

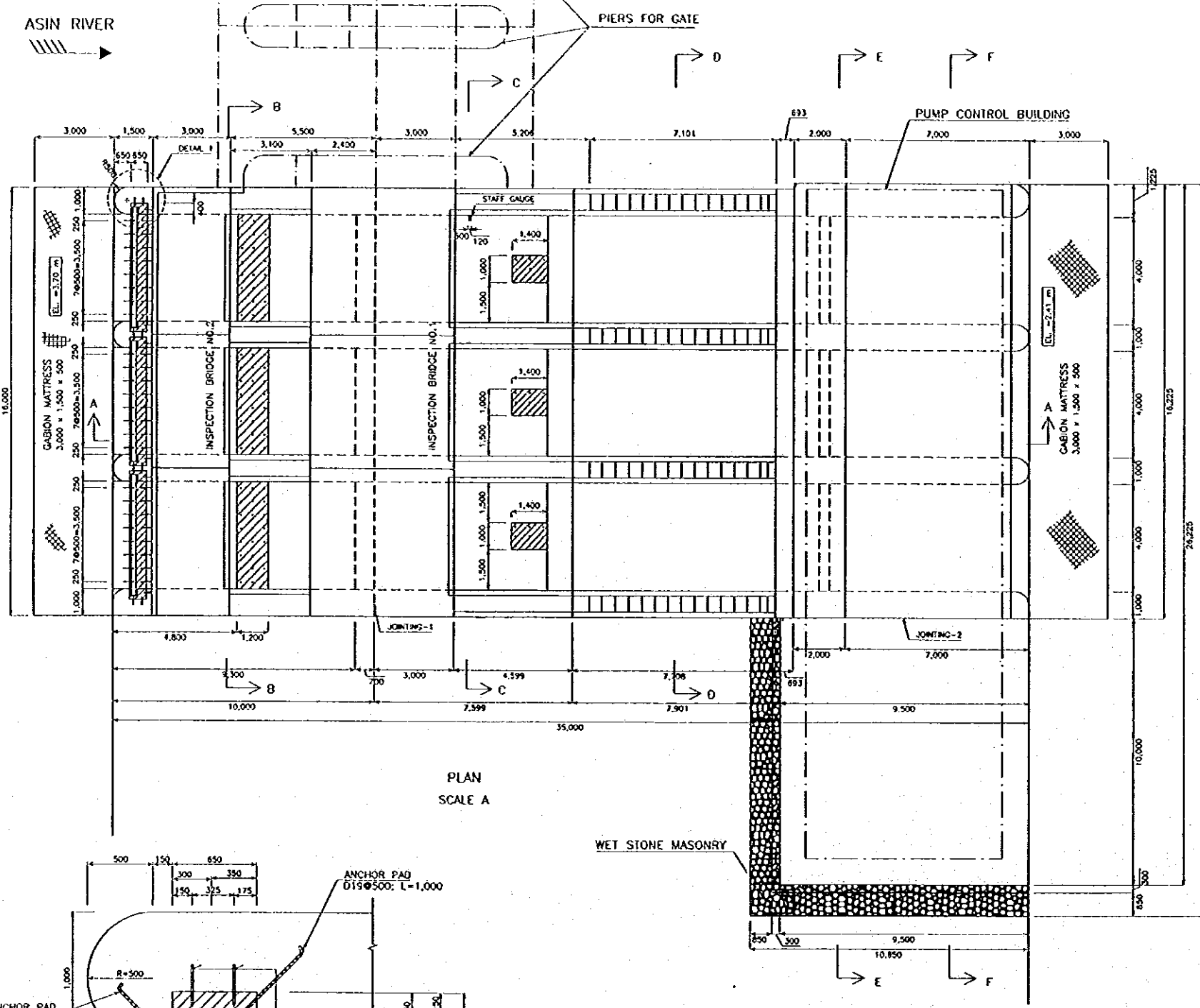
SCALE A
1 : 200

NO.	DATE	REVISIONS	ORIGINATOR	DESIGNED	APPROVED

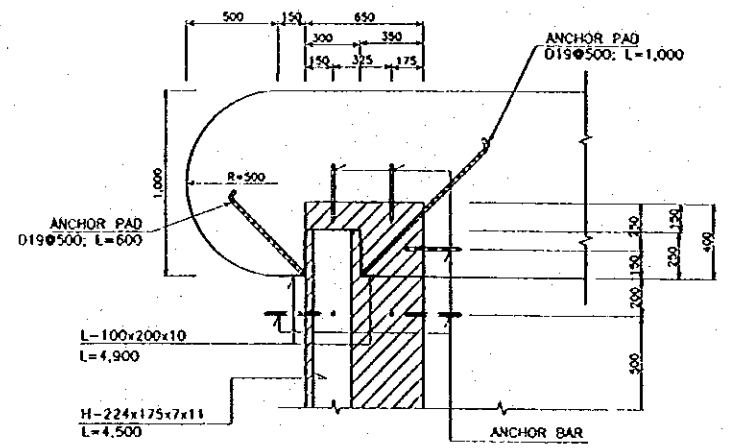
	THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT RAJAWALINGGA FLOOD CONTROL PROJECT COMPONENT 1: URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION GENERAL LAYOUT		PROVINCE CENTRAL JAWA
	LAFAN INTERNATIONAL COOPERATION AGENCY PT. INDOREKSO CO., LTD. in association with PACIFIC CONSULTANTS INTERNATIONAL AND PARKS INTERNATIONAL INC.		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG BY THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY DRAWING NO. U-P2-P-Ge-1 SHEET NO. 81
CELEST OF PLANNING AND DESIGN PROJECT MANAGER	DESIGNED CHECKED <i>[Signature]</i>	DATE CONTRACT NO.	

ASIN RIVER

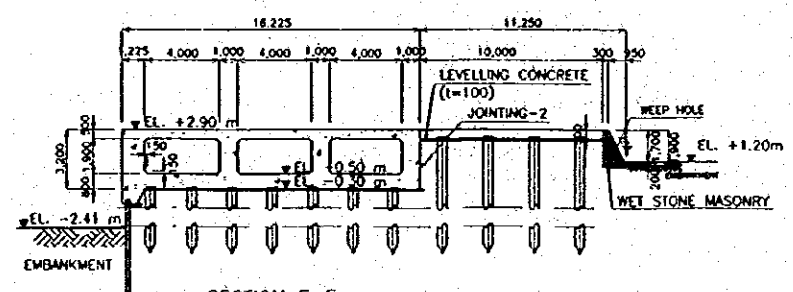
ASIN RETARDING POND



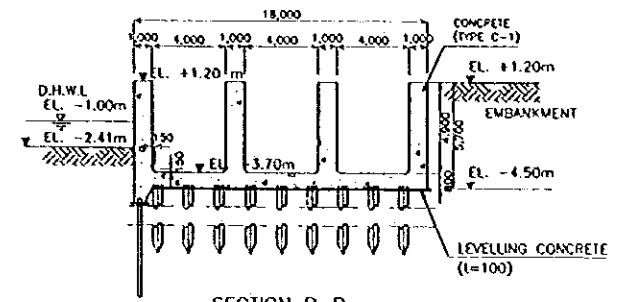
PLAN SCALE A



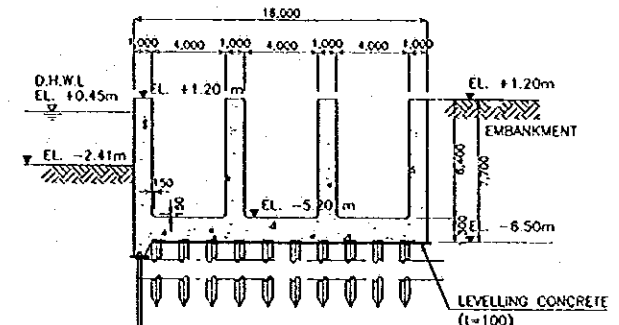
DETAIL I SCALE B



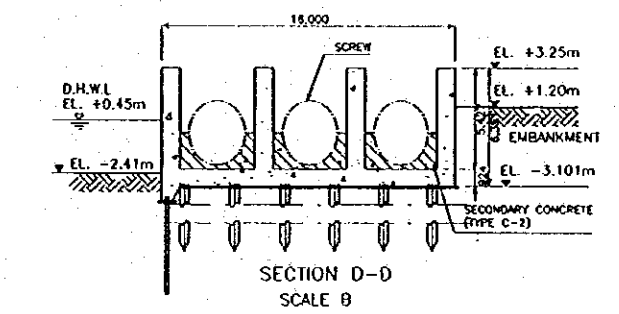
SECTION F-F SCALE B



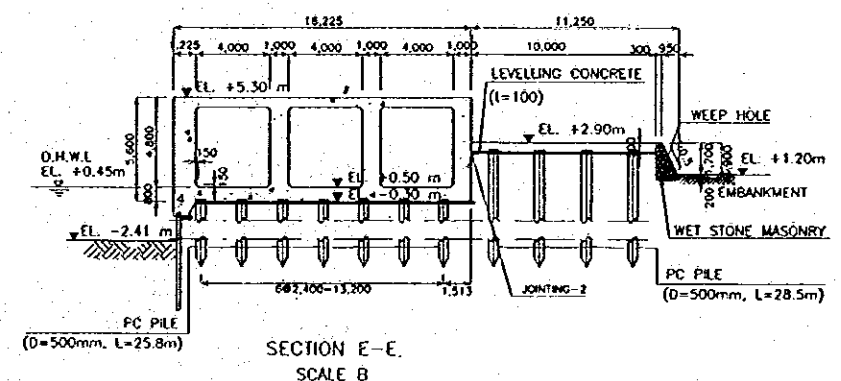
SECTION B-B SCALE B



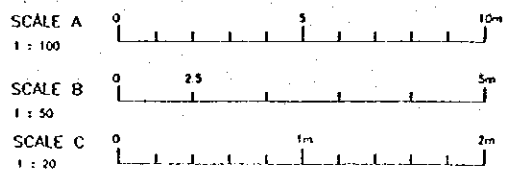
SECTION C-C SCALE B



SECTION D-D SCALE B

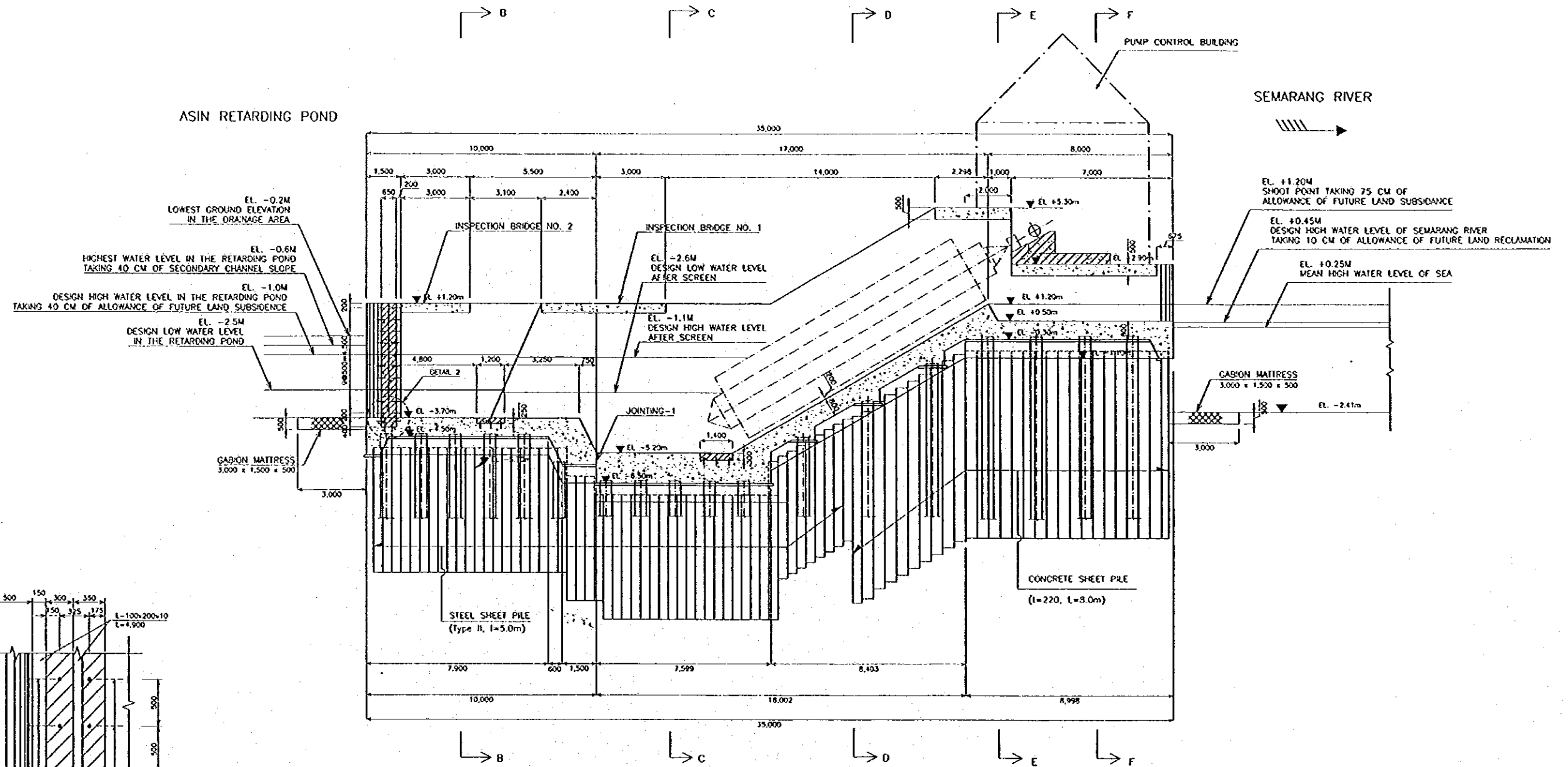


SECTION E-E SCALE B

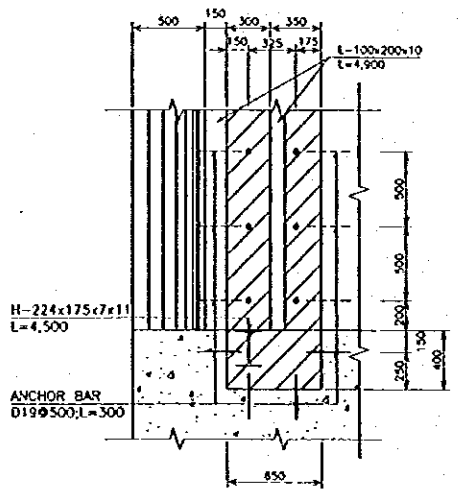


NO.	DATE	REVISIONS	ORGANIZED	DESIGNED	APPROVED

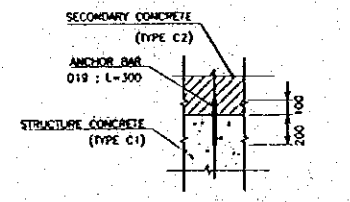
<p>THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF URBAN SETTLEMENT</p>		<p>PROVINCE CENTRAL JAWA</p>	
<p>JATUNGLUKA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT</p>		<p>PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG, IN THE REPUBLIC OF INDONESIA</p>	
<p>ASIN PUMPING STATION GENERAL ARRANGEMENT PLAN AND SECTIONS</p>		<p>TOWN SEMARANG CITY</p>	
<p>SAPAN INTERNATIONAL COOPERATION AGENCY CII ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND JALICO INTERNATIONAL INC.</p>		<p>DRAWING NO. U-P2-P-C-1 SHEET NO. 82</p>	
<p>CHEF OF PLANNING AND DESIGN</p>		<p>DATE CONTRACT NO.</p>	
<p>PROJECT MANAGER</p>		<p> </p>	



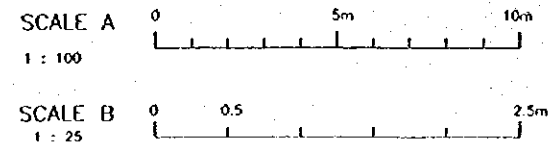
LONGITUDINAL PROFILE OF ASIN PUMPING STATION (A-A)
SCALE A



DETAIL 2
SCALE B

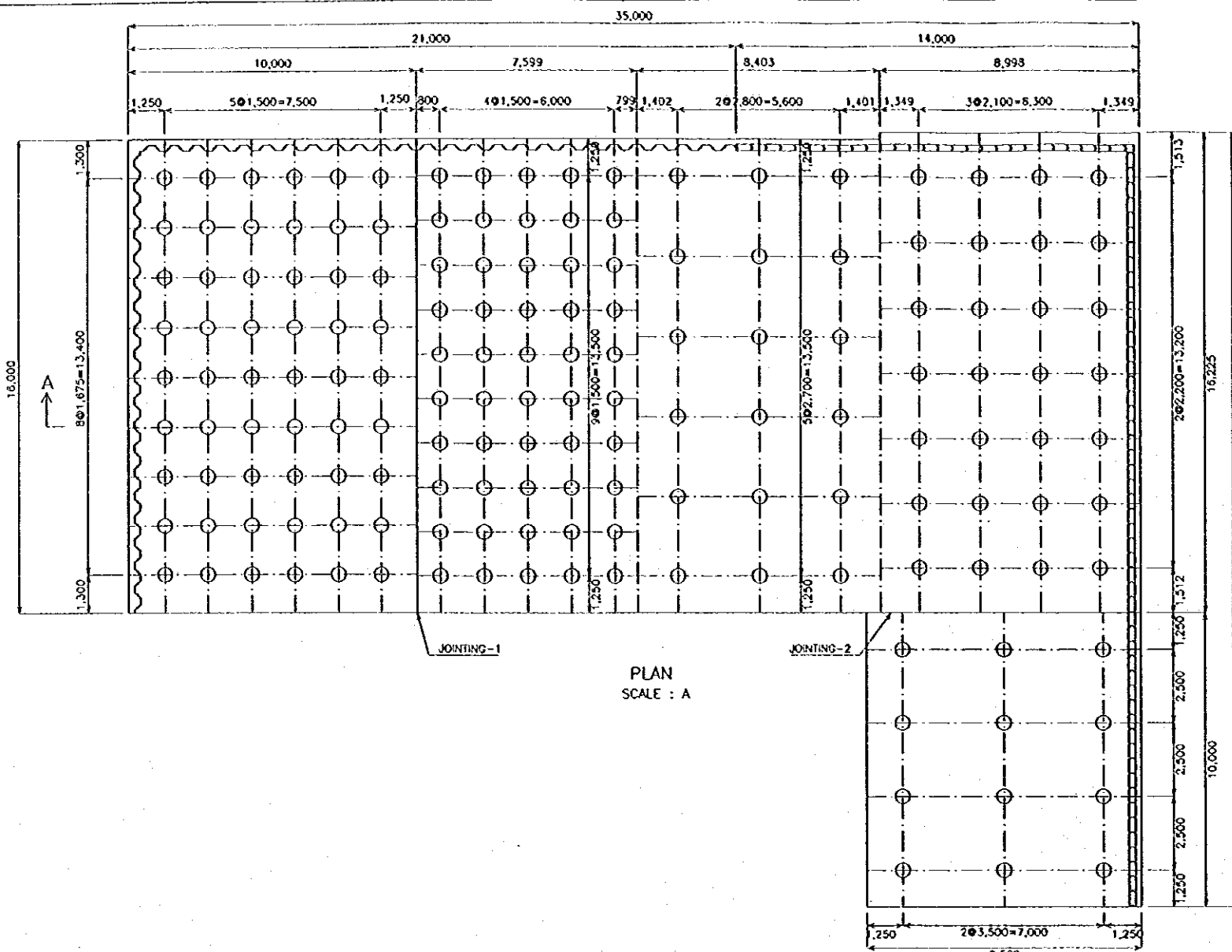


DETAIL OF ANCHOR BAR
SCALE B

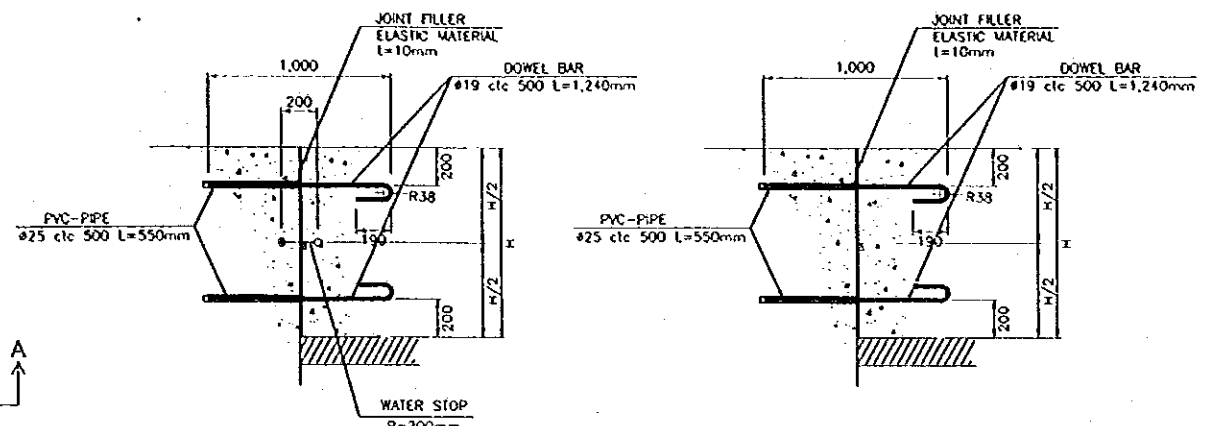


NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

	THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAWA
	BRATUNGLARA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION GENERAL ARRANGEMENT PROFILE AND WATER LEVEL		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
	JAWA INTERNATIONAL COOPERATION AGENCY CIL ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND JAWA INTERNATIONAL INC.		DISTRICT SEMARANG CITY
	DESIGNED CHECKED APPROVED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		DRAWING NO. U-P2.P.CI-2 SHEET NO. 83 DATE CONTRACT NO.

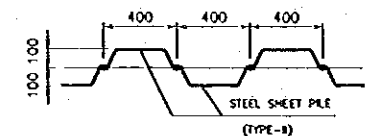


PLAN SCALE : A

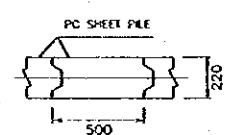


DETAIL OF JOINTING-1 SCALE B

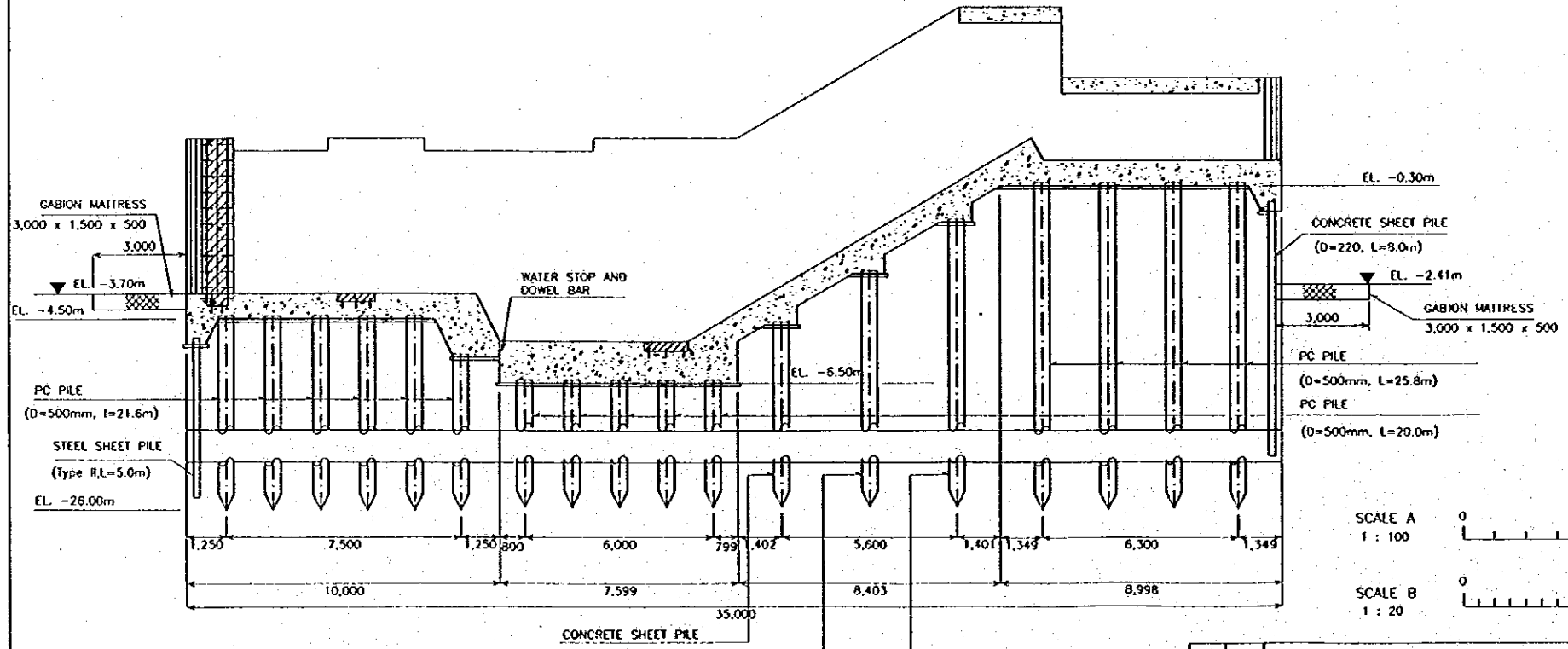
DETAIL OF JOINTING-2 SCALE B



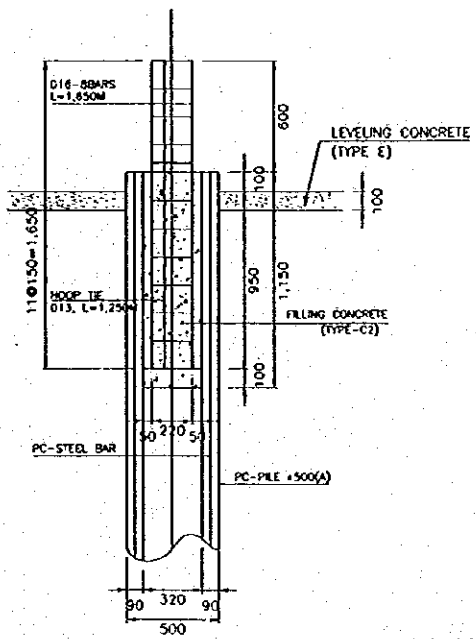
SECTION OF STEEL SHEET PILE SCALE B



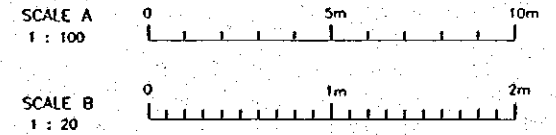
SECTION OF PC SHEET PILE SCALE B



SECTION A-A SCALE : A

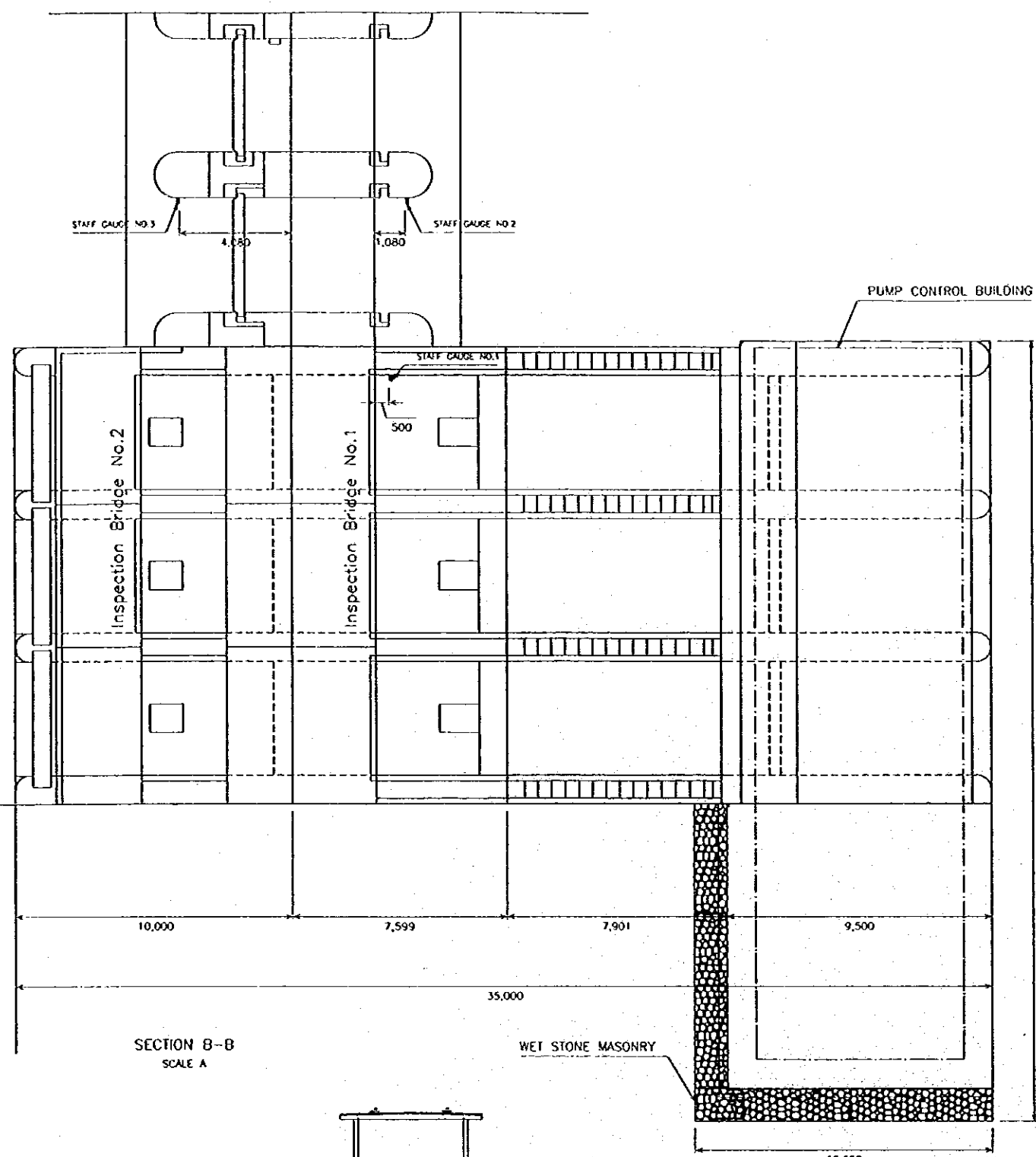


PILE CAP SCALE B

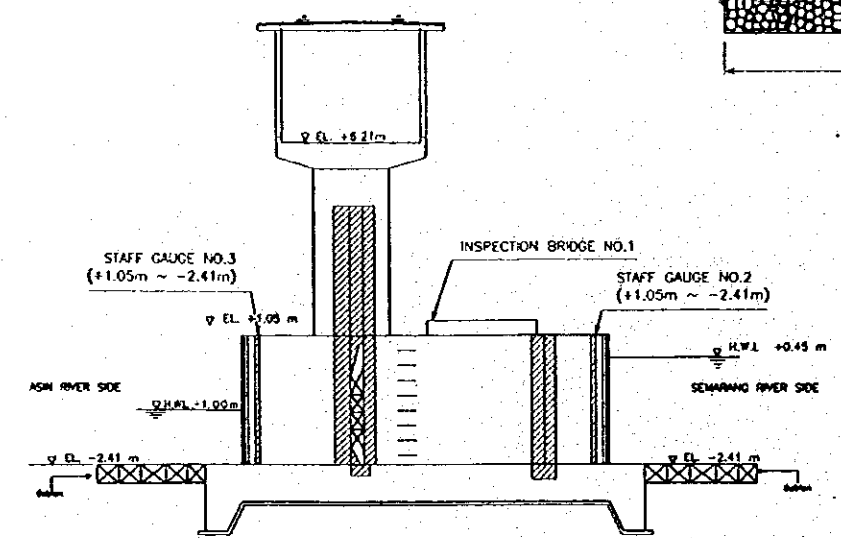


NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

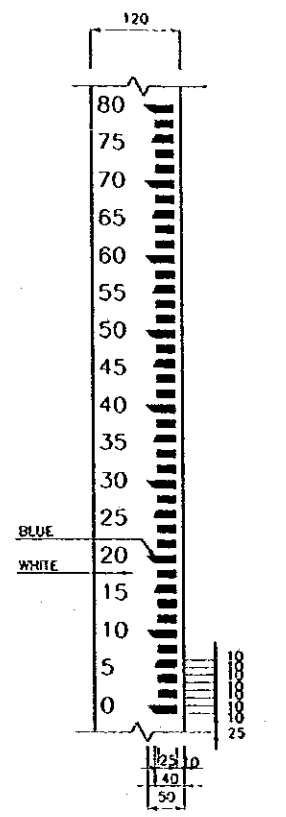
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT BATURUMBURA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION PILE ARRANGEMENT AND DETAILS		PROVINCE CENTRAL JAWA PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY DRAWING NO. U-P2-P-CI-3 SHEET NO. 84 DATE CONTRACT NO.
TAPAN INTERNATIONAL COOPERATION AGENCY PT. INDOBARANG CO. LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND TAPCO INTERNATIONAL SMC.	DESIGNED CHECKED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	DATE CONTRACT NO.



