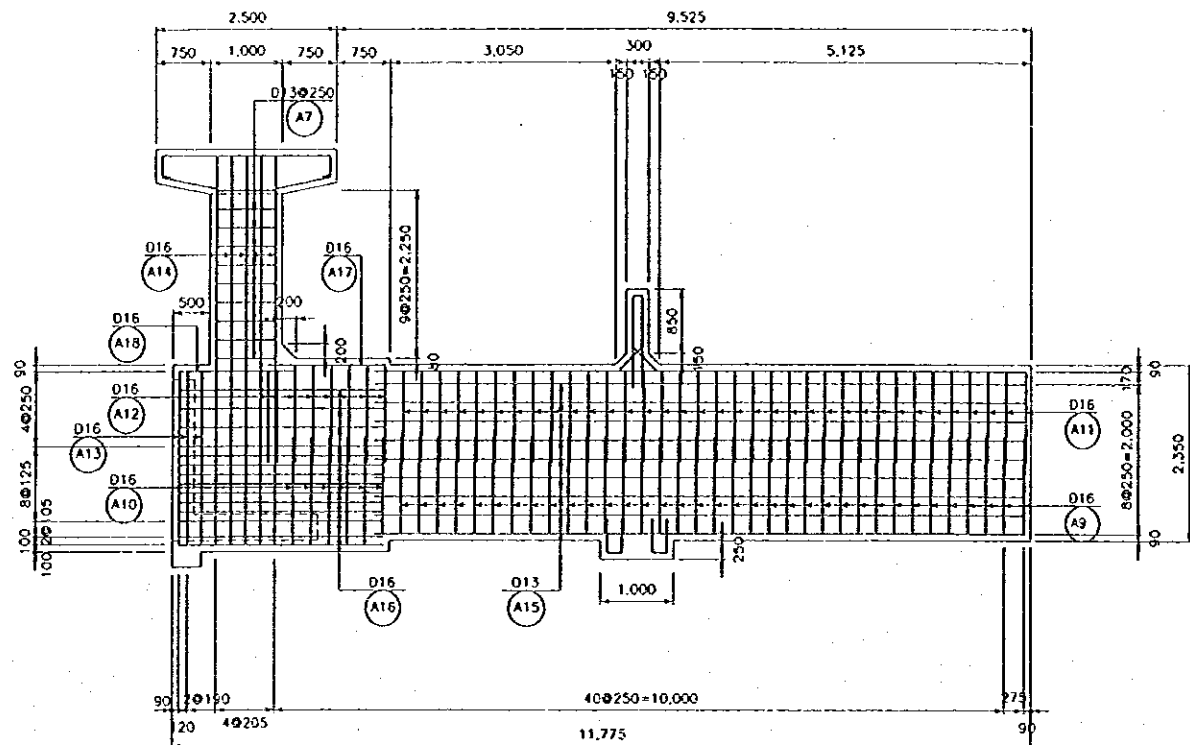
DESIGNED: [Signature]  
 CHECKED: [Signature]  
 DATE: [Date]  
 CONTRACT NO. [Number]

CHIEF OF PLANNING AND DESIGN  
 PROJECT MANAGER

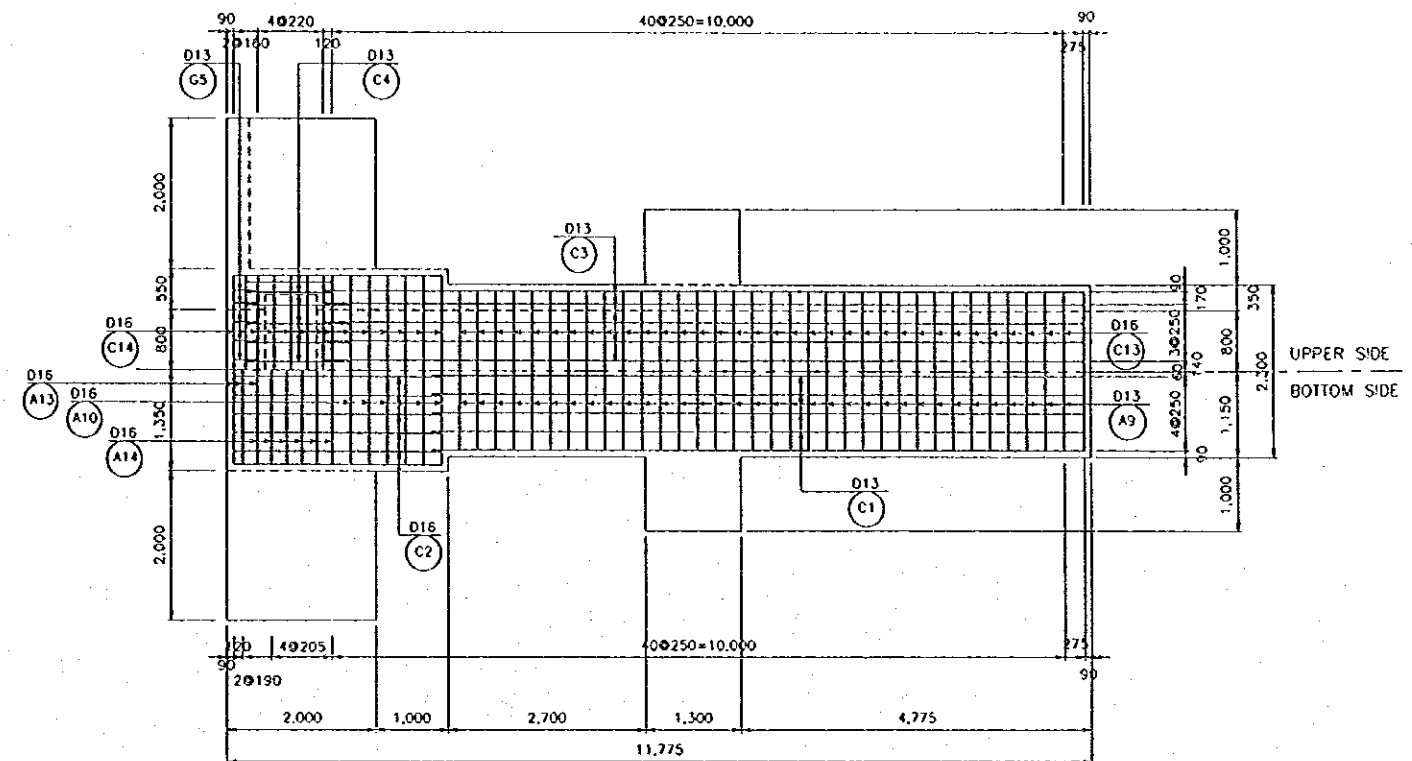


NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

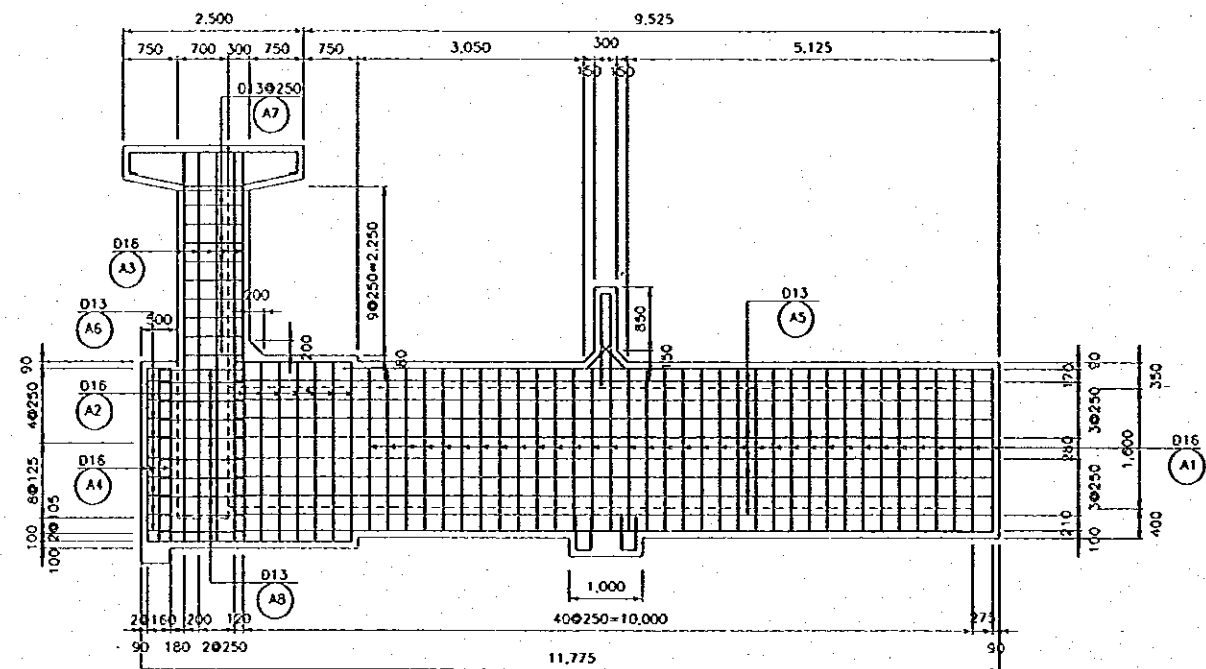
	THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
	JATUNSELUNA FLOOD CONTROL PROJECT COMPONENT: WEST FLOODWAY / GARANO RIVER IMPROVEMENT		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
	DRAINAGE SLUICWAY DETAILS OF GATE PIER AND CONTROL DECK		DISTRICT SEMARANG CITY
	DRAWING NO. 04-P4-03-S1-5 SHEET NO. 157		CONTRACT NO.
PT. INDO-REKREASI CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL INC. CHIEF OF PLANNING AND DESIGN		DESIGNED CHECKED PROJECT MANAGER	DATE



