MINISTRY OF SETTLEMENT AND REGIONAL DEVELOPMENT
THE REPUBLIC OF INDONESIA

FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG

COMPONENT A: WEST FLOODWAY / GARANG RIVER IMPROVEMENT

BIDDING DOCUMENTS

PACKAGE 1:

WEST FLOODWAY AND GARANG RIVER IMPROVEMENT WORKS

VOLUME 3

DRAWINGS

AUGUST 2000

PACKAGE - 1 : WEST FLOODWAY / GARANG RIVER IMPROVEMENT WORKS LIST OF DRAWINGS (1/2)

SHEET No	DRAWING No	TITLE OF DRAWING	
	GENERAL DRAWING (GE)		
1	WG-P1-GE-Pl-1	GENERAL PLAN FOR PACKAGING	
2	WG-P1-GE-St-1	GENERAL NOTES, LEGEND AND ABBREVIATIONS	
	CHANNEL AND DIKE WORKS (CH)		
3	WG-P1-CH-Pl-1	WEST FLOODWAY / GARANG RIVER	INDEX MAP FOR PLAN OF RIVER CHANNEL
4	WG-P1-CH-Pl-2	WEST FLOODWAY	PLAN OF RIVER CHANNEL (1/8)
5	WG-P1-CH-Pl-3	WEST FLOODWAY	PLAN OF RIVER CHANNEL (2/8)
6	WG-P1-CH-Pl-4	WEST FLOODWAY	PLAN OF RIVER CHANNEL (3/8)
7	WG-P1-CH-Pl-5	WEST FLOODWAY	PLAN OF RIVER CHANNEL (4/8)
8	WG-P1-CH-Pl-6	GARANG RIVER	PLAN OF RIVER CHANNEL (5/8)
9	WG-P1-CH-Pl-7	GARANG RIVER	PLAN OF RIVER CHANNEL (6/8)
10	WG-P1-CH-Pl-8	GARANG RIVER	PLAN OF RIVER CHANNEL (7/8)
11	WG-P1-CH-Pl-9	TRIBUTARIES	PLAN OF RIVER CHANNEL (8/8)
12	WG-P1-CH-Lo-10	WEST FLOODWAY	LONGITUDINAL PROFILE (1/2)
13	WG-P1-CH-Lo-11	WEST FLOODWAY	LONGITUDINAL PROFILE (2/2)
14	WG-P1-CH-Cr-12	WEST FLOODWAY	STANDARD CROSS SECTION OF RIVER CHANNEL (1/4)
15	WG-P1-CH-Cr-13	WEST FLOODWAY	STANDARD CROSS SECTION OF RIVER CHANNEL (2/4)
16	WG-P1-CH-Cr-14	WEST FLOODWAY	STANDARD CROSS SECTION OF RIVER CHANNEL (3/4)
17	WG-P1-CH-Cr-15	GARANG RIVER	STANDARD CROSS SECTION OF RIVER CHANNEL (4/4)
18~56	WG-P1-CH-Cr-16~54	WEST FLOODWAY	CROSS SECTIONS (1/39) ~ (39/39)
57~87	WG-P1-CH-Cr-55~85	GARANG RIVER	CROSS SECTIONS (1/31) ~ (31/31)
88	WG-P1-CH-Cr-86a	STANDARD CROSS SECTIONS OF TRIBUTARY	PLAN, PROFILE AND STANDARD CROSS SECTIONS OF CENGKEK CHANNEL
89	WG-P1-CH-Cr-86b	STANDARD CROSS SECTIONS OF TRIBUTARY	PLAN, PROFILE AND STANDARD CROSS SECTIONS OF KALITO RIVER
90	WG-P1-CH-Pl-87	EARTH DIKE AND DRAINAGE BY-PASS CHANNEL	PLAN AND LONGITUDINAL PROFILE
91	WG-P1-CH-Cr-88	EARTH DIKE AND DRAINAGE BY-PASS CHANNEL	CROSS SECTIONS OF DIKE AND CHANNEL (1/4)
92	WG-P1-CH-Cr-89	EARTH DIKE AND DRAINAGE BY-PASS CHANNEL	CROSS SECTIONS OF DIKE AND CHANNEL (2/4)
93	WG-P1-CH-Cr-90	EARTH DIKE AND DRAINAGE BY-PASS CHANNEL	CROSS SECTIONS OF DIKE AND CHANNEL (3/4)
94	WG-P1-CH-Cr-91	EARTH DIKE AND DRAINAGE BY-PASS CHANNEL	CROSS SECTIONS OF DIKE AND CHANNEL (4/4)
	RAISING OF EXISTING FLOODWALL (FL)		
95	WG-P1-FL-Lo-1	LONGITUDINAL PROFILE FLOODWALL (RIGHT BANK)	
96	WG-P1-FL-Lo-2	LONGITUDINAL PROFILE FLOODWALL (LEFT BANK)	
97	WG-P1-FL-Lo-3	TYPICAL CROSS SECTION AND STRUCTURAL DETAILS	
98	WG-P1-FL-St-1	STRUCTURAL DETAILS OF RAISING WALL(WF29L+10)	
99	WG-P1-FL-St-2	STRUCTURAL DETAILS OF RAISING WALL(WF36L+15)	
	PROTECTION WORKS FOR RIVERBANK & RIVERBED (PR)		
100	WG-P1-PR-Pl-1	RIVER SECTION : WF.-9L TO WF.3L (LEFT BANK)	PLAN AND LONGITUDINAL PROFILE
101	WG-P1-PR-St-2	RIVER SECTION : WF.-9L TO WF.3L (LEFT BANK)	TYPICAL CROSS SECTION AND DETAILS
102	WG-P1-PR-Cr-3	RIVER SECTION : WF.-9L TO WF.3L (LEFT BANK)	CROSS SECTIONS (1/2)
103	WG-P1-PR-Cr-4	RIVER SECTION : WF.-9L TO WF.3L (LEFT BANK)	CROSS SECTIONS (2/2)
104	WG-P1-PR-Pl-5	RIVER SECTION : WF.4R TO WF.6R (RIGHT BANK)	PLAN AND CROSS SECTIONS
105	WG-P1-PR-St-6	RIVER SECTION : WF.31L TO WF.38L (LEFT BANK)	PLAN, CROSS SECTION AND STRUCTURAL DETAILS (1/2)
106	WG-P1-PR-St-7	RIVER SECTION : WF.31L TO WF.38L (LEFT BANK)	PLAN, CROSS SECTION AND STRUCTURAL DETAILS (2/2)
107	WG-P1-PR-St-8	RIVER SECTION : WF.46L TO WF.51L (LEFT BANK)	PLAN, CROSS SECTION AND STRUCTURAL DETAILS
108	WG-P1-PR-St-9	RIVER SECTION : WF.64 TO WF.75 (RIGHT & LEFT BANK)	GENERAL LAYOUT PLAN OF REVETMENT AND LEANING WALL
109	WG-P1-PR-St-10	RIVER SECTION : WF.64 TO WF.75 (RIGHT & LEFT BANK)	STANDARD CROSS SECTION AND PROFILE OF REVETMENT
110	WG-P1-PR-St-11	RIVER SECTION : WF.64 TO WF.75 (RIGHT & LEFT BANK)	STRUCTURAL DETAILS OF REVETMENT
111	WG-P1-PR-Pl-12	RIVER SECTION : WF.64 TO WF.75 (RIGHT & LEFT BANK)	DRAINAGE OUTLET AND REVETMENT (1/2)
112	WG-P1-PR-Pl-13	RIVER SECTION : WF.64 TO WF.75 (RIGHT & LEFT BANK)	DRAINAGE OUTLET AND REVETMENT (2/2)
113	WG-P1-PR-Pl-14	RIVER SECTION : WF.74R TO WF.79R (RIGHT BANK)	PLAN, PROFILE AND CROSS SECTION OF LEANING WALL