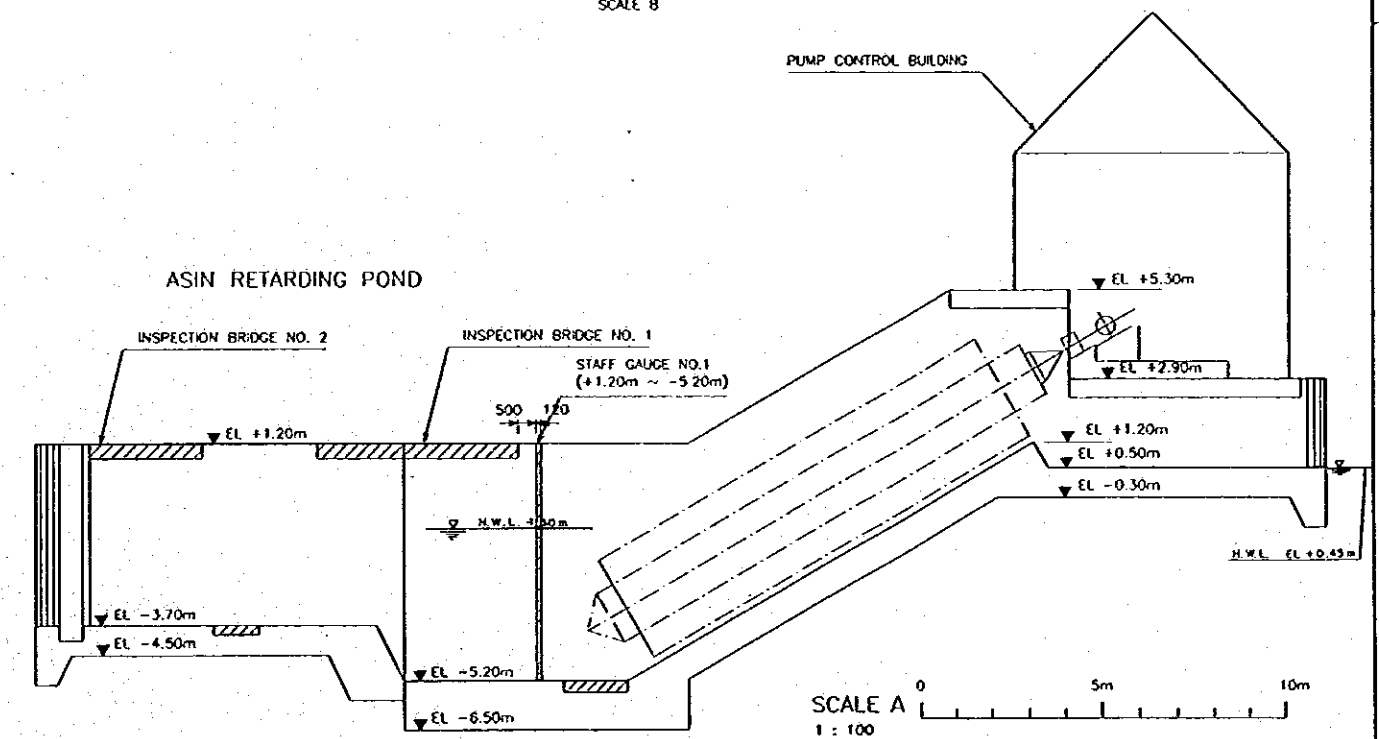
SECTION B-B
SCALE A



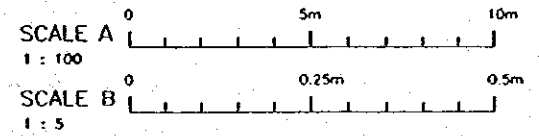
SECTION III - III (SIDE VIEW)
SCALE A



DETAIL OF STAFF GAUGE
SCALE B

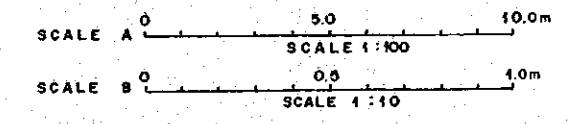
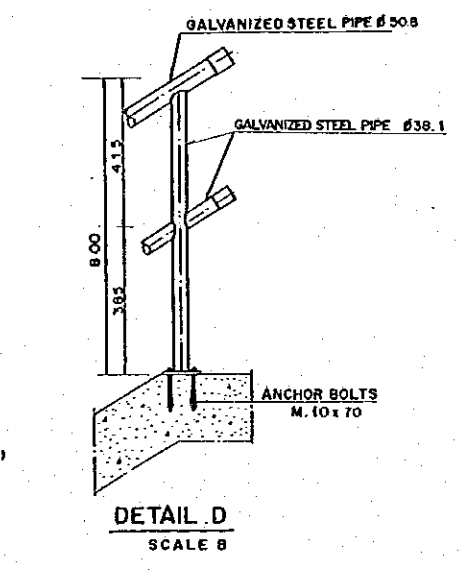
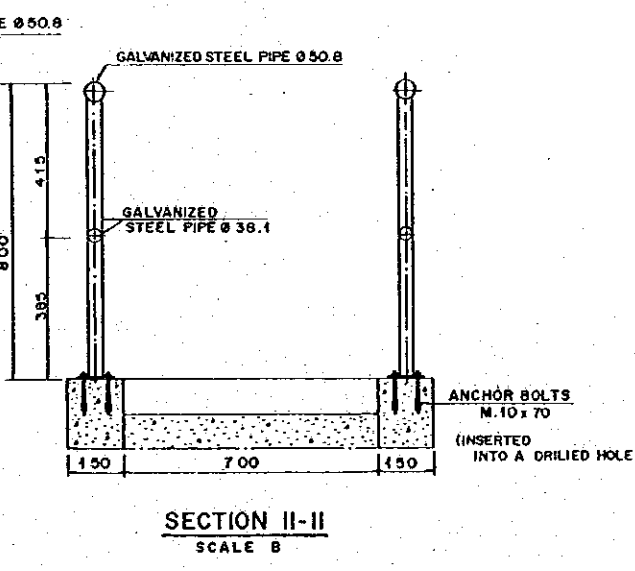
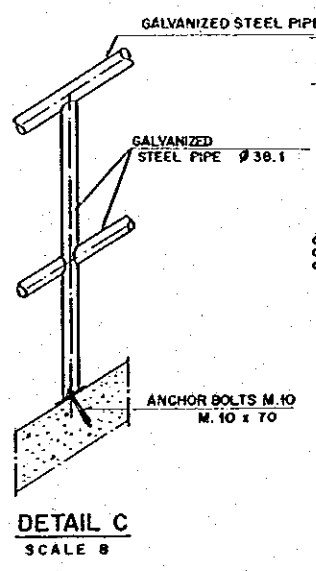
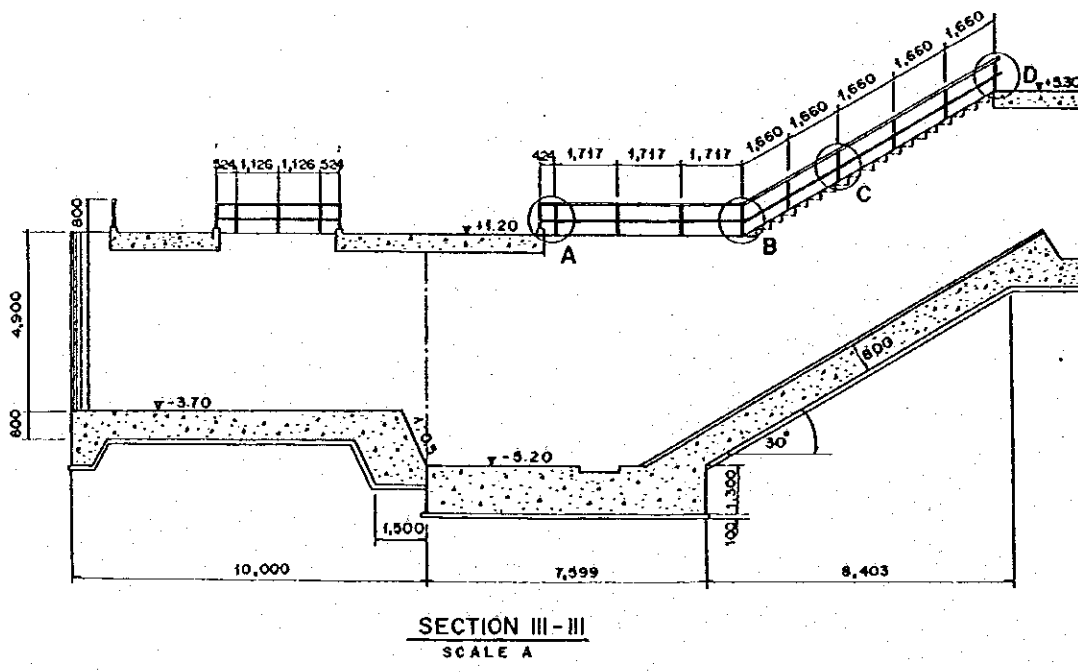
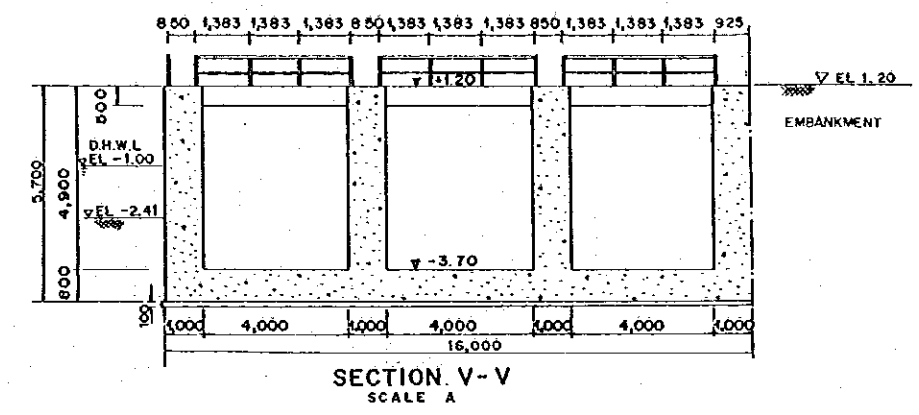
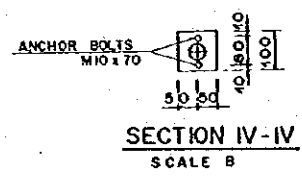
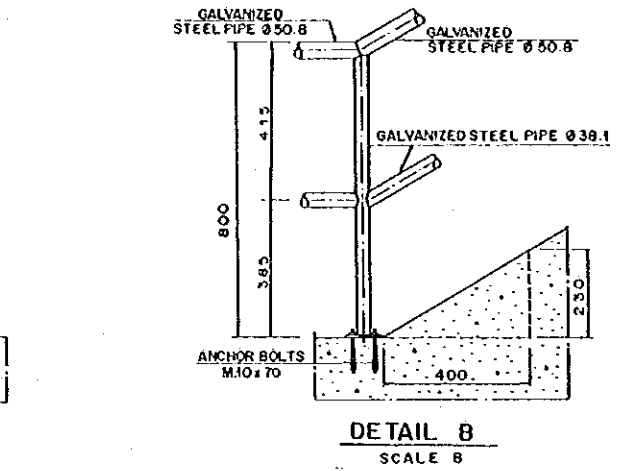
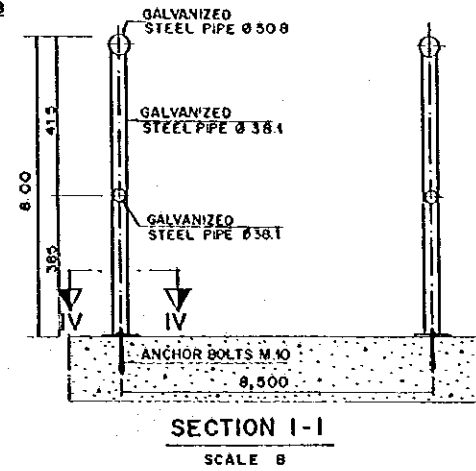
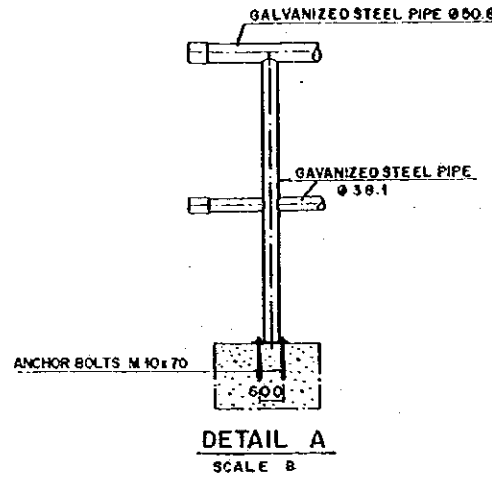
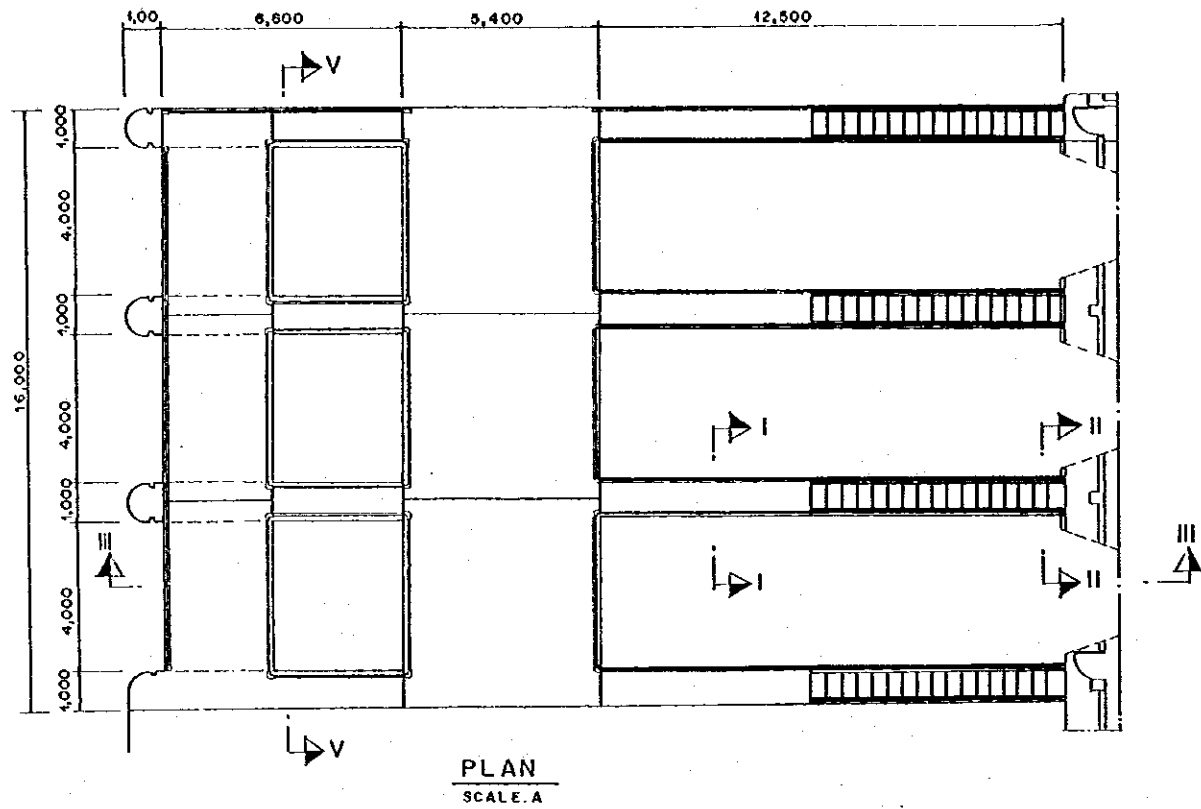


WATER LEVEL DIAGRAM OF ASIN PUMPING STATION
SCALE A



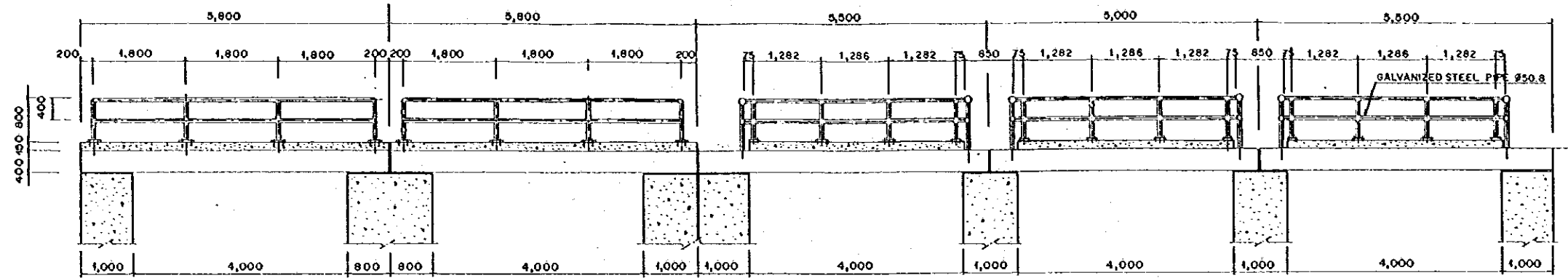
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF RURAL SETTLEMENT RAJAWALINGGA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION STAFF GAUGE		PROVINCE CENTRAL JAYA PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT OF SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY DRAWING NO. U-P2-P-Ci-4 SHEET NO. 85
UJAF (URBAN FLOOD CONTROL AND WATER RESOURCES DEVELOPMENT) CIVIL ENGINEERING CO. LTD. IN ASSOCIATION WITH TROPIC CONSULTANTS INTERNATIONAL AND PAKO INTERNATIONAL INC.	DESIGNED CHECKED APPROVED	DATE CONTRACT NO.

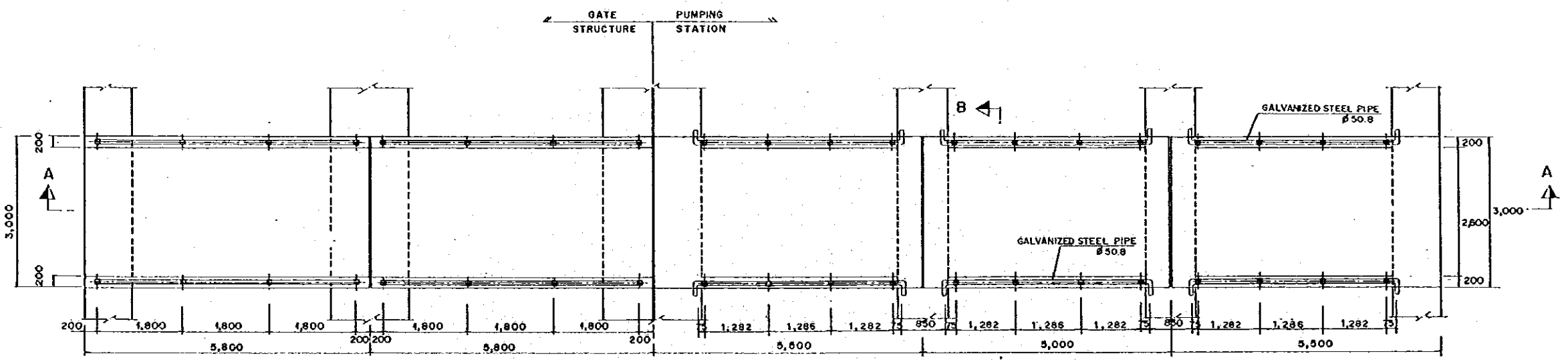


NO.	DATE	REVISIONS	CONCATED	DESIGNED	APPROVED

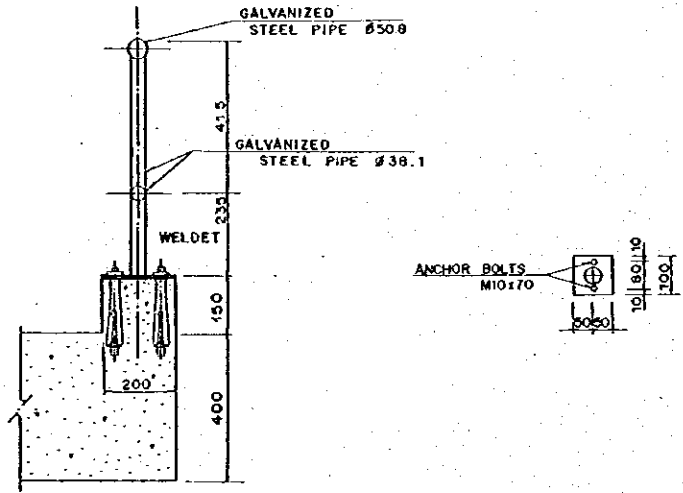
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAWA	
IRATUNBULUMA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION SAFETY HAND RAIL OF PUMPING STATION		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA	
LAYAN INTERNATIONAL COOPERATION AGENCY CTE INDONESIA CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND LAYAN INTERNATIONAL INC.		DISTRICT SEMARANG CITY	
DESIGNED CHECKED DATE		DRAWING NO. U-P2-P-CI-5 SHEET NO. 88	
APPROVED PROJECT MANAGER		CONTRACT NO.	



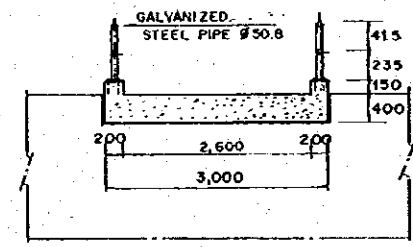
SECTION A-A
SCALE A



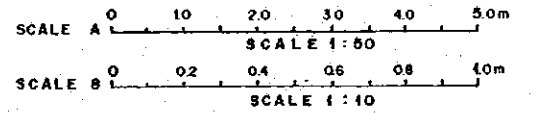
PLAN
SCALE A



DETAIL A
SCALE B

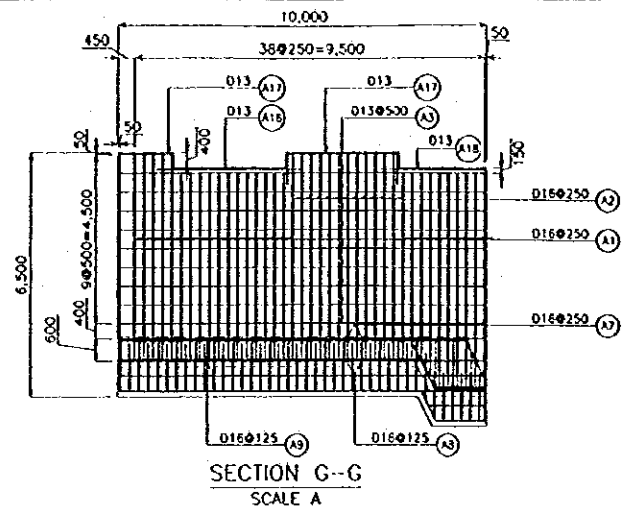


SECTION B-B
SCALE A

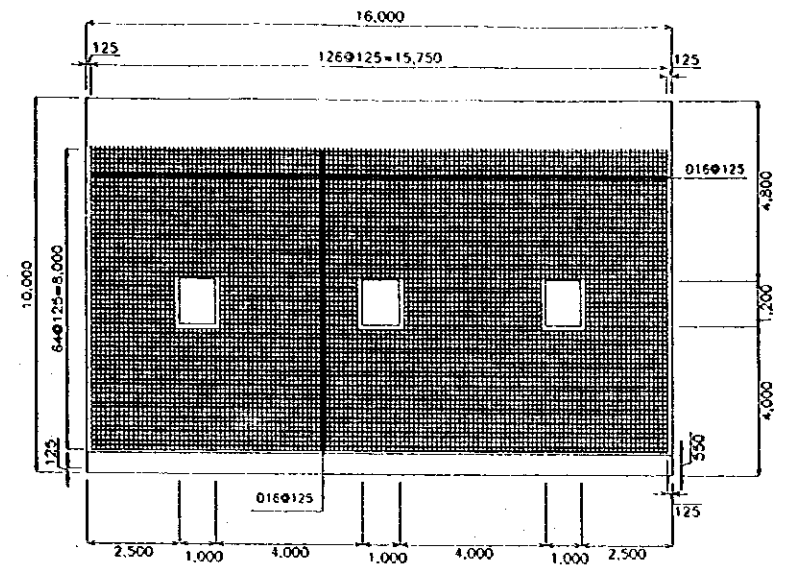


NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

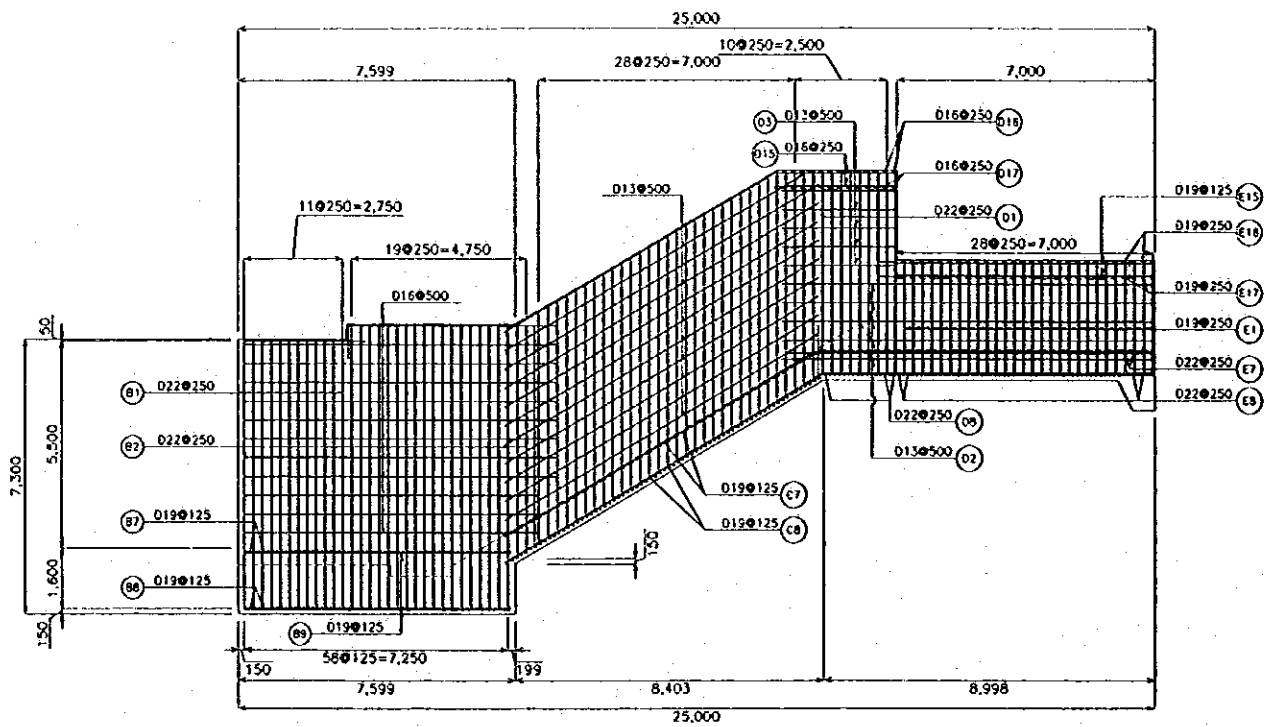
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF URBAN SETTLEMENT SURABAYA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION SAFETY HAND RAIL OF INSPECTION BRIDGE		PROVINCE CENTRAL JAWA PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SURABAYA IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY DRAWING NO. U-P2-P-CI-8 SHEET NO. 87 DATE CONTRACT NO.
TECHNICAL SUPERVISOR (Signature)	CHECKED (Signature)	DATE
CHIEF OF PLANNING AND DESIGN PROJECT MANAGER (Signature)	APPROVED (Signature)	DATE



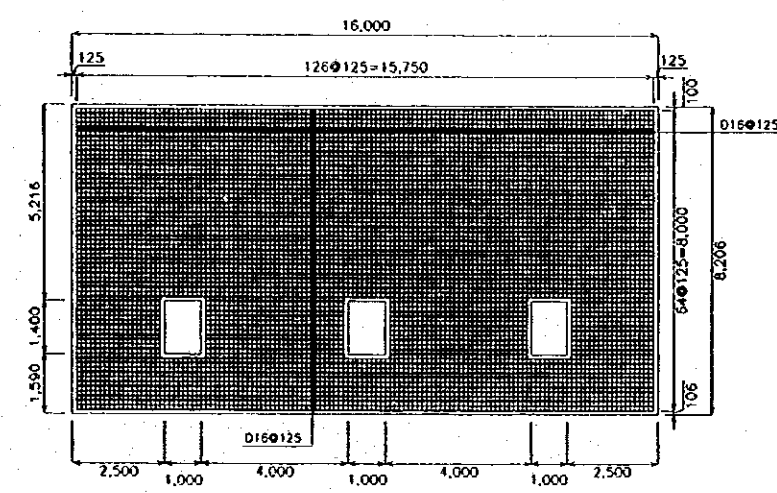
SECTION G-G
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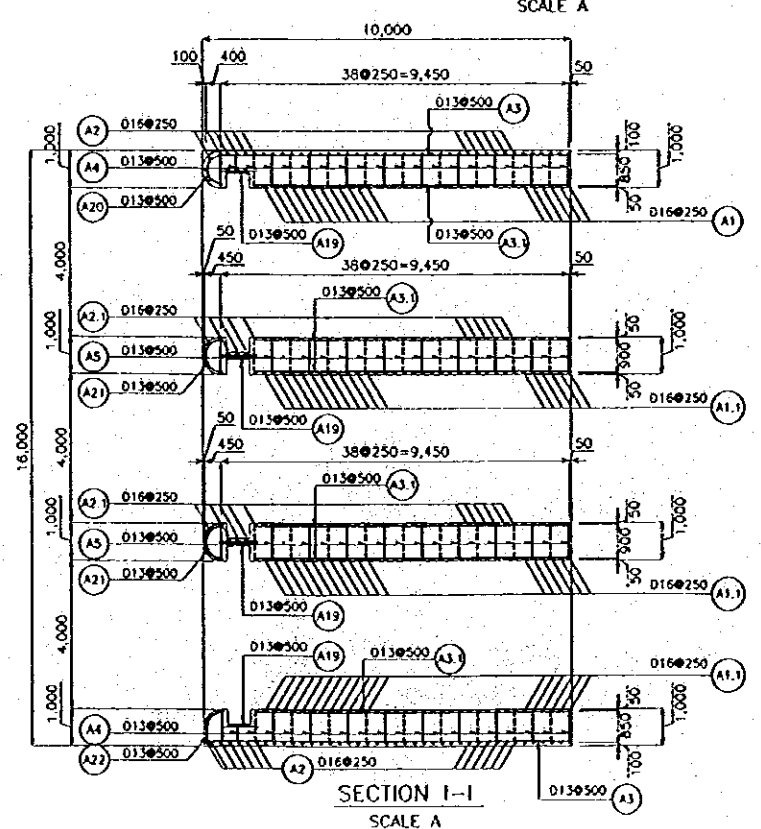
SECTION J-J
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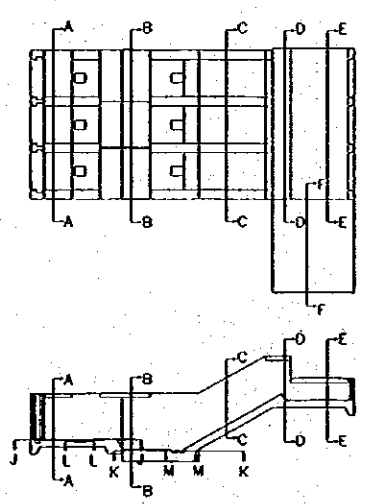
SECTION H-H
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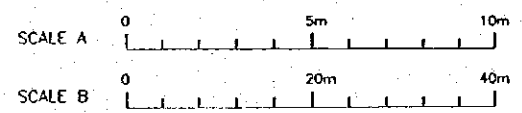
SECTION K-K
SCALE A