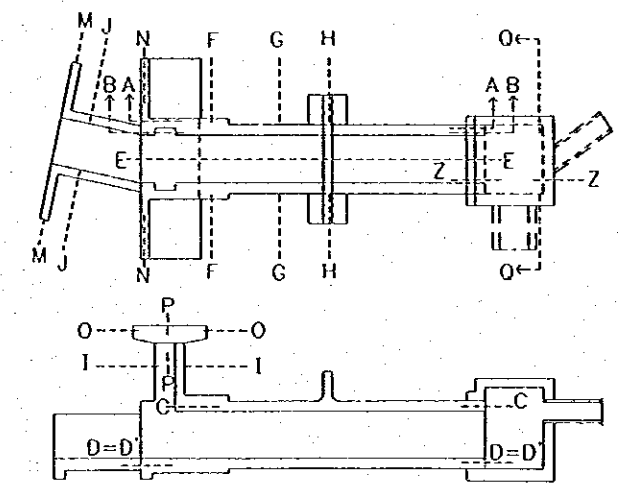
SECTION A-A  
SCALE A



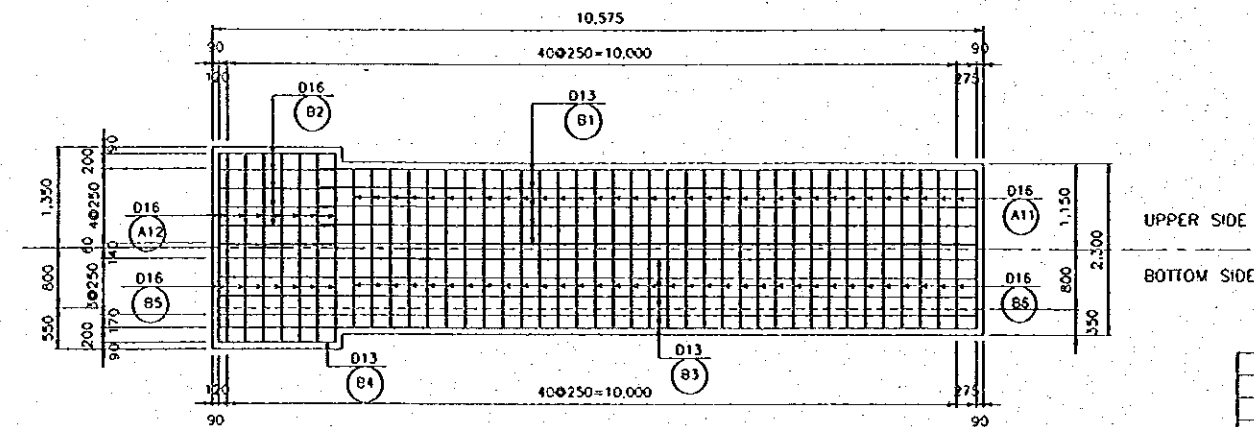
SECTION D-D  
SCALE A



SECTION B-B  
SCALE A



KEY PLAN

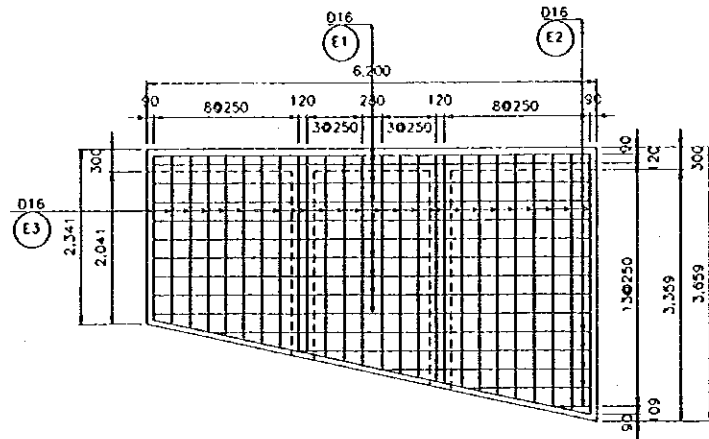


SECTION C-C  
SCALE A

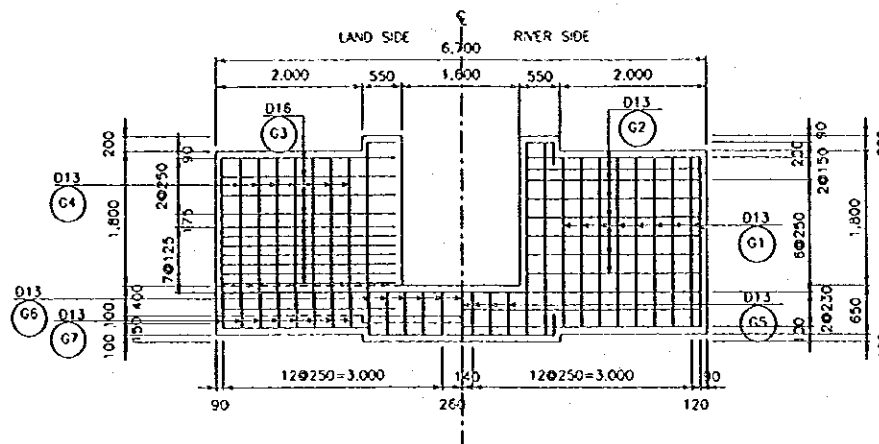
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
JATUNGSSELUNA FLOOD CONTROL PROJECT COMPONENT : WEST FLOODWAY / GARANG RIVER IMPROVEMENT		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DRAINAGE SLUICWAY RE-BAR ARRANGEMENT (1/5)		DISTRICT SEMARANG CITY
JAPAN INTERNATIONAL COOPERATION AGENCY OTE ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND JASCO INTERNATIONAL, INC.		DRAWING NO. W8-Pf-05-Rs-4 SHEET NO. 158
DESIGNED CHECKED PROJECT MANAGER		DATE CONTRACT NO.

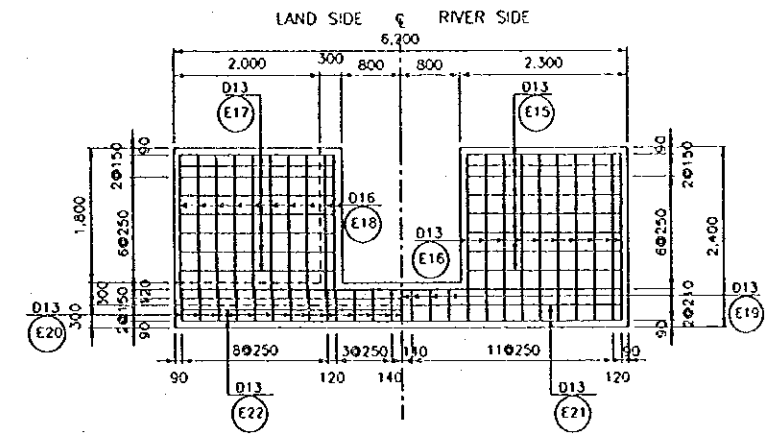




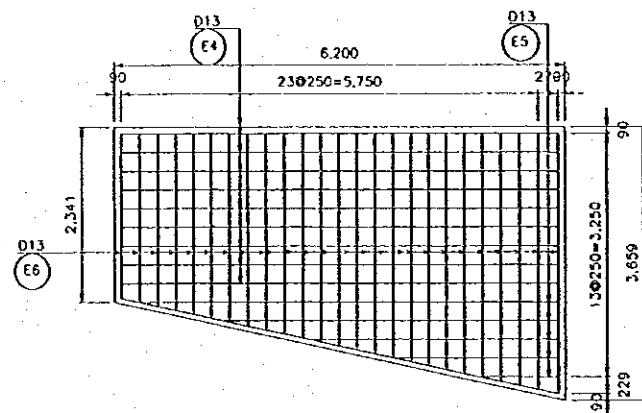
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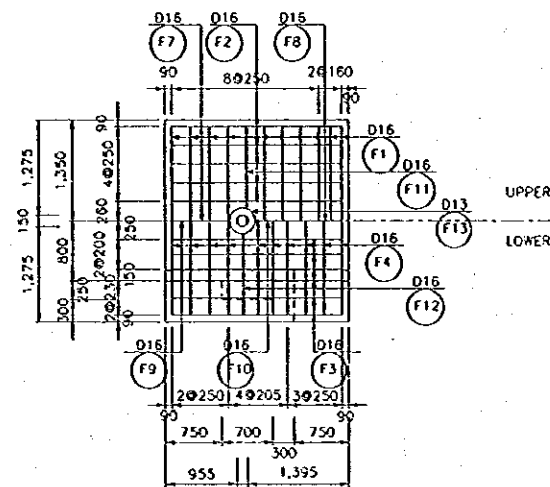
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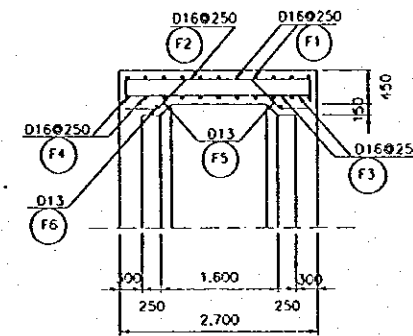
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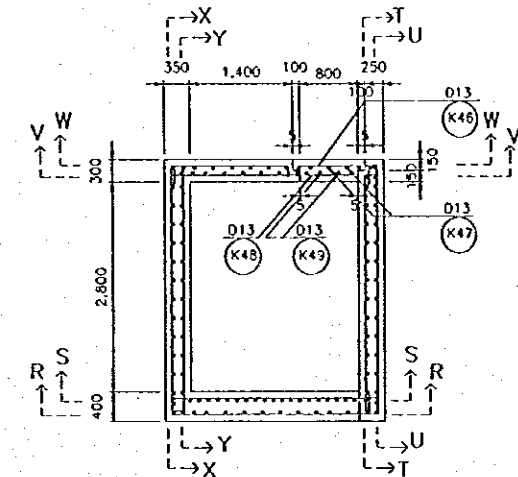
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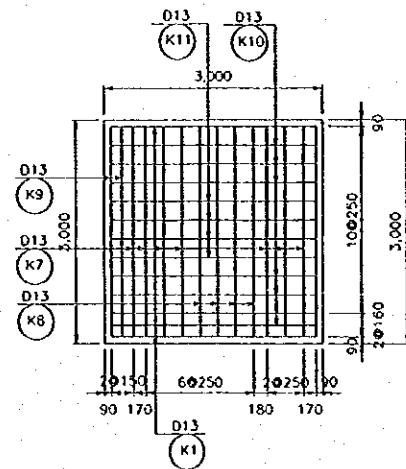
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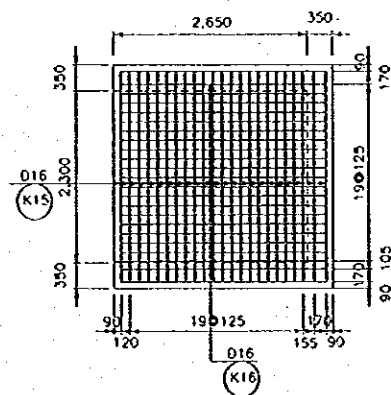
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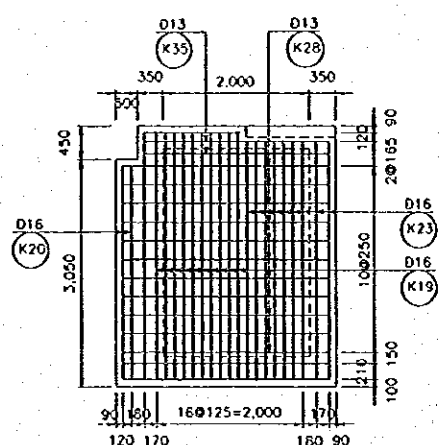
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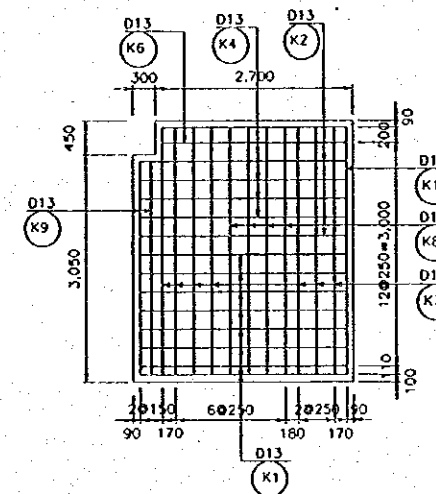
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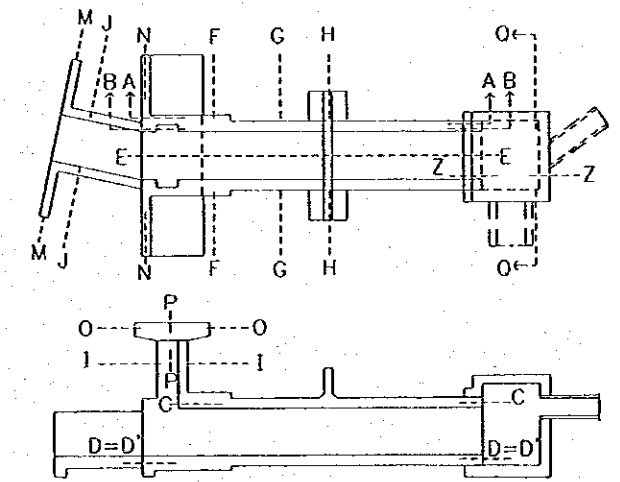
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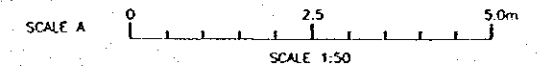
SECTION T-T  
SCALE A