114	WG-P1-PR-Pl-15	RIVER SECTION : WF.75L TO WF.80L (LEFT BANK)	PLAN, PROFILE AND CROSS SECTION OF RETAINING WALL
115	WG-P1-PR-Pl-16	RIVER SECTION : WF.91R TO WF.94R (RIGHT BANK)	PLAN, PROFILE AND CROSS SECTION OF LEANING WALL
116	WG-P1-PR-Pl-17	RIVER SECTION : WF.100 TO WF.112 (RIGHT & LEFT BANK)	GENERAL LAYOUT PLAN OF REVETMENT AND LEANING WALL
117	WG-P1-PR-St-18	RIVER SECTION : WF.100 TO WF.112 (RIGHT & LEFT BANK)	STRUCTURAL DETAILS OF REVETMENT (1/2)
118	WG-P1-PR-St-19	RIVER SECTION : WF.100 TO WF.112 (RIGHT & LEFT BANK)	STRUCTURAL DETAILS OF REVETMENT (2/2)
119	WG-P1-PR-Pl-20	RIVER SECTION : WF.100 TO WF.112 (RIGHT & LEFT BANK)	PLAN AND LONGITUDINAL PROFILE OF LEANING WALL
120	WG-P1-PR-St-21	RIVER SECTION : WF.100 TO WF.112 (RIGHT & LEFT BANK)	STRUCTURAL DETAILS OF LEANING WALL (RIGHT BANK)
121	WG-P1-PR-St-22	RIVER SECTION : WF.100 TO WF.112 (RIGHT & LEFT BANK)	STRUCTURAL DETAILS OF LEANING WALL (LEFT BANK)
122	WG-P1-PR-Pl-23	RIVER SECTION : WF.115R TO WF.118R (RIGHT BANK)	PROFILE OF PC SHEET PILE WALL TYPE REVETMENT
123	WG-P1-PR-St-24	RIVER SECTION : WF.115R TO WF.118R (RIGHT BANK)	STRUCTURAL DETAILS OF REVETMENT
124	WG-P1-PR-St-25	RIVER SECTION : WF.115R TO WF.118R (RIGHT BANK)	DETAILS OF SHEET PILE CONNECTION
125	WG-P1-PR-St-26	RIVER SECTION : WF.139R TO WF.141R (RIGHT BANK)	PLAN AND STRUCTURAL DETAILS OF REVETMENT
126	WG-P1-PR-Pl-27	RIVER SECTION : WF.147 TO WF.155 (RIGHT & LEFT BANK)	GENERAL LAYOUT PLAN OF REVETMENT AND LEANING WALL
127	WG-P1-PR-St-28	RIVER SECTION : WF.147 TO WF.155 (RIGHT & LEFT BANK)	STRUCTURAL DETAILS OF LEANING WALL (LEFT BANK)
128	WG-P1-PR-St-29	RIVER SECTION : WF.147 TO WF.155 (RIGHT & LEFT BANK)	STRUCTURAL DETAILS OF REVETMENT (1/2)
129	WG-P1-PR-St-30	RIVER SECTION : WF.147 TO WF.155 (RIGHT & LEFT BANK)	STRUCTURAL DETAILS OF REVETMENT (2/2)
130	WG-P1-PR-St-31	RIVER SECTION : WF.163L TO WF.167L (LEFT BANK)	PLAN AND STRUCTURAL DETAILS OF REVETMENT
131	WG-P1-PR-Pl-32	RIVER SECTION : WF.175R TO WF.180R (RIGHT BANK)	LAYOUT PLAN AND CROSS SECTIONS OF REVETMENT
132	WG-P1-PR-St-33	RIVER SECTION : WF.175R TO WF.180R (RIGHT BANK)	PROFILE AND STANDARD CROSS SECTION OF REVETMENT
133	WG-P1-PR-St-34	RIVER SECTION : WF.175R TO WF.180R (RIGHT BANK)	STRUCTURAL DETAILS OF REVETMENT (UPPER SIDE)
134	WG-P1-PR-St-35	RIVER SECTION : WF.175R TO WF.180R (RIGHT BANK)	STRUCTURAL DETAILS OF REVETMENT (LOWER SIDE)
135	WG-P1-PR-St-36	RIVER SECTION : WF.175R TO WF.180R (RIGHT BANK)	STRUCTURAL DETAILS OF LEANING WALL
136	WG-P1-PR-St-37	DETAILS OF GABION MATTRESS AND CYLINDER	
137	WG-P1-PR-St-38	STRUCTURAL DETAILS OF PILE TYPE GROIN	
138	WG-P1-PR-Cr-39	CROSS SECTIONS OF PILE TYPE GROIN (1/2)	
139	WG-P1-PR-Cr-40	CROSS SECTIONS OF PILE TYPE GROIN (2/2)	
140	WG-P1-PR-Pl-41	PLAN OF REVETMENT FOR NORTH RING ROAD BRIDGE	
141	WG-P1-PR-St-42	DETAILS OF RIVERBED PROTECTION FOR NORTH RING ROAD BRIDGE	
142	WG-P1-PR-St-43	DETAILS OF RIVERBED PROTECTION FOR NATIONAL ROAD BRIDGE	
143	WG-P1-PR-St-44	DETAILS OF RIVERBED PROTECTION FOR NEW SIMONGAN BRIDGE	
144	WG-P1-PR-St-45	DETAILS OF RIVERBED PROTECTION FOR TOLL ROAD BRIDGE	
	GROUND SILL (GS)		
145	WG-P1-GS-Pl-1	GROUND SILL WITH HEAD AT WF124	PLAN OF RIVER CHANNEL
146	WG-P1-GS-St-2	GROUND SILL WITH HEAD AT WF124	PLAN PROFILE AND STANDARD CROSS SECTION OF REVETMENT
147	WG-P1-GS-Cr-3	GROUND SILL WITH HEAD AT WF124	PROFILE AND CROSS SECTION (1/2)
148	WG-P1-GS-St-4	GROUND SILL WITH HEAD AT WF124	PROFILE AND CROSS SECTION (2/2)
149	WG-P1-GS-St-5	GROUND SILL WITH HEAD AT WF124	PLAN AND PROFILE OF SIDE WALL (RIGHT BANK)
150	WG-P1-GS-Re-6	GROUND SILL WITH HEAD AT WF124	REINFORCING BAR ARRANGEMENT
151	WG-P1-GS-Re-7	GROUND SILL WITH HEAD AT WF124	LIST OF BAR ARRANGEMENT
152	WG-P1-GS-Pl-8	GROUND SILL WITHOUT HEAD AT WF173	PLAN OF RIVER CHANNEL
153	WG-P1-GS-St-9	GROUND SILL WITHOUT HEAD AT WF173	PROFILE AND CROSS SECTION
154	WG-P1-GS-St-10	GROUND SILL WITHOUT HEAD AT WF173	PLAN OF REVETMENT AND PROFILE OF WALL
	DRAINAGE SLUICEWAY (DS)		
155	WG-P1-DS-Pl-1	PLAN AND PROFILE OF DRAINAGE CHANNEL AND SLUICEWAY	
156	WG-P1-DS-St-2	STRUCTURAL DETAILS OF BOX CULVERT, GATE PIER AND WALLS	
157	WG-P1-DS-St-3	DETAILS OF GATE PIER AND CONTROL DECK	