SECTION I-I
SCALE A

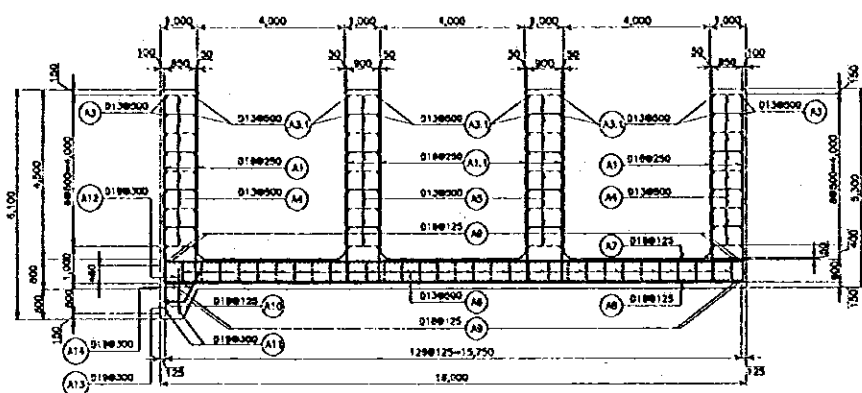


KEY PLAN
SCALE B

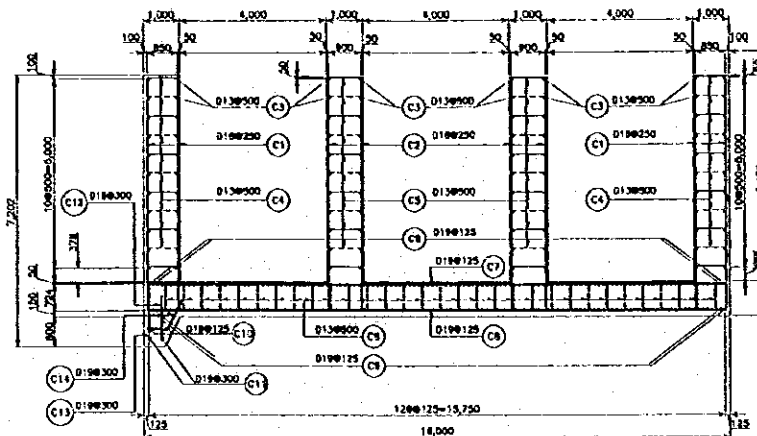


NO.	DATE	REVISIONS	GRADUATED	DESIGNED	APPROVED

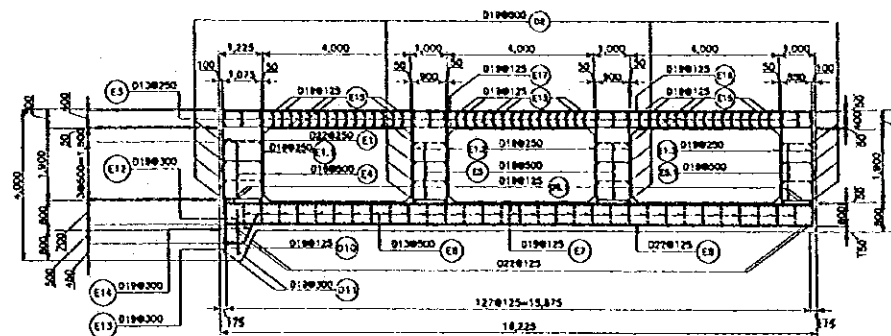
	THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAWA
	JATUNELUMA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION REINFORCING BAR ARRANGEMENT INTAKE,PUMP WELL, TROUGH AND OUTLET (1/5)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
SAKRA INTERNATIONAL COOPERATION AGENCY LTD. ENGINEERING CO., LTD. IN ASSOCIATION WITH TACOM CONSULTANTS INTERNATIONAL AND PAKCO INTERNATIONAL SPC			DISTRICT SEMARANG CITY
DESIGNED CHECKED			DRAWING NO. U-P2-P-C1-7 SHEET NO. 88
COPIED OF PLANNING AND DESIGN PROJECT MANAGER			DATE CONTRACT NO.



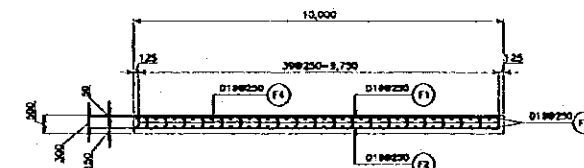
SECTION A-A
SCALE A



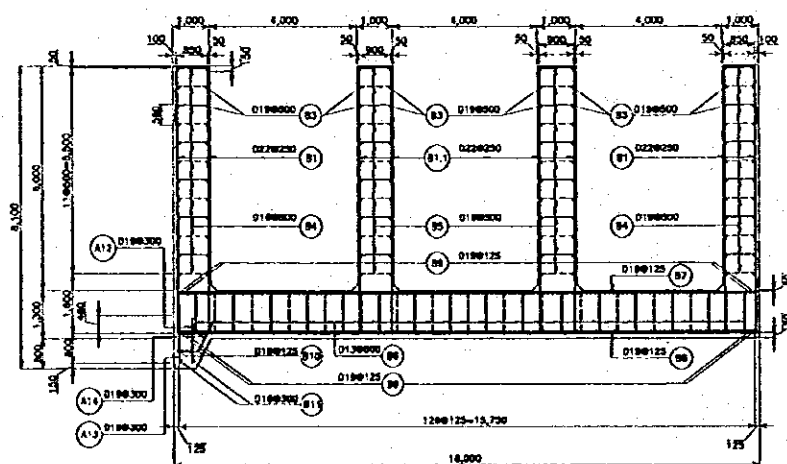
SECTION C-C
SCALE A



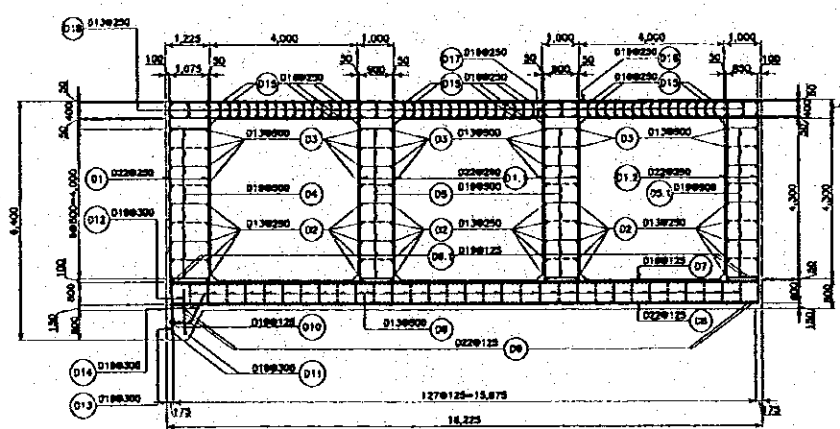
SECTION E-E
SCALE A



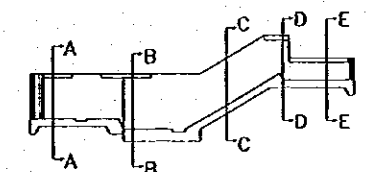
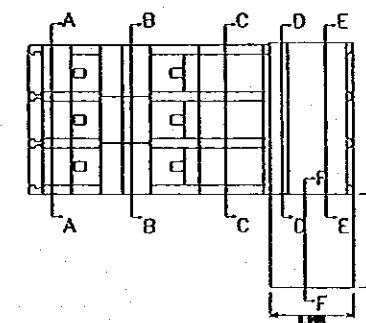
SECTION F-F
SCALE A



SECTION B-B
SCALE A



SECTION D-D
SCALE A

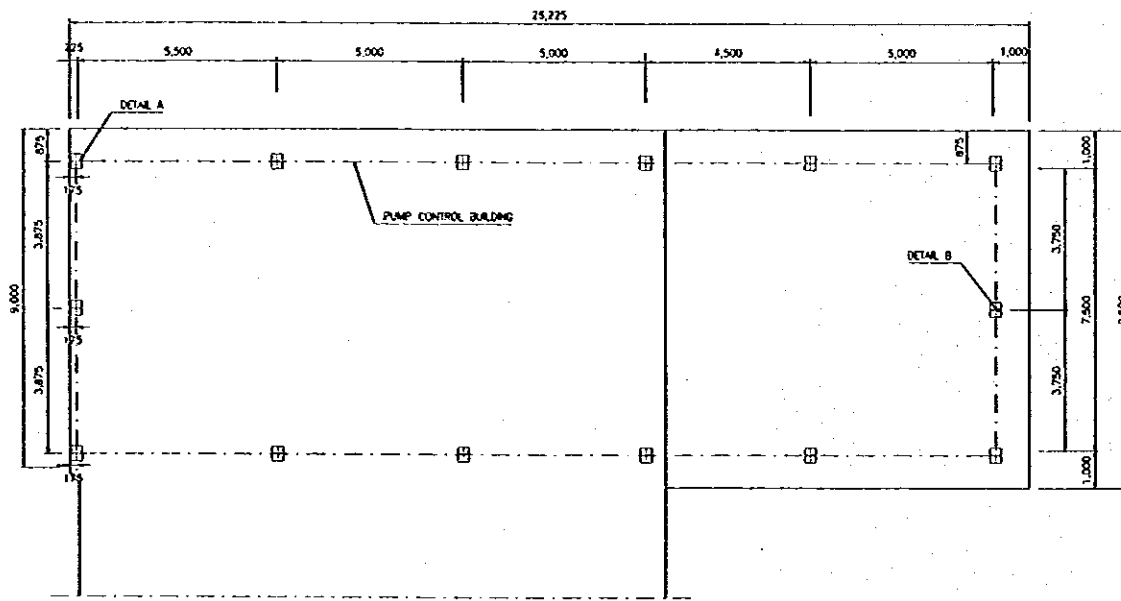


KEY PLAN

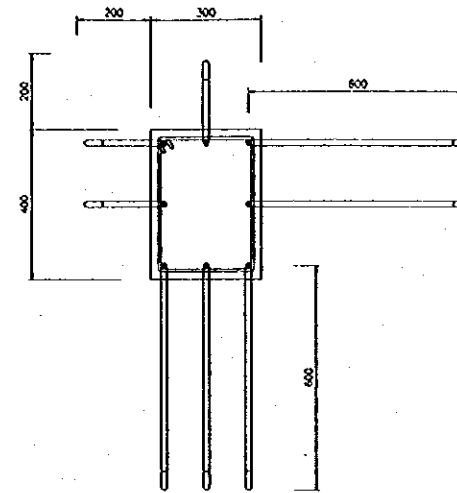


NO.	DATE	REVISIONS	COORDINATOR	DESIGNER	APPROVED

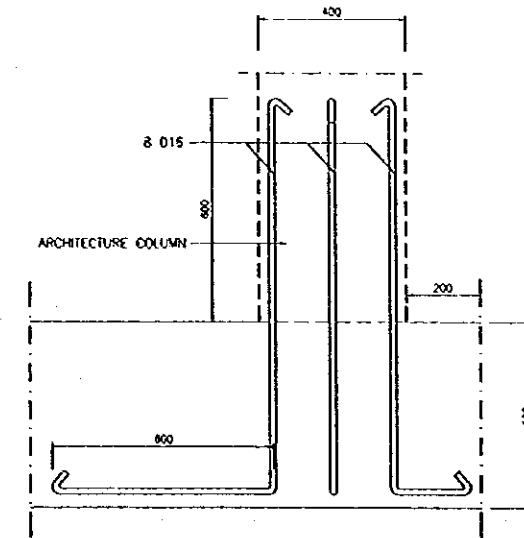
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
BEATURSELAMA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASHN PUMPING STATION REINFORCING BAR ARRANGEMENT INTAKE,PUMP WELL, TROUGH AND OUTLET (1/3)		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT OF SEMARANG IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY CID ENGINEERING CO., LTD. IN COOPERATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL INC.		PROJECT SEMARANG CITY
DRAWING NO. U-P2-P-CI-8 SHEET NO. 89		DATE CONTRACT NO.
APPROVED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		DESIGNED CHECKED DATE



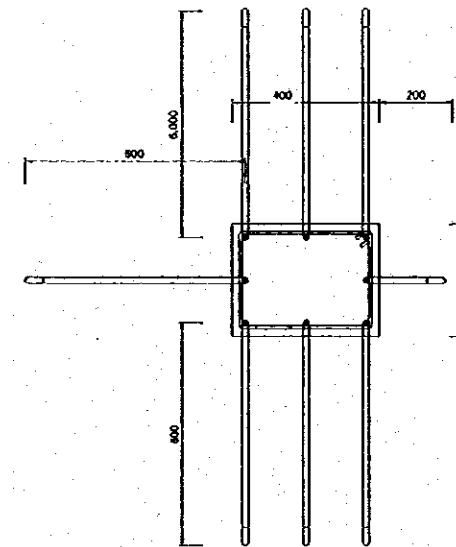
PLAN
SCALE A



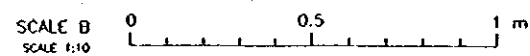
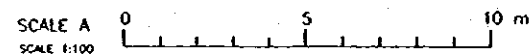
DETAIL A
SCALE A



DETAIL CONNECTION
SCALE A



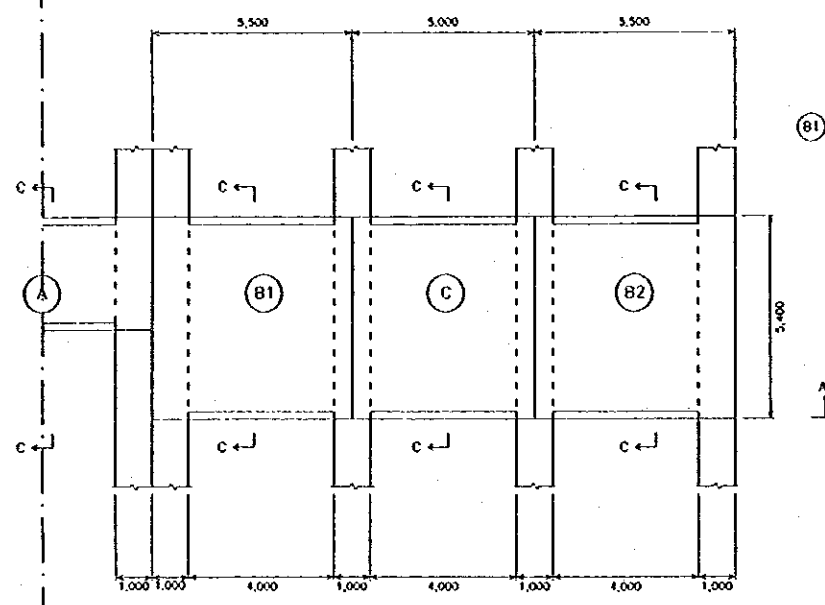
DETAIL B
SCALE A



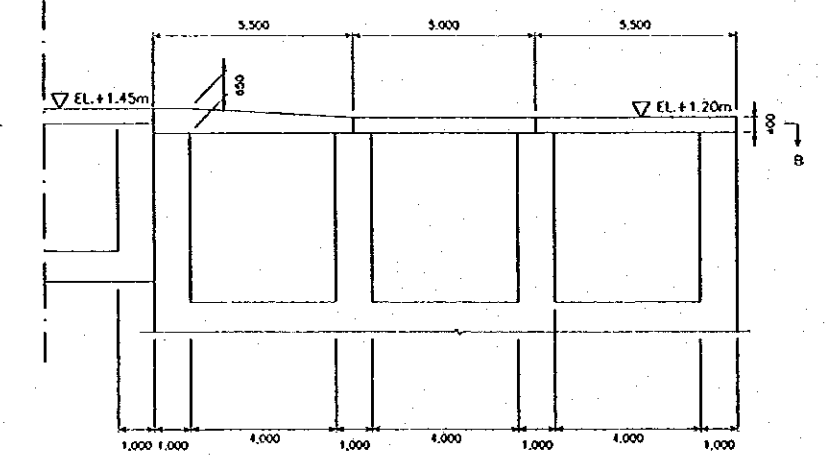
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAWA
BRATUNGSILINGA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT AMEN PUMPING STATION REINFORCING BAR ARRANGEMENT CONNECTION BARS FOR BUILDING		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN BRATUNGSILINGA BY THE REPUBLIC OF INDONESIA CITY SEMARANG CITY
JAWA INTERNATIONAL COOPERATION AGENCY CTE ENGINEERING CO., LTD. in cooperation with PACIFIC CONSULTANTS INTERNATIONAL AND PACO INTERNATIONAL INC.		DRAWING NO. U-P2-P-CI-10 SHEET NO. 91
APPROVED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	CHECKED DRAWING	DATE CONTRACT NO.

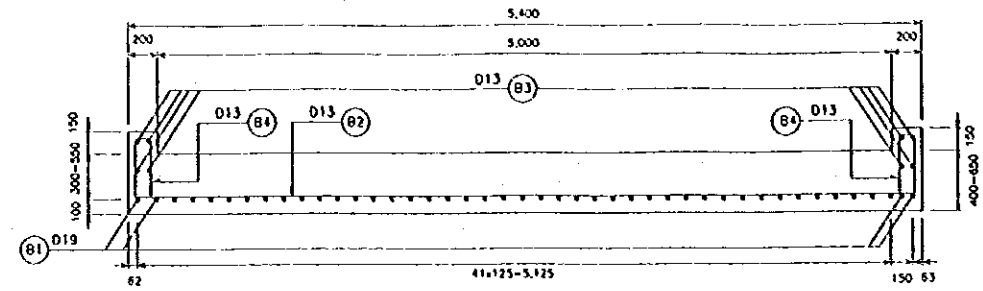
GATE PUMPING STATION



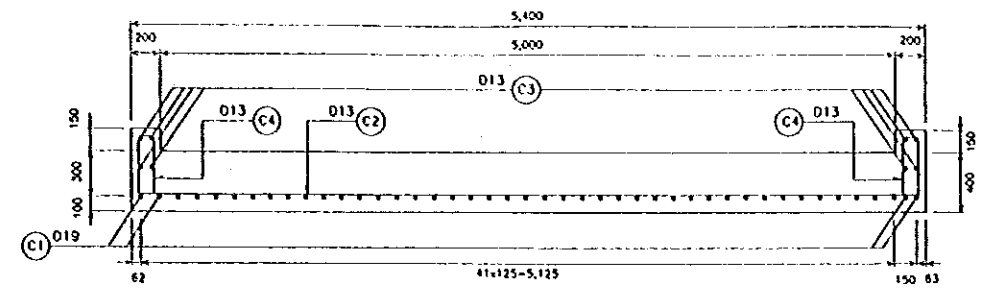
PLAN SCALE A



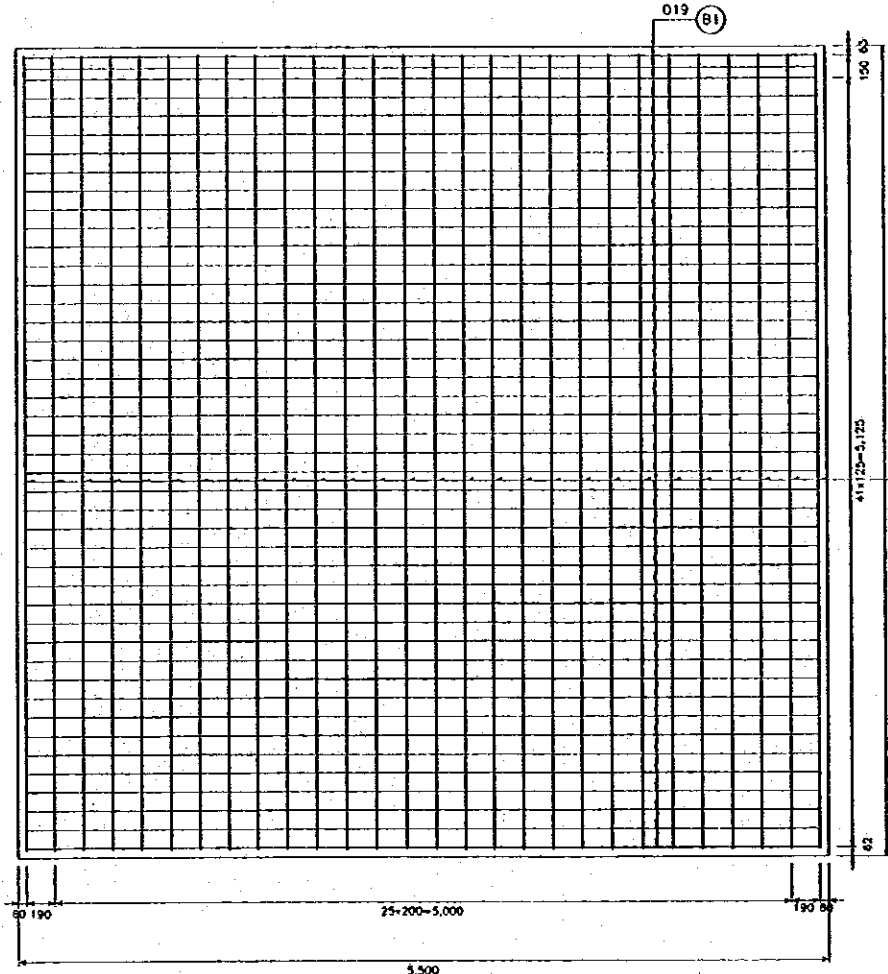
SECTION A-A SCALE A



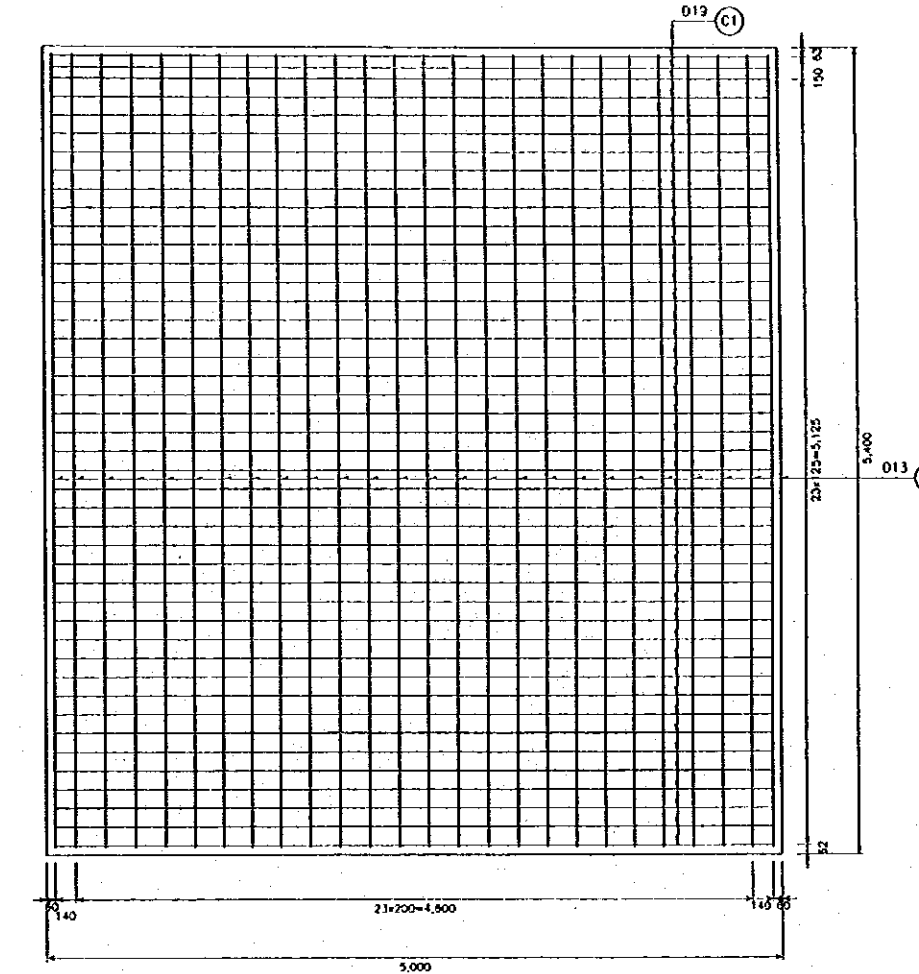
SECTION C-C BRIDGE B1,B2 SCALE B



SECTION C-C BRIDGE C SCALE B



SECTION B-B BRIDGE B1,B2 SCALE B



SECTION B-B BRIDGE C SCALE B

BAR BENDING SCHEDULE

TYPE	SHAPE	DA	NUMBER	LENGTH (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)
BRIDGE B1,B2									
B1	1	19	44	5400	5400				
B2	1	13	28	5300	5300				
B3	1	13	8	3800	3800				
B4	2	13	20	1265-1765	400-650	100	400-650	300	65
BRIDGE C									
C1	1	19	44	4900	4900				
C2	1	13	28	5300	5300				
C3	1	13	8	3800	3800				
C4	2	13	23	1265	400	100	400	300	65

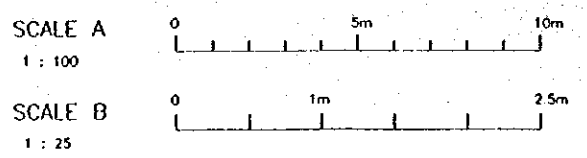
BAR WEIGHT

TYPE	DA (mm)	LENGTH (mm)	NUMBER	WEIGHT PER 'M' (kg)	WEIGHT PER 'M ² ' (kg)	WEIGHT (kg)	SHAPE
BRIDGE B1,B2							
B1	19	5400	44	2.23	12.042	530	—
B2	13	5300	28	1.04	5.512	155	—
B3	13	3800	8	1.04	3.952	32	—
B4	13	265-1765	20	1.04	1.316-1.836	27-37	—
BRIDGE C							
C1	19	4900	44	2.23	10.927	481	—
C2	13	5300	28	1.04	5.512	155	—
C3	13	3800	8	1.04	3.952	32	—
C4	13	1265	23	1.04	1.316	31	—

BAR BENDING DETAIL

DA	a	b	i	R	L	OVERLAP L WEIGHT (kg)
013	66	156	222	42	455	0.453
016	75	193	266	48	580	0.874
019	94	236	330	60	665	1.496
022	104	272	378	66	770	2.341
025	122	306	428	78	875	3.483
028	141	349	490	90	1013	5.116
032	151	385	536	96	1120	6.878

Note :
Number of Bridge B = 2
Number of Bridge C = 1



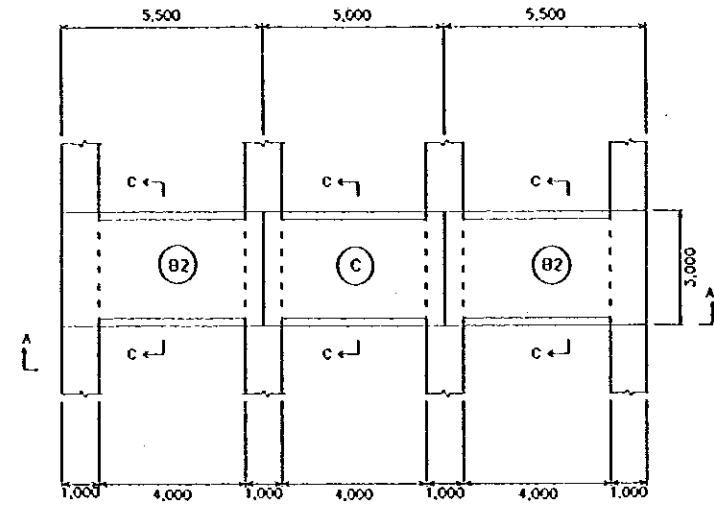
No.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

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

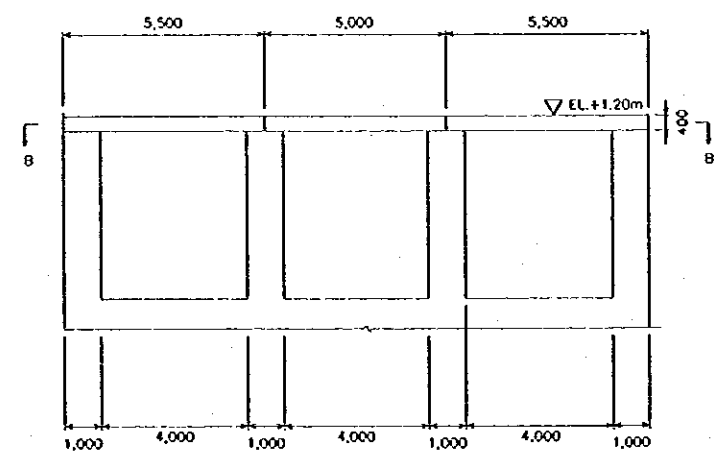
IRATUNBELUNA FLOOD CONTROL PROJECT
COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT
ASIN PUMPING STATION
REINFORCING BAR ARRANGEMENT
INSPECTION BRIDGE NO.1

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-P-C1-11
SHEET NO. : 92

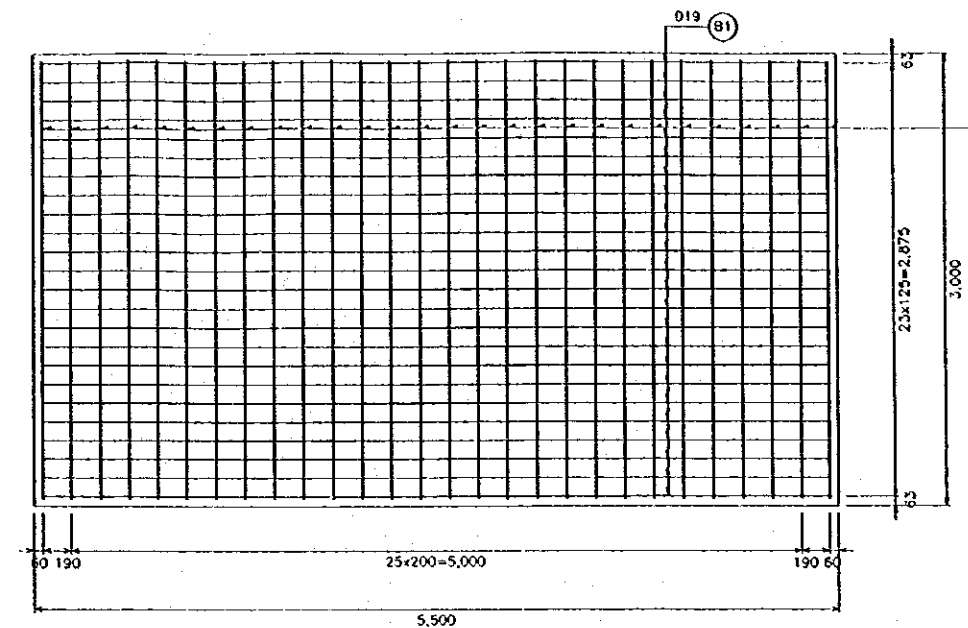
DATE : CONTRACT NO. :
PROJECT MANAGER :
DESIGNED :
CHECKED :
APPROVED :
ORIGINATED :
DATE :