SECTION U-U  
SCALE A



KEY PLAN



THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAWA
JATUNSELUNA FLOOD CONTROL PROJECT COMPONENT: WEST FLOODWAY / GARANO RIVER IMPROVEMENT DRAINAGE SLUICeway RE-BAR ARRANGEMENT (3/5)		PROJECT NAME FLOOD CONTROL, URBAN DESIGN AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY CII ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
DESIGNED CHECKED ORDER OF PLANNING AND DESIGN PROJECT MANAGER		DRAWING NO. W9-PF-05-Ra-6 SHEET NO. 168 DATE CONTRACT NO.

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED





LIST OF REINFORCEMENT

BAR MARK	ØA (mm)	a (mm)	b (mm)	c (mm)	d (mm)	LENGTH OF BAR (mm)	NO REQ'D UNIT	TOTAL LENGTH	UNIT WEIGHT (kg/m)	WEIGHT (kg)	SHAPE	REMARK
A1	D16	2160	-	-	-	2160	70	151200	1.58	238.875	o	
A2	D16	2460	-	-	-	2460	10	24600	1.58	38.858	o	
A3	D16	5110	-	-	-	5110	12	61320	1.58	96.836	o	
A4	D16	2310	-	-	-	2310	8	18480	1.58	29.198	o	
A5	D13	10320	400	-	-	10720	12	12840	1.04	133.728	b	
A6	D13	320	400	200	-	920	18	16560	1.04	17.222	c	
A7	D13	120	820	370	120	2820	18	47160	1.04	43.045	d	
A8	D13	1180	-	-	-	1180	20	23600	1.04	24.544	e	
A9	D16	1360	2120	-	-	4340	35	169400	1.58	267.652	f	
A10	D16	1450	2520	-	-	5440	6	32640	1.58	51.572	g	
A11	D16	1310	2120	-	-	4740	35	169900	1.58	226.122	h	
A12	D16	1510	2520	-	-	5540	8	44320	1.58	70.026	i	
A13	D16	2310	2520	-	-	7140	3	21420	1.58	33.844	j	
A14	D16	5110	1520	-	-	13260	5	65900	1.58	104.754	k	
A15	D13	8850	-	-	-	8850	8	70800	1.04	73.632	l	
A16	D16	2820	500	-	-	3320	15	49800	1.58	78.624	m	
A17	D16	2320	-	-	-	2320	2	4640	1.58	7.3312	n	
A18	D16	900	-	-	-	900	2	1800	1.58	2.844	o	
B1	D13	8835	-	-	-	8835	10	88350	1.04	91.834	p	
B2	D16	2820	-	-	-	2820	12	33840	1.58	53.457	q	
B3	D13	11525	-	-	-	11520	10	115200	1.04	120.588	r	
B4	D16	2820	-	-	-	2820	2	5640	1.58	8.911	s	
B5	D16	2520	-	-	-	2520	8	20160	1.58	31.853	t	
B6	D16	2120	-	-	-	2120	35	74200	1.58	117.236	u	
C1	D13	8835	-	-	-	8835	10	88350	1.04	91.834	v	
C2	D16	2820	-	-	-	2820	12	33840	1.58	53.457	w	
C3	D13	10335	350	-	-	10745	10	107450	1.04	111.743	x	
C4	D13	1180	-	-	-	1180	12	14160	1.04	14.726	y	
C5	D13	2120	-	-	-	2120	18	38160	1.04	39.686	z	
C6	D13	1820	-	-	-	1820	16	29120	1.04	30.285	aa	
C7	D13	2210	-	-	-	2210	18	39780	1.04	41.371	ab	
C8	D13	1820	400	-	-	2220	18	39960	1.04	41.558	ac	
C9	D13	1120	-	-	-	1120	8	8960	1.04	9.318	ad	
C10	D13	1170	-	-	-	1170	14	16380	1.04	17.035	ae	
C11	D13	1170	-	-	-	1170	12	14040	1.04	14.602	af	
C12	D13	1120	-	-	-	1120	8	8960	1.04	9.318	ag	
C13	D16	2120	-	-	-	2120	35	74200	1.58	117.236	ah	
C14	D16	2520	-	-	-	2520	16	40320	1.58	63.706	ai	
E1	D16	6020	-	-	-	6020	10	60200	1.58	95.116	aj	
E2	D16	3010	-	-	-	3010	5	15050	1.58	23.779	ak	avaries
E3	D16	2910	500	-	-	3410	26	88560	1.58	140.083	al	
E4	D13	6020	-	-	-	6020	9	54180	1.04	56.347	am	
E5	D13	3010	-	-	-	3010	5	15050	1.04	15.652	an	
E6	D13	2910	-	-	-	2910	25	72750	1.04	75.680	ao	
E7	D16	2010	500	-	-	2510	13	32630	1.58	51.555	ap	
E8	D13	3054	-	-	-	3054	9	27486	1.04	28.585	aq	