PACKAGE - 1 : WEST FLOODWAY / GARANG RIVER IMPROVEMENT WORKS LIST OF DRAWINGS (2/2)

SHEET No	DRAWING No	TITLE OF DRAWING
		DRAINAGE SLUICEWAY (DS)
158	WG P1-DS Re 4	RE-BAR ARRANGEMENT (1/5)
159	WG P1-DS Re 5	RE-BAR ARRANGEMENT (2/5)
160	WG P1-DS Re 6	RE-BAR ARRANGEMENT (3/5)
161	WG P1-DS Re-7	RE-BAR ARRANGEMENT (4/5)
162	WG P1-DS Re 8	RE-BAR ARRANGEMENT (5/5)
163	WG P1-DS-St-9	DETAILS OF GATE AND BLOCKOUT
164	WG P1-DS-St-10	DETAILS OF REVETMENT AND CONCRETE STEPS (1/2)
165	WG P1-DS-St-11	DETAILS OF REVETMENT AND CONCRETE STEPS (2/2)
166	WG P1-DS-St-12	DETAILS OF CONNECTING CHANNEL AND PIPE (1/2)
167	WG P1-DS-St-13	DETAILS OF CONNECTING CHANNEL AND PIPE (2/2)
		DRAINAGE OUTLET WORKS (DO)
168	WG-P1-DO-St-1	PLAN, PROFILE AND STRUCTURAL DETAILS OF OUTLET CHANNEL R3A
169	WG-P1-DO-St-2	PLAN, PROFILE AND STRUCTURAL DETAILS OF OUTLET CHANNEL R9
170	WG-P1-DO-St-3	PLAN, PROFILE AND STRUCTURAL DETAILS OF OUTLET CHANNEL R11
171	WG-P1-DO-St-4	PLAN, PROFILE AND STRUCTURAL DETAILS OF OUTLET CHANNEL R12
172	WG-P1-DO-St-5	PLAN, PROFILE AND STRUCTURAL DETAILS OF DRAINAGE PIPE R18 & R19
173	WG-P1-DO-St-6	STRUCTURAL DETAILS OF FLAP GATE R3
174	WG-P1-DO-St-7	STRUCTURAL DETAILS OF STOP LOG L.8
175	WG P1-DO-St-8	STRUCTURAL DETAILS OF FLAP GATE L.9
176	WG P1-DO-St-9	STANDARD DRAWING OF FLAP GATE (1/3)
177	WG-P1-DO-St-10	STANDARD DRAWING OF FLAP GATE (2/3)
178	WG P1-DO-St-11	STANDARD DRAWING OF FLAP GATE (3/3)
		RIVER AMENITY AND MAINTENANCE FACILITIES (AM)
179	WG-P1-AM-St-1	STRUCTURAL DETAILS OF MOORING FACILITY (1/2)
180	WG-P1-AM-St-2	STRUCTURAL DETAILS OF MOORING FACILITY (2/2)
181	WG-P1-AM-St-3	APPROACH STEPS TYPE WA-1 IN WEST FLOODWAY
182	WG P1-AM-St-4	APPROACH STEPS TYPE WA-2 IN WEST FLOODWAY
183	WG P1-AM-St-5	APPROACH STEPS TYPE WB IN WEST FLOODWAY
184	WG-P1-AM-St-6	APPROACH STEPS TYPE GA-1 IN GARANG RIVER
185	WG-P1-AM-St-7	APPROACH STEPS TYPE GA-2 IN GARANG RIVER
186	WG P1-AM-St-8	APPROACH STEPS TYPE GA-3 IN GARANG RIVER
187	WG-P1-AM-St-9	APPROACH STEPS TYPE GA-4 IN GARANG RIVER
188	WG-P1-AM-St-10	APPROACH STEPS TYPE GA-5 IN GARANG RIVER
189	WG-P1-AM-St-11	APPROACH STEPS TYPE GB-1 IN GARANG RIVER
190	WG P1-AM-St-12	APPROACH STEPS TYPE GB-2 IN GARANG RIVER
191	WG-P1-AM-St-13	DETAILS OF BENCHMARK, HECTOMETER POST AND AZIMUTH MARK
		WATER LEVEL GAUGING STATION (WL)
192	WG P1-WL-St-1	PLAN AND PROFILE OF GAUGING STATION
193	WG P1-WL-St-2	STRUCTURAL DETAILS OF WELL, INTAKE PIPE AND INTAKE BOX
194	WG P1-WL-St-3	STRUCTURAL DETAILS OF GAUGING HOUSE

SHEET No	DRAWING No	TITLE OF DRAWING

9.232.700 | 9.231.200 | 9.229.700 | 9.228.200 | 9.226.700 | 9.225.200 | 9.223.700 | 9.222.200

435.700

434.200

432.700

431.200

N

PACKAGE - 3
RAISING OF RAILWAY BRIDGE AND RAILWAY TRACK

RAISING OF EXISTING FLOODWALL (RIGHT BANK)
L = 2,510 m

CHANNEL EXCAVATION
L = 420 m

PACKAGE - 2
RECONSTRUCTION OF SIMONGAN WEIR

DIKE EMBANKMENT
L = 730 m

SEMARANG RIVER

PDAM INTAKE FACILITY

850 m

850 m

IRRIGATION CHANNEL

NORTH RING ROAD

JAVA SEA

RAILWAY

RAISING OF EXISTING FLOODWALL (LEFT BANK)
L = 2,460 m

WEST FLOODWAY CHANNEL EXCAVATION L = 5,440 m

GARANG RIVER CHANNEL EXCAVATION L = 3,650 m

GARANG RIVER

WEST TOLL ROAD

KREO RIVER

PACKAGE-1 | WEST FLOODWAY/GARANG RIVER IMPROVEMENT WORKS

LEGEND

- CHANNEL EXCAVATION
- DIKE EMBANKMENT
- RAISING OF EXISTING FLOODWALL
- GROUND SILL
- REVETMENT
- GROIN
- DRAINAGE SLUICEWAY/OUTLET WITH GATE

SCALE 0 750 1500 m
1 : 15,000

NO.	DATE	REVISIONS	ORIGINATED	DESIGNED	APPROVED

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

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : WEST FLOODWAY / GARANG RIVER IMPROVEMENT

GENERAL DRAWING
GENERAL PLAN FOR PACKAGING

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

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

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. WG - P1 - GE - P1 - 1
SHEET NO. 1
DATE | CONTRACT NO.

GENERAL NOTES

1. GENERAL

1.1. THESE NOTES SHALL APPLY UNLESS SPECIFICATION OTHERWISE INDICATED IN THE RESPECTIVE DRAWINGS.

1.2. ALL THE BOUND PLANS HEREIN SHALL BE AVAILABLE FOR TENDERING PURPOSE ONLY, NOT FOR CONSTRUCTION. IN CASE OF CONFLICT BETWEEN THE DRAWINGS AND THE TECHNICAL SPECIFICATIONS, THE LATTER SHALL GOVERN.

1.3. RIGHT OF WAY FOR THE PERMANENT STRUCTURES IS NOT SHOWN ON THE DRAWINGS, WHICH SHALL BE AS DIRECTED BY THE ENGINEER.

1.4. UNLESS OTHERWISE SPECIFIED, ALL DIMENSION SHOWN ON THE DRAWINGS ARE IN MILLIMETERS.

1.5. ALL DIMENSIONS RELATING TO THE EXISTING STRUCTURES AND FACILITIES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE COMMENCEMENT OF THE WORKS.

1.6. ALL ELEVATION ARE REFERRED TO THE NATIONAL BENCH MARKS (TTG) OBTAINED FROM THE MEAN SEA LEVEL OF JAKARTA PORT, INDONESIA.

1.7. FIGURE SHALL GOVERN OVER SCALED DIMENSION IN CASE OF DISCREPANCY.

2. EARTHWORK

2.1. AREAS FOR PERMANENT STRUCTURES AND ALL BORROW PITS, QUARRY AND STOCKPILE SITES SHALL BE CLEARED AND GRUBBED TOP SOIL SHALL BE STRIPPED BEFORE COMMENCEMENT OF CONSTRUCTION.

2.2. UNLESS OTHERWISE SPECIFIED, REQUIRED OPEN CUT EXCAVATION SHALL BE MADE WITH THE SLOPES SHOWN BELOW :

	SLOPE GRADIENT	
	PERMANENTLY EXPOSED	TEMPORARILY EXPOSED
DILUVIAL MEDIUM	1:1.0	1:0.5
COMMON MATERIALS	1:1.5	1:1.0
RIVERBED MATERIALS	1:1.5	1:1.0

WHERE, 1:N SHALL MEAN 1 VERTICAL TO N HORIZONTAL

2.3. BACKFILL SHALL BE PLACES IN HORIZONTAL LAYERS NOT MORE THAN 30 cm THICK AND BE THOROUGHLY COMPACTED MAXIMUM SIZE OF ROCK IN THE BACKFILL SHALL BE 150mm.