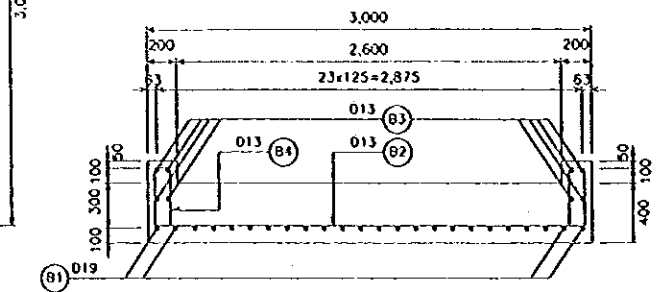
PLAN
SCALE A



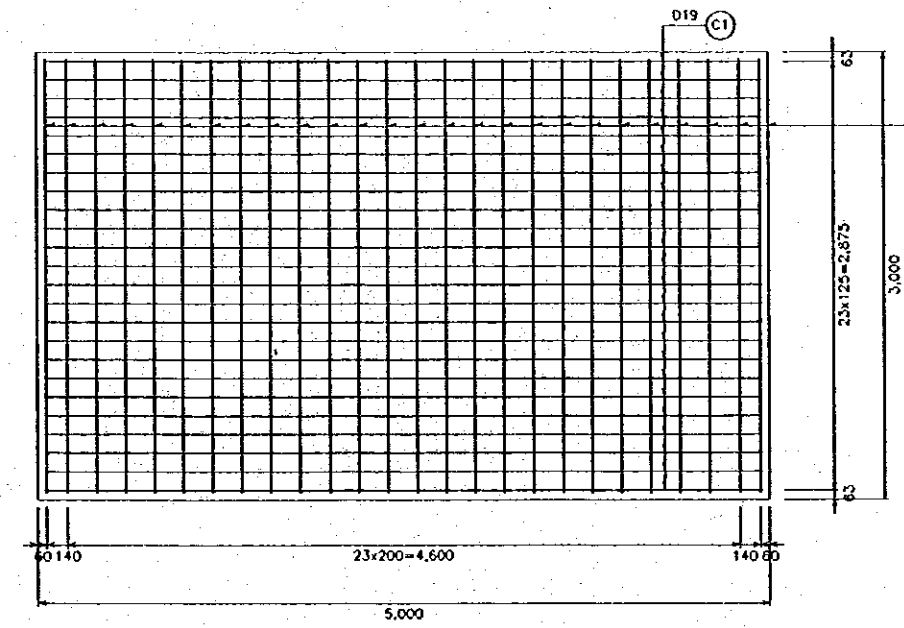
SECTION A-A
SCALE A



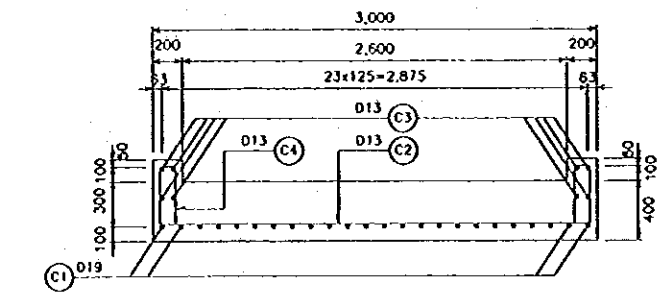
SECTION B-B
BRIDGE B
SCALE B



SECTION C-C
BRIDGE B
SCALE B



SECTION B-B
BRIDGE C
SCALE B



SECTION C-C
BRIDGE C
SCALE B

BAR BENDING SCHEDULE

TYPE	SHAPE	DA	NUMBER	LENGTH (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	R
BRIDGE B2											
B1	1	19	24	5400	5400						
B2	1	13	28	2900	2900						
B3	1	13	8	5400	5400						
B4	2	13	28	1285	400	100	400	300	85		
BRIDGE C											
C1	1	19	24	4900	4900						
C2	1	13	28	2900	2900						
C3	1	13	8	4900	4900						
C4	2	13	28	1285	400	100	400	300	85		

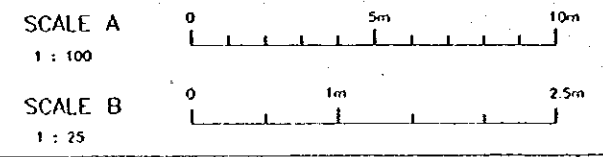
BAR WEIGHT

TYPE	DA (mm)	LENGTH (mm)	NUMBER	WEIGHT PER BAR (kg)	WEIGHT PER BAR (kg)	WEIGHT (kg)	SHAPE
BRIDGE B2							
B1	19	5400	24	2.23	12.042	289	
B2	13	2900	28	1.04	3.016	84	
B3	13	5400	8	1.04	5.616	45	
B4	13	1285	28	1.04	1.316	37	
BRIDGE C							
C1	19	4900	24	2.23	10.927	282	
C2	13	2900	28	1.04	3.016	78	
C3	13	4900	8	1.04	5.616	45	
C4	13	1285	28	1.04	1.316	37	

BAR BENDING DETAIL

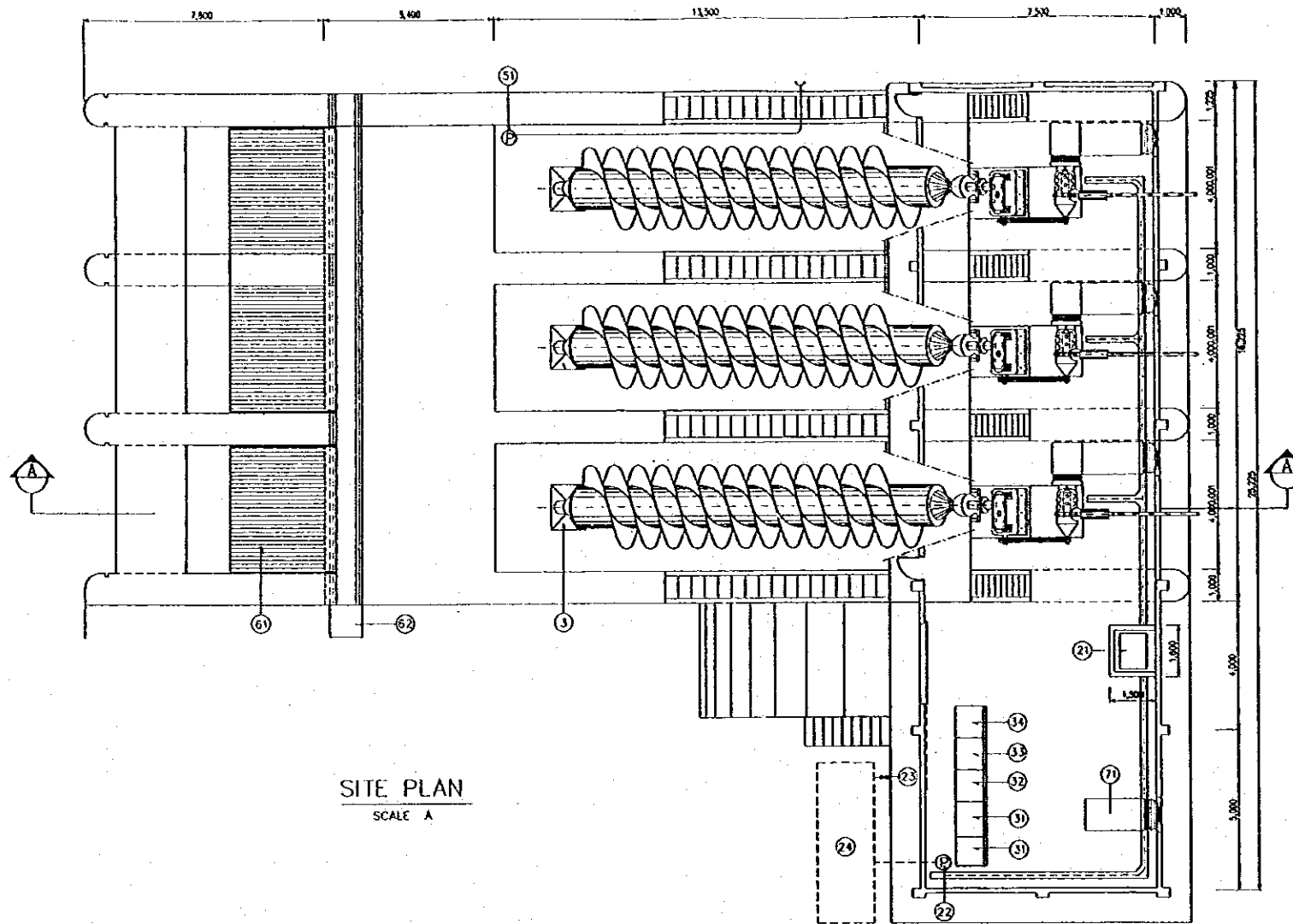
DA	a	b	I	R	OVERLAP	
					L	WEIGHT (kg)
D13	66	156	222	42	455	0.433
D18	75	183	266	48	560	0.874
D19	94	236	330	60	665	1.496
D22	104	272	378	66	770	2.341
D25	122	308	428	78	875	3.483
D28	141	348	490	90	1015	5.116
D32	151	385	536	96	1120	6.976

Note :
Number of Bridge B = 2
Number of Bridge C = 1



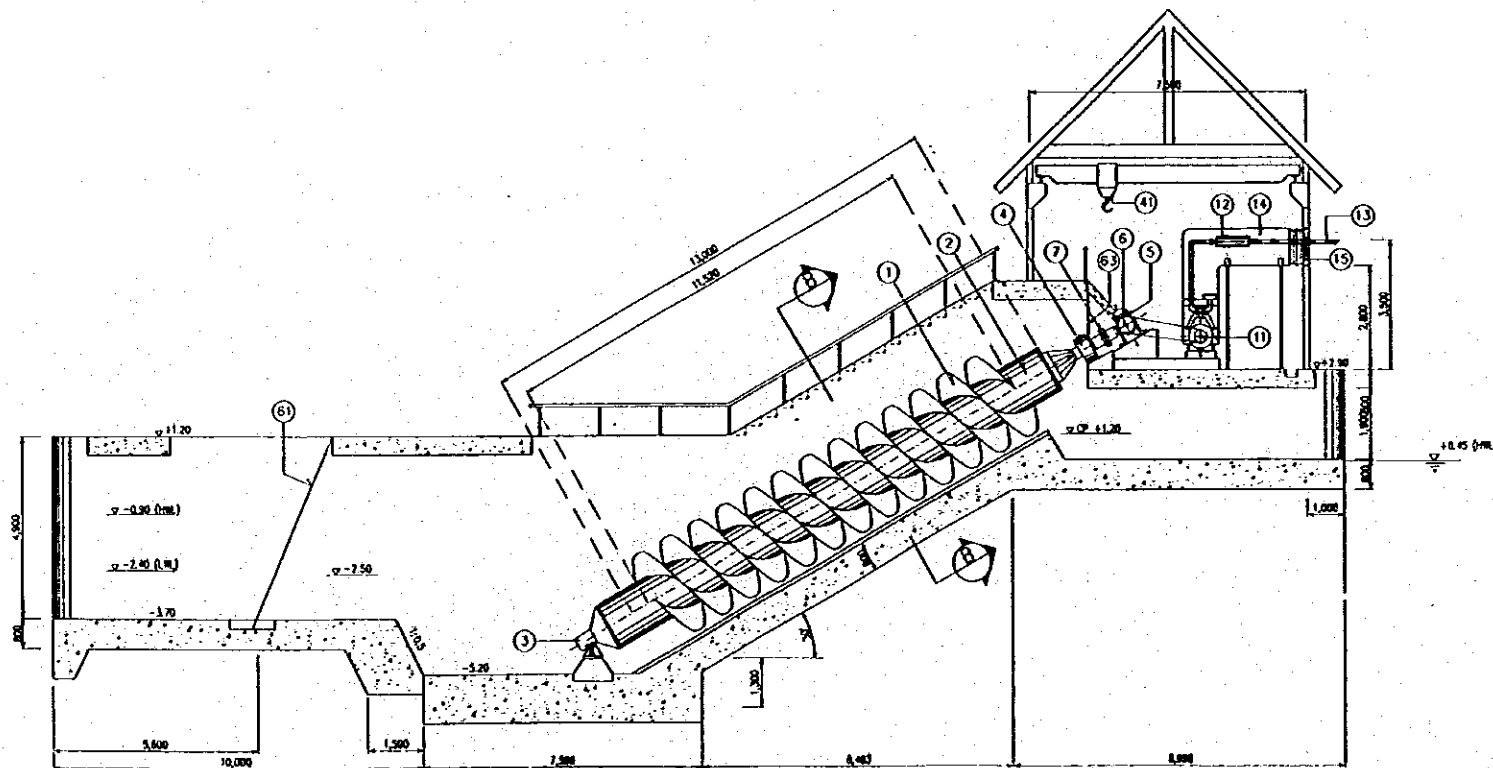
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAYA
IRATUNBILANA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION REINFORCING BAR ARRANGEMENT INSPECTION BRIDGE NO.2		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN IRATUNBILANA IN THE PROVINCE OF BUKIT MARGAHAYU
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND FAROS INTERNATIONAL INC.		DISTRICT SIMARANG CITY
CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		DRAWING NO. U-P2-P-CI-12 SHEET NO. 93 DATE CONTRACT NO.

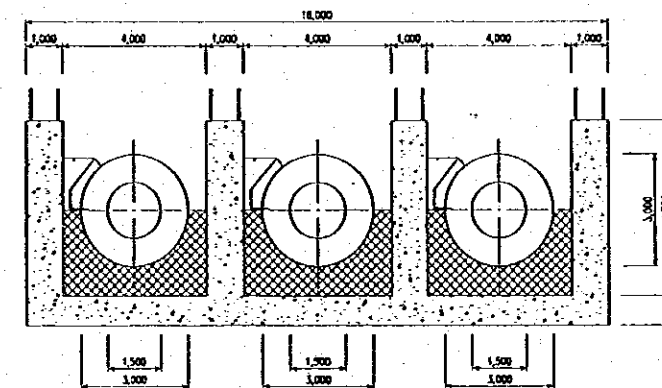


SITE PLAN
SCALE A

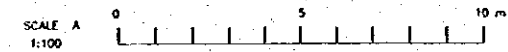
NO	DESCRIPTION	REMARKS	UNIT
1	Flight of screw pump	Diameter : 3.000 mm, Capacity 3.0 m ³ /s	3
2	Center tube of screw pump		3
3	Lower bearing		3
4	Upper bearing		3
5	Gear box	Gear ratio 300 rpm/28.5 rpm	3
6	V-Belt & Pulley	Pulley, 500 mm diameter, 3 Planes	9x3
7	Coupling		3
11	Diesel engine	325 hp, 1.800 rpm Radiator cooled type	3
12	W/Filter		3
13	Exhaust pipe		3
14	Ducting & flexible Connector		3
15	Louver	By architectural work	3
21	Fuel service tank	2.000 liter	1
22	Fuel transfer pump		1
23	Fuel intake connection plug		1
24	Fuel storage tank	10.000 liter, underground	1
31	kWh meter & distribution panel	For PUNS transformer & Generator Unit	1
32	Motor control panel		1
33	Water level indication & Alarm panel		1
34	Batteries charger & Panel	For diesel engine starting	1
41	Manual operated hoist	2 ton	1
51	Auxiliary drainage pump	Submersible type capacity : 0.2 m ³ /s	1
61	Screen	Pitch 200 mm	3
62	Splash plate	2.3 mm Galvanized steel plate, Fixed after alignment	3
71	Generator Unit	16.0 kVA	1



SECTION A-A
SCALE A

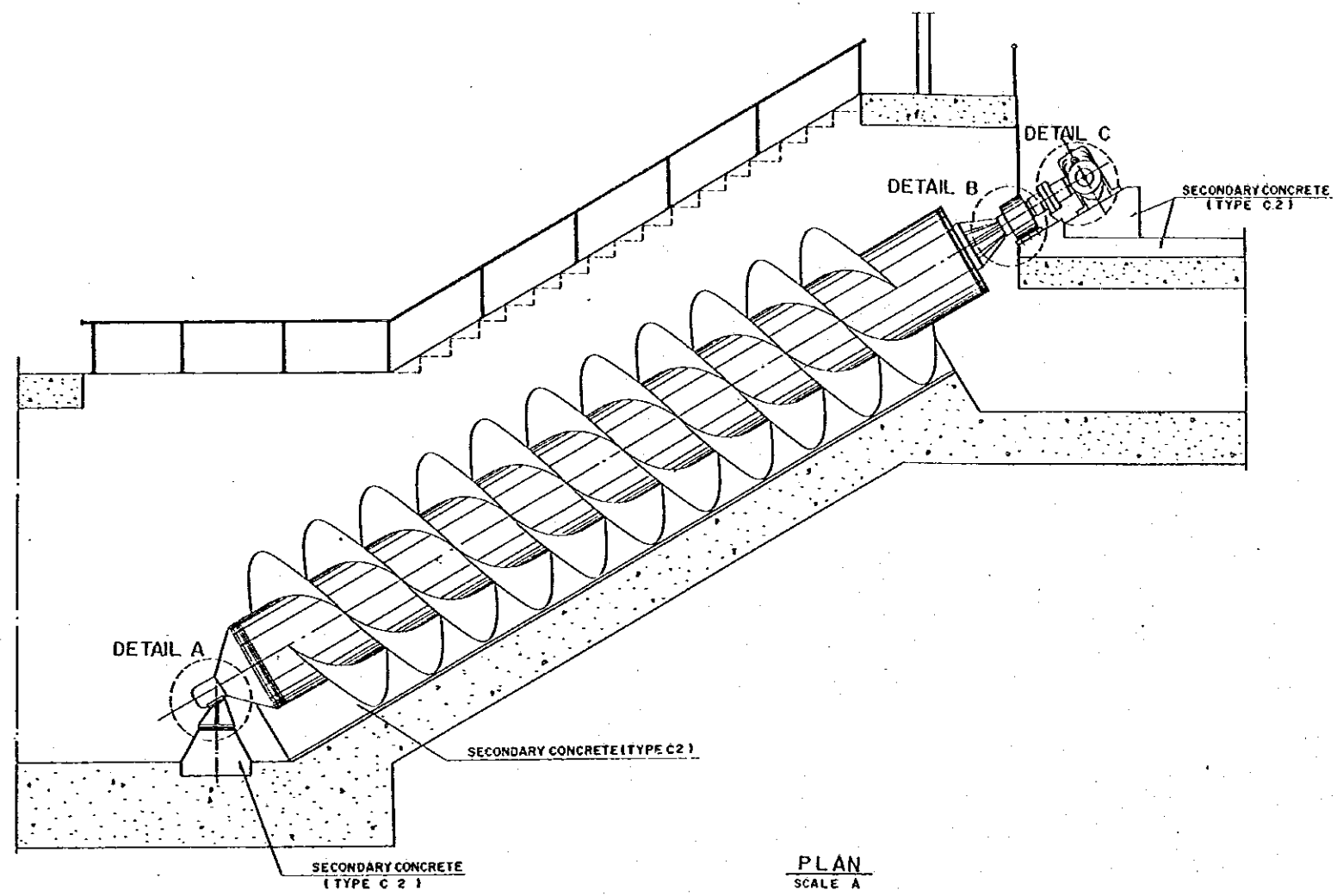


SECTION B-B
SCALE A

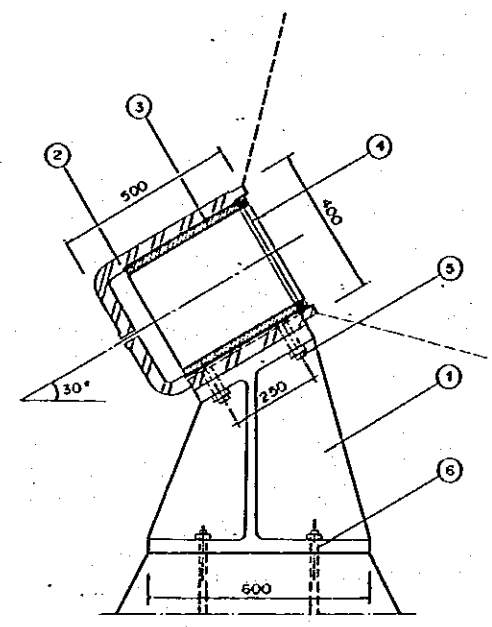


NO.	DATE	REVISIONS	ORIGINATED	DRAWN	APPROVED

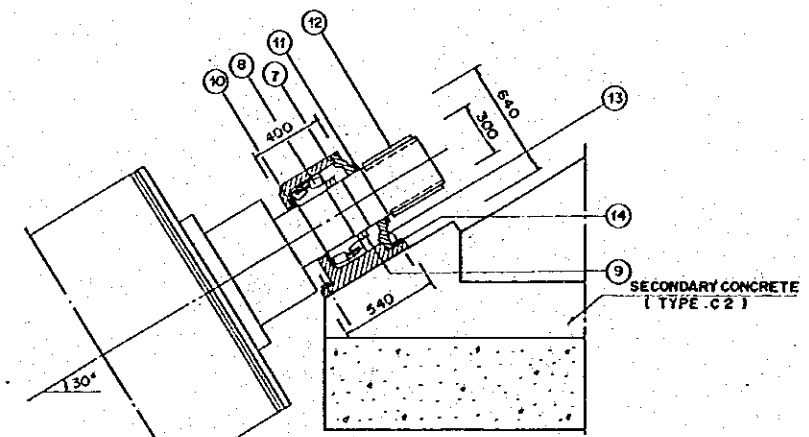
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT RIATUMSEKELUA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION SCREW PUMP GENERAL ARRANGEMENT	PROVINCE CENTRAL JAVA
	PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT OF SEMARANG IN THE REPUBLIC OF INDONESIA
	DISTRICT SEMARANG CITY
	DRAWING NO. U-P2-P-Me-1 SHEET NO. 94
WAPR INTERNATIONAL CONSULTING ENGINEERS C/O ENGINEERING CO., LTD. #100000000 JAYAPALM COMPLEX INTERNATIONAL AND PABO INTERNATIONAL INC.	DATE CONTRACT NO.
CHECKED CHECKED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	APPROVED



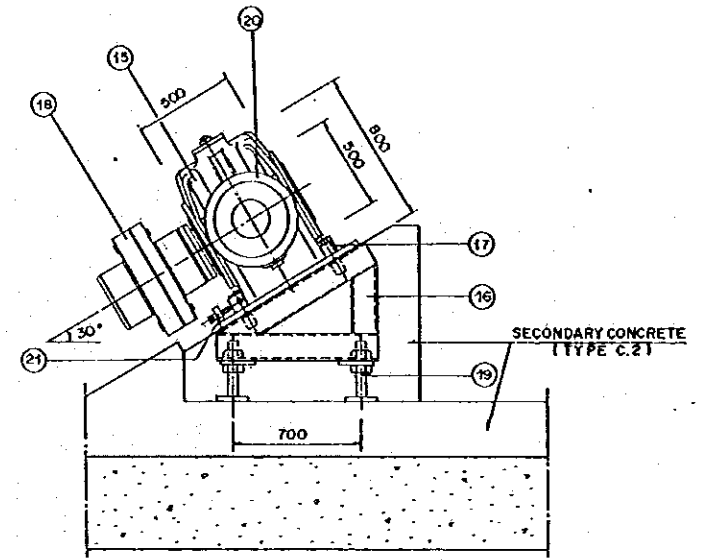
PLAN
SCALE A



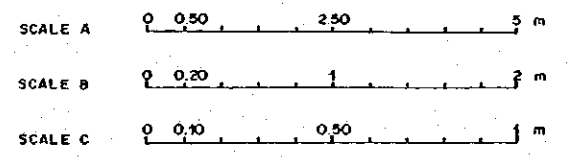
DETAIL A
SCALE C



DETAIL B
SCALE B



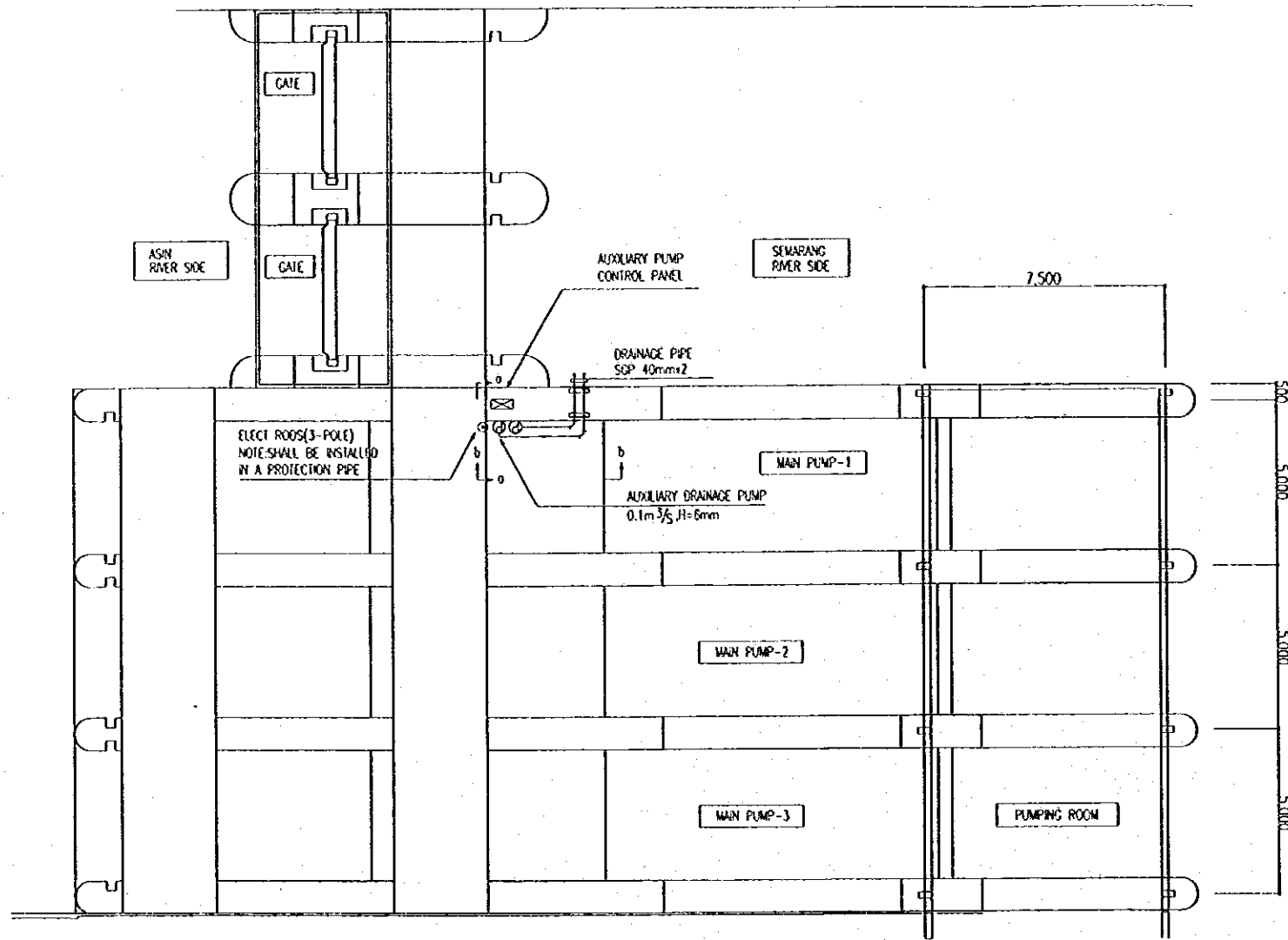
DETAIL C
SCALE B



NO.	DESCRIPTION	REMARKS
1	BEARING SUPPORT	CAST IRON SHROUD
2	BEARING HOUSE	CAST IRON SHROUD
3	BEARING	SLEEVE TYPE, PHOSPHOR BRONZE
4	SEALING RING	
5	BOLT	
6	ANCHOR BOLTS	
7	BEARING HOUSE	
8	BEARING	SELF ALIGNING, DOUBLE SPHERICAL ROLLER
9	LOCK NUT	
10	SEALING RING	
11	V-RING	
12	KEYS	
13	BEARING COVER	
14	ANCHOR BOLTS	
15	GEAR BOX	RATIO OF REDUCTION 1 : 37.5
16	GEAR BOX MOUNTING	
17	MOUNTING BOLTS	
18	COUPLING	FLEXIBLE TYPE
19	ANCHOR BOLT	
20	PULLEY	500 mm DIAMETER, 3 PLANES
21	ADJUSTING BOLT	

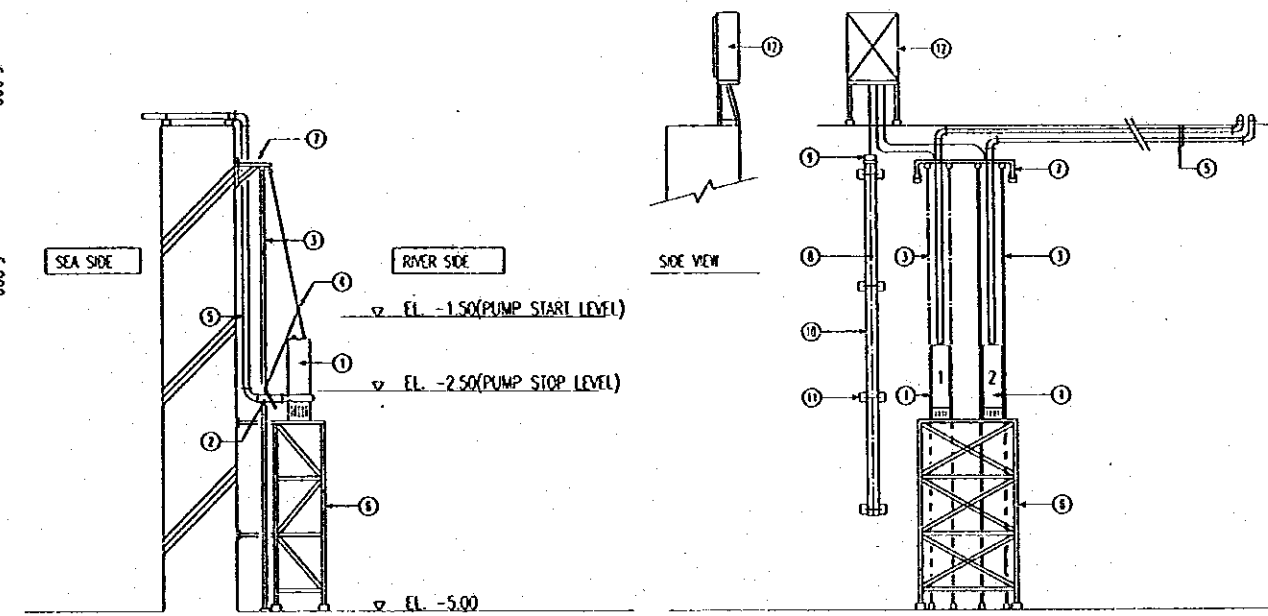
NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAWA
RAYUNHILINA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION SCREW PUMP MAIN PUMP INSTALLATION		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN DRAGAN IN THE PROVINCE OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO. LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
ORDER OF PLANNING AND DESIGN PROJECT MANAGER		DRAWING NO. U-P-E-P-M-2 SHEET NO. 95 DATE CONTRACT NO.