	ØA	WEIGHT (kg)
TOTAL	013	2473.738
	016	2647.009
GRAND TOTAL		5320.747

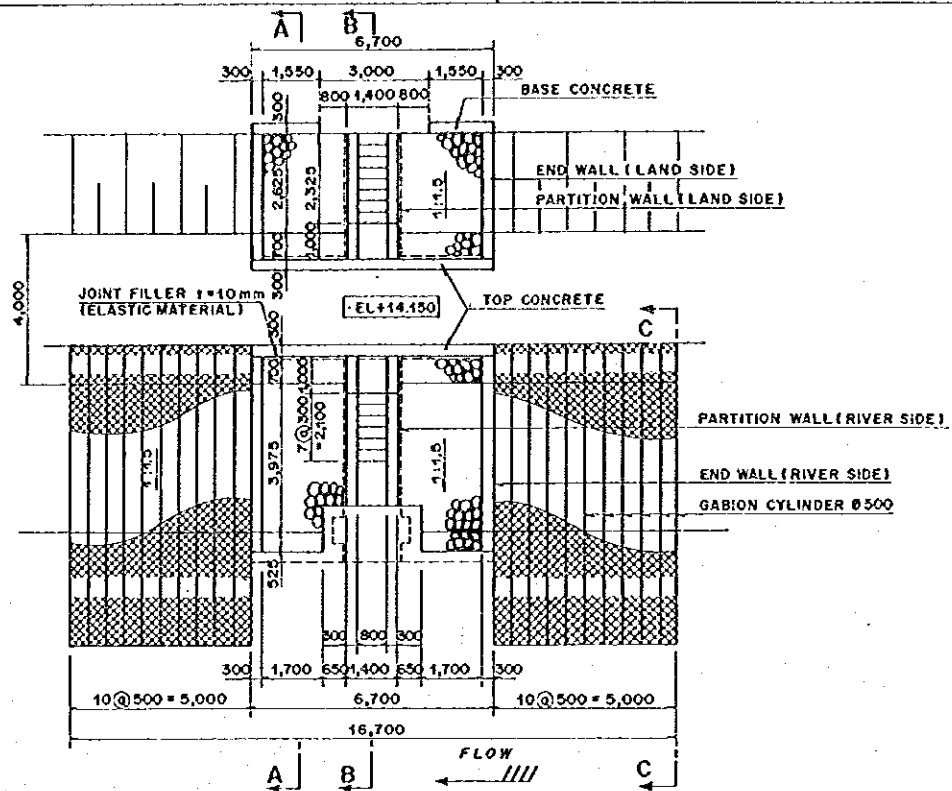
LIST OF REINFORCEMENT

BAR MARK	ØA (mm)	a (mm)	b (mm)	c (mm)	d (mm)	LENGTH OF BAR (mm)	NO REQ'D UNIT	TOTAL LENGTH	UNIT WEIGHT (kg/m)	WEIGHT (kg)	SHAPE	REMARK
E9	D13	2010	-	-	-	2010	13	26130	1.04	27.175	o	
E10	D13	2920	-	-	-	2920	9	26310	1.04	27.986	a	
E11	D13	2010	-	-	-	2010	12	24120	1.04	25.085	o	
E12	D13	2650	-	-	-	2650	9	23850	1.04	24.804	a	
E13	D16	2010	-	-	-	2010	11	22110	1.58	34.934	jo	
E14	D13	2586	-	-	-	2586	9	23274	1.04	24.205	a	
E15	D13	2120	-	-	-	2120	20	42400	1.04	44.096	bl	
E16	D13	2210	-	-	-	2210	16	35360	1.04	36.774	a	
E17	D13	2120	-	-	-	2120	16	33920	1.04	35.277	a	
E18	D16	1910	500	-	-	2410	16	38560	1.58	60.925	bo	
E19	D13	410	-	-	-	410	7	2870	1.04	2.988	of	
E20	D13	410	-	-	-	410	27	11070	1.04	11.513	o	
E21	D13	6020	-	-	-	6020	2	12040	1.04	12.523	a	
E22	D13	6020	-	-	-	6020	2	12040	1.04	12.523	a	
F1	D16	2520	500	-	-	3520	10	35200	1.58	55.616	bp	
F2	D16	2320	-	-	-	2320	10	23200	1.58	36.656	a	
F3	D16	2520	-	-	-	2520	12	30240	1.58	47.779	a	
F4	D16	2320	-	-	-	2320	10	23200	1.58	36.656	a	
F5	D13	370	345	-	-	715	11	7865	1.06	8.180	g	b: varies
F6	D13	2320	-	-	-	2320	2	4640	1.06	4.827	a	
F7	D16	775	-	-	-	775	1	775	1.58	1.225	a	
F8	D16	1215	-	-	-	1215	1	1215	1.58	1.920	a	
F9	D16	775	-	-	-	775	1	775	1.58	1.225	a	
F10	D16	1215	-	-	-	1215	1	1215	1.58	1.920	a	
F11	D16	1140	500	-	-	1640	2	3280	1.58	5.182	b	
F12	D16	1035	500	-	-	1535	2	3190	1.58	5.040	o	
F13	D13	1237	-	-	-	1237	2	2474	1.04	2.573	o	R=330mm
G1	D13	2270	-	-	-	2270	16	36320	1.04	37.773	a	
G2	D13	2370	200	-	-	2570	16	41120	1.04	42.765	bl	
G3	D16	2370	-	-	-	2370	22	52140	1.58	82.381	a	
G4	D13	2020	-	-	-	2020	16	32320	1.04	33.614	a	
G5	D13	560	200	-	-	760	7	5320	1.04	5.533	of	
G6	D13	560	-	-	-	560	11	6160	1.04	6.406	a	
G7	D13	450	-	-	-	450	16	7200	1.04	7.654	a	
H1	D13	200	1170	120	-	2860	10	28600	1.04	29.744	bc	
H2	D13	4120	-	-	-	4120	8	32960	1.04	34.278	a	
H3	D13	200	1170	120	-	2860	16	45760	1.04	47.590	bc	
H4	D13	200	3170	-	-	3370	16	53920	1.04	56.075	o	
H5	D13	4120	-	-	-	4120	4	16480	1.04	17.139	a	
H6	D13	470	195	-	-	1135	18	20430	1.04	21.2472	d	
H7	D13	432	-	-	-	432	30	12960	1.04	13.478	a	
I1	D13	1258	-	-	-	1258	16	20128	1.04	20.933	a	
I2	D13	1188	-	-	-	1188	26	30888	1.04	32.124	a	
I3	D13	693	-	-	-	693	35	25020	1.04	25.946	a	
I4	D13	764	-	-	-	764	36	27504	1.04	28.604	a	
I5	D13	905	-	-	-	905	8	7240	1.04	7.530	a	
K1	D13	2820	2820	120	-	8700	8	69600	1.04	72.384	cr	
K2	D13	2820	2820	120	670	6430	2	12860	1.04	13.374	cr	
K3	D13	670	1065	-	-	1735	3	5205	1.04	5.413	o	b: varies

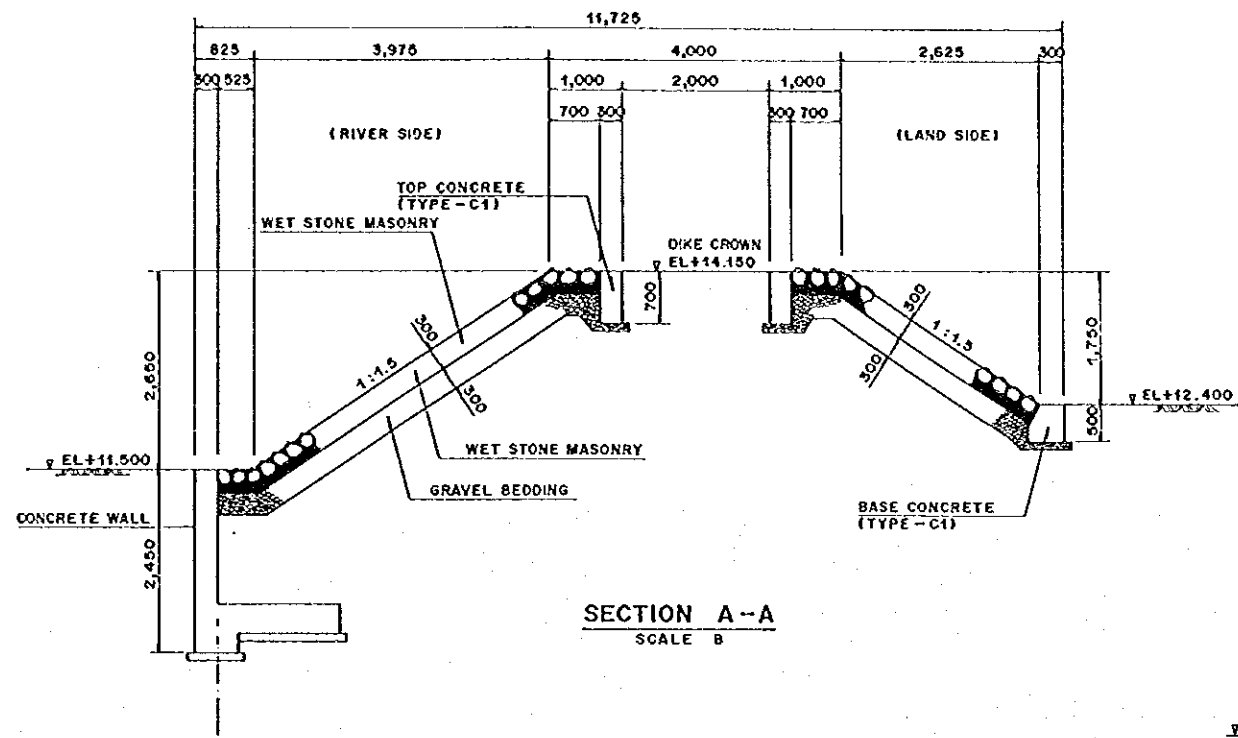
LIST OF REINFORCEMENT

BAR MARK	ØA (mm)	a (mm)	b (mm)	c (mm)	d (mm)	LENGTH OF BAR (mm)	NO REQ'D UNIT	TOTAL LENGTH	UNIT WEIGHT (kg/m)	WEIGHT (kg)	SHAPE	REMARK
K4	D13	3820	1065	120	-	4005	3	12015	1.04	12.495	cr	b: varies
K5	D13	970	120	-	-	1090	5	5450	1.04	5.668	bl	a
K6	D13	2820	2520	-	-	7850	3	2380	1.04	24.523	bl	o
K7	D13	2820	3310	-	-	9440	7	66080	1.04	68.723	bl	o
K8	D13	2820	3310	1610	-	7740	4	30960	1.04	32.198	cl	o
K9	D13	2820	2860	-	-	8540	2	17080	1.04	17.763	cl	o
K10	D13	2820	3310	220	-	6350	7	44450	1.04	45.228	cl	o
K11	D13	2820	1010	220	-	4050	4	1620	1.04	16.848	cl	o
K12	D13	800	-	-	-	800	3	2400	1.04	2.469	a	a: varies
K13	D13	3310	400	-	-	3710	1	3710	1.04	3.858	o	
K14	D13	3310	400	-	-	3710	1	3710	1.04	3.858	o	
K15	D16	2820	-	-	-	2820	22	62040	1.58	98.023	a	
K16	D16	2700	-	-	-	2700	21	56700	1.58	89.586	a	
K17	D16	3310	-	-	-	3310	12	39720	1.58	62.757	a	
K18	D16	1610	-	-	-	1610	4	6440	1.58	10.175	a	
K19	D16	3310	-	-	-	3310	10	33100	1.58	52.295	a	
K20	D16	2810	-	-	-	2810	2	5620	1.58	8.890	a	
K21	D16	2810	-	-	-	2810	2	5620	1.58	8.890	a	
K22	D13	220	-	-	-	220	4	880	1.04	0.915	a	
K23	D16	3160	170	-	-	3330	9	3330	1.58	5.261	b	
K24	D16	2700	-	-	-	2700	7	18900	1.58	29.862	a	
K25	D13	670	-	-	-	670	5	3350	1.04	3.484	a	
K26	D13											