3. CONCRETE WORK

3.1. CLASSIFICATION OF CONCRETE IS AS SHOWN BELOW:

CLASS OF CONCRETE	COMPRESSIVE STRENGTH AT 28 DAYS (σbk)		MAX. SIZE OF AGGREGATE (mm)	APPLICABLE STRUCTURES
	MPa	(kgf/cm2)		
A-1 (K-500)	49.02	500	——	PRESTRESSED CONCRETE PILE (READY MADE PRODUCT)
A-2 (K-400)	39.20	400	25	PRESTRESSED CONCRETE FOR BRIDGE GIRDER, PRESTRESSED CONCRETE PILE
A-3 (K-350)	34.30	350	25	PRESTRESSED CONCRETE FOR SLAB DECK OF BRIDGE, PRECAST CONCRETE PILE
B (K-250)	24.51	250	25	REINFORCED CONCRETE FOR BRIDGE GIRDER, WEIR AND WATER GATE
C1 (K-225)	22.05	225	25	GENERAL USE, REINFORCED CONCRETE MEMBERS WITH THICKNESS MORE THAN 20 cm
C2 (K-225)	22.05	225	15	SECONDARY CONCRETE
D (K-175)	17.15	175	40	PLAIN CONCRETE FOR STRUCTURE
E (K-125)	12.25	125	25	PLAIN CONCRETE FOR LEVELING

NOTE: 1 MPa = 10.2 kgf/cm2, (MPa: MEGA PASCAL)
1 kgf/cm2 = 0.098 MPa

TYPE OF CONCRETE SHALL BE AS SHOWN ON THE DRAWING AND DIRECTED BY THE ENGINEER

3.2. PROTECTIVE COVER FOR STEEL REINFORCEMENT SHALL NOT BE LESS THAN THE FOLLOWS:

-IMPORTANT CONCRETE FOOTING AND SLAB EXPOSED TO SOIL	100 mm
(LOWER SIDE OF FOOTING SUPPORTED BY PILE FOUNDATION)	150 mm
-COMMON CONCRETE FOOTING AND SLAB EXPOSED TO SOIL	75 mm
-STRUCTURES EXPOSED TO WEATHER OR BACKFILLED SOIL OR FLOWING WATER	50 mm
-NOT EXPOSED TO EARTH OR WEATHER	
BEAM	50 mm
SLAB	30 mm
COLUMN	30 mm

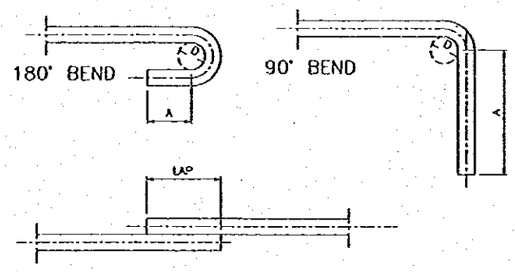
3.3. CONSTRUCTION JOINTS OTHER THAN THOSE SHOWN ON THE PLANS SHALL HAVE THE ENGINEER'S PRIOR APPROVAL.

3.4. ALL REINFORCING STEEL SHALL BE DEFORMED BAR CONFORMING TO U30 OF SII 0292-80, SD30 OF JIS G3112, AASHTO M31M (ASTM A615) OR EQUIVALENT.

3.5. CLEAR DISTANCE BETWEEN PARALLEL BARS EXCEPT IN COLUMNS AND BETWEEN MULTIPLE LAYERS, SHALL BE NOT LESS THAN 4/3 TIMES MAXIMUM SIZE OF COARSE AGGREGATE.

3.6. ALL BAR SPLICE LAPS AND BENDS SHALL CONFORM TO THE MINIMUM REQUIREMENT AS FOLLOWS:

MINIMUM REINFORCING LAP SPLICE AND BEND				
BAR SIZE	LAP	D	A	
			180°	90°
D10	35 cm	50 mm	6 cm	12 cm
D13	46 cm	65 mm	6 cm	16 cm
D16	56 cm	80 mm	7 cm	20 cm
D19	67 cm	95 mm	8 cm	23 cm
D25	88 cm	125 mm	10 cm	30 cm
D29	102 cm	145 mm	12 cm	35 cm
D32	112 cm	160 mm	13 cm	48 cm



SPLICE LAP

4. OTHER WORKS

4.1. UNLESS OTHERWISE SPECIFIED, ALL STRUCTURAL STEELS SHALL BE ROLLED STEEL CONFORMING TO ASTM A36, JIS G3101, JIS G 3106 OR EQUIVALENT.

4.2. UNLESS OTHERWISE SPECIFIED, CEMENT MORTAR AND PLASTER FOR STRUCTURES SHALL BE PROPORTIONED BY VOLUME OF ONE (1) PART OF CEMENT TO THREE (3) PARTS OF SAND AND FOR REVETMENT.

4.3. LOCATIONS OF EXISTING DRAINAGE STRUCTURES INDICATED ON THE PLANS SHALL BE VERIFIED IN THE FIELD AND THE LOCATIONS OF PROPOSED DRAINAGE DITCHES AND OUTLETS SHALL BE ADJUSTED TO SUIT FIELD CONDITIONS.

ABBREVIATIONS AND LEGEND

ABBREVIATIONS

APPROX.	APPROXIMATELY	LLWL	LOWEST LOW WATER LEVEL
B	WIDTH	LWL	LOW WATER LEVEL
BP	BEGINNING POINT	MAX	MAXIMUM
BC	BEGINNING POINT OF CURVE	MIN	MINIMUM
CL	CURVE LENGTH	MSL	MEAN SEA LEVEL
L	CENTER LINE	MHWL	MEAN HIGH WATER LEVEL
CTC	CENTER TO CENTER	MLWL	MEAN LOW WATER LEVEL
D	DIAMETER OF DEFORMED BAR	°N	NORTH LATITUDE
DFWL	DESIGN FLOOD WATER LEVEL	No.	NUMBER
DHWL	DESIGN HIGH WATER LEVEL	NWL	NORMAL WATER LEVEL
DWL	DESIGN WATER LEVEL	PC	PRESTRESSED CONCRETE
EL	ELEVATION	PL	PLATE
EC	ENDING POINT OF CURVE	PVC	POLYVINYL CHLORIDE
EP	ENDING POINT	R	RADIUS
°E	EAST LONGITUDE	RC	REINFORCED CONCRETE
EL	ELEVATION	SL	SECANT LENGTH
FIG	FIGURE	T, THK	THICKNESS
HWL	HIGH WATER LEVEL	TL	TANGENT LENGTH
HHWL	HIGHEST HIGH WATER LEVEL	VCL	VERTICAL CURVE LENGTH
I	I-BEAM	@	SPACING OF REINFORCEMENT BAR
IA	INTERSECTION ANGLE	ø	DIAMETER OF ROUND BAR
IP	INTERSECTION POINT	° ' "	ANGLE (DEGREE, MINUTE, SECOND)
i	GRADE		
L	LENGTH		

LEGEND

	EARTH		WET STONE MASONRY
	ROCK		COBBLE STONE OR GRAVEL
	EMBANKMENT / CUT SLOPE		CONCRETE
	SLOPE WITH REVETMENT		BLOCK OR CONCRETE BLOCK
	FLOW DIRECTION		WATER SURFACE