AUXILIARY DRAINAGE PLAN S=1:100

①	SUBMERSIBLE MOTOR DRAINAGE PUMP (WITH SLIDING TYPE SELF CONNECTION FLANGE)	CAPACITY : 0.1m ³ /S HEAD: 6m, MOTOR 1.5kW
②	SLIDING TYPE FLANGE	CONNECTED AND SEALED BY HEIGHT OF THE PUMP
③	GUIDE PIPES	TO SLIDING THE PUMP
④	CHAIN	TO LIFT UP AND DOWN THE PUMP
⑤	DRAINAGE PIPE	SDP 40mm
⑥	MOUNTING PLATFORM	
⑦	FRONG STRUCTURE	TO GUIDE PIPES
⑧	ELECT-RODS (SUS 5mmφ)	3-RODS, WITH SEPARATING DEVICES
⑨	ELECT-ROD HOLDER	WITH CABLE CONNECTION TERMINALS
⑩	PROTECTION PIPE	FOR ELECT-RODS, PVC 250mm
⑪	FRONG DEVICES	FOR PROTECTION PIPE
⑫	CONTROL PANEL	METALLIC CABINET IP 65



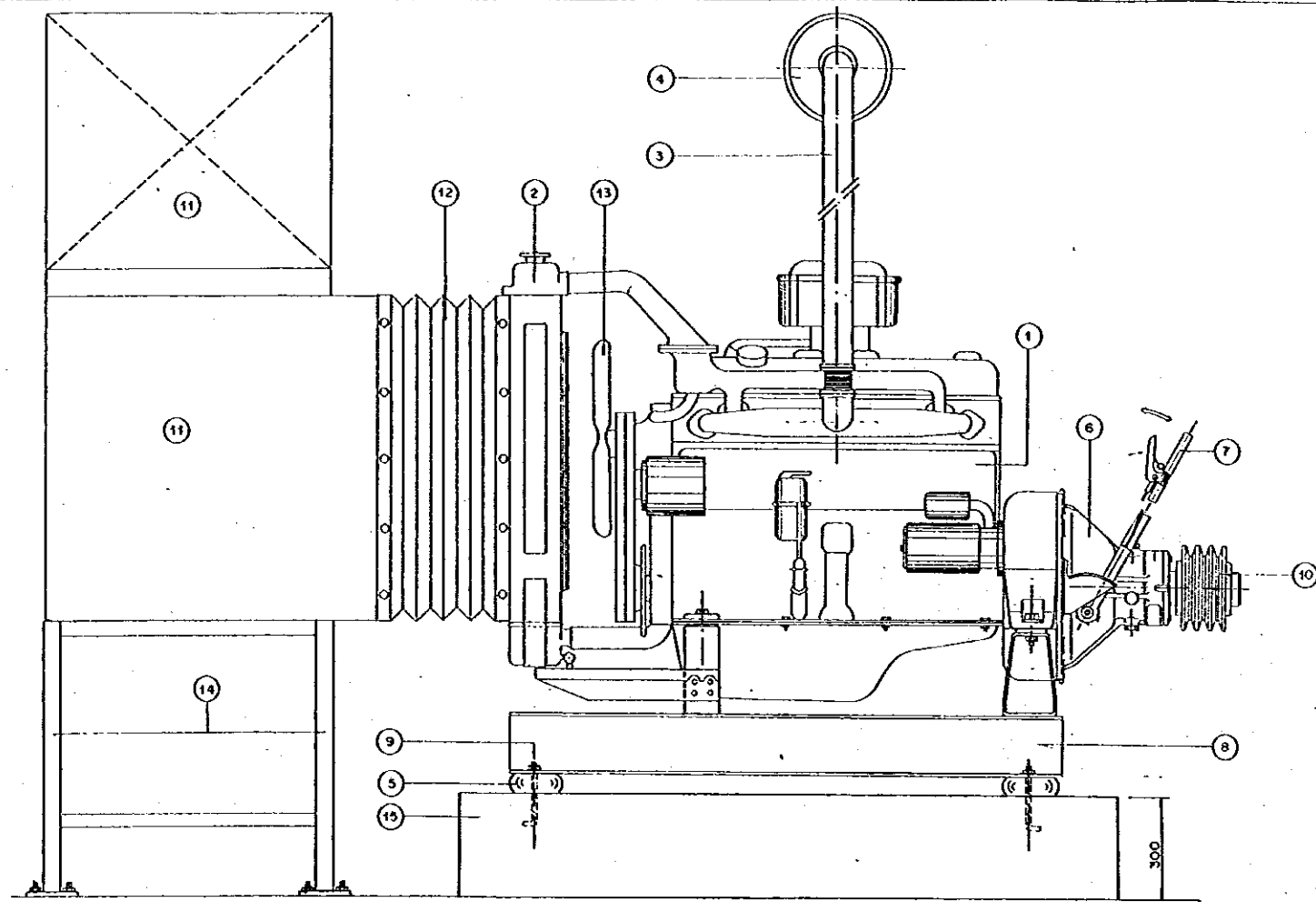
a-a SECTION

b-b ELEVATION

AUXILIARY DRAINAGE PUMP INSTALLATION S=1:50
(FOR REFERENCE)

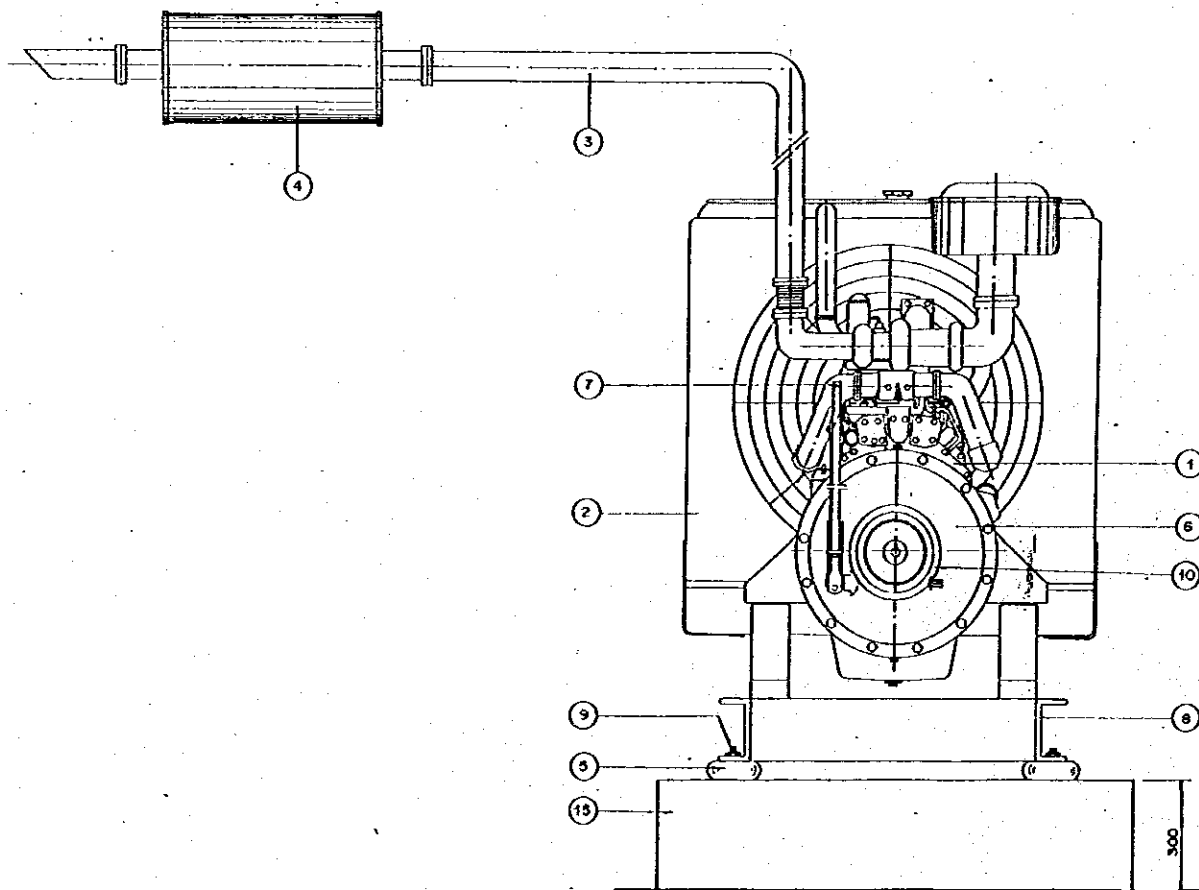
NO.	DATE	REVISIONS	GRADUATED	DRAWN	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT BATUNGKALUA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASN PUMPING STATION AUXILIARY PUMP		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-P-Me-3 SHEET NO. 96 DATE CONTRACT NO.
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND TARKO INTERNATIONAL ETC.	DESIGNED CHECKED APPROVED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	[Signature]

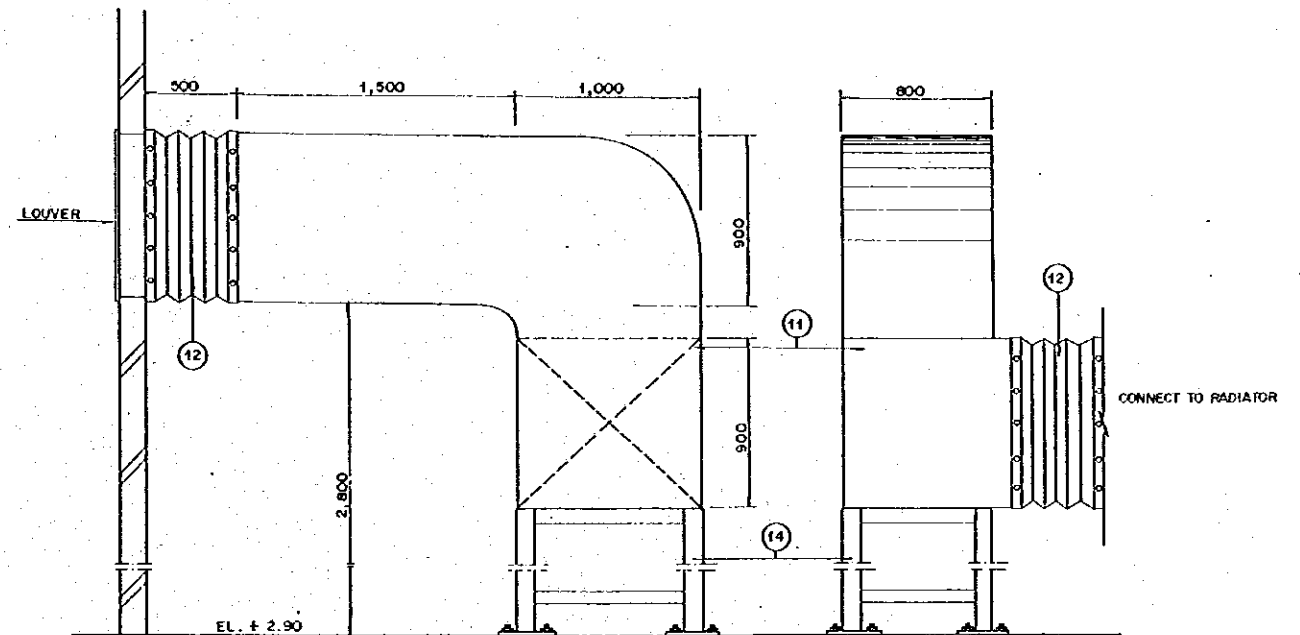


NO.	DESCRIPTION	REMARKS
1	Diesel Engine	325 hp, 1,800 rpm, Radiator cooled
2	Radiator	
3	Exhaust Pipe	
4	Muffer	
5	Engine Mounting	
6	Clutch	
7	Clutch Lever	Closp type with Stopper
8	Frame	
9	Anchor Bolt	
10	Pulley	250 mm diameter, 3 Planes
11	Cooling Air Duct	Galvanized Steel Sheet 1.2 mm
12	Flexible Air Duct Connector	Rubber
13	Radiator Fan	
14	Support	
15	Foundation	Light Concrete

SIDE VIEW
SCALE A



BACK VIEW
SCALE A



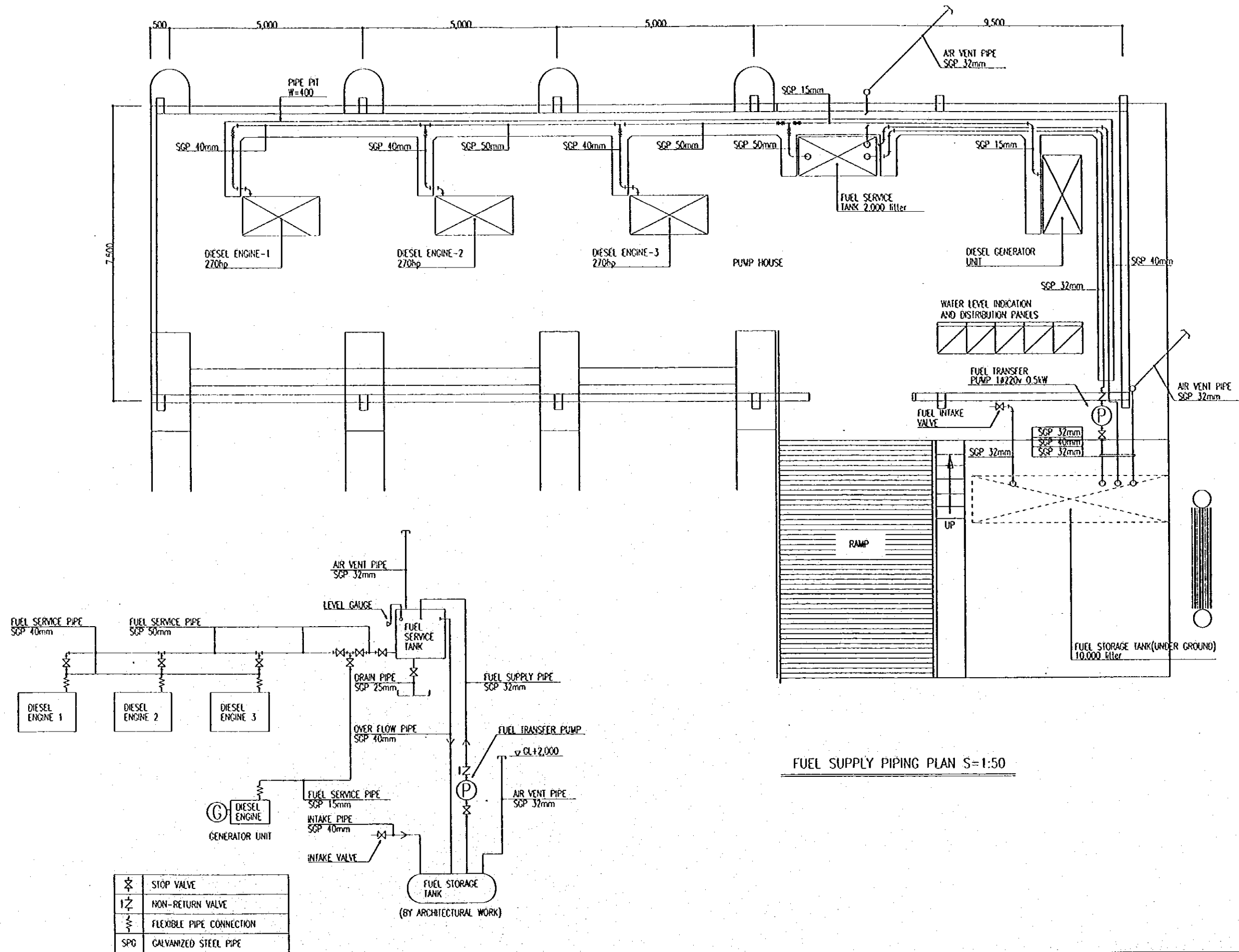
DETAIL FOR COOLING AIR DUCT
SCALE B

NOTE : ALL DIMENSION INDICATED IN THIS DRAWING SHALL BE REFERENCE ONLY, ACTUAL SIZE OF DUCT SHALL BE DECIDED BY THE SPECIFICATION OF THE DIESEL ENGINE

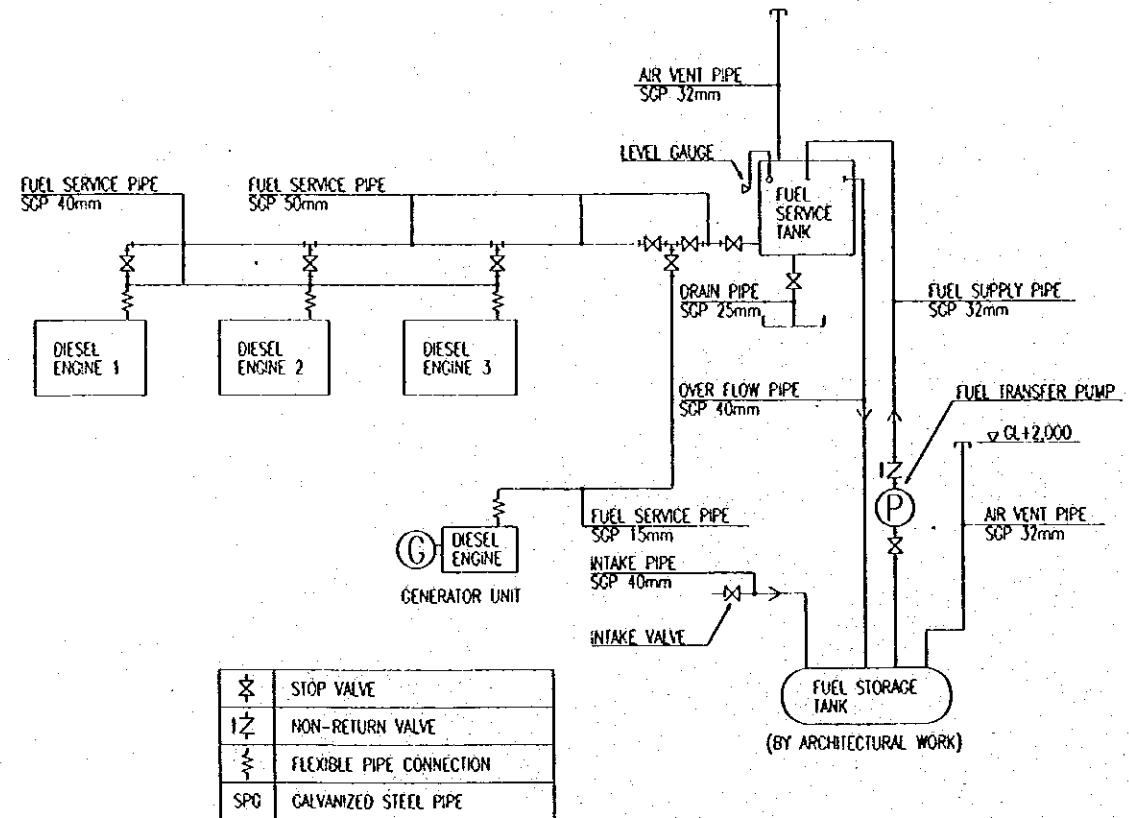
SCALE B 0 0.20 1.00 2.00 m
1 : 20
SCALE A 0 0.10 0.50 1.00 m
1 : 10

NO.	DATE	REVISIONS	COORDINATED	DESIGNED	APPROVED	APPROVED

THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT IRATUNSELUMA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION DIESEL ENGINE		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-P-M-4 SHEET NO. 97
JAPAN INTERNATIONAL COOPERATION AGENCY CII ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND TAYCO INTERNATIONAL, INC. CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	DESIGNED CHECKED DATE CONTRACT NO.	



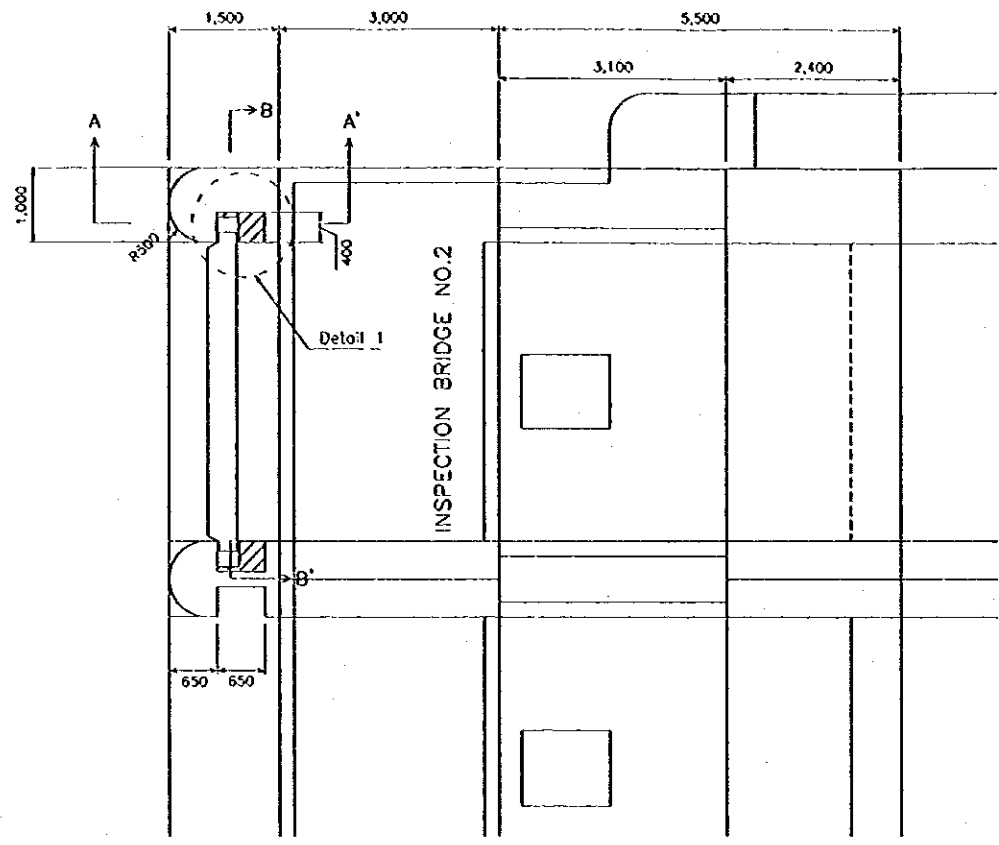
FUEL SUPPLY PIPING PLAN S=1:50



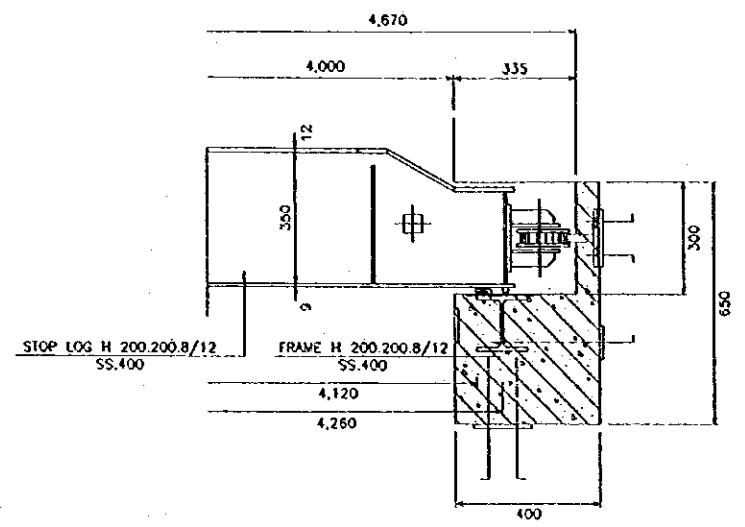
FUEL SUPPLY PIPING DIAGRAM

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

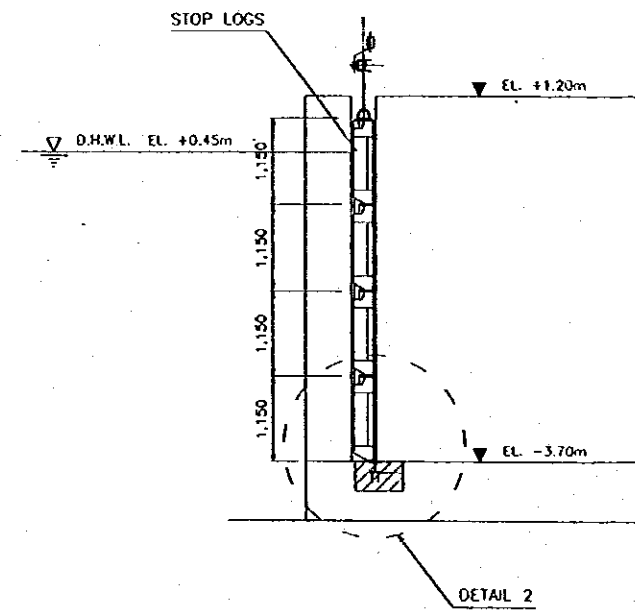
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF RUMAH SHELLEMENT		PROVINCE CENTRAL JAVA
BATUNUNDA FLOOD CONTROL PROJECT COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPSTATION FUEL SUPPLY SYSTEM		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER SUPPLY DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY DRAWING NO. U-P2-P-Me-5 SHEET NO. 98
APPROVED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	CHECKED CHECKED DATE	CONTRACT NO.



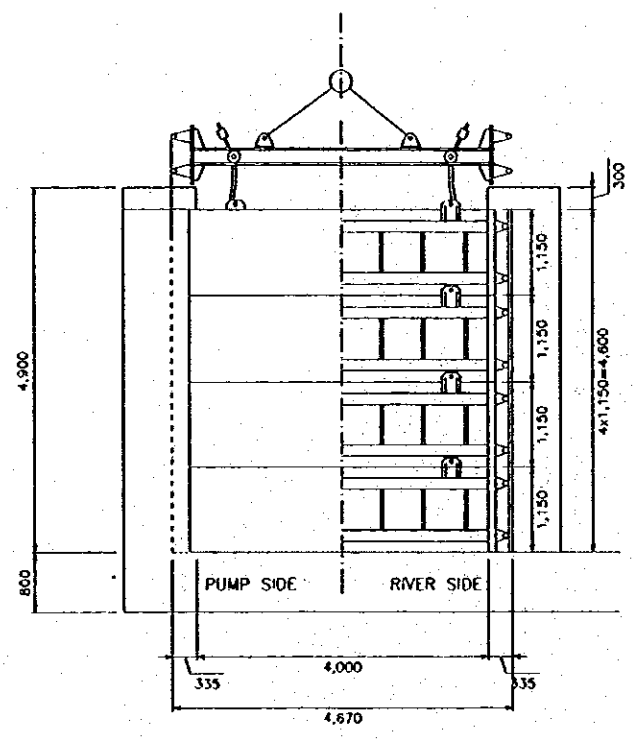
PLAN
SCALE A



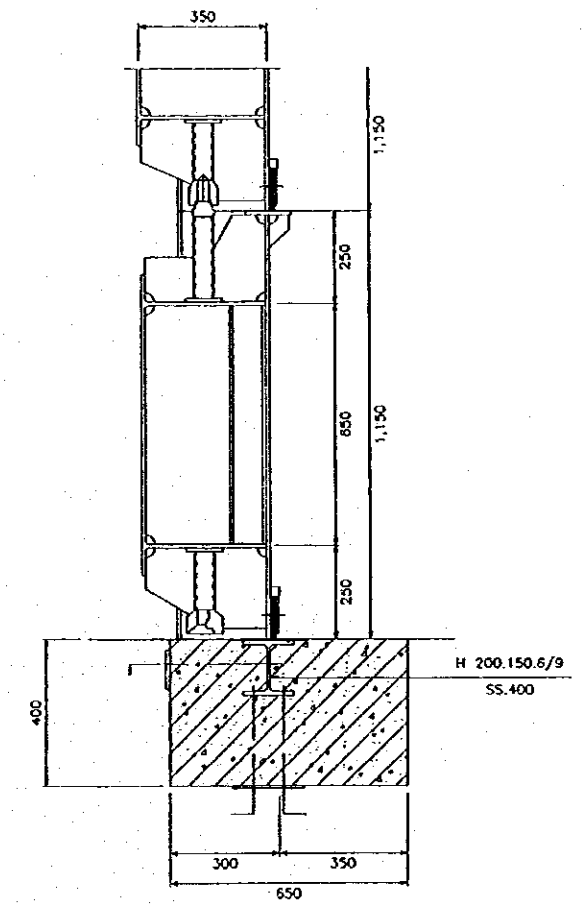
DETAIL 1
SCALE B



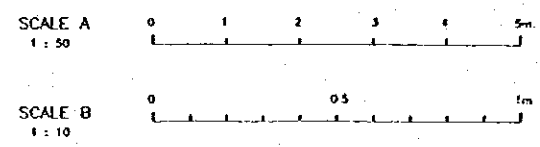
SECTION A-A'
SCALE A



SECTION B-B'
SCALE A



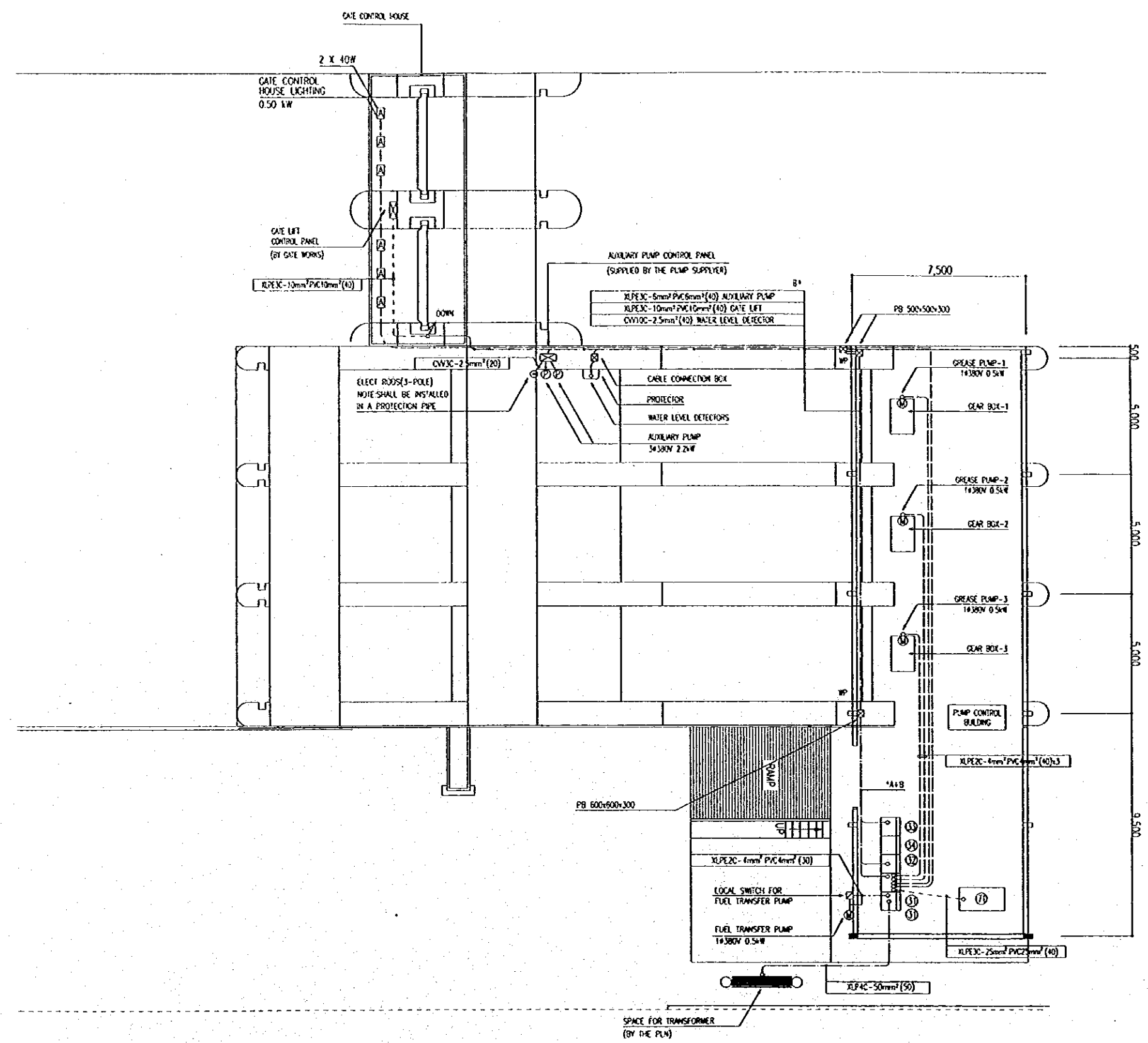
DETAIL 2
SCALE B



NO.	DATE	REVISIONS	QUOTED	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
BATUNDELUKA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION STOP LOGS		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT, SE SEMARANG BY THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND FARO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
DESIGNED CHECKED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER		DRAWING NO. U-P2-P-Me-6 SHEET NO. 99 DATE CONTRACT NO.