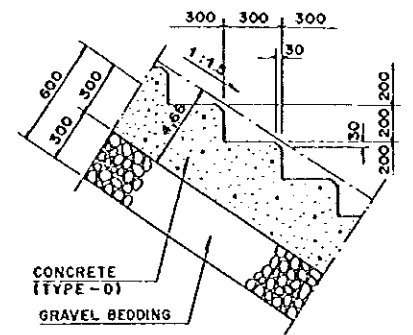




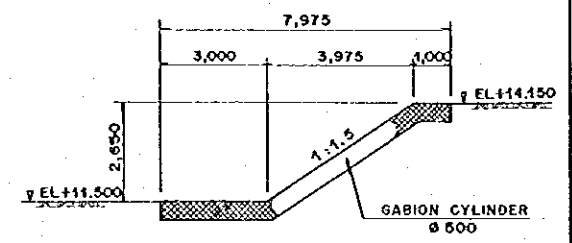
PLAN OF CONCRETE STEP  
SCALE A



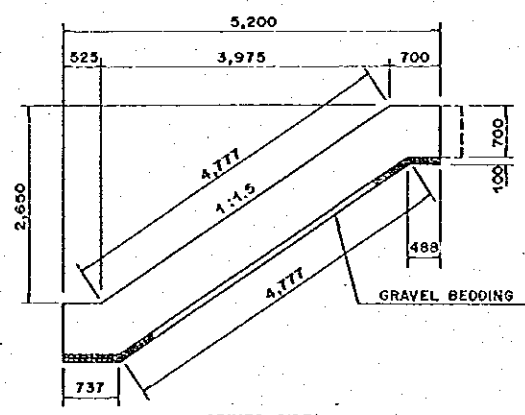
SECTION A-A  
SCALE B



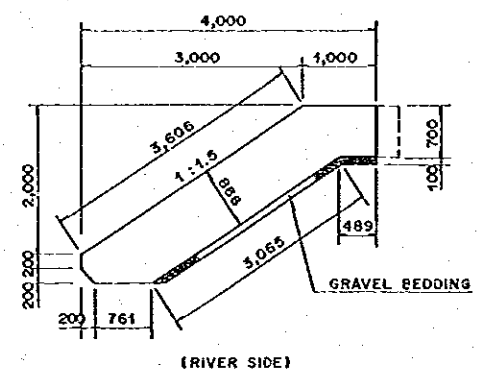
DETAIL OF 'C'  
SCALE C



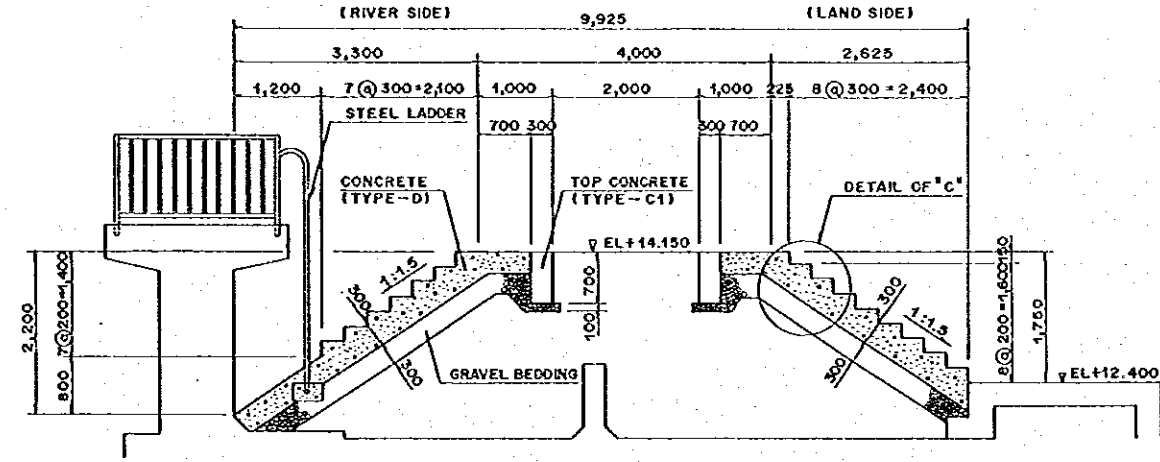
SECTION C-C  
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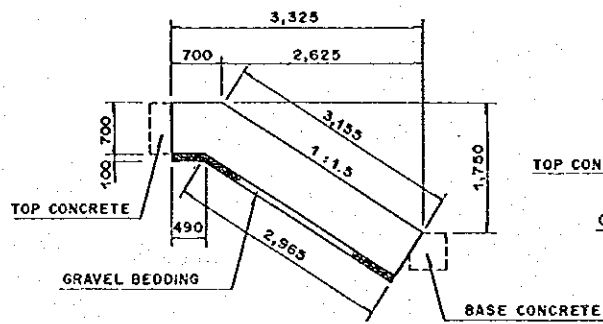
(RIVER SIDE)



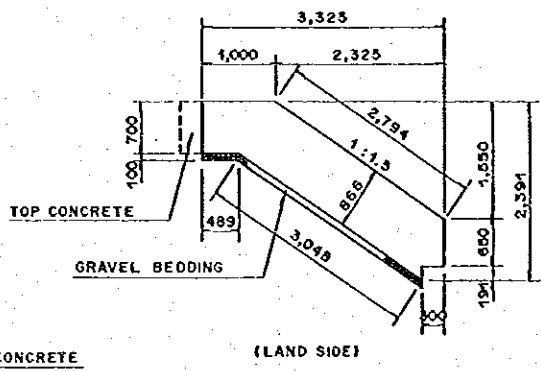
(RIVER SIDE)



SECTION B-B  
SCALE B



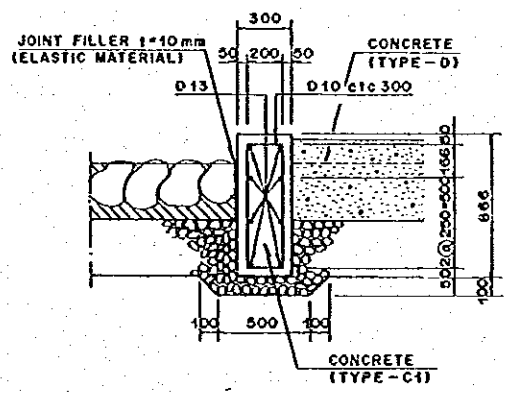
(LAND SIDE)



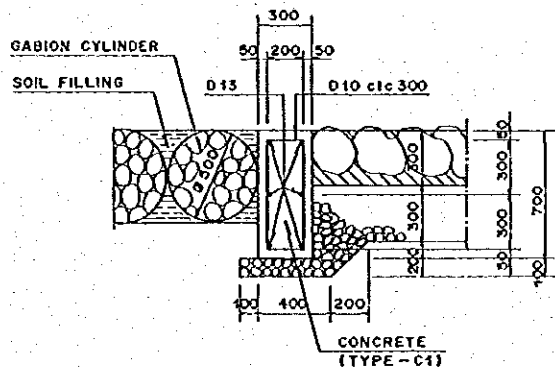
(LAND SIDE)

PROFILE OF END WALL  
SCALE B

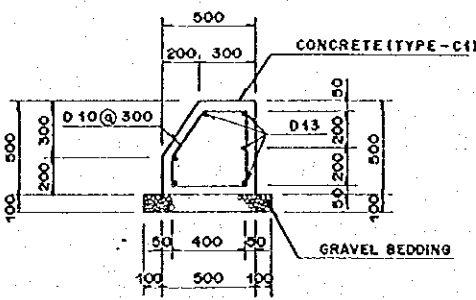
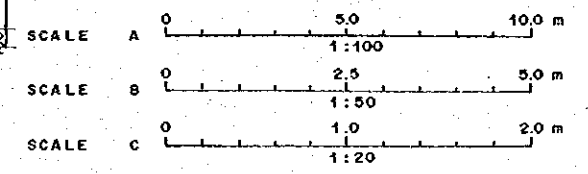
PROFILE OF PARTITION WALL  
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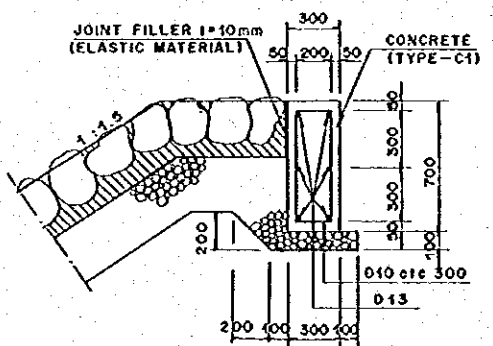
PARTITION WALL  
SCALE C



END WALL  
SCALE C



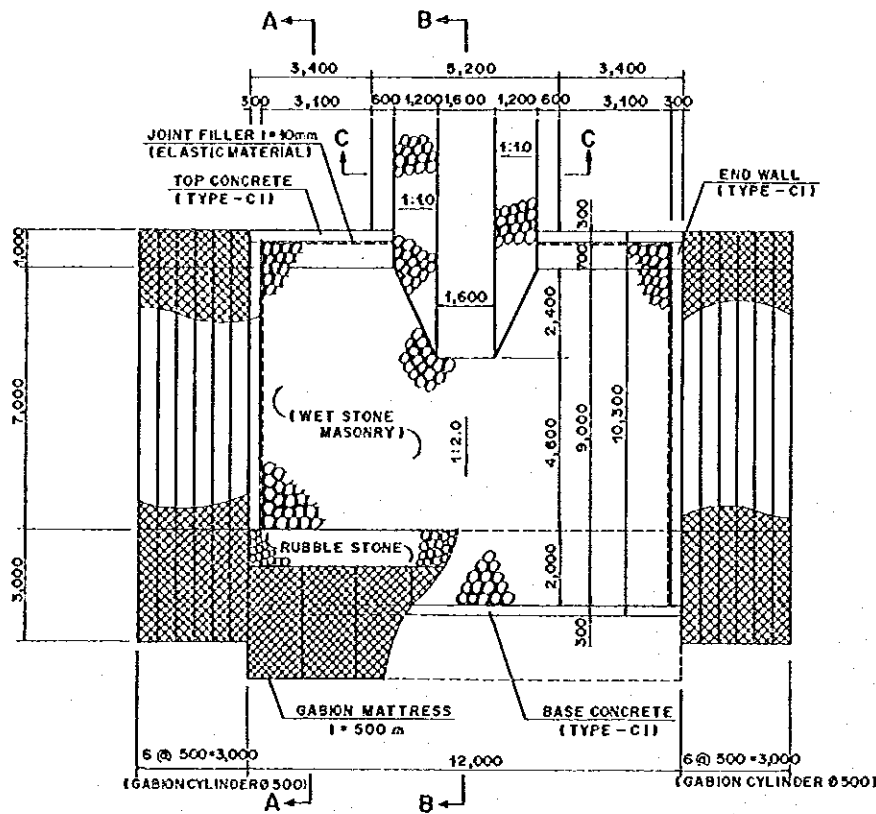
BASE CONCRETE  
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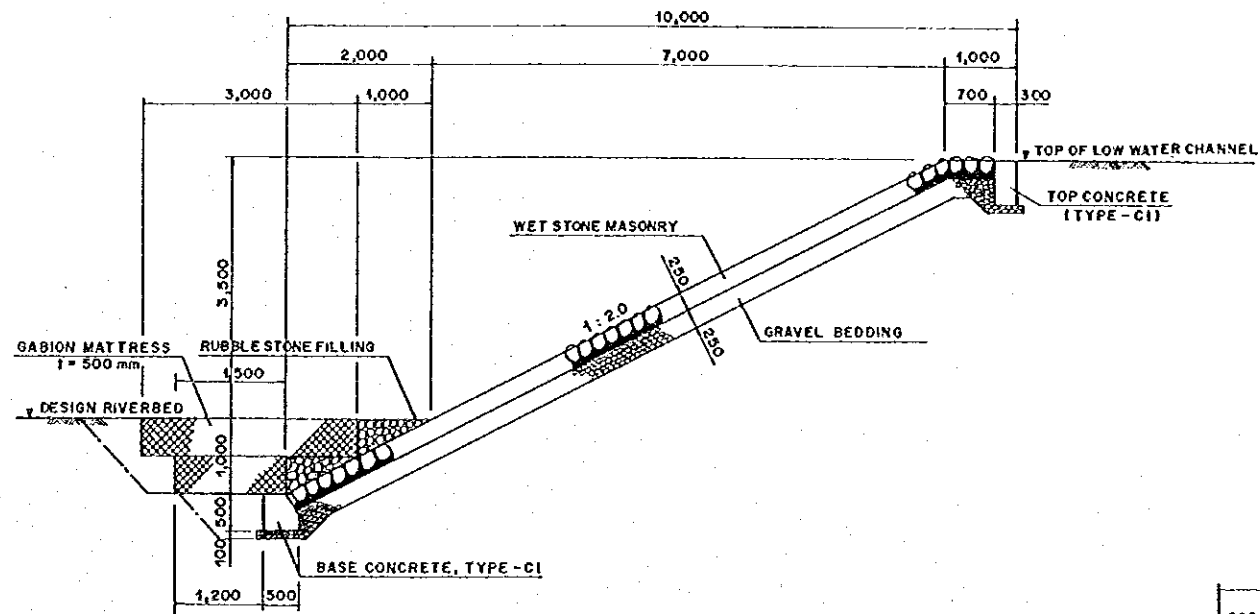
TOP CONCRETE  
SCALE C