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

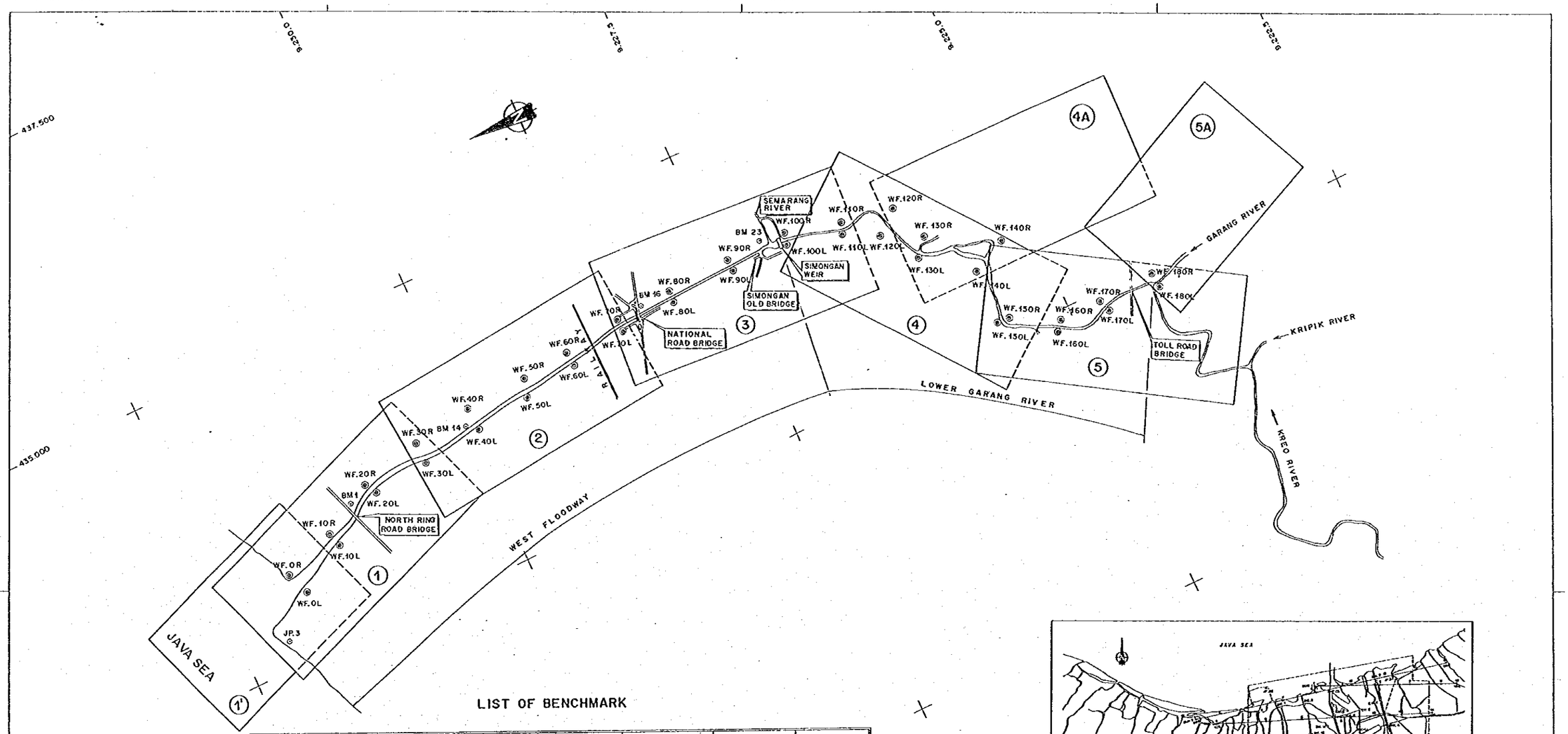
JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : WEST FLOODWAY / GARANG RIVER IMPROVEMENT

GENERAL DRAWING
GENERAL NOTES, LEGEND AND ABBREVIATIONS

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

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

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. WG - PI - GE - ST - 1
SHEET NO. 3
DATE
CONTRACT NO.

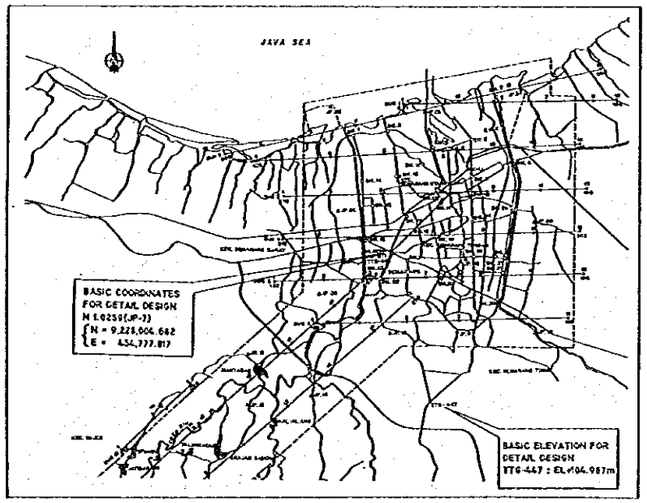


LIST OF BENCHMARK

BENCHMARK	NORTHING	EASTING	ELEVATION	BENCHMARK	NORTHING	EASTING	ELEVATION
WF. 0L	9,231,815.846	433,108.376	0.462	WF. 0R	9,231,907.759	433,291.856	0.214
WF.10L	9,231 377.213	433,347.574	0.662	WF.10R	9,231,427.965	433,461.435	2.565
WF.20L	9,230,916.692	433,541.171	1.274	WF.20R	9,230,953.067	433,680.526	1.041
JP - 3	9,232,127.943	432,863.829	0.926	BM. 1	–	–	0.593
WF.30L	9,230,431.588	433,658.513	0.608	WF.30R	9,230,460.330	433,821.259	1.070
WF.40L	9,229,932.472	433,694.915	1.060	WF.40R	9,229,961.498	433,883.501	1.126
WF. 50L	9,229,438.130	433,768.858	2.028	WF.50R	9,229,449.531	433,899.152	1.274
WF.60L	9,228,942.315	433,827.275	2.668	WF.60R	9,228,947.972	433,914.895	2.237
BM.14	–	–	0.892	WF. 70R	9,228,450.046	433,962.260	3.742
WF. 70L	9,228,442.951	433,871.523	4.994	WF.80R	9,227,945.059	434,006.242	5.378
BM. 16	–	–	5.023	WF.90R	9,227,447.129	434,039.912	5.924
WF. 80L	9,227,942.940	433,921.077	4.185	BM. 23	–	–	6.672
WF. 90L	9,227,443.775	433,956.295	5.707	WF.100R	9,226,939.702	434,036.468	8.602
WF.100L	9,226,945.269	433,949.563	8.634	WF.110R	9,226,445.572	433,895.695	12.604
WF.110L	9,226,465.004	433,839.899	14.000	WF.120 R	9,226,015.528	433,820.669	11.046
WF.120L	9,226,200.718	433,650.883	11.122	WF.130R	9,225,865.354	433,478.686	11.209
WF.130L	9,225,971.446	433,360.744	10.450	WF.140R	9,225,315.852	433,174.392	9.960
WF.140 L	9,225,606.343	433,048.607	13.213	WF.150R	9,225,506.446	432,584.507	11.184
WF.150L	9,225,585.447	432,570.587	11.190	WF.160R	9,225,113.825	432,406.006	14.482
WF.160L	9,225,164.235	432,336.425	9.321	WF.170R	9,224,758.219	432,403.999	14.260
WF.170L	9,225,736.620	432, 329.047	9.475	WF.180R	9,224,251.145	432,405.201	11.827
WF. 180L	9,224,250.068	432, 311.727	12.149				

NOTE :

1. ALL LEVELING WORKS SHALL BE BASED ON THE NATIONAL BENCH MARK TTG-447 SHOWN ON THE LOCATION MAP.
2. ALL CALCULATIONS FOR COORDINATES SHALL BE BASED ON THE BENCH MARK N.1.0259 (JP-7) SHOWN ON THE LOCAITON MAP.
3. COORDINATES AND ELEVATIONS SHOWN IN THE TABLE "LIST OF BENCHMARK" ARE ONLY FOR REFERENCE.