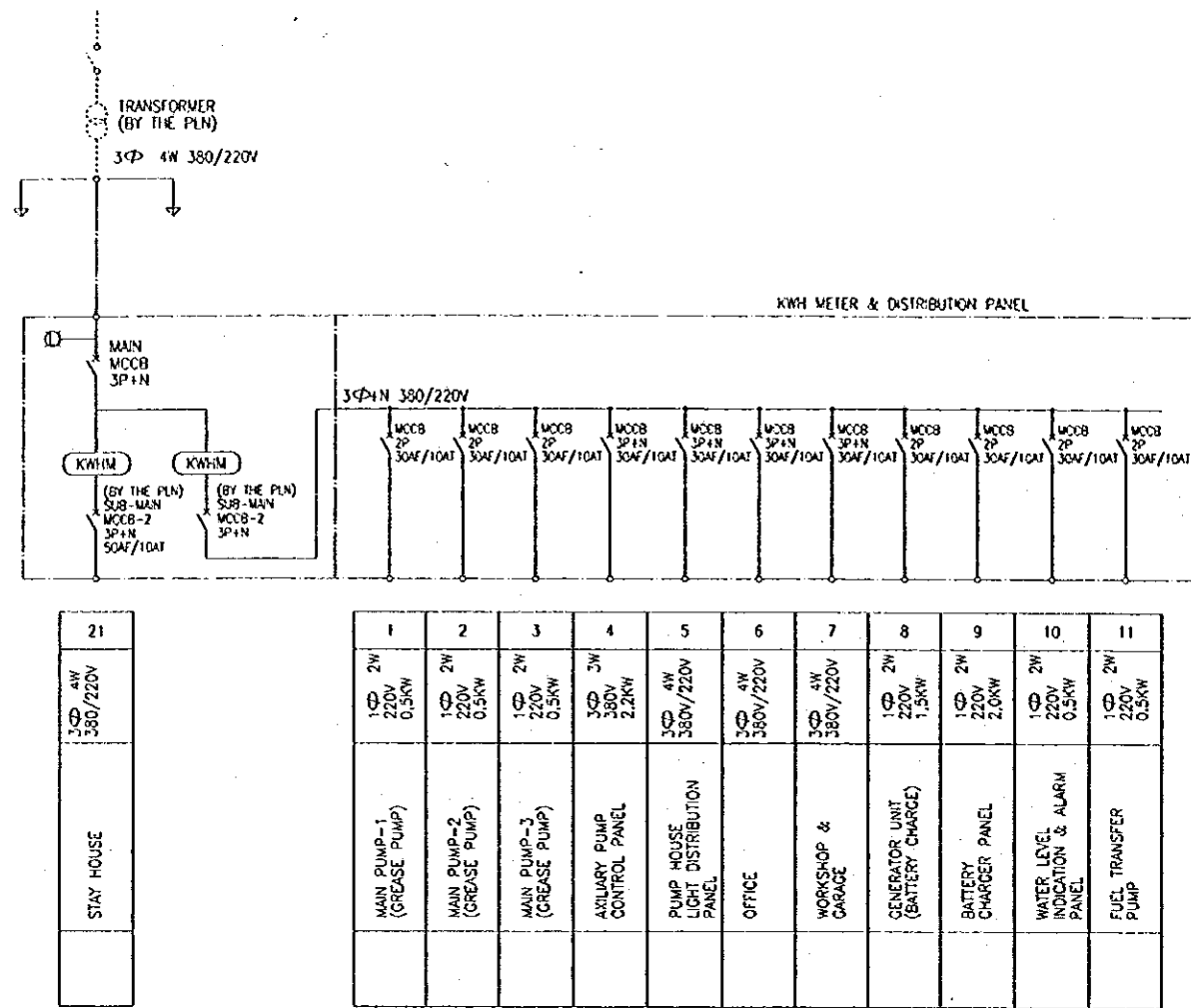
ⓑ	KWH METER & DISTRIBUTION PANEL
ⓐ	MOTOR CONTROL PANEL
ⓓ	WATER LEVEL INDICATION & ALARM PANEL
ⓔ	BATTERY CHARGER PANEL
ⓑ	GENERATOR UNIT 30KVA 2.5VA
PB	PULL BOX
WP	WATER PROOFING TYPE



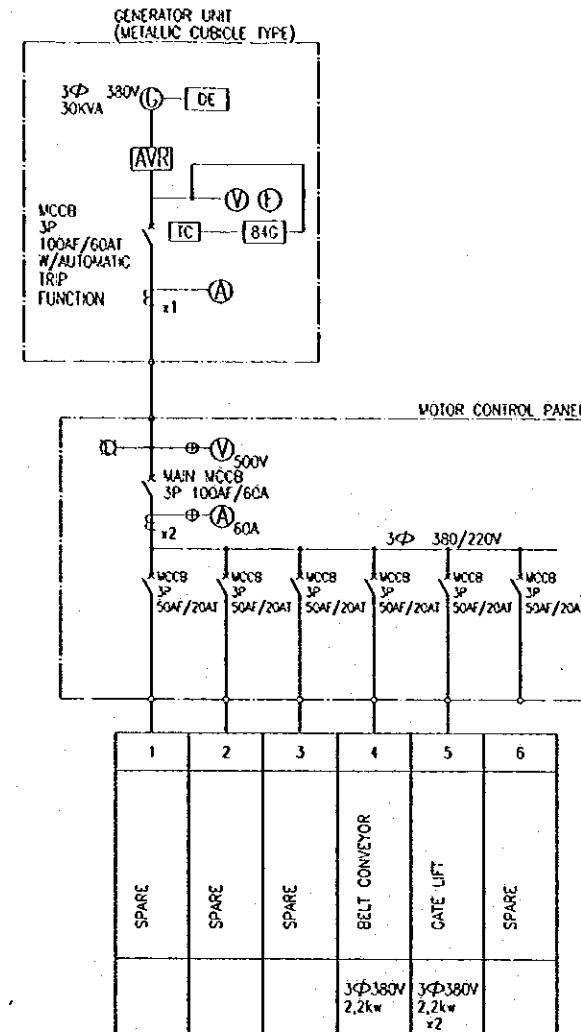
ELECTRICAL WIRING PLAN S=1:100

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
BATURUMBUNGA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
ASIN PUMPING STATION ELECTRICAL WIRING PLAN		DISTRICT SEMARANG CITY
LAPAN INTERNATIONAL COOPERATION AGENCY C/O ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PARCO INTERNATIONAL P.C.		DRAWING NO. U-P2-P-EI-1 SHEET NO. 100
DESIGNED CHECKED CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	DATE	CONTRACT NO.

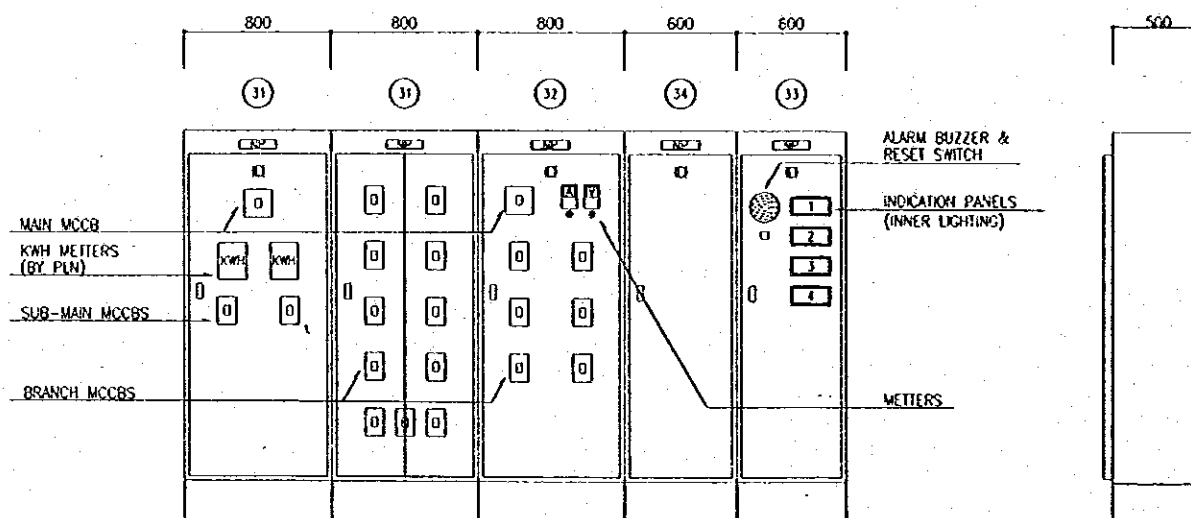


SINGLE LINE DIAGRAM FOR KWH METER & DISTRIBUTION PANEL



SINGLE LINE DIAGRAM FOR GENERATING POWER SUPPLY

Ⓞ	GENERATOR 3-PHASE 380V AC, 4-POLE 1500 rpm DIESEL ENGINE DRIVEN TYPE 30KVA, POWER FACTOR 80%
Ⓧ	DIESEL ENGINE RADATOR COOLING TYPE, 1500rpm CELL MOTOR STARTING (DC12V) BATTERY SELF CONTAINED.
Ⓜ	AUTOMATIC VOLTAGE REGULATOR.
Ⓣ	TRIP COIL.
Ⓥ	VOLT METER.
Ⓧ	FREQUENCY METER.
Ⓜ	AM-METER.
•	PHASE CHANGE OVER SWITCH.
Ⓢ	GROUNDING VOLTAGE RELAY.
Ⓧ	CURRENT TRANSFORMER.
Ⓧ	INDICATION LAMP.
MCCB	MOLDED CASE CIRCUIT BREAKER 600V CLASS.
KWHM	WATT HOUR METER (SUPPLIED BY THE PLN)



PANEL FIGURE (FOR REFERENCE)

PANEL SCHEDULE

31	KWH METER & DISTRIBUTION PANEL
32	MOTOR CONTROL PANEL
33	WATER LEVEL INDICATION & ALARM PANEL
34	BATTERY CHARGER PANEL

INDICATION PANEL SCHEDULE

1	HIGH WATER LEVEL
2	PUMP START
3	PUMP STOP
4	LOW WATER LEVEL

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

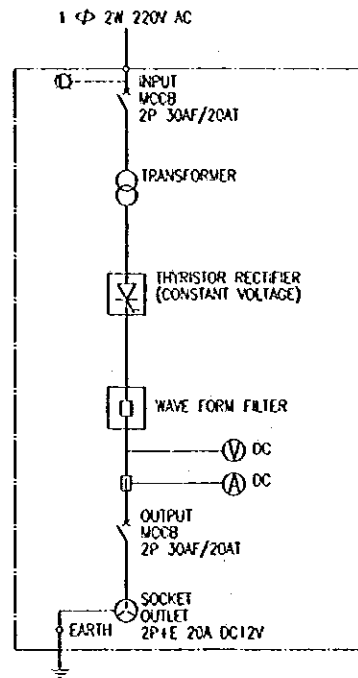
THE REPUBLIC OF INDONESIA
 MINISTRY OF PUBLIC WORKS
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

PROVINCE: CENTRAL JAVA
 PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER INFRASTRUCTURE DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
 DISTRICT: SEMARANG CITY
 DRAWING NO.: U.P2.P-EI-2
 SHEET NO.: 101

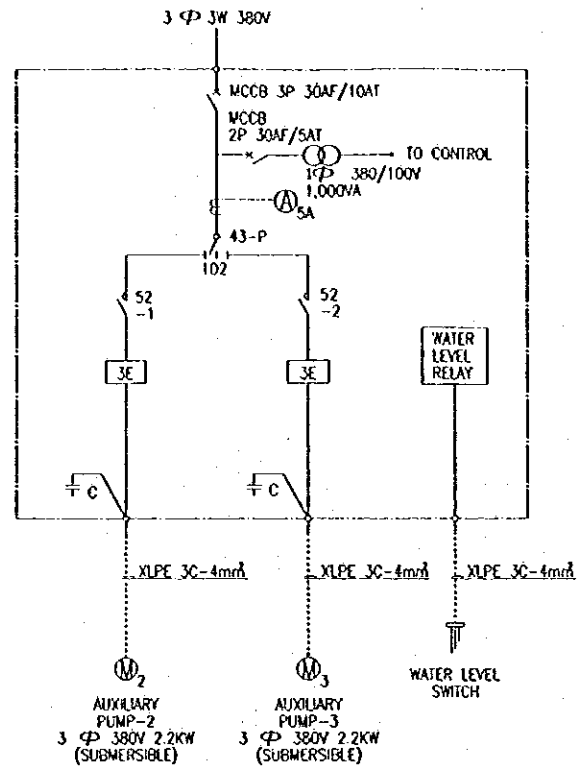
JAPAN INTERNATIONAL COOPERATION AGENCY
 OF ENGINEERING CO., LTD. IN ASSOCIATION WITH
 PACIFIC CONSULTANTS INTERNATIONAL AND
 PARCO INTERNATIONAL INC.

DATE: _____ CONTRACT NO.: _____

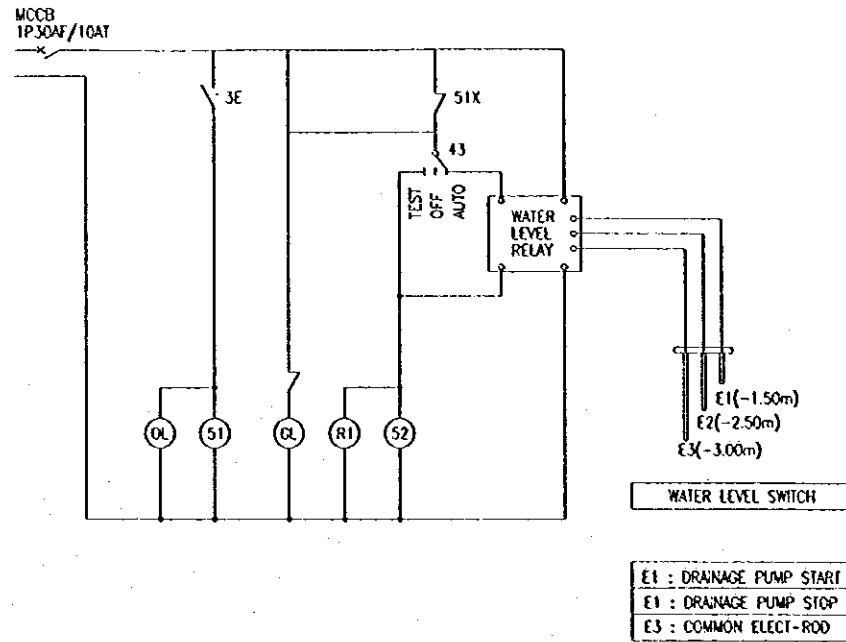
CHEF OF PLANNING AND DESIGN
 PROJECT MANAGER



SINGLE LINE DIAGRAM FOR BATTERY CHARGER



SINGLE LINE DIAGRAM FOR AUXILIARY PUMPS



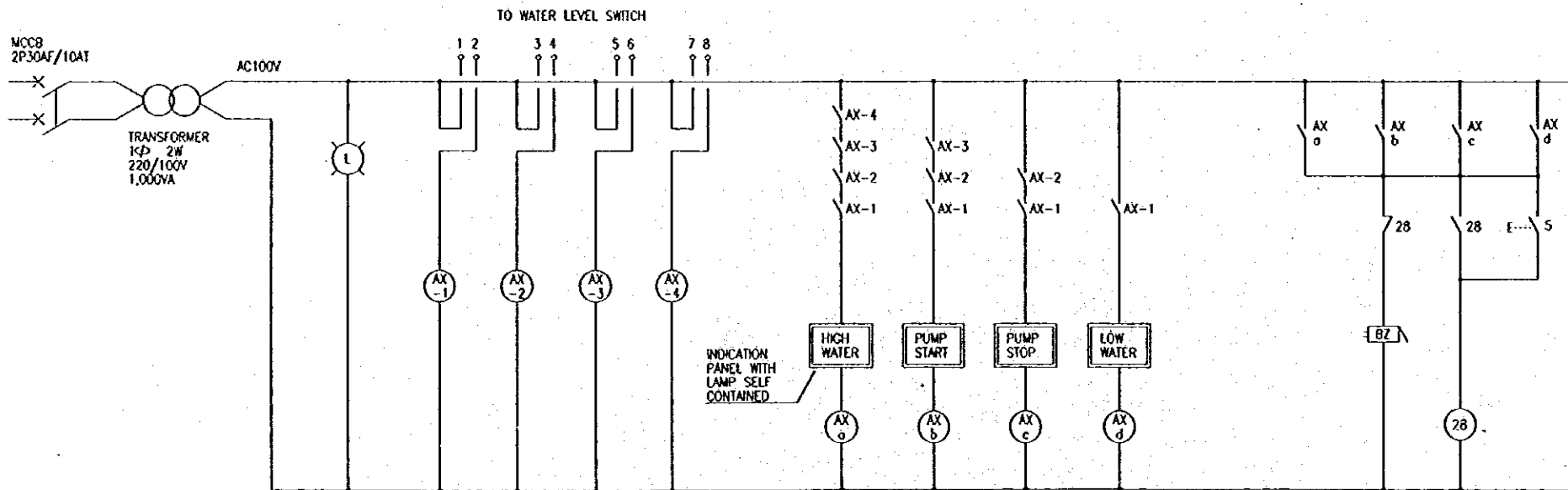
SEQUENCE CONTROL DIAGRAM FOR AUXILIARY PUMPS

3E	3-ELEMENT RELAY (OVER LOAD, NEGATIVE PHASE, OPEN PHASE)
43	CHANGE-OVER-SWITCH
51	OVER CURRENT RELAY
52	MAGNETIC CONTACTOR
28	ALARM RELAY
5	BOZZER STOP/RESET SWITCH
MCCB	MOLDED CASE CIRCUIT BREAKER
AF/AI	FRAME AMPER/TRIP AMPER RATE
F	FUSE
C	STATIC CONDENSOR
A	AM-METER
IL	INDICATION LAMP
BZ	ALARM BOZZER
AX	AUXILIARY RELAY

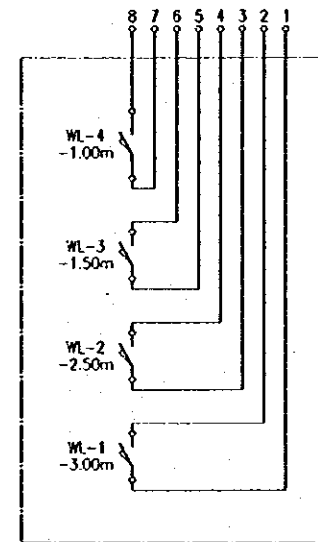
E1 (-1.50m)
E2 (-2.50m)
E3 (-3.00m)

WATER LEVEL SWITCH

E1 : DRAINAGE PUMP START
E1 : DRAINAGE PUMP STOP
E3 : COMMON ELECT-ROD



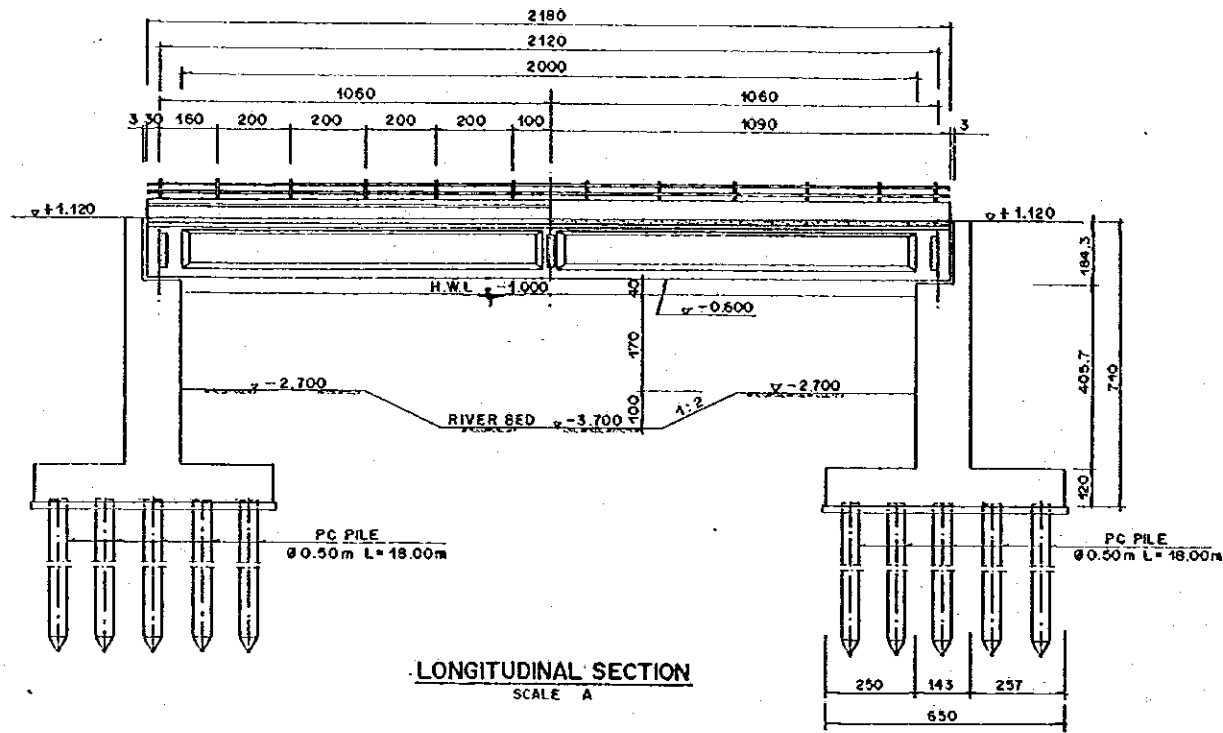
SEQUENCE CONTROL DIAGRAM FOR WATER LEVEL INDICATION & ALARM PANEL



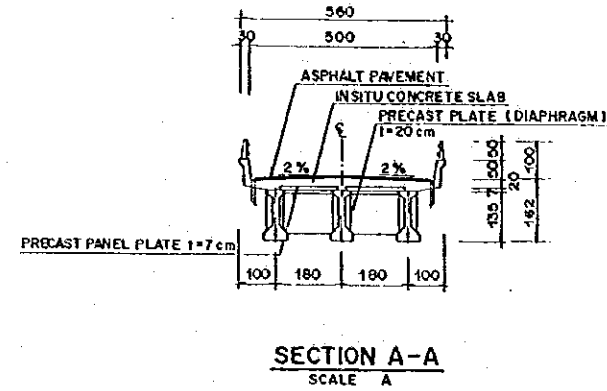
WATER LEVEL SWITCHES

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

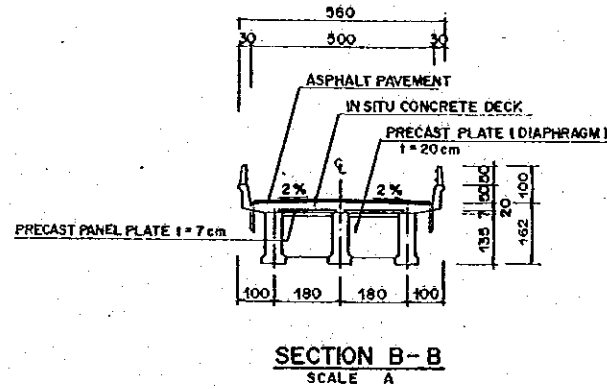
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAWA
RATURUNGLINGA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION POWER SUPPLY AND CONTROL SYSTEM DIAGRAM-2		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
JAWA INTERNATIONAL COOPERATION AGENCY CII ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND TAIKO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
CHECKED DATE		DRAWING NO. U-P2-P-EI-3 SHEET NO. 102
APPROVED PROJECT MANAGER		CONTRACT NO.



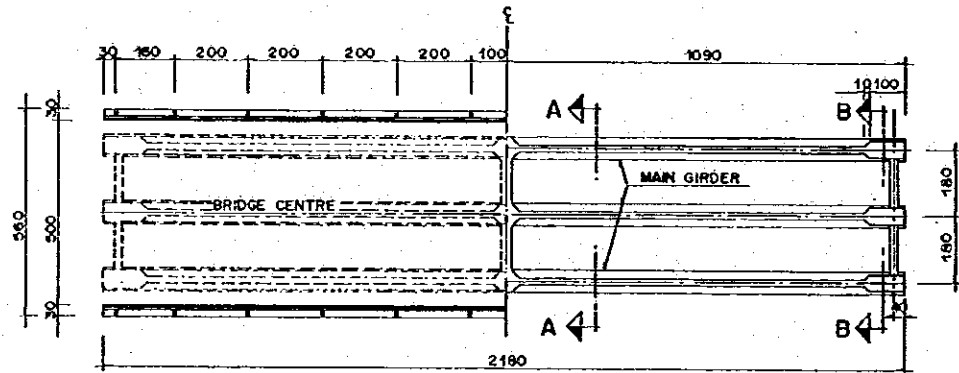
LONGITUDINAL SECTION
SCALE A



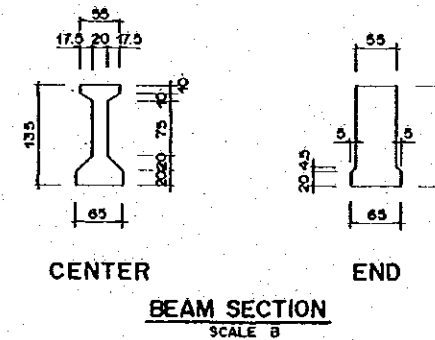
SECTION A-A
SCALE A



SECTION B-B
SCALE A

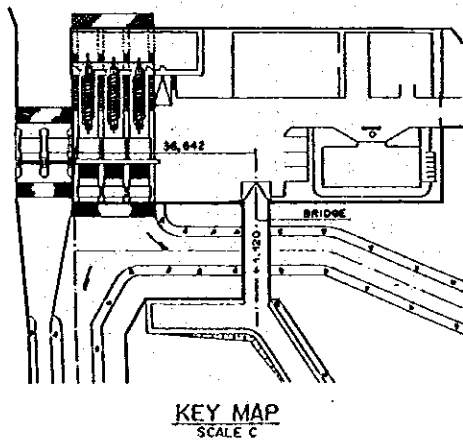
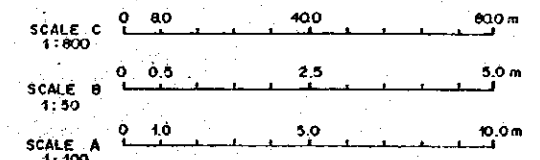


PLAN
SCALE A



CENTER END
BEAM SECTION
SCALE B

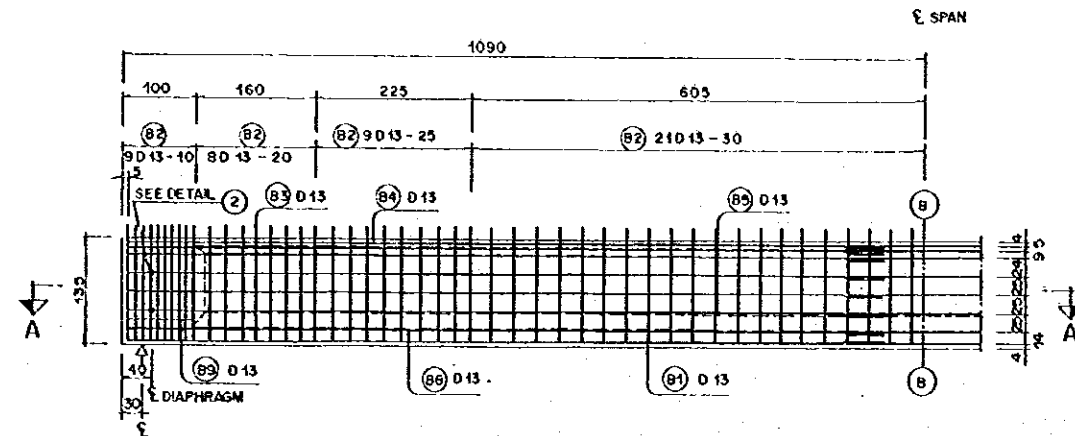
- NOTE :
1. UNIT IN CENTIMETER
 2. CONCRETE QUALITY FOR MAIN GIRDER AND DIAPHRAGM K-400.
 3. CONCRETE QUALITY FOR SLAB K-250.



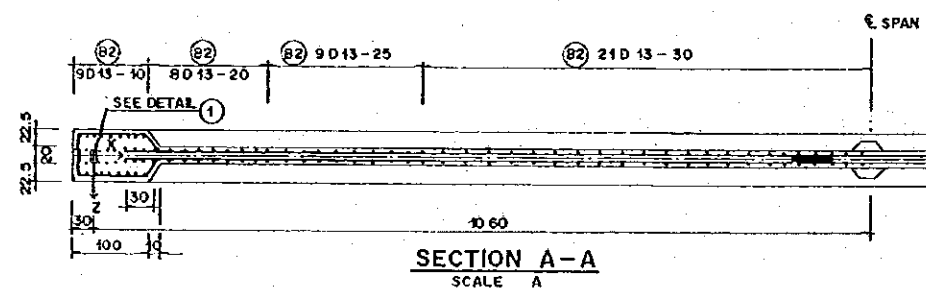
KEY MAP
SCALE C

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED	APPROVED	DATE	CONTRACT NO.