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

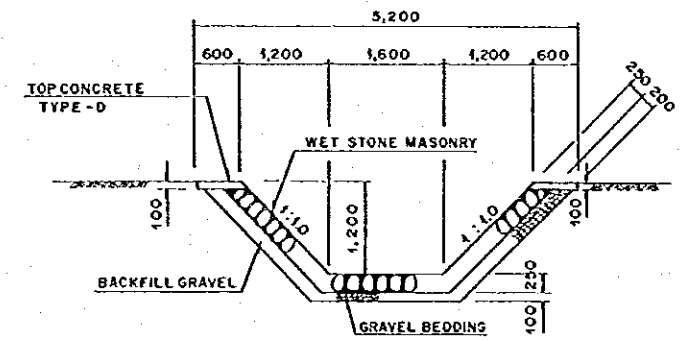
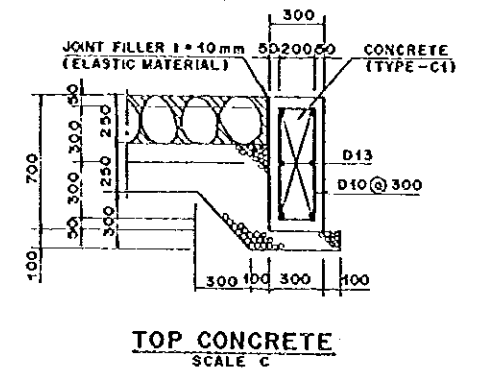
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
BRATUNSEUNA FLOOD CONTROL PROJECT COMPONENT: WEST FLOODWAY / GARANG RIVER IMPROVEMENT DRAINAGE SLUICWAY DETAILS OF RÉVETMENT AND CONCRETE STEPS (1/2)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
LAMP INTERNATIONAL COOPERATION AGENCY CIL ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND FARO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
DESIGNED CHECKED CHERY OF PLANNING AND DESIGN PROJECT MANAGER		DRAWING NO. W6-P1-05-S1-10 SHEET NO. 164 DATE CONTRACT NO.



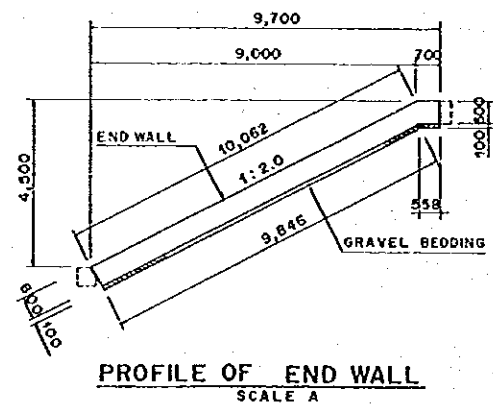
ARRANGEMENT OF REVETMENT (LOW WATER CHANNEL)  
SCALE A



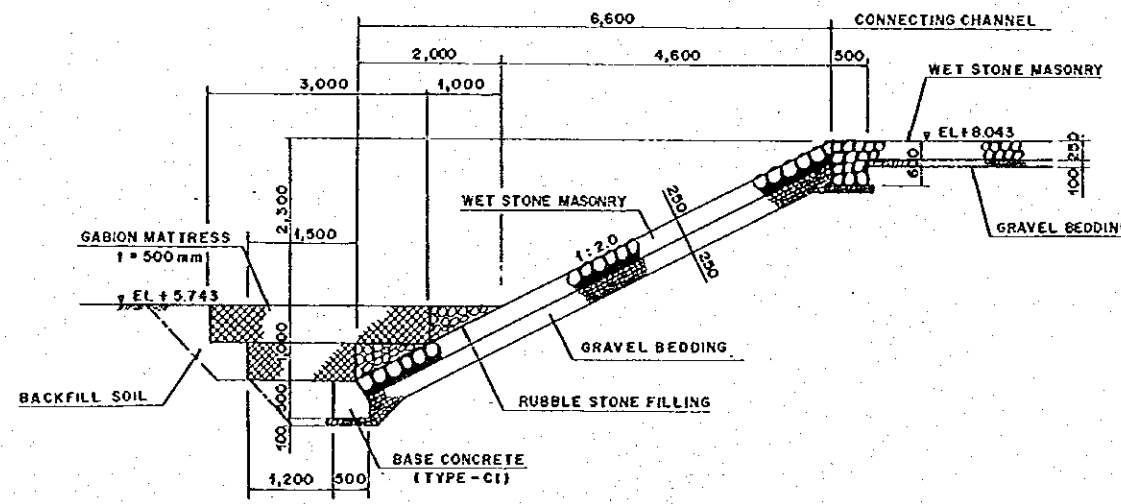
SECTION A-A  
SCALE B



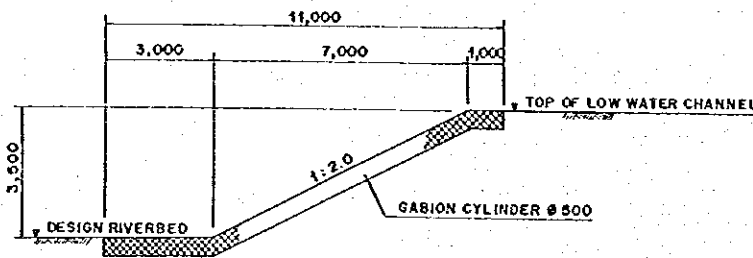
SECTION C-C  
SCALE B



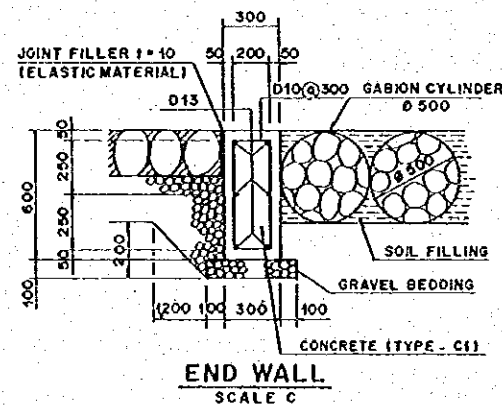
PROFILE OF END WALL  
SCALE A



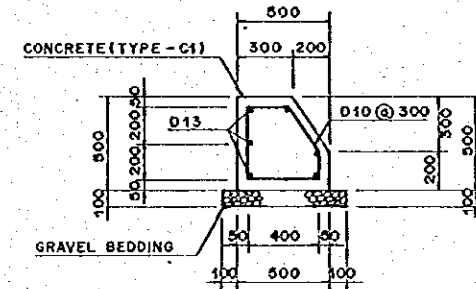
SECTION B-B  
SCALE B



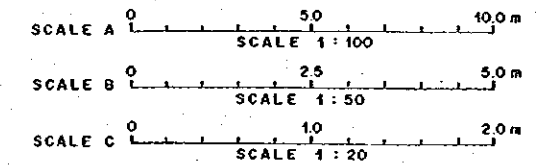
GABION CYLINDER ON SLOPE OF 1:2  
SCALE A