LOCATION MAP FOR BASIC BENCH MARKS

0 0.5 1.0 1.5 Km

SCALE 1 : 16,666.667

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 / GARANG RIVER IMPROVEMENT

CHANNEL AND DIKE WORKS
WEST FLOODWAY / GARANG RIVER
INDEX MAP FOR PLAN OF RIVER CHANNEL

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

APPROVED | CHIEF OF PLANNING AND DESIGN | PROJECT MANAGER

DESIGNED | CHECKED

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. W3 - P1 - GN - P1 - 1
SHEET NO. 3
DATE | CONTRACT NO.

1A

9.233.000 9.232.800 9.232.600 9.232.400 9.232.200 9.232.000 9.231.800

433.200 433.000 432.800 432.600 432.400

JAVA SEA

APPROACH ROAD
SCALE S = 1 : 600

FLOW

LAND RECLAMATION AREA (PLANNED)

DRAINAGE BY PASS CHANNEL L=

WF.4R -5.0m

EARTH DIKE EMBANKMENT L= 723,380

Kel. Panggung

KEC. SEMARANG UTARA

WF.0 WF.1 WF.2 WF.3 WF.4 WF.5R1 WF.6 WF.7

REVETMENT, L=97.000 (STONE FACING) WF.OR=65.0m WF.OR=32.0m

REVETMENT, L=100.000 (STONE FACING) WF.5R=51.0m WF.5R=49.0m

WF.5L=60m

150.0 m 115.0 m

10.000

604.000

PARAPET WALL AND REVETMENT (WET STONE MASONRY & STONE FACING) L=570,000

WF.9L

WF.5L

50.000 10.000

Kel. Tawangsari
KEC. SEMARANG BARAT

KOMPLEK VILA MARINA

SP(WF.0)
N = 433195
E = 9231859

WF.0 L=604 m

CHANNEL EXCAVATION (WF.0 - 604.0 m ~ WF.96+0.0 L = 5,437 m

0 20 100 200 m
SCALE 1:2000

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 / GARANG RIVER IMPROVEMENT

CHANNEL AND DIKE WORKS
WEST FLOODWAY
PLAN OF RIVER CHANNEL (1/8)

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

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

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. M8-P1-CH-P1-2
SHEET NO. 4
DATE
CONTRACT NO.

1

DRAINAGE BY-PASS CHANNEL L = 779,100

EARTH DIKE EMBANKMENT L = 723,380

LAND RECLAMATION AREA (PLANNED)

Kel. Panggung

KEC. SEMARANG UTARA

PUMPING STATION PLANNED BY SSUDP

NORTH RING ROAD

APPROACH STEPS TYPE WA-1

REVETMENT L = 85.000 (WET STONE MASONRY & GABION) TP-1

Banjir Kanal Barat

REVETMENT L = 53.000 (WET STONE MASONRY & GABION)

REVETMENT, L = 97.000 (STONE FACING)

REVETMENT, L = 100.000 (STONE FACING)

REVETMENT L = 570.000 (WET STONE MASONRY & STONE FACING)

REVETMENT L = 30.745

DRAINAGE CHANNEL

DRAINAGE OUTLET L.8

Kel. Tawangmas

Kel. Tawangsari
KEC. SEMARANG BARAT

KOMPLEK YEE MARINA

BP (WF.01
N = 433195
E = 9231859

IP 1
N = 433 557
E = 9 231 119
IA = 8°32'19"
R = 1600 m
TL = 119.444 m
SL = 4.452 m
CL = 238.446 m

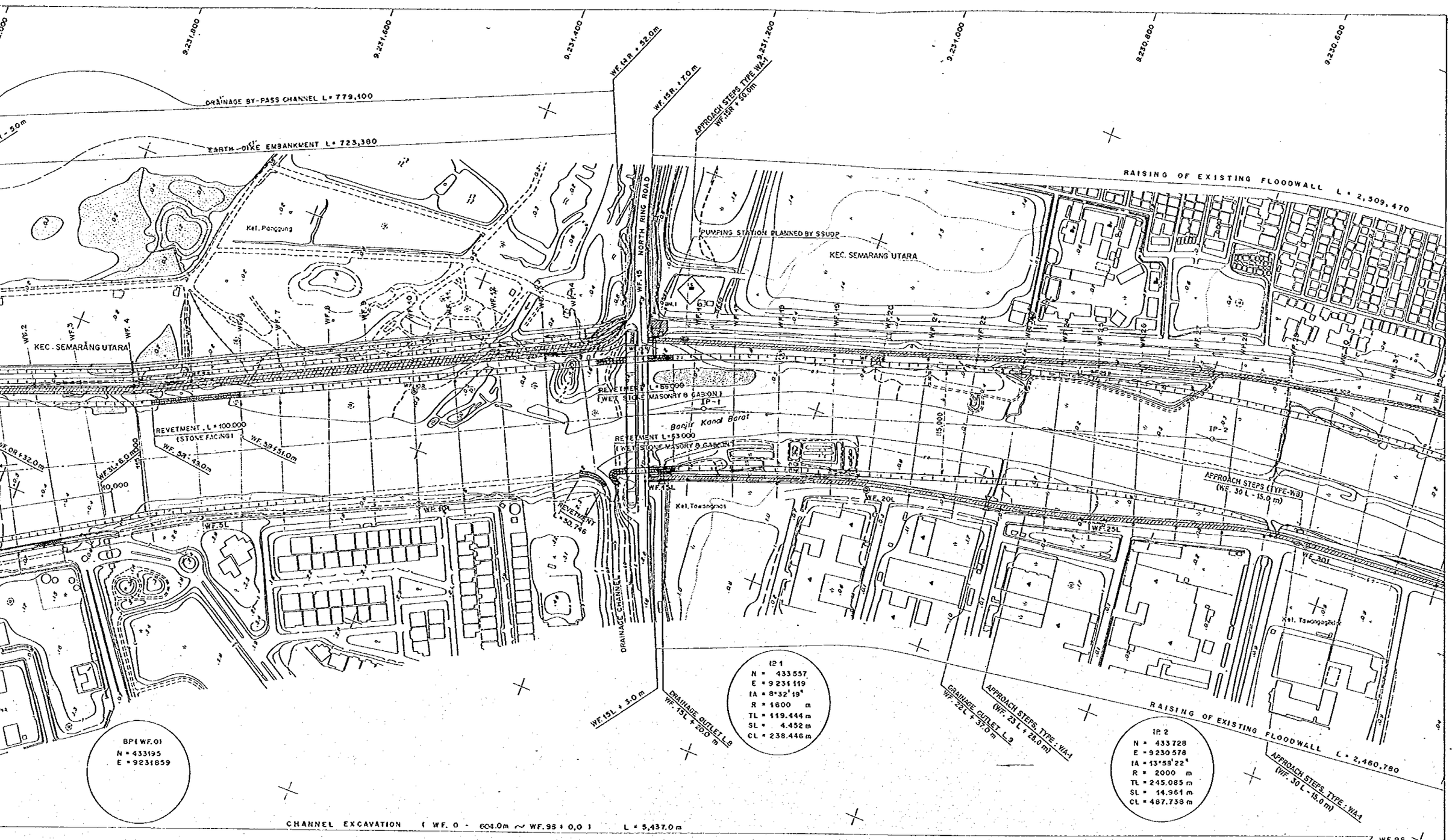
CHANNEL EXCAVATION (WF. 0 - 604.0m ~ WF. 9S + 0.0) L = 5,437.0 m

NAME	NORTHING	EASTING	ELEVATION
WF. 0L	9,231,815.846	433,108.376	0.462
WF.10L	9,231,377.913	433,347.574	0.662
WF.20L	9,230,916.892	433,541.171	1.274
JP - 3	9,232,127.943	439,863.829	0.926
WF.30L	9,230,431.588	433,658.513	0.608

NAME	NORTHING	EASTING	ELEVATION
WF. 0R	9,231,907.759	433,991.856	0.914
WF.10R	9,231,497.965	433,461.435	2.565
WF.20R	9,230,953.067	433,680.526	1.041
BM. 1	-	-	0.593
WF.30R	9,230,460.330	433,821.259	1.070

0 20 100 200 m
SCALE 1 : 2000

NO.	DATE	REVISIONS



ASTING	ELEVATION
,108.376	0.462
,347.574	0.662
,541.171	1.274
,863.829	0.926
,658.513	0.608

NAME	NORTHING	EASTING	ELEVATION
WF. 0R	9,231,907.759	433,291.856	0.914
WF.10R	9,231,421.965	433,461.435	2.565
WF.90R	9,230,953.067	433,680.526	1.041
BM. 1	-	-	0.593
WF.30R	9,230,460.330	433,821.959	1.070

0 20 100 200 m
SCALE 1 : 2000

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

JRATUN/SELUNA FLOOD CONTROL PROJECT
COMPONENT : WEST FLOODWAY/GARANG RIVER IMPROVEMENT

CHANNEL AND DIKE WORKS
WEST FLOODWAY
PLAN OF RIVER CHANNEL (2/8)

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL, PASCO INTERNATIONAL INC.