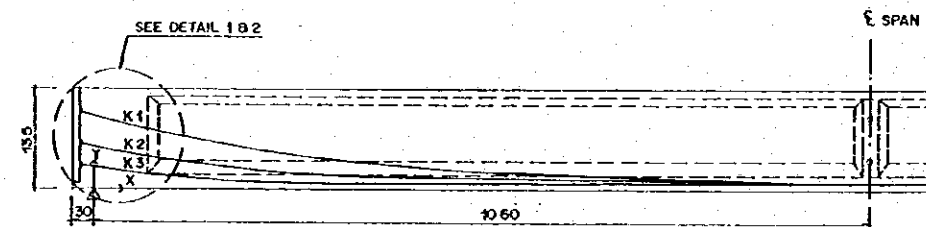
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
JATUNGLUNG FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION BRIDGE SUPER STRUCTURE DIMENSION OF SUPER STRUCTURE		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT BY SEMARANG IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL, INC. FARO INTERNATIONAL P.C.		DISTRICT SEMARANG CITY
CHIEF OF PLANNING AND DESIGN		DRAWING NO. U-PR-P-01-1 SHEET NO. 403
PROJECT MANAGER		DATE



REINFORCING BAR ARRANGEMENT OF BEAM
SCALE A



SECTION A-A
SCALE A



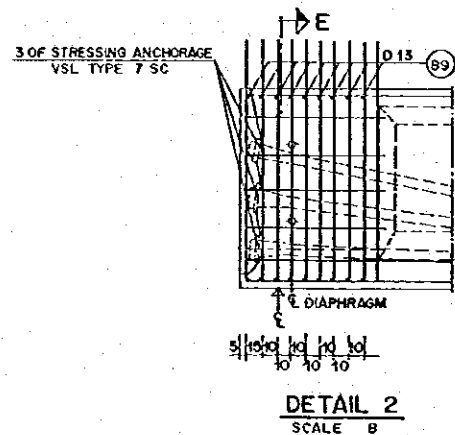
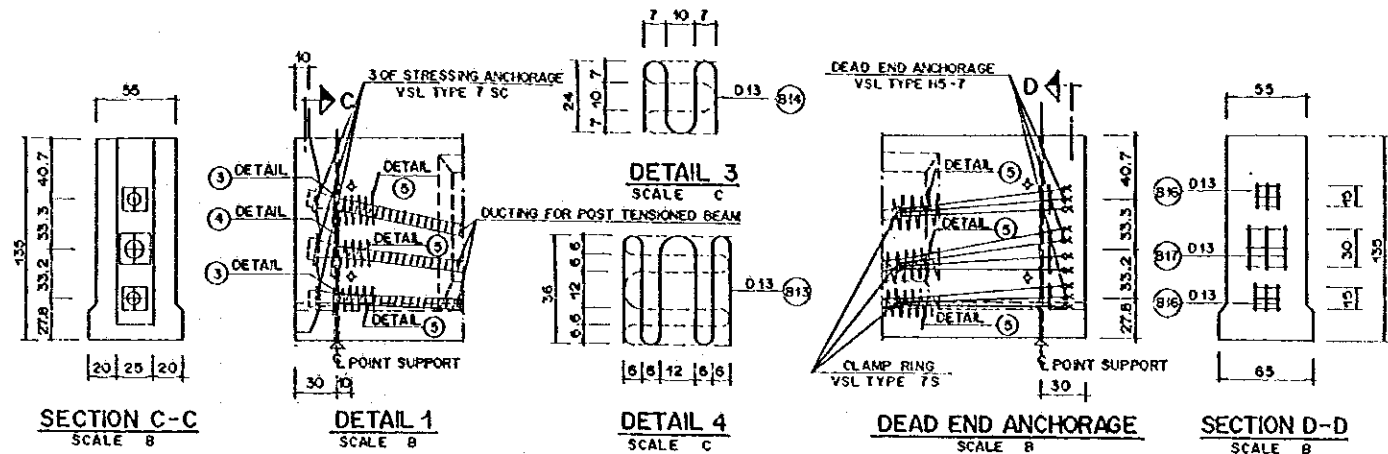
CABLE ELEVATION
SCALE A

CABLE NO.	TYPE	X											
		0	100	200	300	400	500	600	700	800	900	1000	1060
CABLE 3 (K3)	Y	27.0	24.0	21.4	19.0	16.9	15.1	13.5	12.0	11.3	10.6	10.1	10.0
	Z	0	2.1	4.0	5.7	7.1	8.4	9.5	10.4	11.1	11.6	11.9	12.0
CABLE 2 (K2)	Y	58.5	50.1	42.5	35.7	29.6	24.4	20.0	16.4	13.6	11.6	10.4	10.0
	Z	0	0	0	0	-3.2	-5.9	-8.1	-9.8	-11.0	-11.8	-12.0	
CABLE 1 (K1)	Y	90.0	76.1	63.6	52.3	42.4	33.8	26.5	20.6	17.7	15.4	10.9	10.0
	Z	0	0	0	0	0	0	0	0	0	0	0	0

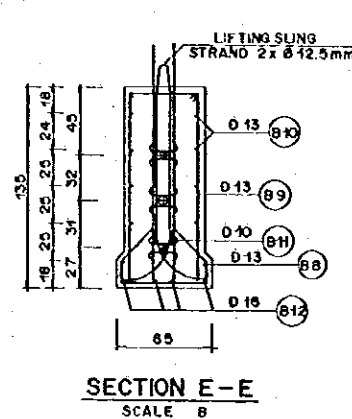
LIST OF CABLE COORDINATE

REINFORCING BAR NO.	Ø (mm)	TYPE	BENDING DIMENSION (cm)							TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	NUMBER	WEIGHT (kg)	REMARKS
			a	b	c	d	e	f						
K 3	12.7	7 STRANDS	162.44							162.44	0.789	3	385	
K 2	12.7	12 STRANDS	278.77							278.77	0.789	3	660	
K 1	12.7	7 STRANDS	162.95							162.95	0.789	3	386	
TOTAL = 1431 kg														

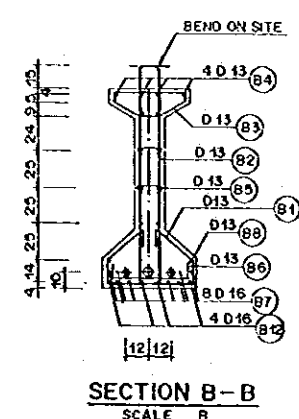
LIST OF PC CABLE OF MAIN GIRDER



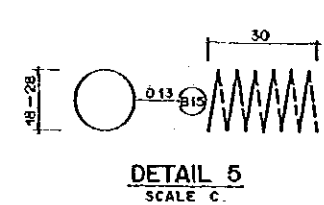
DETAIL 2
SCALE B



SECTION E-E
SCALE B



SECTION B-B
SCALE B

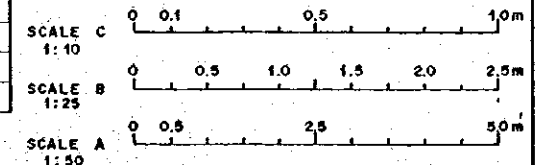


DETAIL 5
SCALE C

REINFORCING BAR NO.	Ø (mm)	TYPE	BENDING DIMENSION (cm)							TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	NUMBER	WEIGHT (kg)	REMARKS
			a	b	c	d	e	f						
B 1	13	D	57	15	35	10				1.77	1.04	3x94	519	
B 2	13	E	12	166						3.44	1.04	3x94	1009	
B 3	13	C	47	4	12	20				1.19	1.04	3x76	282	
B 4	13	A	24.70							22.09	1.04	3x4	278	
B 5	13	A	20.28							20.67	1.04	3x8	516	
B 6	13	G	55	10						0.75	1.04	3x1	2	
B 7	16	A	21.70							22.18	1.58	3x8	841	
B 8	13	A	21.70							22.09	1.04	3x2	138	
B 9	13	H	47	127	6.5					3.61	1.04	3x18	203	
B 10	13	B	92	23	15					1.30	1.04	3x10	41	
B 11	10	F	16	4						0.24	0.617	3x6	140	
B 12	16	A	21.70							22.18	1.58	3x4	420	
B 13	13	I	6	6	12	36				2.365	1.04	3x2	15	
B 14	13	J	7	10	24					0.95	1.04	3x4	12	
B 15	13	K	30	18						3.394	1.04	3x6	62	
B 16	13	B	15							0.90	1.04	3x2	6	
B 17	13	B	30							1.80	1.04	3x1	6	
TOTAL = 4488 kg														

LIST OF REINFORCING BAR OF MAIN GIRDER

- NOTE :
- CONCRETE COMPRESSION STRENGTH OF:
 - $f'_c = 33.2$ MPa
 - $f_{cl} = 28.6$ MPa
 - TENSILE STRENGTH OF REINFORCING BAR
 - $f_y = 320$ MPa
 - TENDON SPECIFICATION
 - TYPE = 7 SUPER STRANDS.
 - DIAMETER = 12.7 mm
 - AREA A = 100 mm²
 - MIN TENSILE STRENGTH = 1840 MPa
 - MIN BREAKING LOAD 184 kn
 - USED = 26 STRANDS
 - K 1 = 7 STRANDS
 - K 2 = 12 STRANDS
 - K 3 = 7 STRANDS
 EACH STRAND SHALL BE PRESTRESSED TO 150 kn IMMEDIATELY PRIOR TO LOCK OFF
 - UNIT IN CENTIMETER EXCEPT FOR DIAMETER OF REINFORCING BAR.
 - CONCRETE QUALITY K-400.
 - STEEL QUALITY BJ-32.

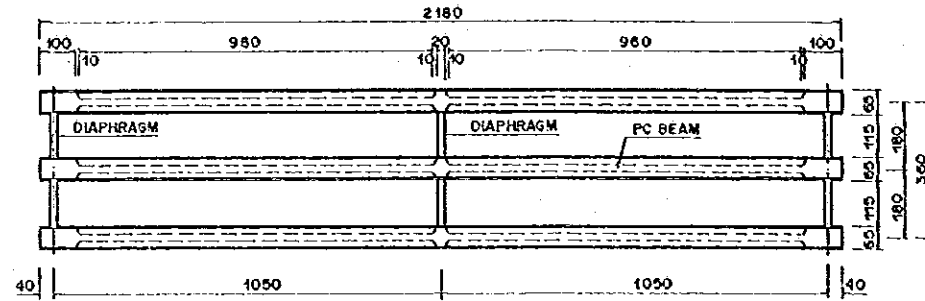


NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

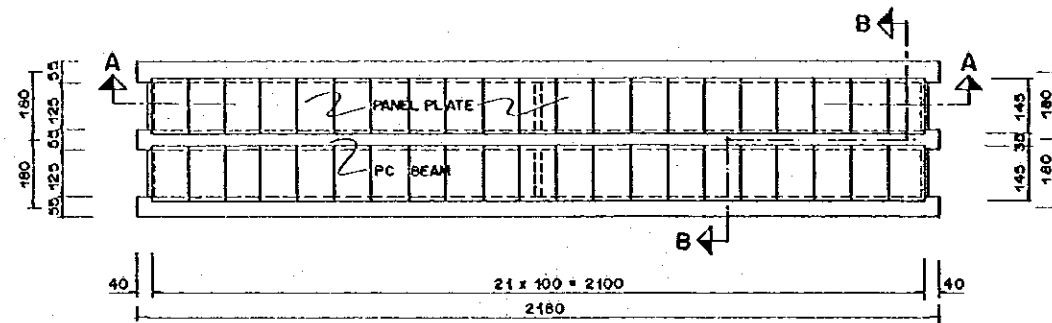
THE REPUBLIC OF INDONESIA
 MINISTRY OF PUBLIC WORKS
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF URBAN SETTLEMENT

BEATURSELUNA FLOOD CONTROL PROJECT
 COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT
 ASIN PUMPING STATION BRIDGE
 SUPER STRUCTURE
 CABLE AND REINFORCING ARRANGEMENT OF GIRDER

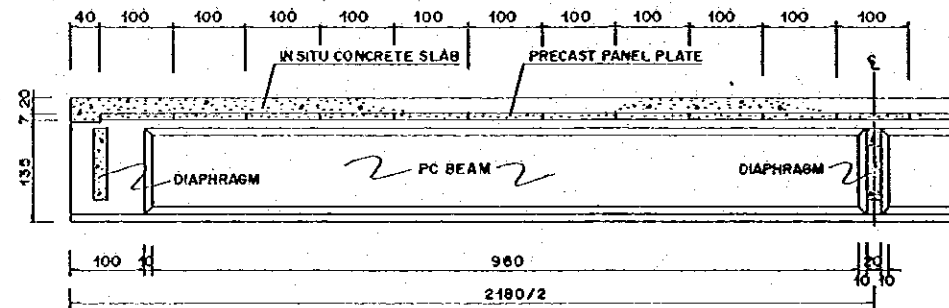
DATE: 10/4
 PROJECT MANAGER: [Signature]



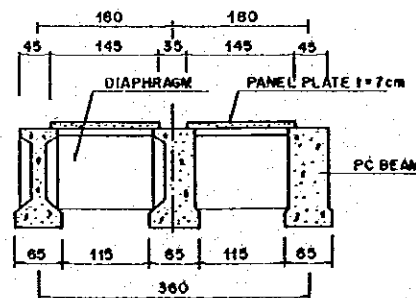
BEAM AND DIAPHRAGM ARRANGEMENT
SCALE A



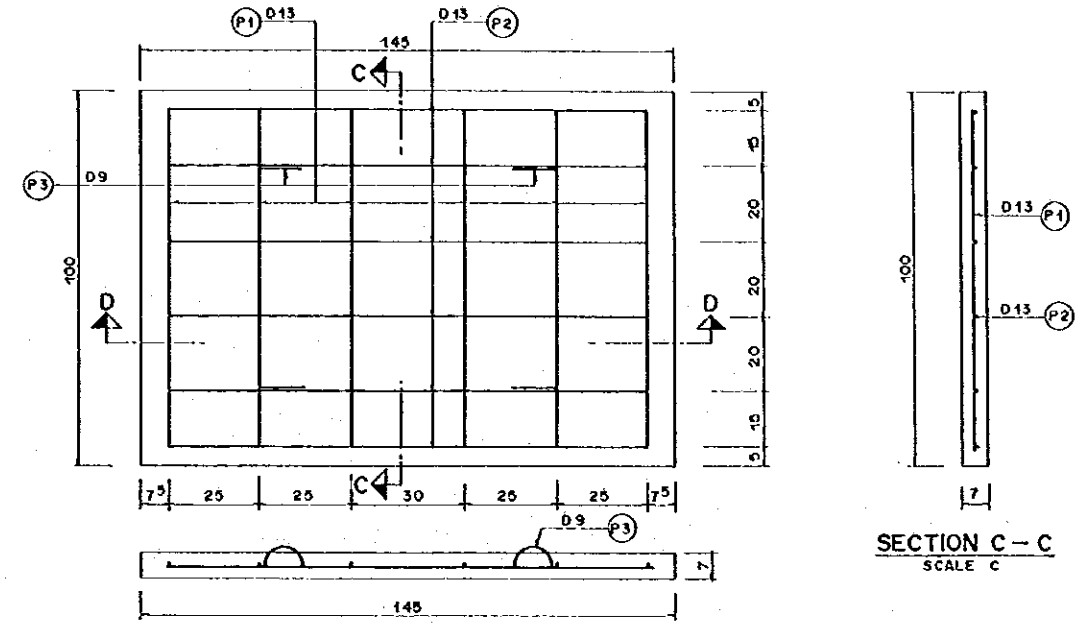
PANEL PLATE ARRANGEMENT
SCALE A



SECTION A - A
SCALE B



SECTION B - B
SCALE B

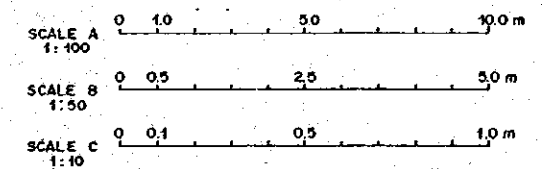


SECTION D - D
SCALE C

SECTION C - C
SCALE C

REINFORCING BAR NO.	Ø (mm)	TYPE	BENDING DIMENSION (cm)						TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	NUMBER	WEIGHT (kg)	REMARKS
			a	b	c	d	e	f					
145 x 100 (NUMBER OF PANELS = 42)													
P 1	13	B	90						0.90	1.04	252	236	
P 2	13	B	130						0.30	1.04	252	341	
P 3	9	I	20	10	12				0.39	0.50	168	33	
TOTAL = 610 kg													

LIST OF REINFORCING BAR OF PANEL PLATE



NO.	DATE	REVISIONS	ORIGINATOR	DESIGNED	APPROVED

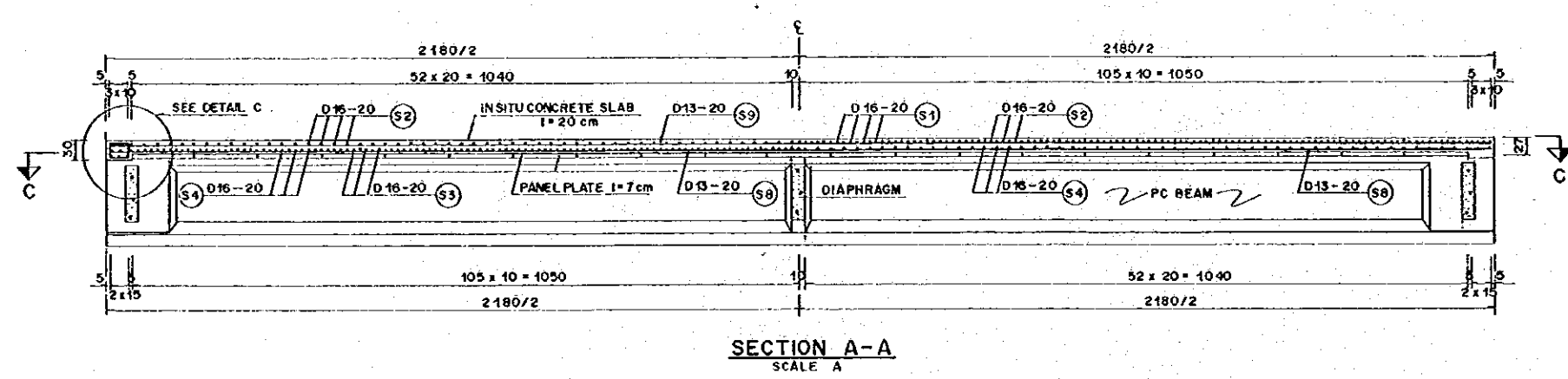
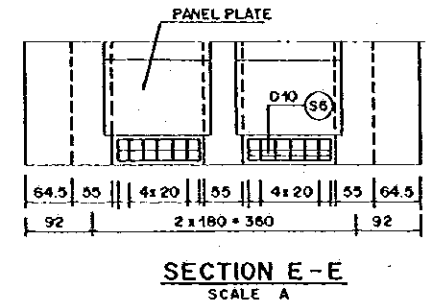
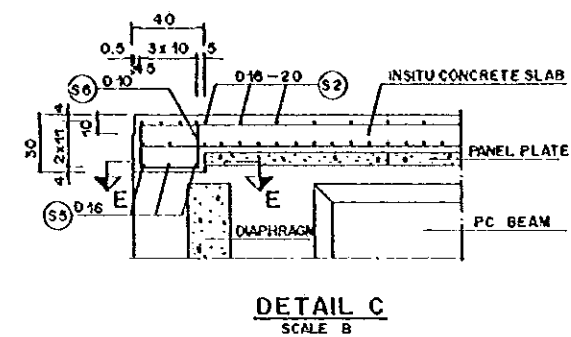
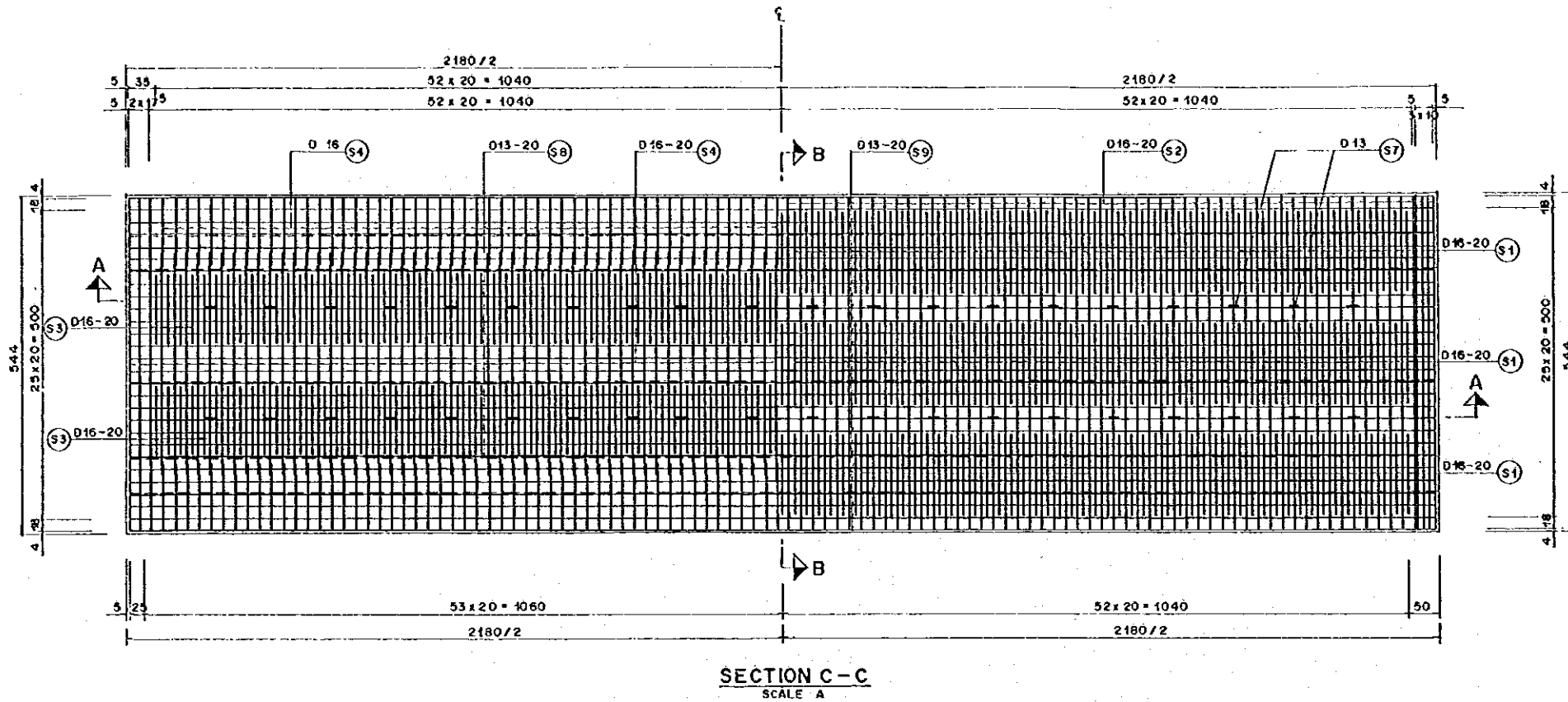
THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

FRATUNNELINA FLOOD CONTROL PROJECT
COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT
ASIN PUMPING STATION BRIDGE
SUPER STRUCTURE
REINFORCING BAR ARRANGEMENT OF PANEL PLATE

PROVINCE: CENTRAL JAWA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT OF SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. U - P2 - P - 81 - 5
SHEET NO. 105

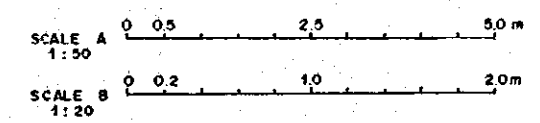
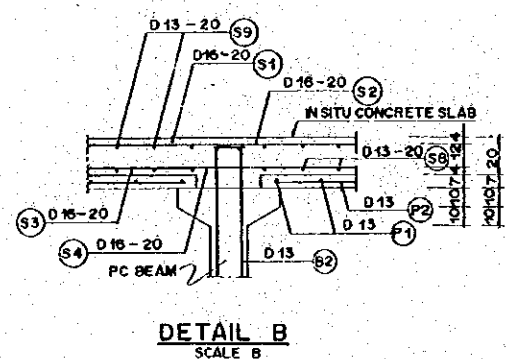
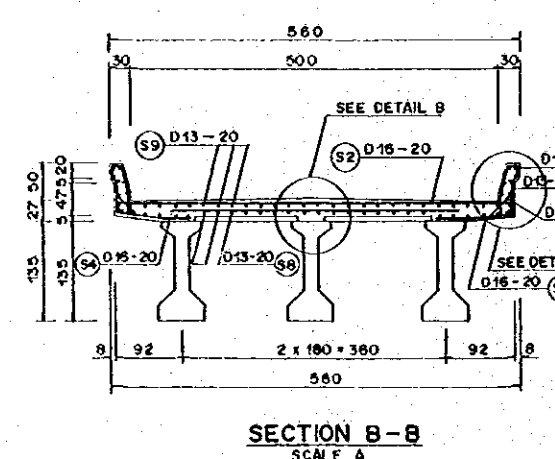
DATE: _____ CONTRACT NO. _____

APPROVED: _____ PROJECT MANAGER



REINFORCING BAR NO	Ø (mm)	TYPE	BENDING DIMENSION					TOTAL LENGTH (m)	UNIT WEIGHT (kg/m)	WEIGHT PER BAR	NUMBER	WEIGHT (kg)	REMARKS
			a	b	c	d	e						
S 1	D16	B	130					1.30	1.58	2.054	315	647	
S 2	D16	B	536					5.36	1.58	8.469	114	965	
S 3	D16	B	130					1.30	1.58	2.054	210	431	
S 4	D16	E	415	40	60	10		6.35	1.58	10.033	110	1104	
S 5	D16	B	115					1.15	1.58	1.817	12	22	
S 6	D10	C	30	22	5			1.14	0.56	0.638	28	18	
S 7	D10	D	25	10	5			0.55	0.56	0.308	40	12	
S 8	D13	A	2170					22.09	1.04	22.97	28	643	
S 9	D13	A	2170					22.09	1.04	22.97	28	643	
TOTAL = 4485 kg													

LIST OF REINFORCING BAR OF DECK SLAB

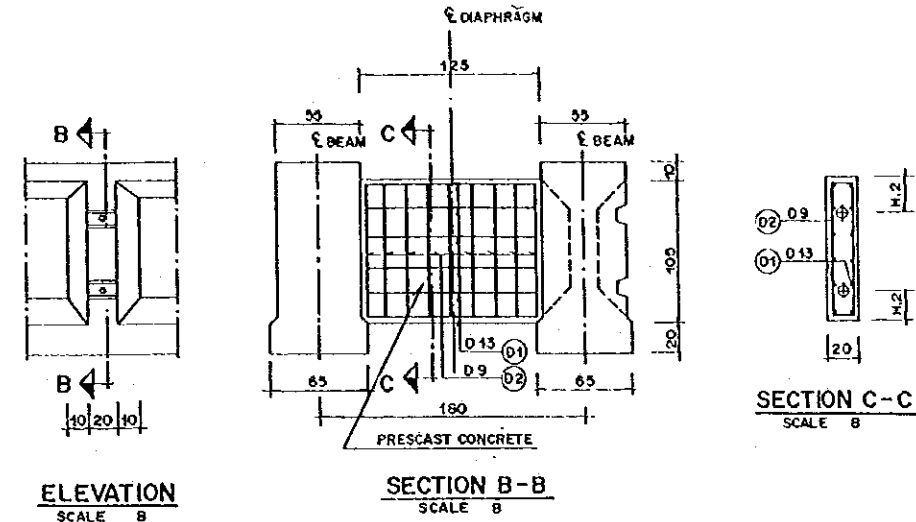
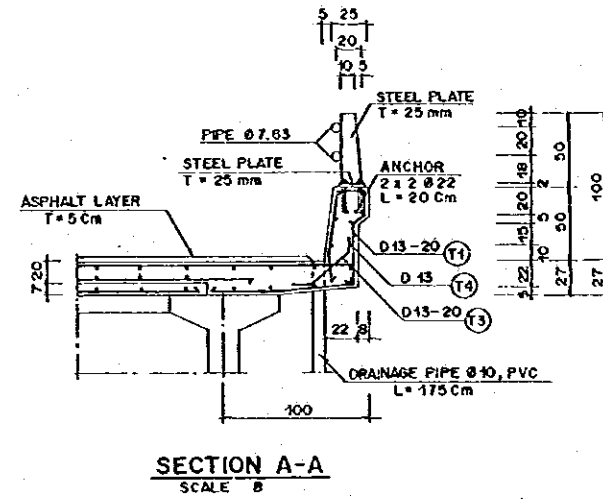
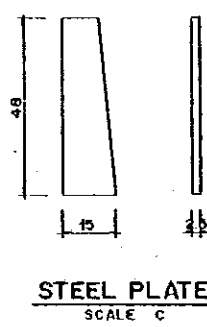
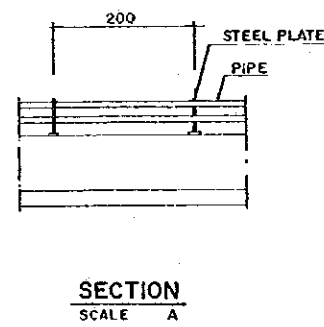
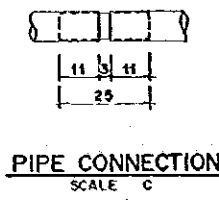
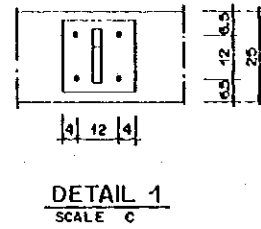
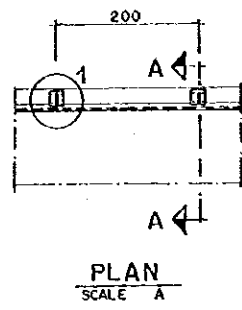


THE REPUBLIC OF INDONESIA
 MINISTRY OF PUBLIC WORKS
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
 DISTRICT: SEMARANG CITY
 DRAWING NO. U-P3-P-01-4
 SHEET NO. 108

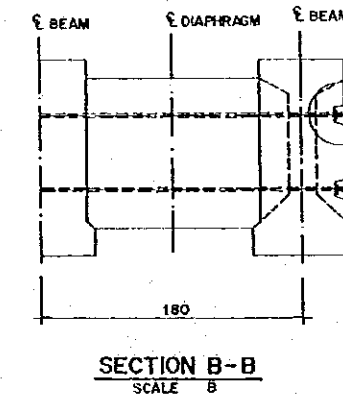
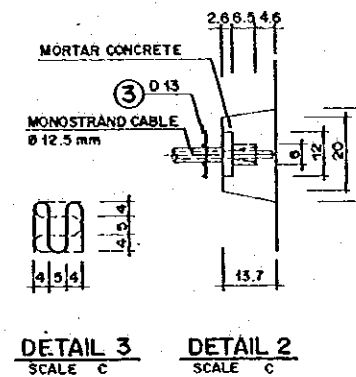
PROJECT MANAGER: [Signature]

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED



DIAPHRAGM DIMENSION

SIZE	
H 1	99
H 2	20



LIST OF REINFORCING BAR OF HAND RAIL

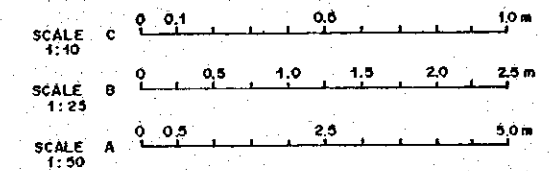
REINFORCING BAR NO.	Ø (mm)	TYPE	BENDING DIMENSION (cm)					TOTAL LENGTH (m)	UNIT WEIGHT/m (kg/m)	NUMBER	WEIGHT (kg)	REMARKS	
			a	b	c	d	e						f
T 1	13	J	20	35	20	15	10	30	1.30	1.04	2 x 110	297	∩
T 2													
T 3	13	L	12	40	15				0.67	1.04	2 x 110	153	∩
T 4	13	A	2109						21.09	1.04	2 x 7	307	—
TOTAL = 757 kg													

LIST OF REINFORCING BAR OF DIAPHRAGM

REINFORCING BAR NO.	Ø (mm)	TYPE	BENDING DIMENSION (cm)					TOTAL LENGTH (m)	UNIT WEIGHT/m (kg/m)	NUMBER	WEIGHT (kg)	REMARKS	
			a	b	c	d	e						f
D 1	13	B	117						1.17	1.04	72	88	
D 2	9	H	90	97	4.5				2.13	0.50	54	58	∩
TOTAL = 146 kg													

NOTE :

1. CONCRETE QUALITY OF DIAPHRAGM K-400
2. MAXIMUM AGGREGATE SIZE 20 mm
3. STEEL QUALITY BJ-32.
4. MINIMUM CONCRETE COVER 20 mm
5. PIPE AND STEEL PLATE MUST BE GALVANISED
6. DIAPHRAGM PRECAST CONCRETE



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

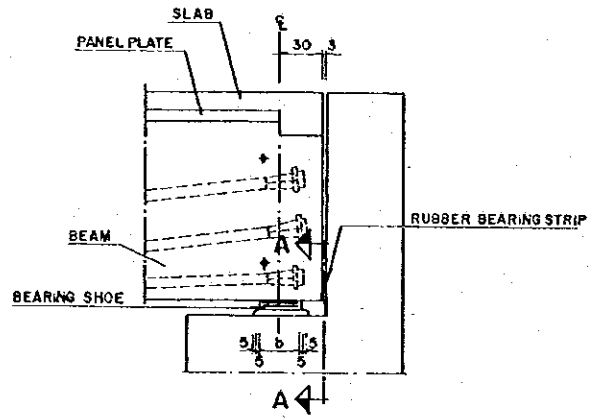
JRATUNGGALANA FLOOD CONTROL PROJECT
 COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT
 ASIN PUMPING STATION BRIDGE
 SUPER STRUCTURE
 REINFORCING BAR ARRANGEMENT OF DIAPHRAGM & SIDE WALK

JAVAN INTERNATIONAL COOPERATION AGENCY
 C/O PT. INDOBARAYA CO., LTD. (INCORPORATED IN INDONESIA)
 PACIFIC COMMERCIAL BANK INTERNATIONAL LTD.
 JAPAN INTERNATIONAL BANK

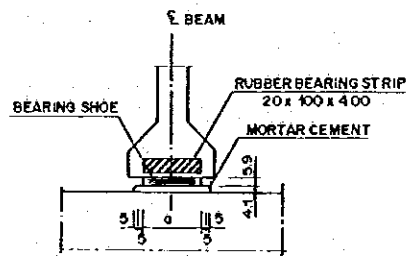
DESIGNED: *[Signature]*
 CHECKED: *[Signature]*
 CRISIS OF PLANNING AND DESIGN

PROVINCE: CENTRAL JAWA
 PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN PROGRAMS IN THE REPUBLIC OF INDONESIA
 DISTRICT: SEMARANG CITY
 DRAWING NO. U-PS-P-Br-0
 SHEET NO. 107
 DATE: _____
 CONTRACT NO. _____

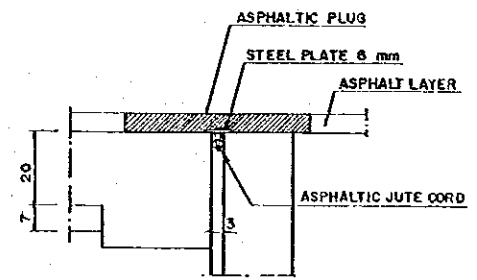
APPROVED: _____
 PROJECT MANAGER



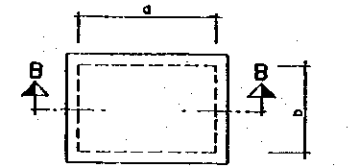
POINT SUPPORT ON ABUTMENT
SCALE A



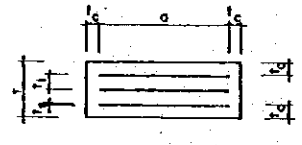
SECTION A-A
SCALE A



DETAIL OF JOINT
SCALE B



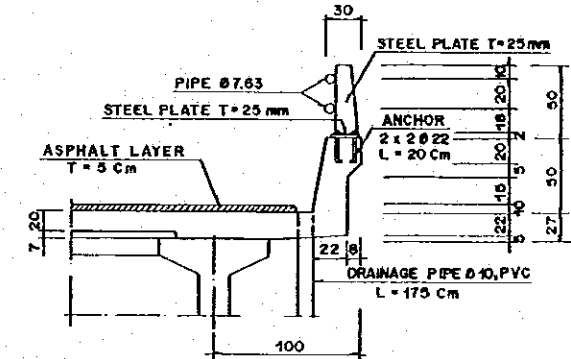
PLAN OF ELASTOMERIC BEARING
SCALE A



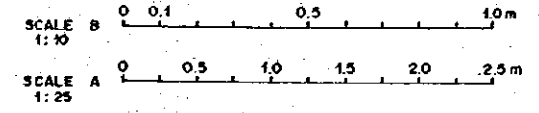
SECTION B-B
SCALE A

SIZE OF BEARING SHOE (mm)

a	b	STEEL PLATE		RUBBER		TOTAL
		a	t _s	t _r	t _t	
350	280	4	5	6	9	59



DETAIL OF HAND RAIL
SCALE A



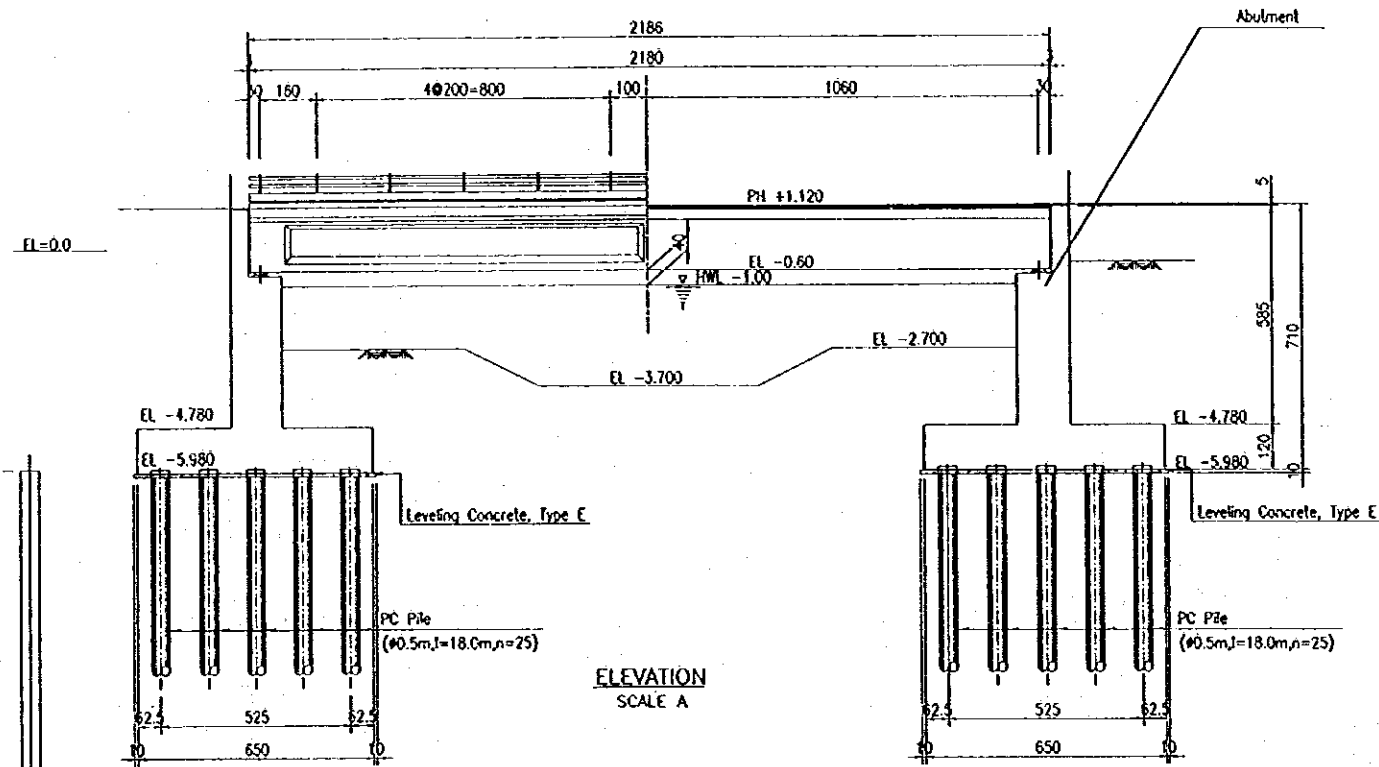
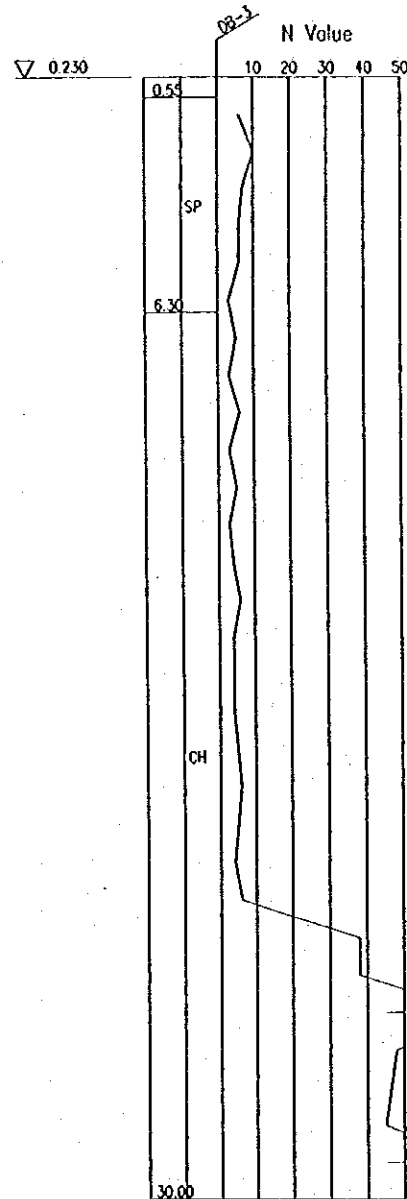
NO.	DATE	REVISIONS	QUOTED	DESIGNED	APPROVED

THE REPUBLIC OF INDONESIA
 MINISTRY OF PUBLIC WORKS
 DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT
 RAJURUMBLANA FLOOD CONTROL PROJECT
 COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT
 ASIN PUMPING STATION BRIDGE
 SUPER STRUCTURE
 EXPANSION JOINT AND BEARING SHOE

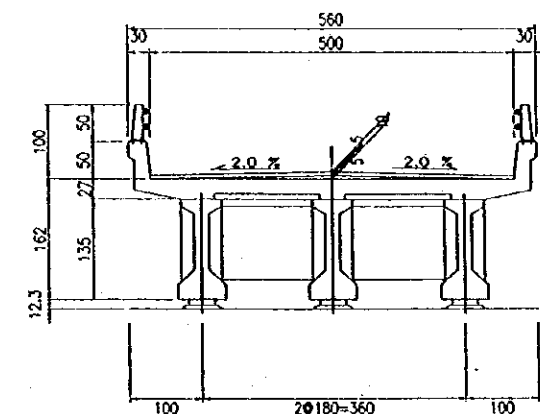
JAPAN INTERNATIONAL COOPERATION AGENCY
 CTS ENGINEERING CO., LTD. IN ASSOCIATION WITH
 PACIFIC CONSULTANTS INTERNATIONAL INC.
 AND
 TAIKOO INTERNATIONAL INC.

DESIGNED: [Signature]
 CHECKED: [Signature]
 CHIEF OF PLANNING AND DESIGN
 PROJECT MANAGER

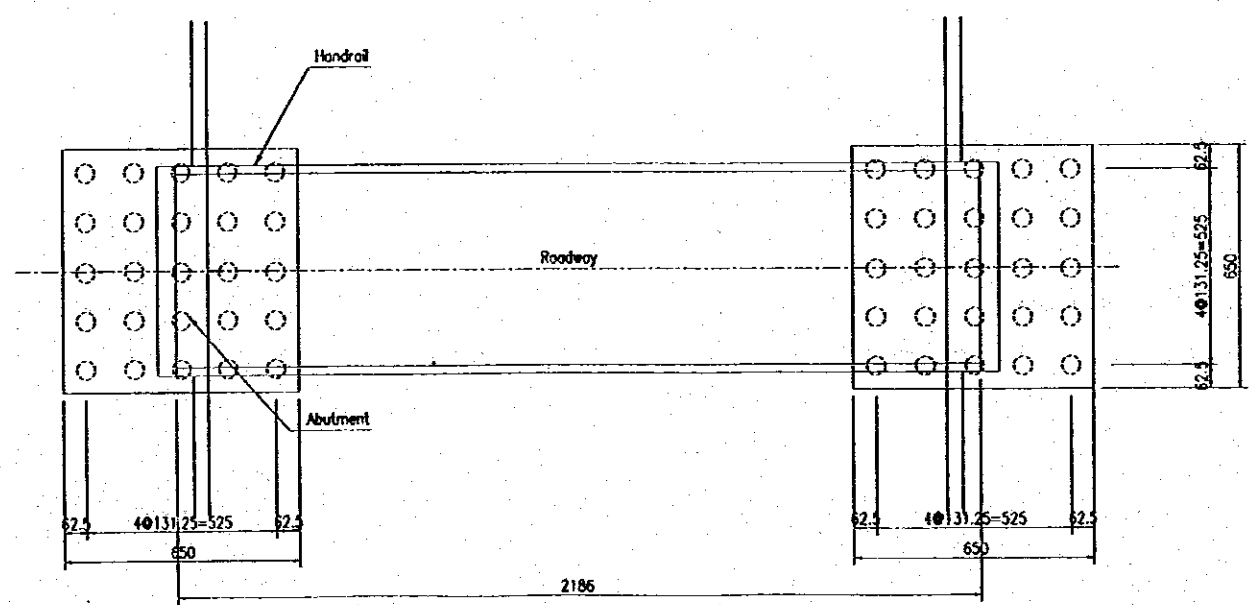
PROVINCE: CENTRAL JAWA
 PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT OF SEMARANG IN THE REPUBLIC OF INDONESIA
 DISTRICT: SEMARANG CITY
 DRAWING NO. U-P2-P-Br-8
 SHEET NO. 108
 DATE: [] [] []
 CONTRACT NO.



ELEVATION
SCALE A

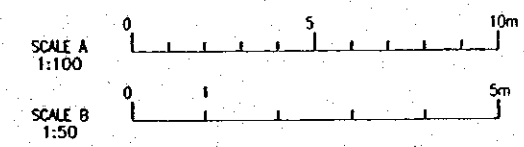


TYPICAL CROSS SECTION
SCALE B



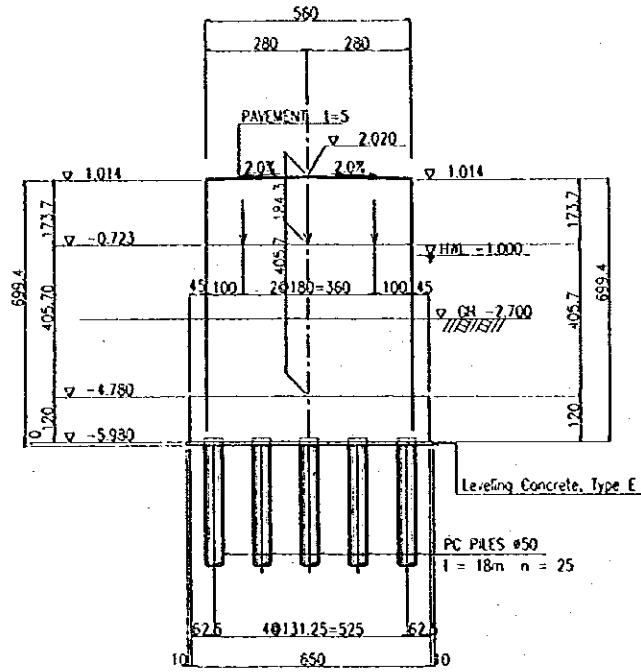
PLAN
SCALE A

- Notes :
1. The dimension in cm
 2. The elevation in m
 3. Concrete for structure, Type C1

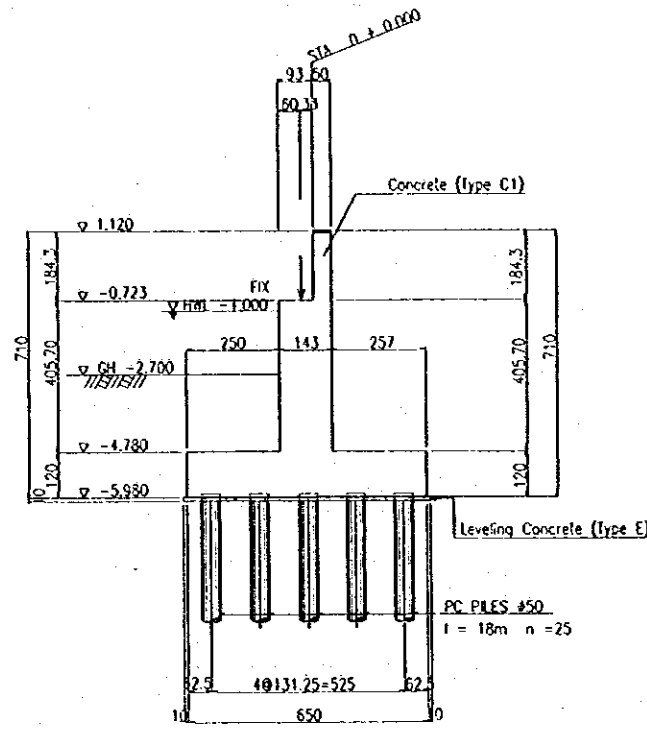


NO.	DATE	REVISIONS	PROPOSED	DESIGNED	APPROVED

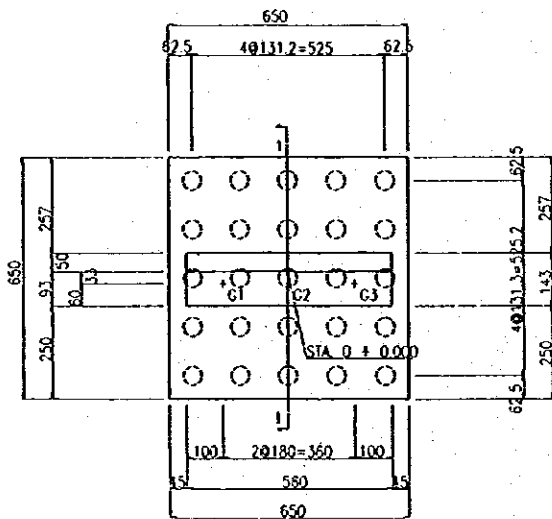
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT		PROVINCE CENTRAL JAVA
RIATUNBULANA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION BRIDGE SUBSTRUCTURE GENERAL ARRANGEMENT		PROJECT NAME FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT OF SEMARANG IN THE REPUBLIC OF INDONESIA DISTRICT SEMARANG CITY DRAWING NO. U-P2-P-Br-1 SHEET NO. 109
JAPAN INTERNATIONAL COOPERATION AGENCY CITY ENGINEERING CO. LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL AND PASCIO INTERNATIONAL INC.	DESIGNED CHECKED DATE	CONTRACT NO.
CHIEF OF PLANNING AND DESIGN PROJECT MANAGER	APPROVED	DATE



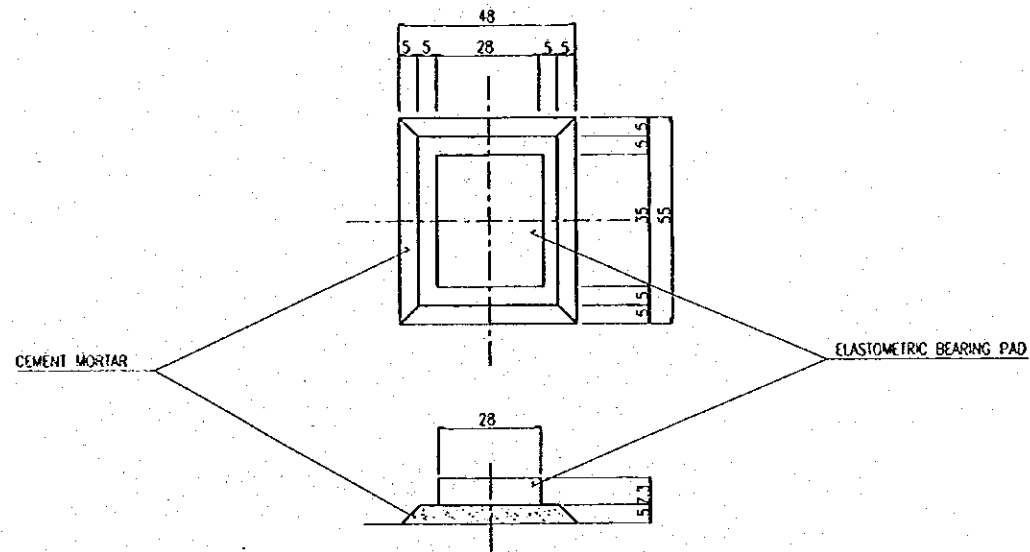
ELEVATION
SCALE A



PROFILE
SCALE A

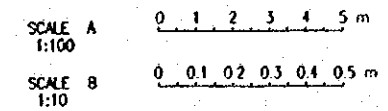


PLAN
SCALE A



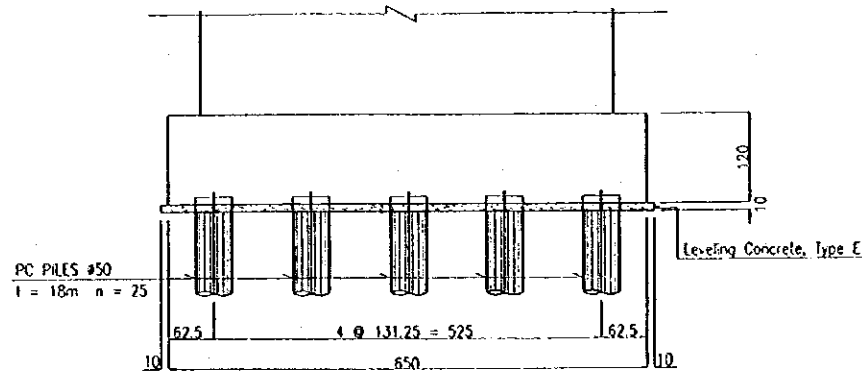
BEARING PAD
SCALE B

- Notes :
1. The dimension in cm
 2. The elevation in m
 3. Concrete for structure, Type C1

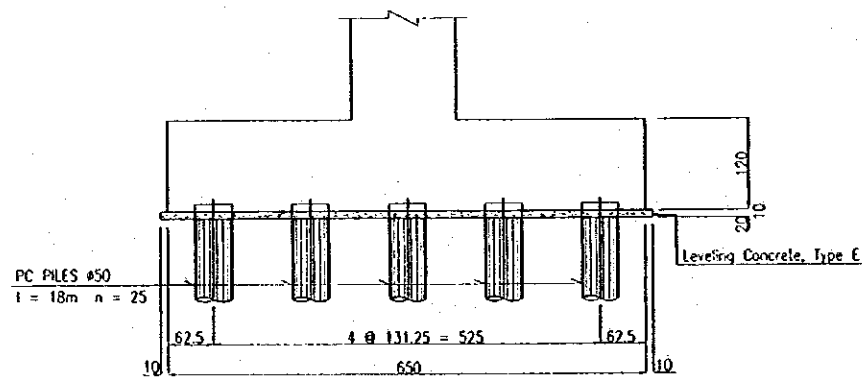


NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

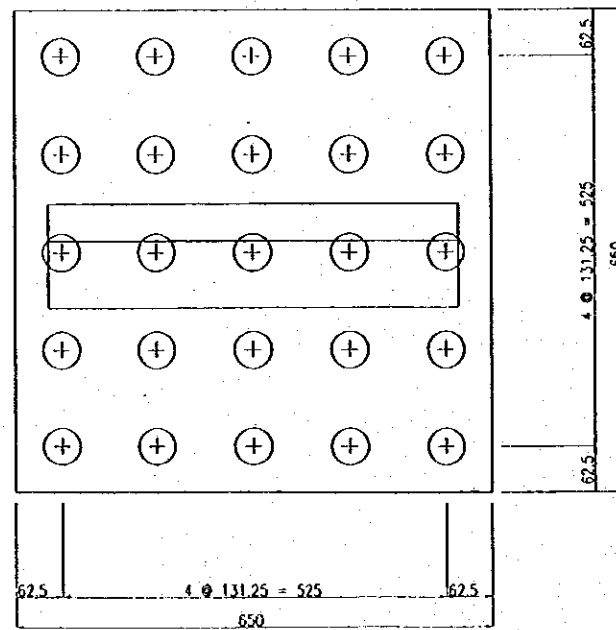
THE REPUBLIC OF INDONESIA MINISTRY OF PUBLIC WORKS DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF URBAN SETTLEMENT		PROVINCE CENTRAL JAWA
RATURUMBUKA FLOOD CONTROL PROJECT COMPONENT : URBAN DRAINAGE SYSTEM IMPROVEMENT ASIN PUMPING STATION BRIDGE SUBSTRUCTURE DIMENSION OF ABUTMENT		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 FAKSO INTERNATIONAL INC.		DISTRICT SEMARANG CITY
DESIGNED CHECKED CRYZ OF PLANING AND DESIGN		DRAWING NO. U-P2-P-Br-2 SHEET NO. 110
APPROVED PROJECT MANAGER		GATE CONTRACT NO.



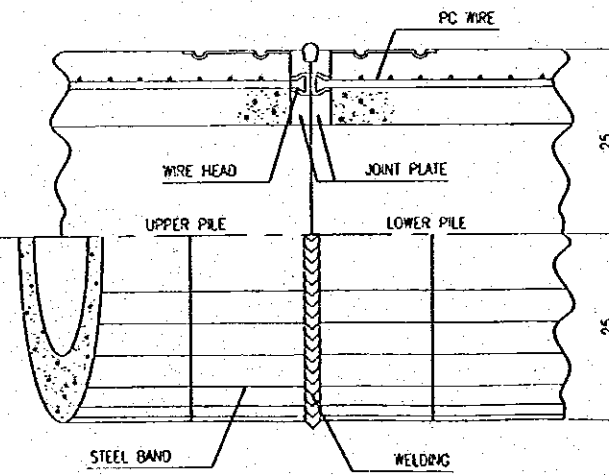
ELEVATION SCALE A



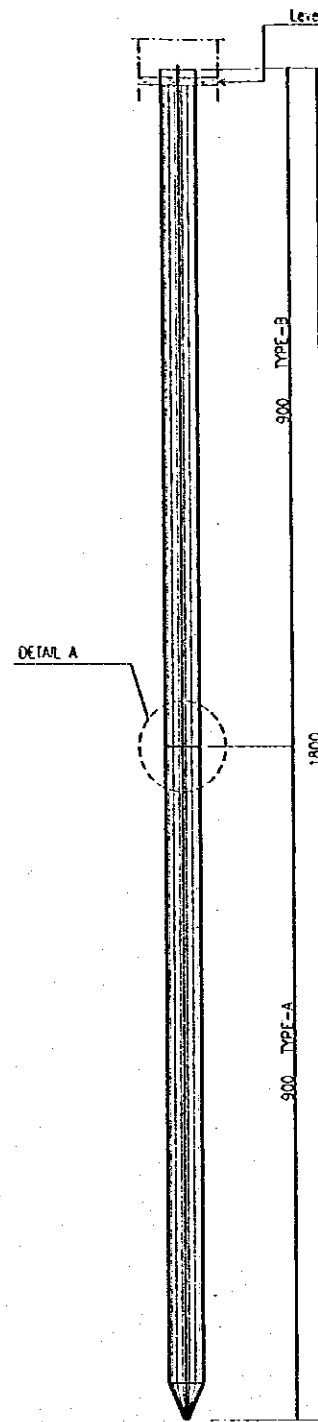
PROFILE SCALE A



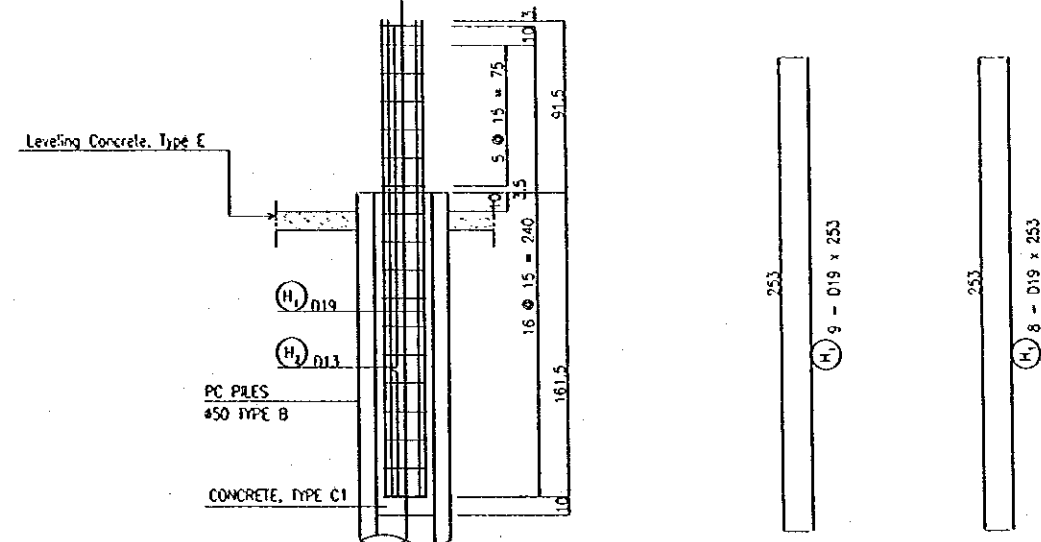
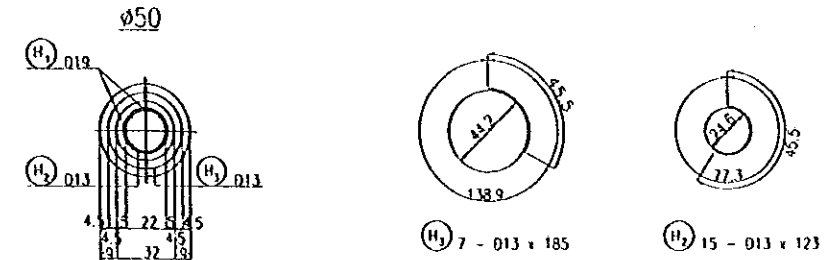
PLAN SCALE A



DETAIL A SCALE C

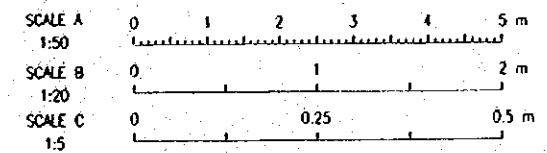


DETAIL OF PC PILE SCALE A



DETAIL OF REINFORCING BAR FOR PILE SCALE B

REINF. No.	#	LENGTH	NUM.	U.WEIGHT	WEIGHT/BAR	WEIGHT	REMARKS
H.1	Ø19	253	8	2.23	5.64	46	I
H.2	Ø13	123	18	1.04	1.28	23	O
							69 kg
		WEIGHT/PILE	PILES NUM.	WEIGHT/ABUTMENT			
		Ø19	46 kg	25	1150 kg		
		Ø13	23 kg	25	575 kg		
		TOTAL	69 kg		1725 kg		
LOWER	TYPE-A	900					
UPPER	TYPE-B	900					
		1800					
		LENGTH/PILE	PILES NUM.	TOTAL LENGTH/ABUTMENT			
		TYPE-A	9 m	25	225 m		
		TYPE-B	9 m	25	225 m		
		TOTAL	18 m		450 m		



Notes:
1. The dimension in cm, except for reinforcing bar diameter in mm
2. Concrete for structure, Type C1

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

PRATUNSELUMA FLOOD CONTROL PROJECT
COMPONENT: URBAN DRAINAGE SYSTEM IMPROVEMENT
ASIN PUMPING STATION BRIDGE
SUBSTRUCTURE
DIMENSIONS AND REINFORCING BAR ARRANGEMENT OF PC PILES

SAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD. IN ASSOCIATION WITH
PACIFIC CONSULTANTS INTERNATIONAL AND
TAKAO INTERNATIONAL PCL

CHIEF OF PLANNING AND DESIGN

PROVINCE: CENTRAL JAWA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER INFRASTRUCTURE DEVELOPMENT OF SURABAYA IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. U-P2-P-Br-3
SHEET NO. 111
DATE: CONTRACT NO.:

APPROVED: PROJECT MANAGER