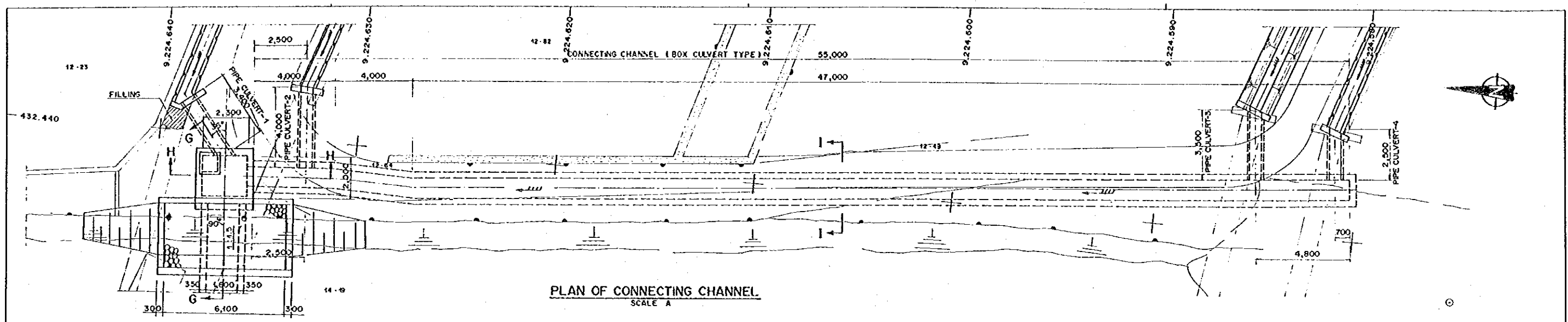
END WALL  
SCALE C



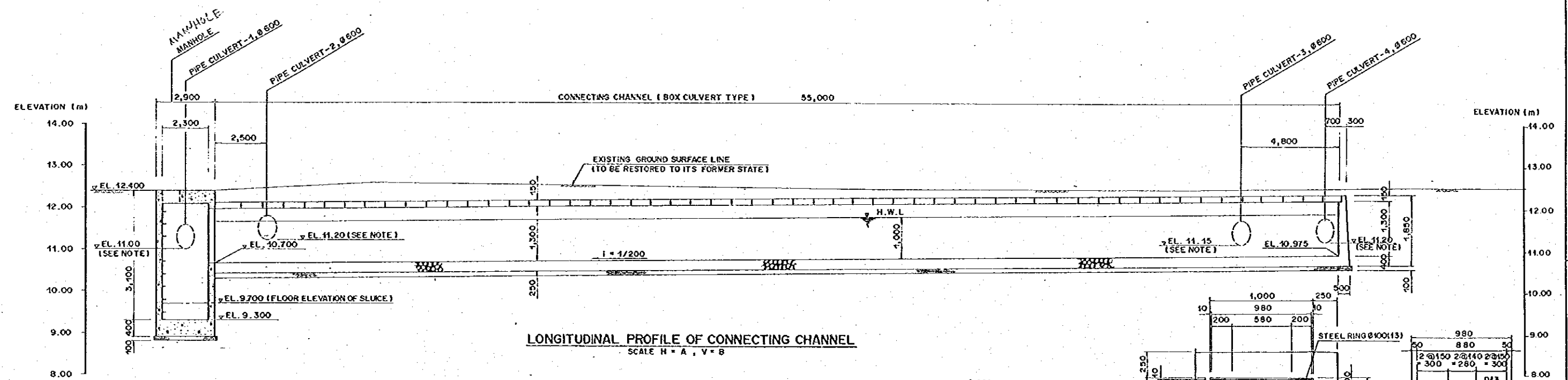
BASE CONCRETE  
SCALE C



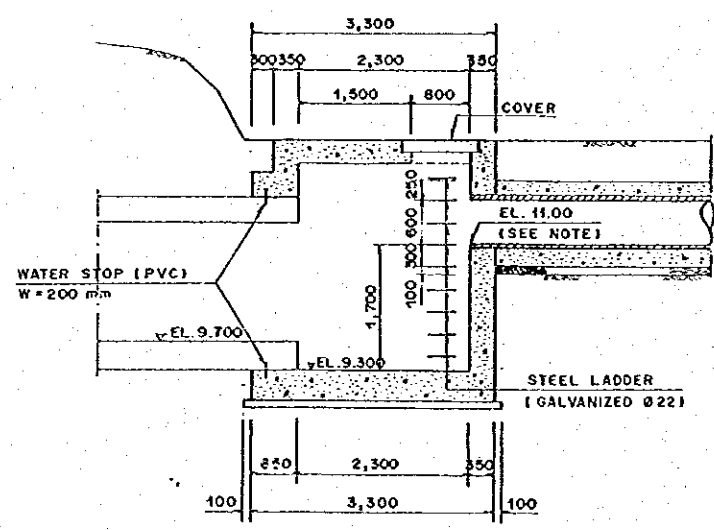
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT JATUNSELUNA FLOOD CONTROL PROJECT COMPONENT: WEST FLOODWAY / GARANG RIVER IMPROVEMENT DRAINAGE SLUICeway DETAILS OF REVETMENT AND CONCRETE STEPS (2/2)					PROJECT CENTRAL JAWA PROJECT NAME FLOOD CONTROL, DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY DRAWING NO. WS-P1-D5-51-11 SHEET NO. 165 DATE CONTRACTING
JICA INTERNATIONAL COOPERATION AGENCY CHE ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PACIFIC INTERNATIONAL INC.	DESIGNED 	CHECKED 	CHIEF OF PLANNING AND DESIGN	PROJECT MANAGER	APPROVED 
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED



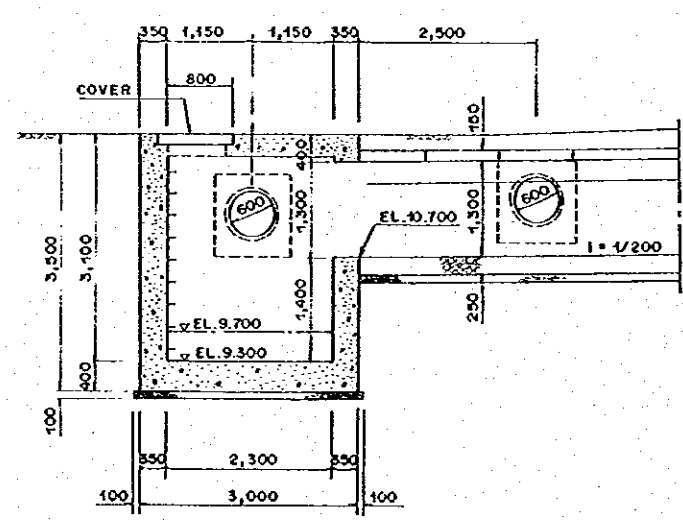
PLAN OF CONNECTING CHANNEL  
SCALE A



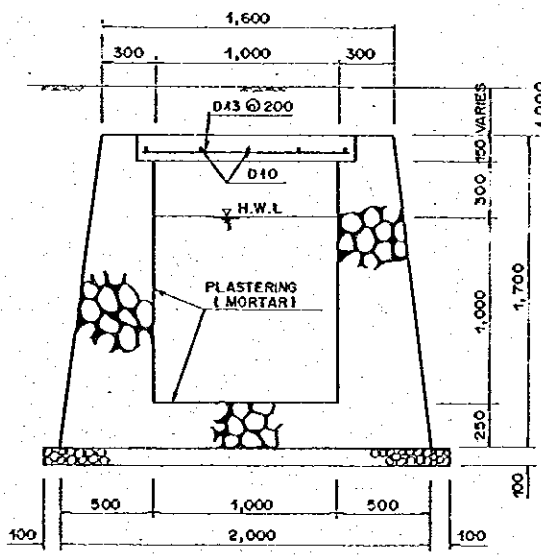
LONGITUDINAL PROFILE OF CONNECTING CHANNEL  
SCALE H = A, V = B



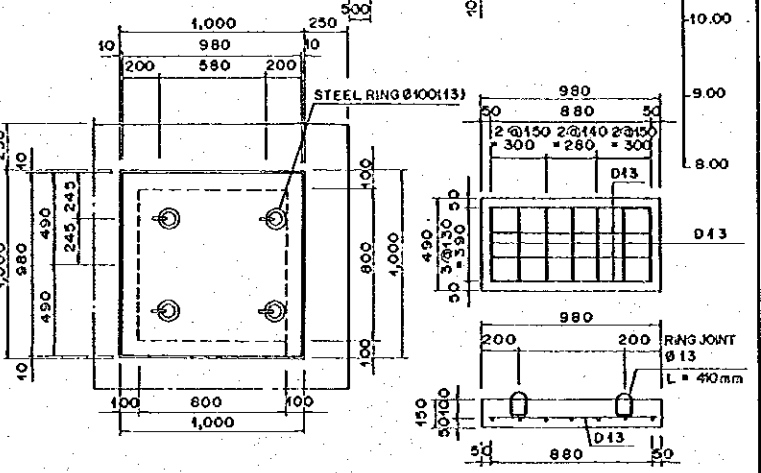
CROSS SECTION G-G  
SCALE B



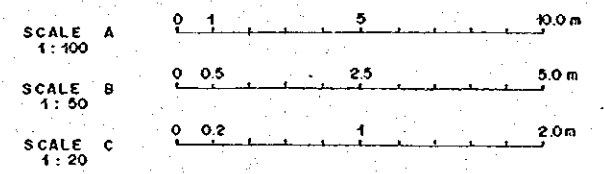
CROSS SECTION H-H  
SCALE B



CROSS SECTION I-I  
SCALE C



DETAIL OF COVER FOR MANHOLE BAR ARRANGEMENT OF COVER  
SCALE C



NOTE:  
1. BOTTOM ELEVATIONS OF PIPE CULVERT SHOWN ON THE DRAWING ARE TENTATIVE FIGURES. THE CONTRACTOR SHALL CONDUCT SITE SURVEY ON THE EXISTING PIPE CULVERTS BEFORE THE DEMOLITION OF THE EXISTING STRUCTURES AND SHALL DETERMINE THE BOTTOM ELEVATIONS OF NEWLY INSTALLED PIPE CULVERT. THE WORK DRAWINGS SHALL BE APPROVED BY THE ENGINEER.