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

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. W3-P4-CH-P1-3
SHEET NO. 5
DATE
CONTRACT NO.

2

IP. 3
N = 433755
E = 9230145
IA = 2° 7' 40"
R = 4000 m
TL = 74.261 m
SL = 0.690 m
CL = 148.544 m

IP. 4
N = 433 870
E = 9 229 992
IA = 1° 30' 39"
R = 4000 m
TL = 52.744 m
SL = 0.348 m
CL = 105.482 m

APPROACH ROAD
SCALE S = 1 : 600

RAISING OF EXISTING FLOODWALL L = 2,509.475 m

KEC. SEMARANG BARAT

APPROACH STEPS (TYPE-W3) WF. 34R + 5.0m

APPROACH STEPS (TYPE-W3) WF. 41 + 0.0m

MOORING PLACE (WF. 32R)

EXISTING DRAINAGE OUTLET (TO BE PLUGGED)

APPROACH STEPS (TYPE-W3) (WF. 30L)

REVETMENT (PC SHEET PILE WALL & RIPRAP) L = 223,500

REVETMENT (PC SHEET PILE WALL & RIPRAP) L = 96,000

APPROACH STEPS (TYPE-W3) WF. 40L + 15.0 m

MOORING PLACE (WF. 41L)

MOORING PLACE (WF. 46 R)

APPROACH STEPS (TYPE-W3) WF. 53 R + 0.0 m

REVETMENT (PC SHEET-PILE WALL & RIPRAP) L = 297,000 Banjir Kanal Barat

APPROACH STEPS (TYPE-W3) WF. 55L + 0.0 m

Kel. Tawangsari

Kel. Tawangsari kidul

DRAINAGE CHANNEL

APPROACH STEPS TYPE-WA-1 (WF. 30L + 25.0 m)

APPROACH STEPS TYPE-WA-1 (WF. 40L + 15.0 m)

APPROACH STEPS TYPE-WA-1 (WF. 46 R)

APPROACH STEPS TYPE-WA-1 (WF. 53 R)

RAISING OF EXISTING FLOODWALL AND EMBANKMENT L = 2,460,780 m

KEC. SEMARANG BARAT

CHANNEL EXCAVATION (WF. 0 – 574.0 m ~ WF. 96 + 0.0) L = 5,437.00 m

WF. 0 – 574 m

NAME	NORTHING	EASTING	ELEVATION
WF.30L	9,230,431.588	433,658.513	0.603
WF.40L	9,229,932.472	433,694.915	1.060
WF.50L	9,229,438.130	433,768.858	2.028
WF.60L	9,228,942.315	433,827.275	2.668
BM.14	-	-	0.892
WF.70L	9,228,442.951	433,871.523	4.994

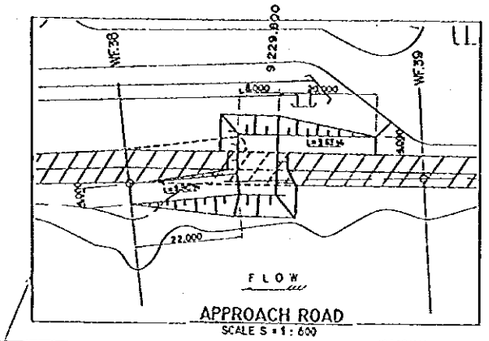
NAME	NORTHING	EASTING	ELEVATION
WF.30R	9,230,460.330	433,821.259	1.070
WF.40R	9,229,961.498	433,883.501	1.126
WF.50R	9,229,449.531	433,899.152	1.274
WF.60R	9,228,947.972	433,914.895	2.937
WF.70R	9,228,450.046	433,962.960	3.742

0 20 100 200 m
SCALE 1 : 2000

NO.	DATE	REVISIONS

433.400
433.200

9.230.400 9.230.200 9.230.000 9.229.800 9.229.600 9.229.400 9.229.200 9.229.000



APPROACH ROAD
SCALE S = 1 : 600

IP. 4
N = 433 870
E = 9 228 992
IA = 1°30'39"
R = 4000 m
TL = 52.744 m
SL = 0.348 m
CL = 105.482 m

PACKAGE - 3 :
RAISING OF RAILWAY BRIDGE

IP. 5
N = 433 903
E = 9 228 541
IA = 2°50'27"
R = 2000 m
TL = 49.591 m
SL = 0.615 m
CL = 99.161

RAISING OF EXISTING FLOODWALL L = 2,509.410 m

KEC.SEMARANG BARAT

APPROACH STEPS (TYPE - WA-1) WF.0+0.0m

APPROACH STEPS (TYPE - WB) WF.11+0.0m

APPROACH STEPS (TYPE - WB) WF.32+0.0m

APPROACH STEPS (TYPE - WB) WF.41+0.0m

APPROACH STEPS (TYPE WB) WF.40L+15.0m

MOORING PLACE (WF. 46 R)

APPROACH STEPS (TYPE - WB) WF.53R+0.0m

WF.54L+39.0m

WF.54L+21.0m

REVETMENT (PC SHEET PILE WALL & RIPRAP) L = 297,000

Banjir Kanal Barat

APPROACH STEPS (TYPE - WB) WF.55L+0.0m

IP.4

WF.64R+28.0m

MOORING PLACE (WF. 41L)

WF.39L+29.0m

APPROACH STEPS (TYPE - WA-1) WF.46L

APPROACH STEPS (TYPE - WA-1) WF.54L

Kel. Tawangsari Kidul

Kel. Krobokan

KEC. SEMARANG BARAT

EARTH RETAINING WALL 35.000

DRAINAGE OUTLET R3 (WF.68R+21.0m)

LEANING WALL (WET STONE MASONRY) AND TREE PLANTING L = 390.000 m

REVETMENT FOR LOW WATER CHANNEL SLOPE (WET STONE MASONRY & GABION)

IP.5

REVETMENT FOR LOW WATER CHANNEL SLOPE

RAISING OF EXISTING FLOODWALL AND EMBANKMENT L = 2,460.780 m

EARTH RETAINING WALL 35.000

LEANING WALL (WET STONE MASONRY) AND TREE PLANTING L = 260.000 m

WF.70L+13.0m

CHANNEL EXCAVATION (WF.0 - 574.0m ~ WF.96 + 0.0) L = 5,437.00m

WF. 96

EASTING	ELEVATION
433,821.259	1.070
433,883.501	1.126
433,899.152	1.274
433,914.895	9.237
433,962.960	3.742

0 20 100 200 m
SCALE 1 : 2000

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 / GARANG RIVER IMPROVEMENT
CHANNEL AND DIKE WORKS
WEST FLOODWAY
PLAN OF RIVER CHANNEL (3/8)

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD in association with PACIFIC CONSULTANTS INTERNATIONAL and PASCO INTERNATIONAL INC.

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

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. W2-P1-CH-PI-4
SHEET NO. 6
DATE
CONTRACT NO.

3

9.228.200 | 9.228.000 | 9.227.800 | 9.227.600 | 9.227.400 | 9.227.200 | 9.227.000

434.200

LEANING WALL (WET STONE MASONRY) L = 330,000

APPROACH STEPS (TYPE-WA2), WF.74R + 15m

DRAINAGE OUTLET R1A WF.72R + 22.0m

DRAINAGE OUTLET R1 WF.74R + 3.0m

WF.74R + 20.0m

LEANING WALL (WET STONE MASONRY) AND TREE PLANTING L = 215,000

WF.78R + 40.9m

APPROACH STEPS (TYPE-WA2), WF.80R + 7m

APPROACH STEPS (TYPE-WA2), WF.87 + 6m

LEANING WALL (WET STONE MASONRY) AND TREE PLANTING L = 160,000

WF. 91R + 22.0m

WF.94R + 26.0m

WF 98+00

PACKAGE 2: RECON

IP-7

Banjir Kanal Barat

30.000

REVETMENT FOR LOW WATER CHANNEL SLOPE (WET STONE MASONRY BG 350) REVETMENT FOR LOW WATER CHANNEL (WET STONE MASONRY & GABION)

IP-6

Jl. SUDIRMAN

Kel. Cabean

EARTH RETAINING WALL (WET STONE MASONRY) AND TREE PLANTING L = 282,000

APPROACH STEPS (TYPE-WA2), WF.80L + 15 m

WF.80L + 10.0m

DRAINAGE OUTLET L12 WF.74L + 11.0m

APPROACH STEPS (TYPE-WA2), WF.73L + 25m

WF.75L - 20.0m

IP. 6
N = 433938
E = 9228257
IA = 2°40'34"
R = 2000 m
TL = 46.713 m
SL = 0.545 m
CL = 93.409 m

Kel. Bojong soloman

APPROACH STEPS (TYPE-WA2), WF.87L + 4m

IP. 7
N = 434006
E = 9227363
IA = 5°29'21"
R = 1000 m
TL = 47.939 m
SL = 1.148 m
CL = 95.805 m

APPROACH STEPS (TYPE-WA2), WF.94L + 12m

PDAM WATER MAIN Ø 500 (LAID UNDERGROUND)

LEANING WALL (WET STONE MASONRY) L = 260,000

WF. 70L + 15.0m

433.600

PACKAGE - 1

CHANNEL EXCAVATION (WF.0 + 574.0m ~ WF.96+0.0) L = 5,437.0m

CHANNEL EXCAVATION (WF.9

WF. 96+00

433.400

NAME	NORTHING	EASTING	ELEVATION
WF. 70L	9,228,442.951	433,871.523	4.994
BM. 16	-	-	5.023
WF. 80L	9,227,942.940	433,921.077	4.185
WF. 90L	9,227,443.775	433,956.295	5.707
WF.100L	9,226,945.269	433,949.563	8.634
WF.110L	9,226,465.004	433,839.899	14.000

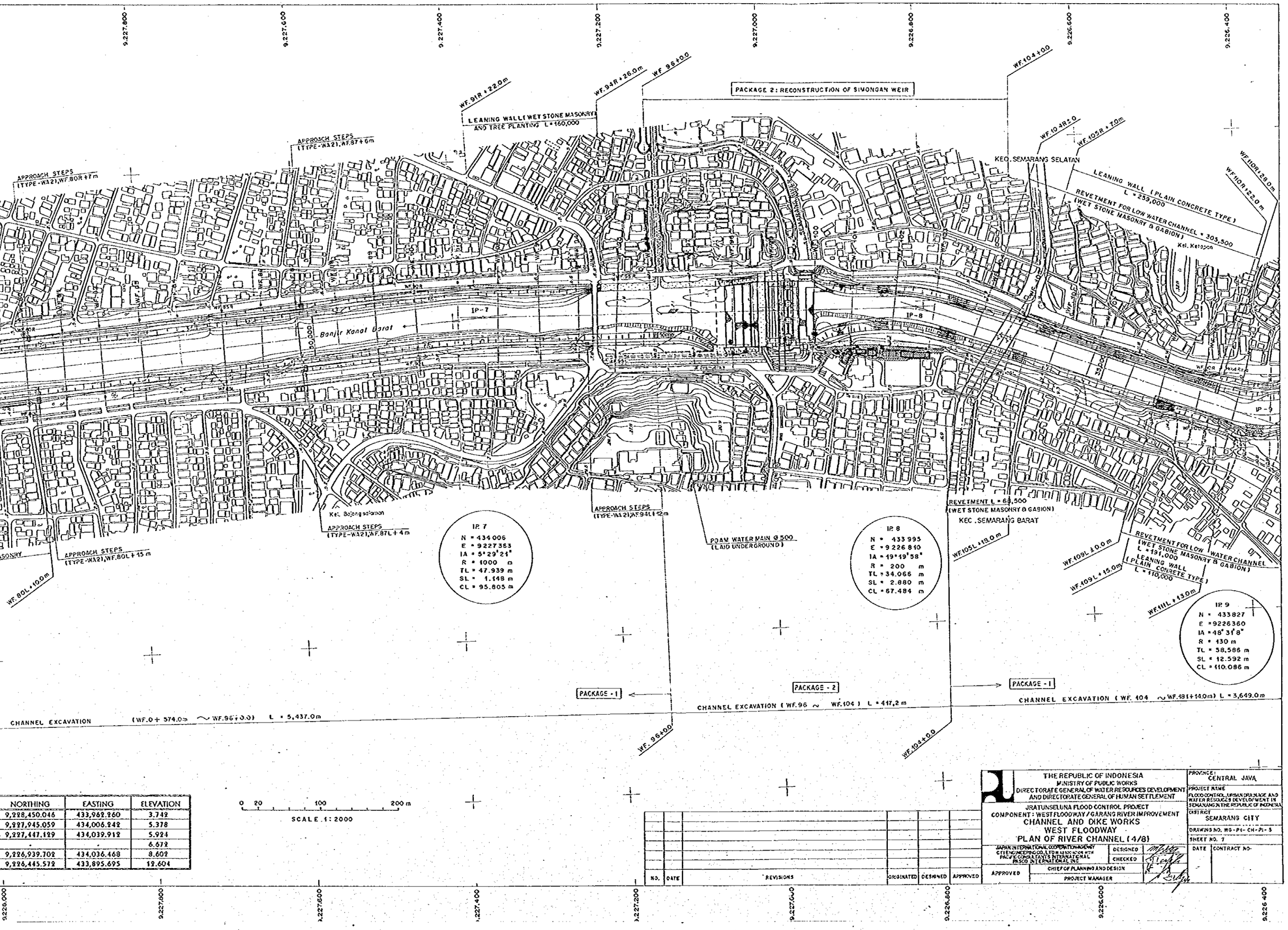
NAME	NORTHING	EASTING	ELEVATION
WF. 70R	9,228,450.046	433,962.260	3.742
WF. 80R	9,227,945.059	434,006.242	5.378
WF. 90R	9,227,447.129	434,039.912	5.924
BM. 23	-	-	6.672
WF.100R	9,226,939.702	434,036.468	8.602
WF.110R	9,226,445.572	433,895.695	12.604

0 20 100 200 m

SCALE 1 : 2000

NO.	DATE	REVISIONS

9.228.400 | 9.228.200 | 9.228.000 | 9.227.800 | 9.227.600 | 9.227.400 | 9.227.200 | 9.227.000



NORTHING	EASTING	ELEVATION
9,228,450.046	433,962.960	3.742
9,227,945.059	434,006.242	5.378
9,227,447.129	434,039.912	5.924
-	-	6.672
9,226,939.702	434,036.468	8.602
9,226,445.572	433,895.695	12.604

0 20 100 200 m

SCALE 1 : 2000

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 / GARANG RIVER IMPROVEMENT
CHANNEL AND DIKE WORKS
WEST FLOODWAY
PLAN OF RIVER CHANNEL (4/8)

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD. IN JOINT VENTURE WITH PACIFIC CONSULTANTS INTERNATIONAL PASCO INTERNATIONAL INC

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

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. WS-PI-CH-PI-5
SHEET NO. 7
DATE
CONTRACT NO.