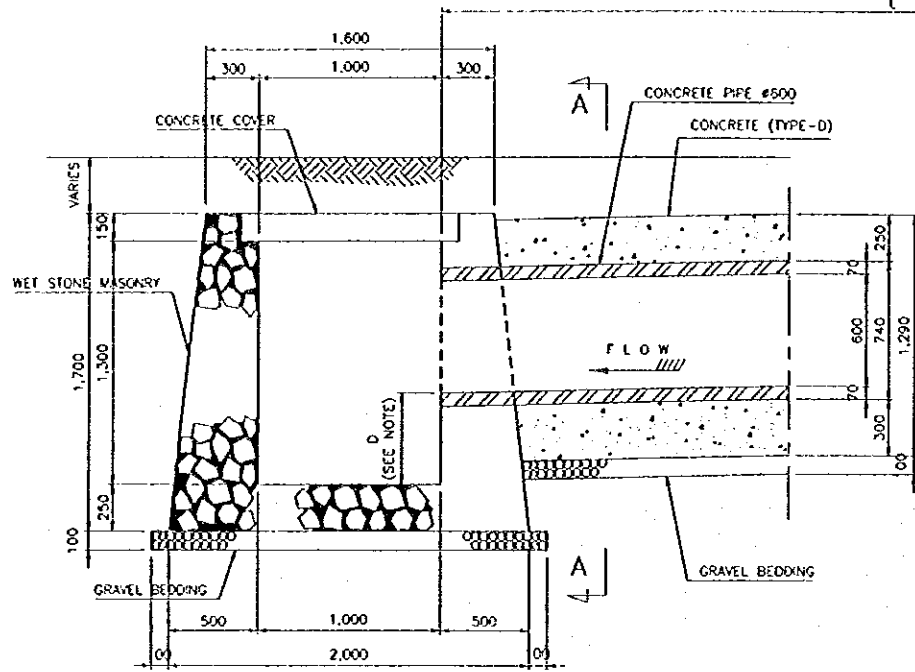
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA  
MINISTRY OF PUBLIC WORKS  
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT  
IRATUNSELUNA FLOOD CONTROL PROJECT  
COMPONENT: JATIBARANO DAM CONSTRUCTION  
**DRAINAGE SLUICeway**  
DETAILS OF CONNECTING CHANNEL AND PIPE (1/2)

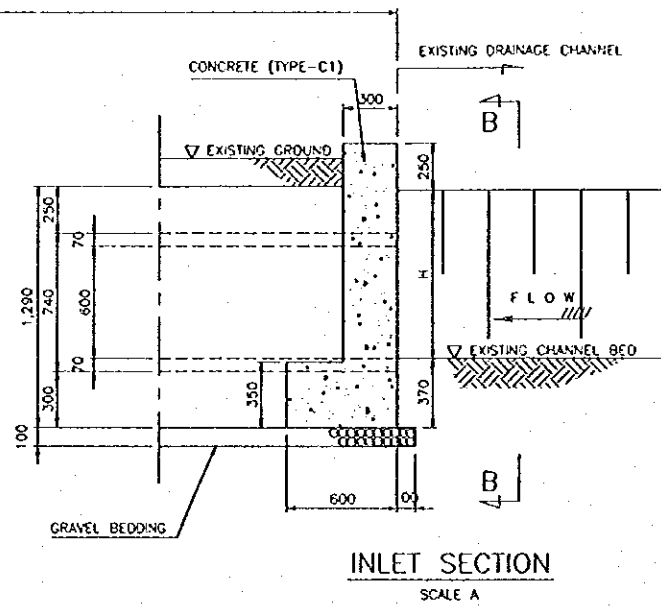
DESIGNED: [Signature]  
CHECKED: [Signature]  
PROJECT MANAGER: [Signature]

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. WB-P4-D5-S1-12  
SHEET NO. 166  
DATE: [Blank]  
CONTRACT NO.: [Blank]

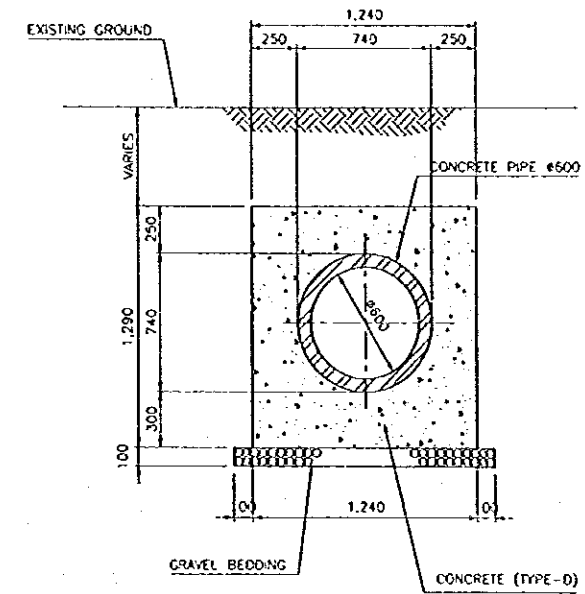




OUTLET SECTION  
SCALE A



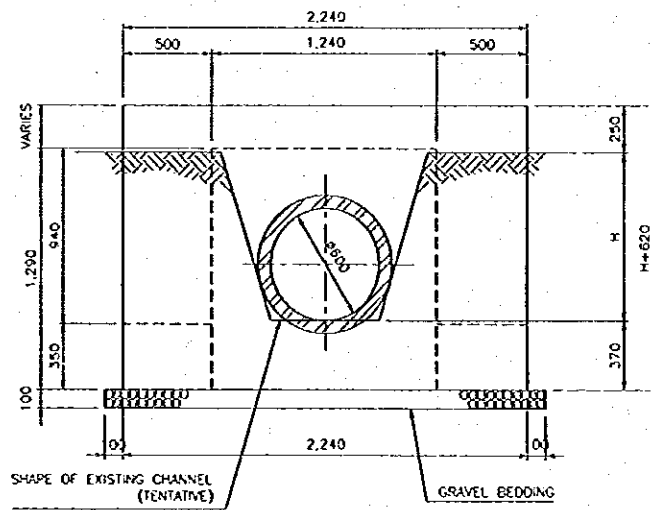
INLET SECTION  
SCALE A



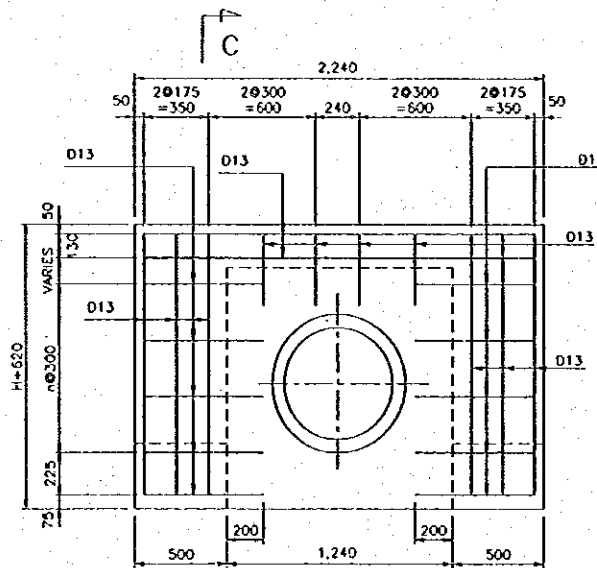
SECTION A-A  
SCALE A

DIMENSION

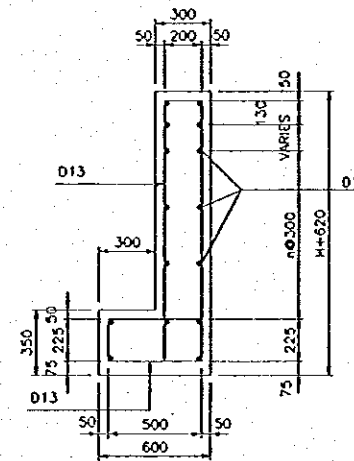
LOCATION	BOTTOM ELEVATION OF PIPE CULVERT AT OUTLET SECTION	L (m)
PIPE CULVERT - 1	EL+11.00 m	3.400 m
PIPE CULVERT - 2	EL+11.20 m	4.000 m
PIPE CULVERT - 3	EL+11.15 m	3.500 m
PIPE CULVERT - 4	EL+11.20 m	2.500 m



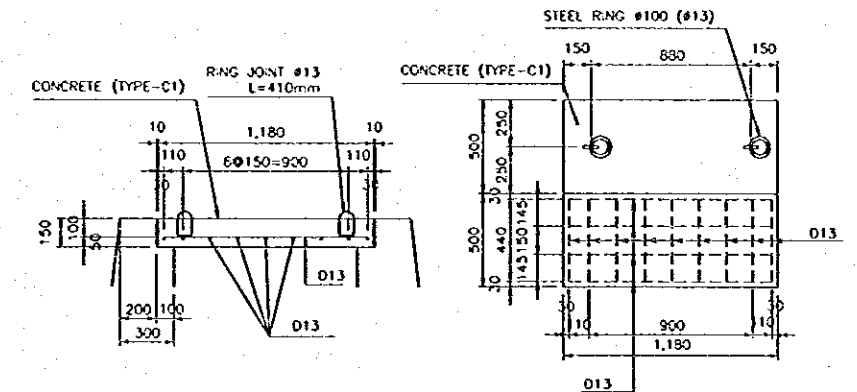
SECTION B-B  
SCALE A



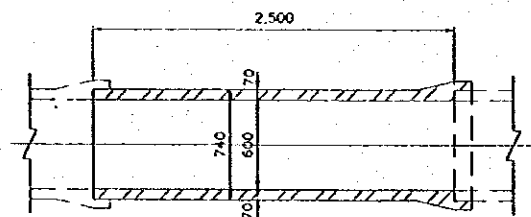
ARRANGEMENT OF REINFORCING BAR  
SCALE A



SECTION C-C  
SCALE A

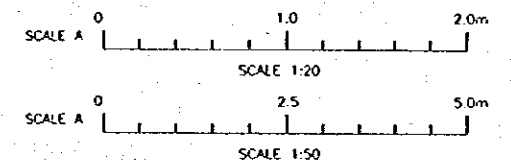


DETAIL OF CONCRETE COVER  
SCALE A



DETAIL OF CONCRETE PIPE Ø600  
SCALE B

NOTE : CONTRACTOR SHALL INVESTIGATE SHAPE AND DEPTH OF EACH EXISTING DRAINAGE CHANNELS AT THE FIELD.  
CONTRACTOR SHALL DETERMINE BOTTOM ELEVATION OF PIPE CULVERT AT INLET SECTION.



THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
IRATUNSELUNA FLOOD CONTROL PROJECT COMPONENT : WEST FLOODWAY / GARANG RIVER IMPROVEMENT DRAINAGE SLUICeway		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DETAILS OF CONNECTING CHANNEL AND PIPE(2/2)		LOCATION SEMARANG CITY
JAPAN INTERNATIONAL COOPERATION AGENCY JICA PACIFIC CONSULTANTS INTERNATIONAL AND PARTNER INTERNATIONAL INC.		DRAWING NO. W2-P1-05-01-02 SHEET NO. 167
DESIGNED: [Signature] CHECKED: [Signature] CHIEF OF PLANNING AND DESIGN		DATE CONTRACTING
APPROVED: [Signature] PROJECT MANAGER		

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED