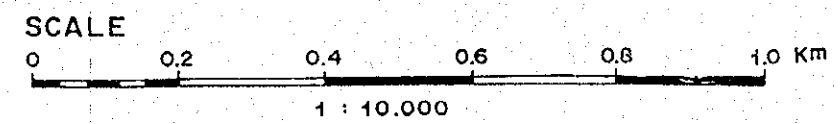
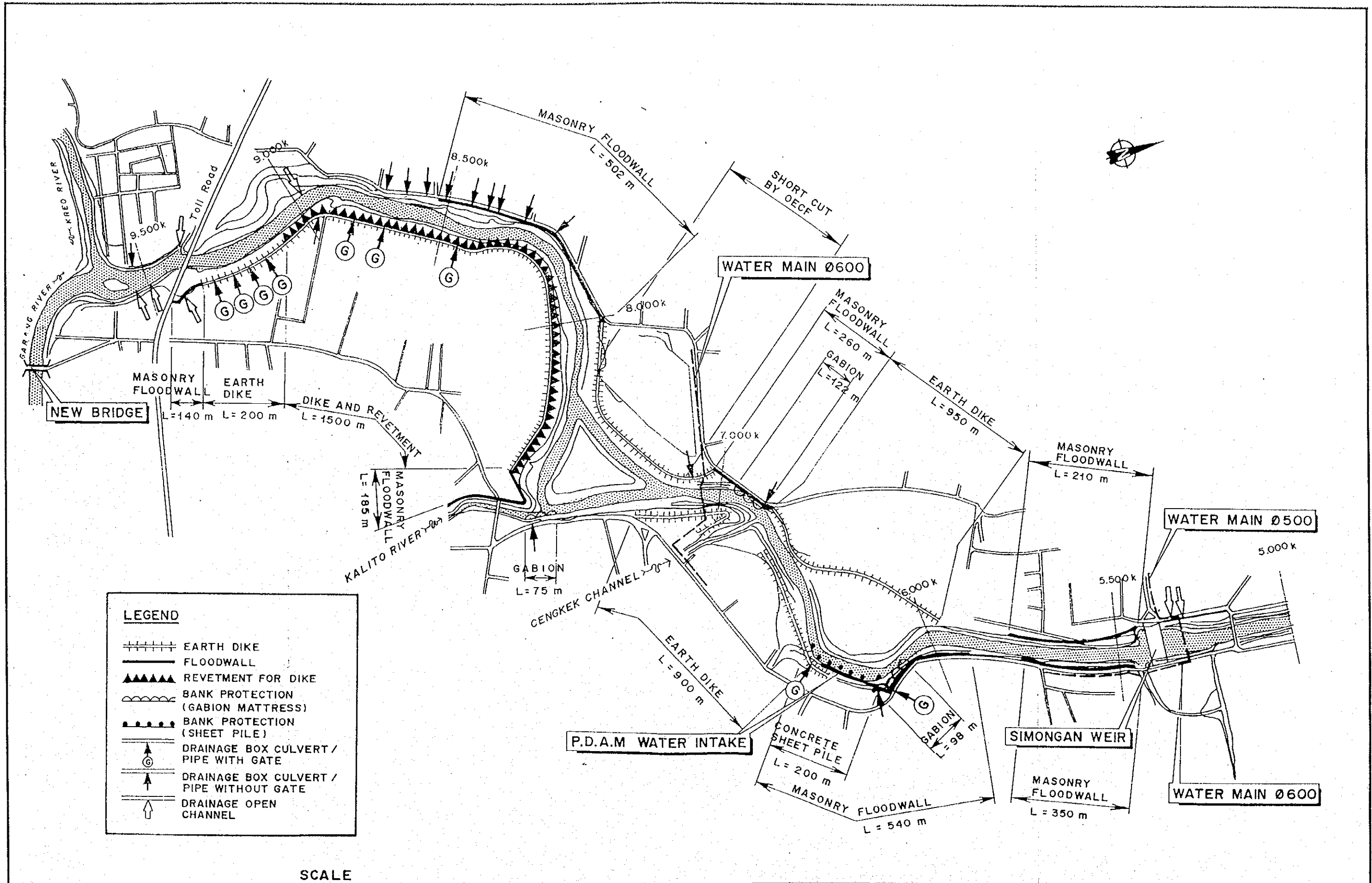


LEGEND	
	EARTH DIKE
	FLOODWALL
	REVTMENT FOR DIKE
	BANK PROTECTION (GABION MATTRESS)
	BANK PROTECTION (SHEET PILE)
	DRAINAGE BOX CULVERT PIPE WITH GATE
	DRAINAGE BOX CULVERT PIPE WITHOUT GATE
	DRAINAGE OPEN CHANNEL



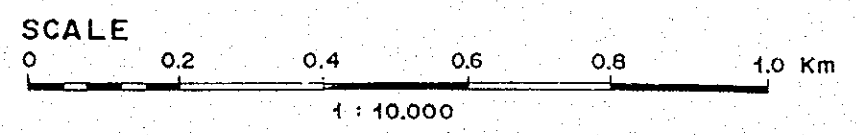
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.1.9 (1/2):
EXISTING RIVER STRUCTURES AND DRAINAGE OUTLET



LEGEND

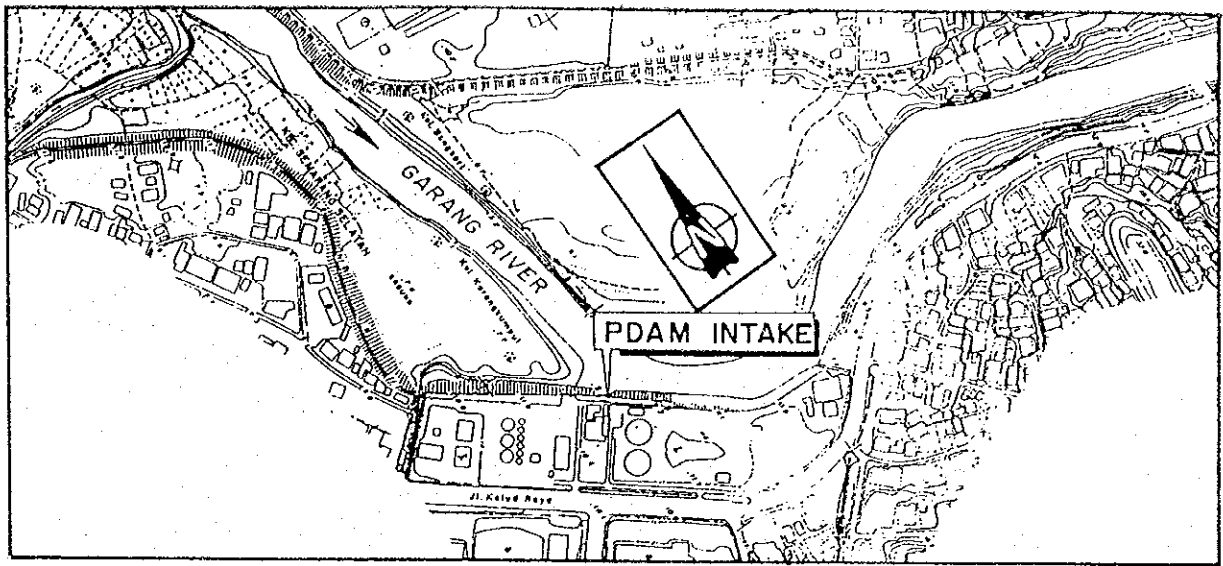
	EARTH DIKE
	FLOODWALL
	REVETMENT FOR DIKE
	BANK PROTECTION (GABION MATTRESS)
	BANK PROTECTION (SHEET PILE)
	DRAINAGE BOX CULVERT / PIPE WITH GATE
	DRAINAGE BOX CULVERT / PIPE WITHOUT GATE
	DRAINAGE OPEN CHANNEL



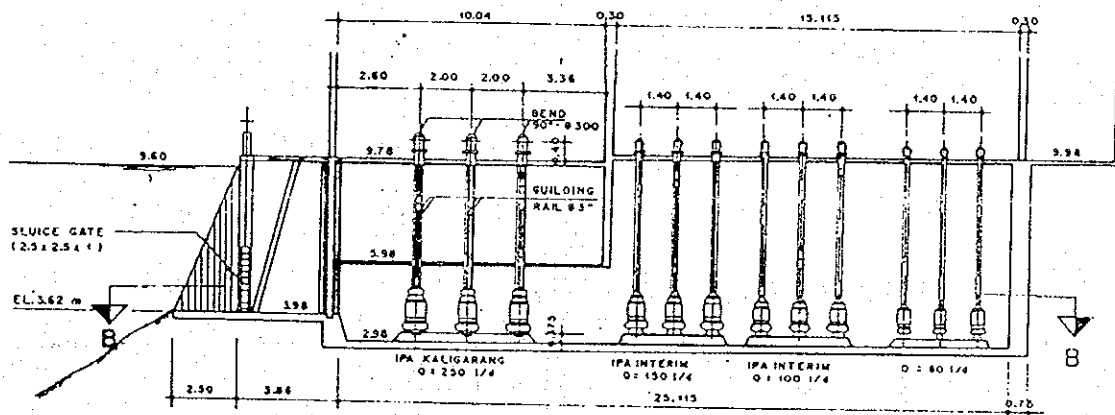
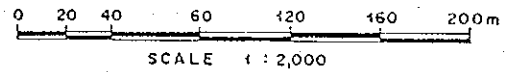
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.1.9(2/2) EXISTING RIVER STRUCTURES AND DRAINAGE OUTLET

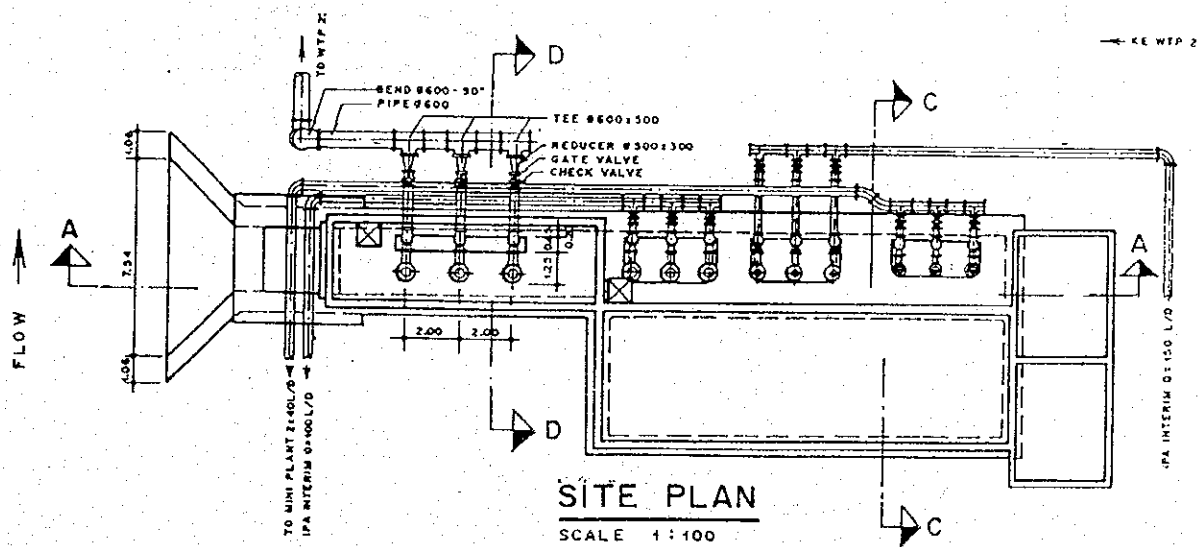


LOCATION



SECTION A - A

SCALE 1 : 100



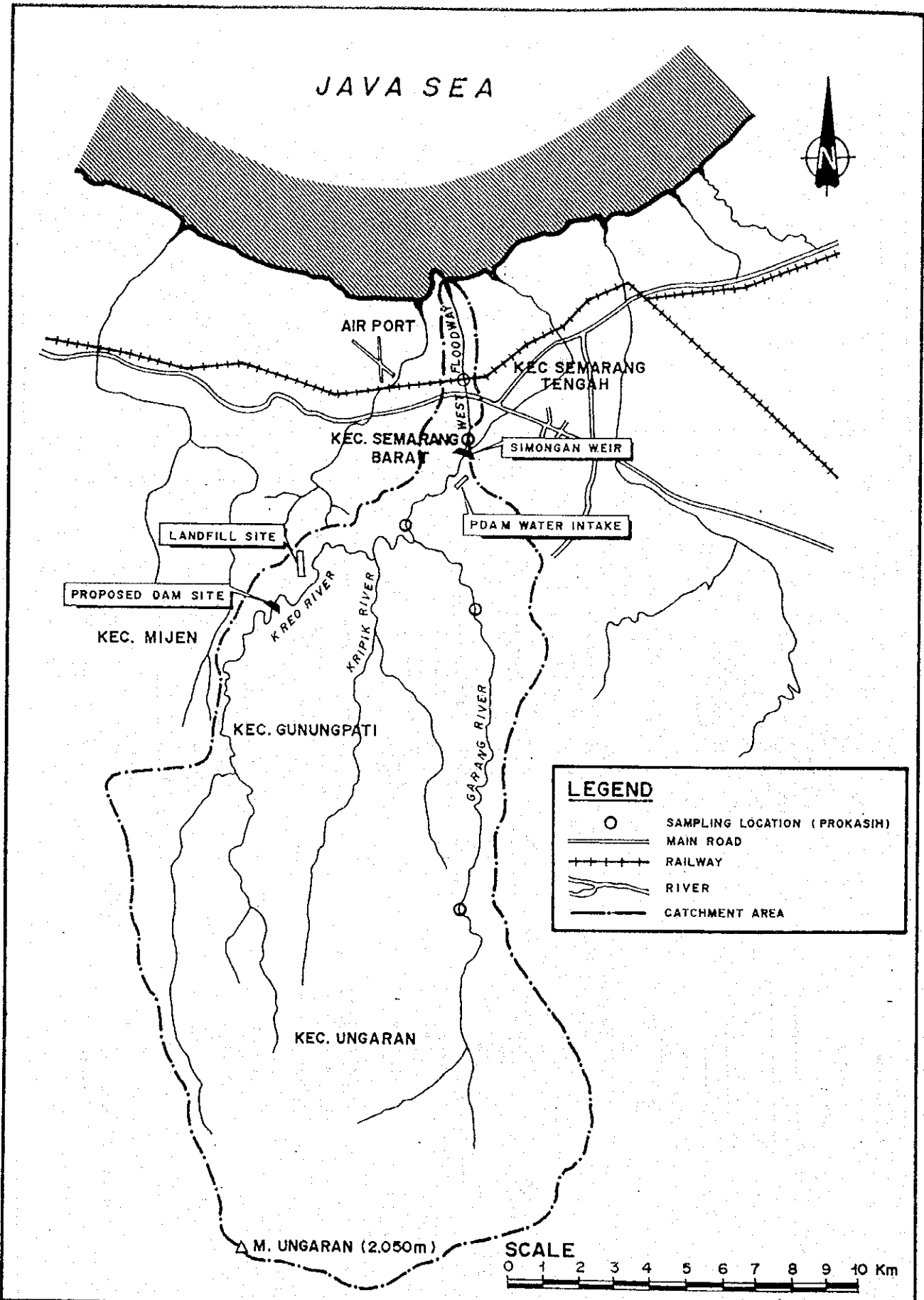
SITE PLAN

SCALE 1 : 100

THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.1.10
OUTLINE OF PDAM INTAKE STRUCTURE

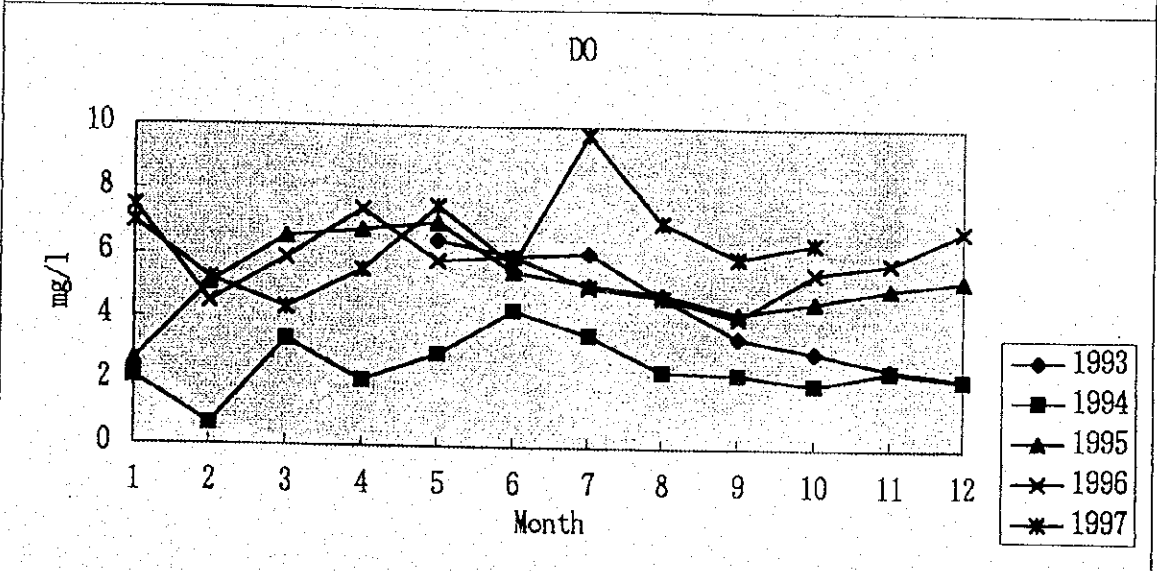
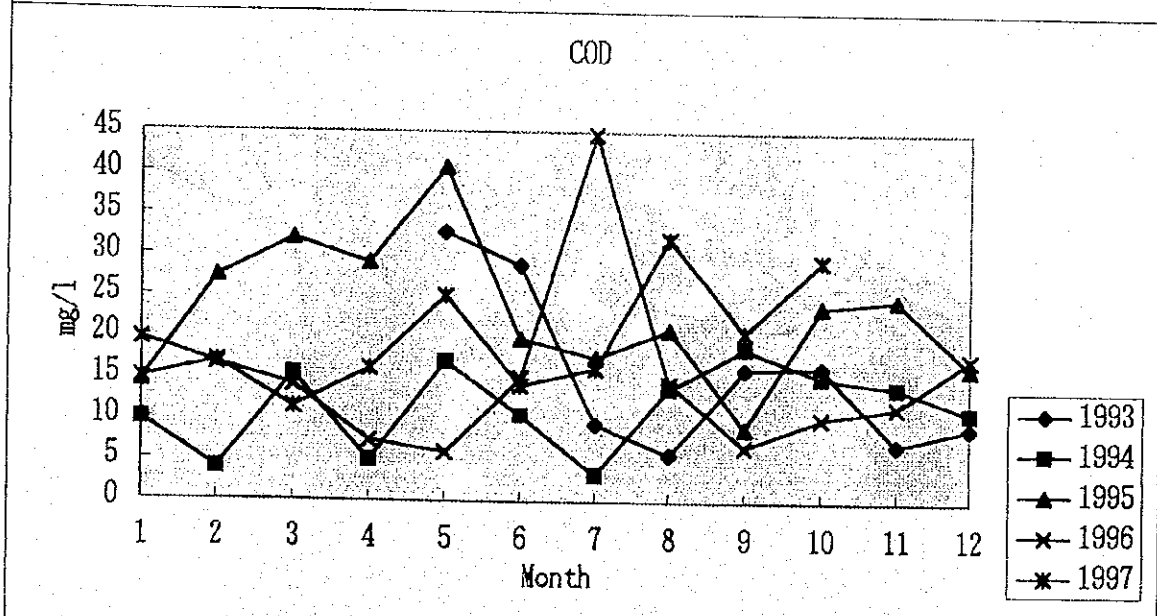
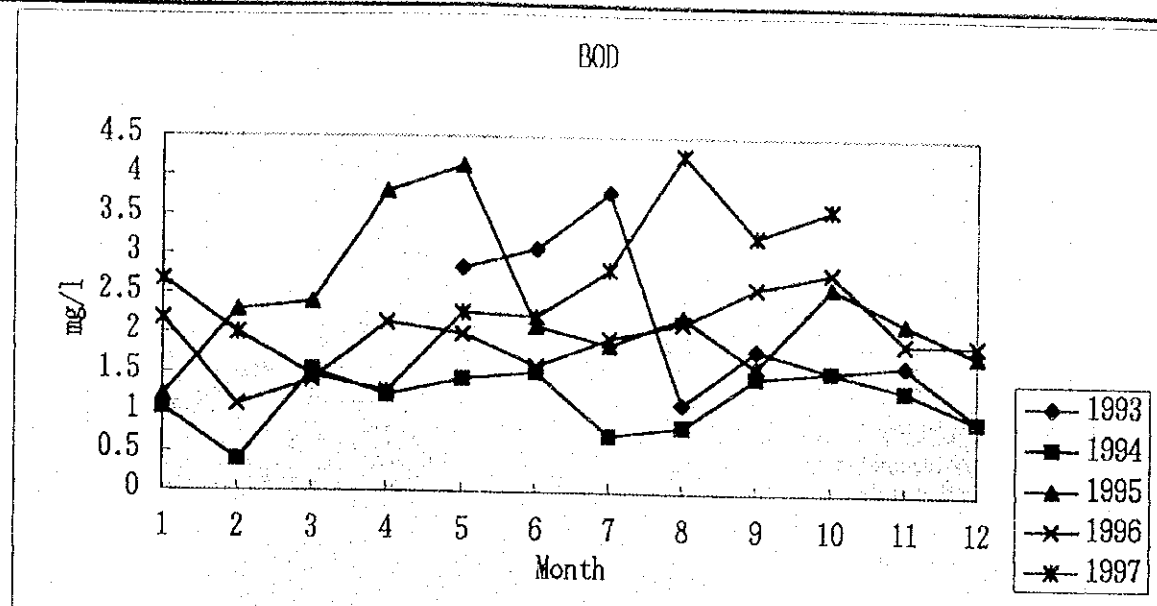
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THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.1.11 WATER SAMPLING LOCATIONS FOR PROKASIH

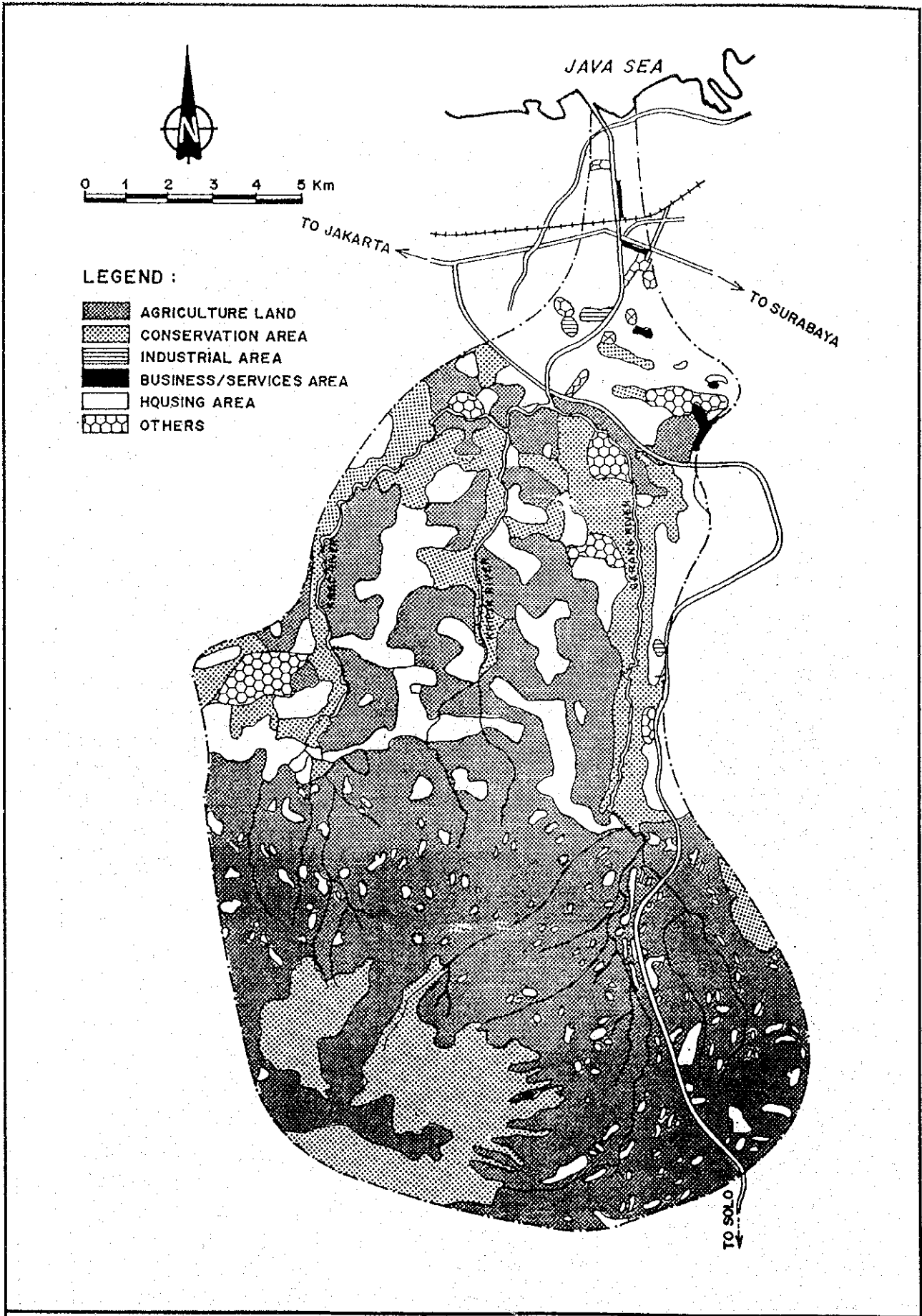
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THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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Fig. 2.1:12 WATER ANALYSIS RECORD BY PDAM (1993 - 1997)

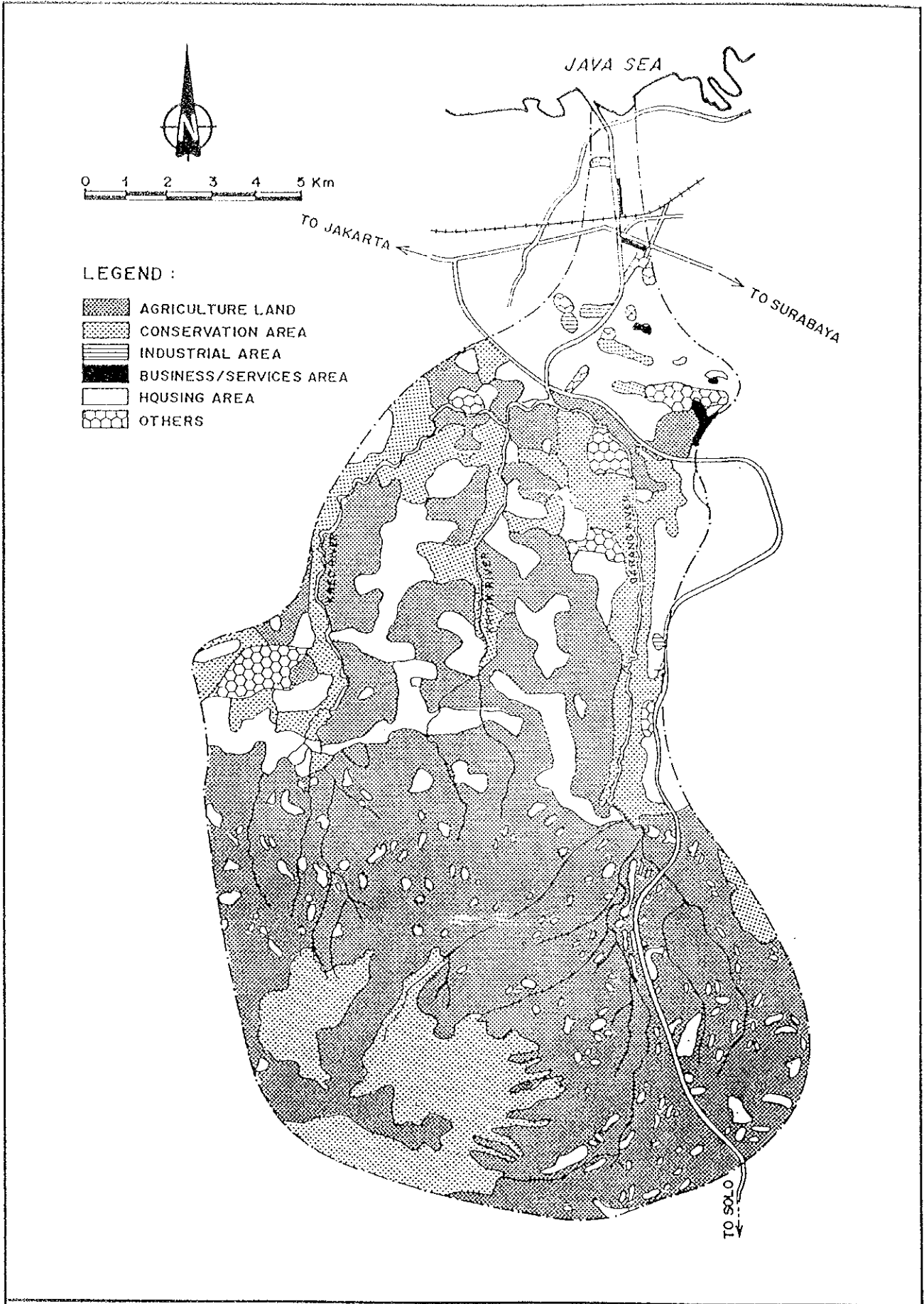


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA







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Fig. 2.1.13

LAND USE MAP OF GARANG RIVER BASIN (1992 - 1995)



LEGEND :

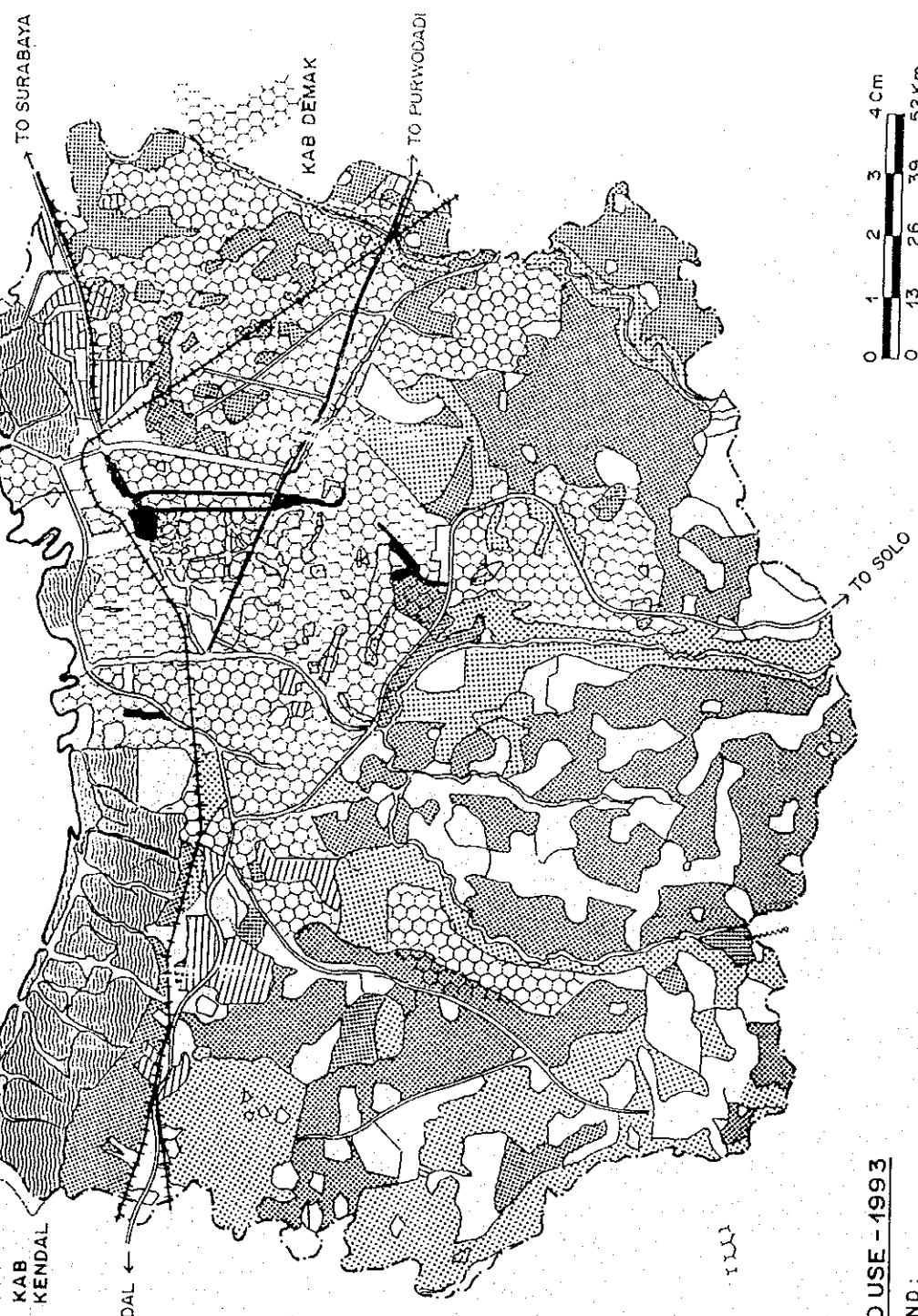
-  AGRICULTURE LAND
-  CONSERVATION AREA
-  INDUSTRIAL AREA
-  BUSINESS/SERVICES AREA
-  HOUSING AREA
-  OTHERS

THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.1.13
LAND USE MAP OF GARANG RIVER BASIN
(1992 - 1995)

JAPAN INTERNATIONAL COOPERATION AGENCY

JAVA SEA



LAND USE - 1993

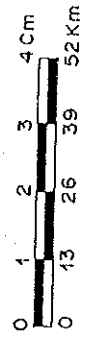
LEGEND:

- AGRICULTURE LAND
- WATER AREA

- CONSERVATION AREA
- INDUSTRIAL AREA

- BUSINESS SERVICES AREA
- HOUSING AREA

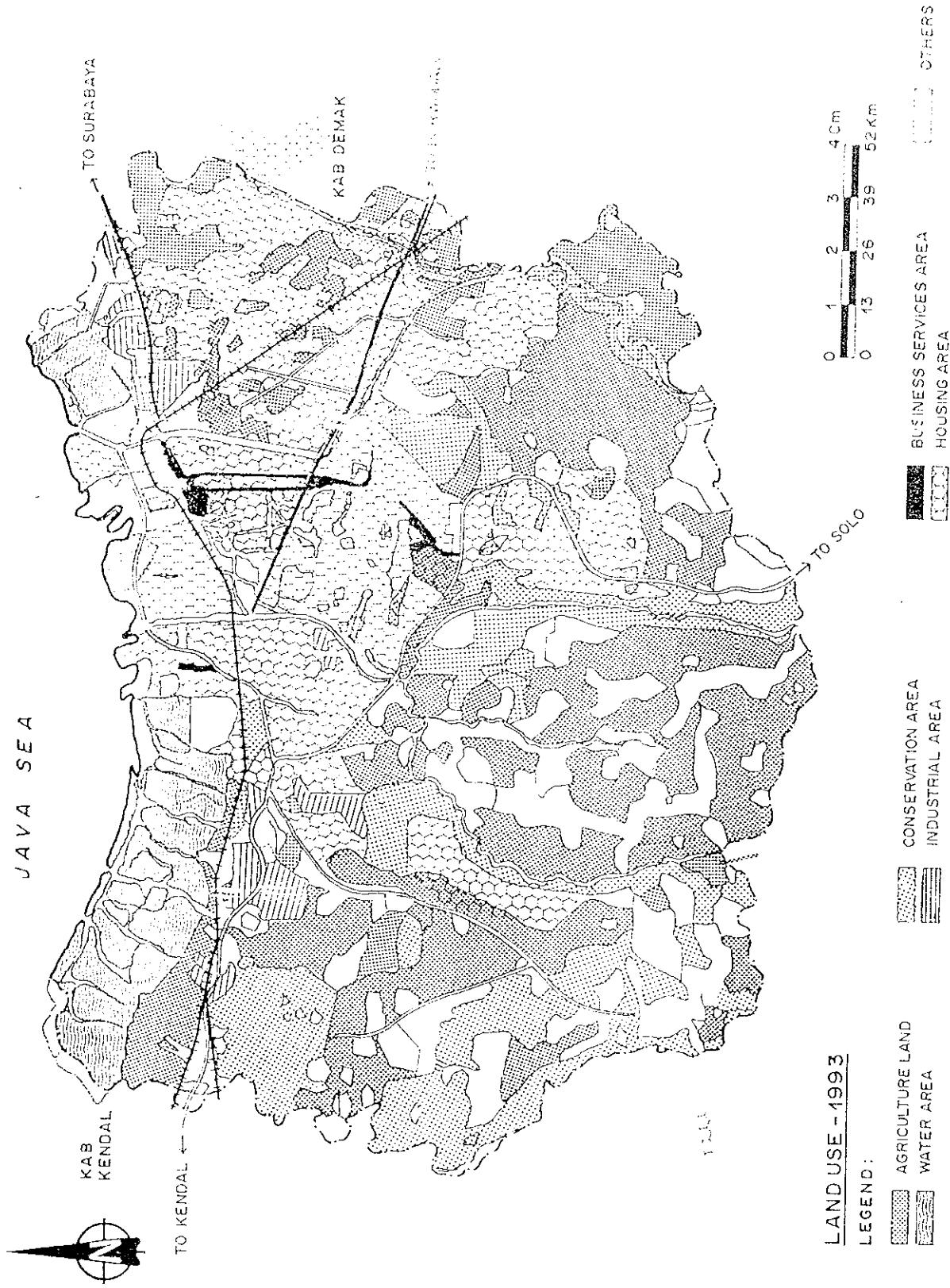
OTHERS



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

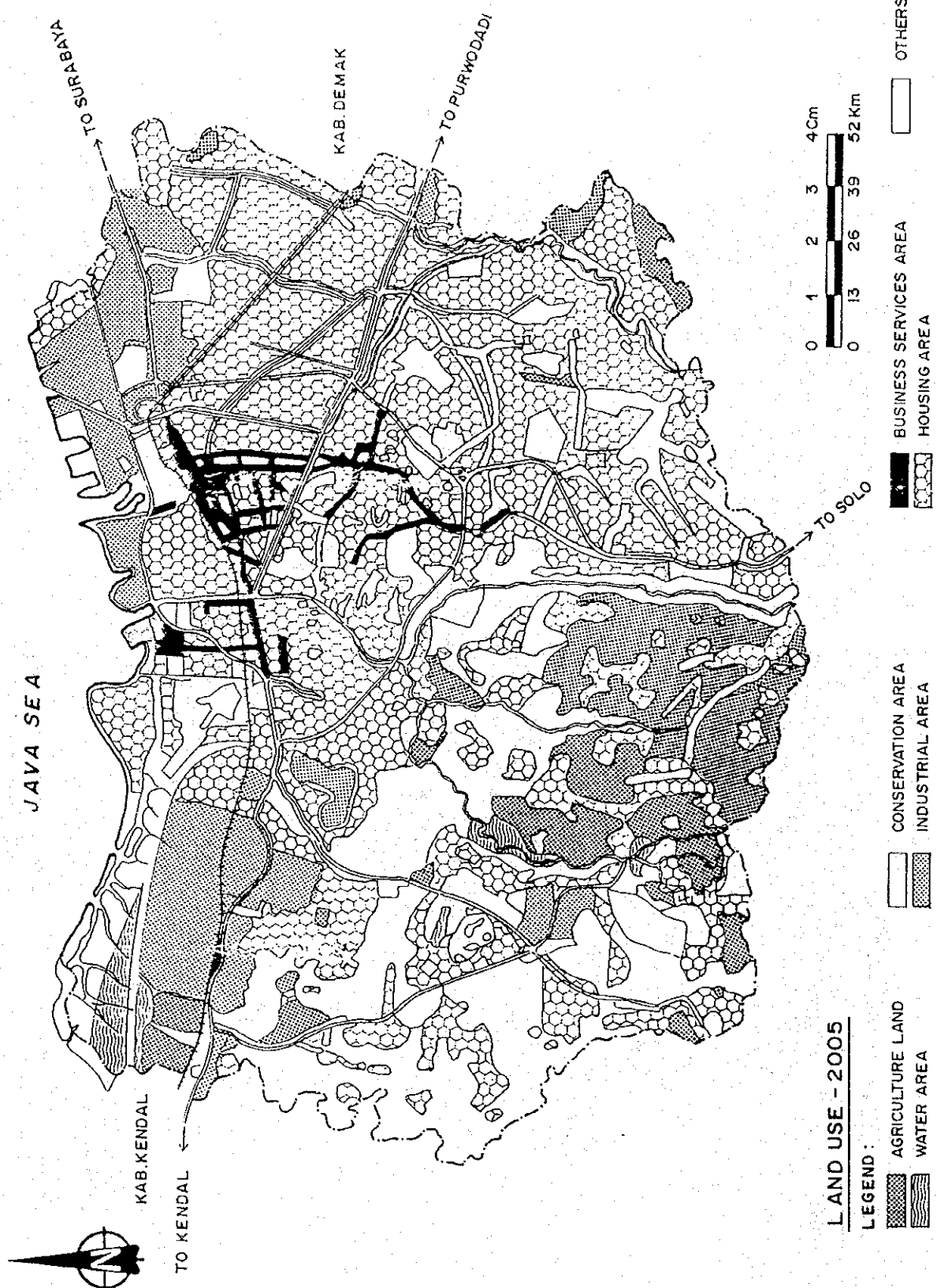
Fig. 2.1.14 (1/2)
LAND USE MAP OF SEMARANG CITY
(YEAR 1993)



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.1.14 (1/2)
LAND USE MAP OF SEMARANG CITY
(YEAR 1993)

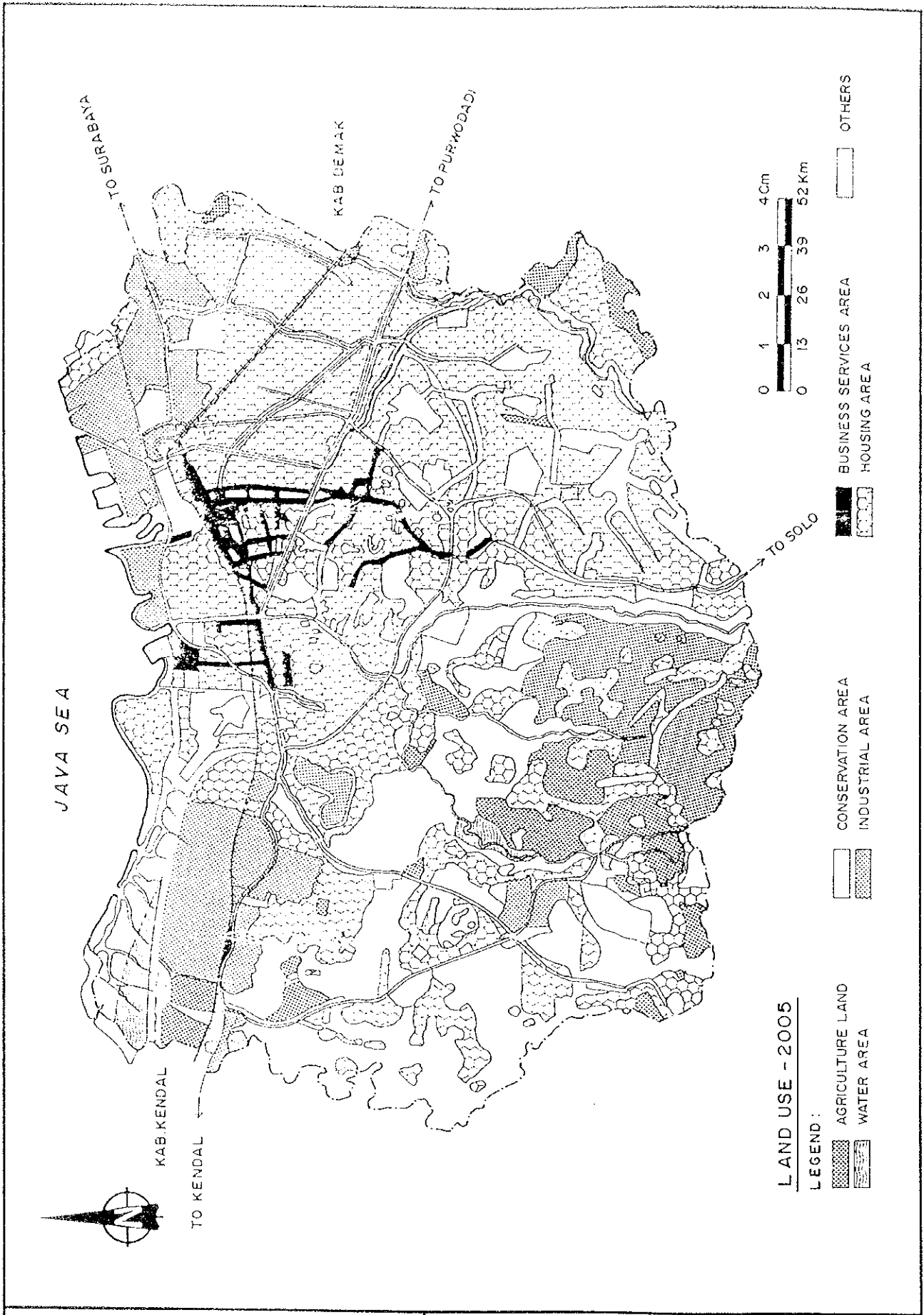


LAND USE - 2005
LEGEND :
 AGRICULTURE LAND
 WATER AREA
 CONSERVATION AREA
 INDUSTRIAL AREA
 BUSINESS SERVICES AREA
 HOUSING AREA
 OTHERS

THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.1.14 (2/2)
LAND USE MAP OF SEMARANG CITY (YEAR 2005)

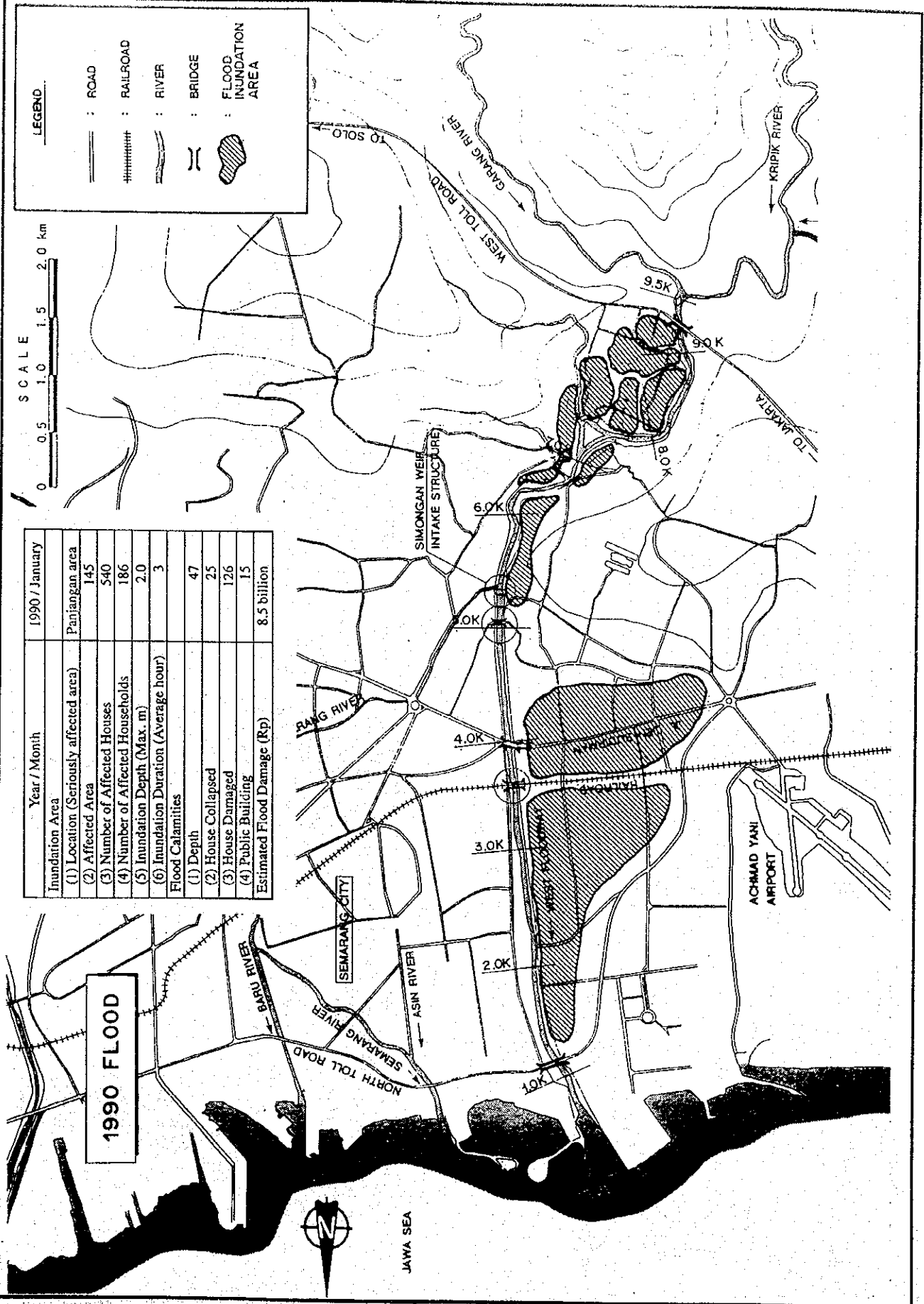
JAPAN INTERNATIONAL COOPERATION AGENCY



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.1.14 (2/2)
LAND USE MAP OF SEMARANG CITY
(YEAR 2005)

JAPAN INTERNATIONAL COOPERATION AGENCY



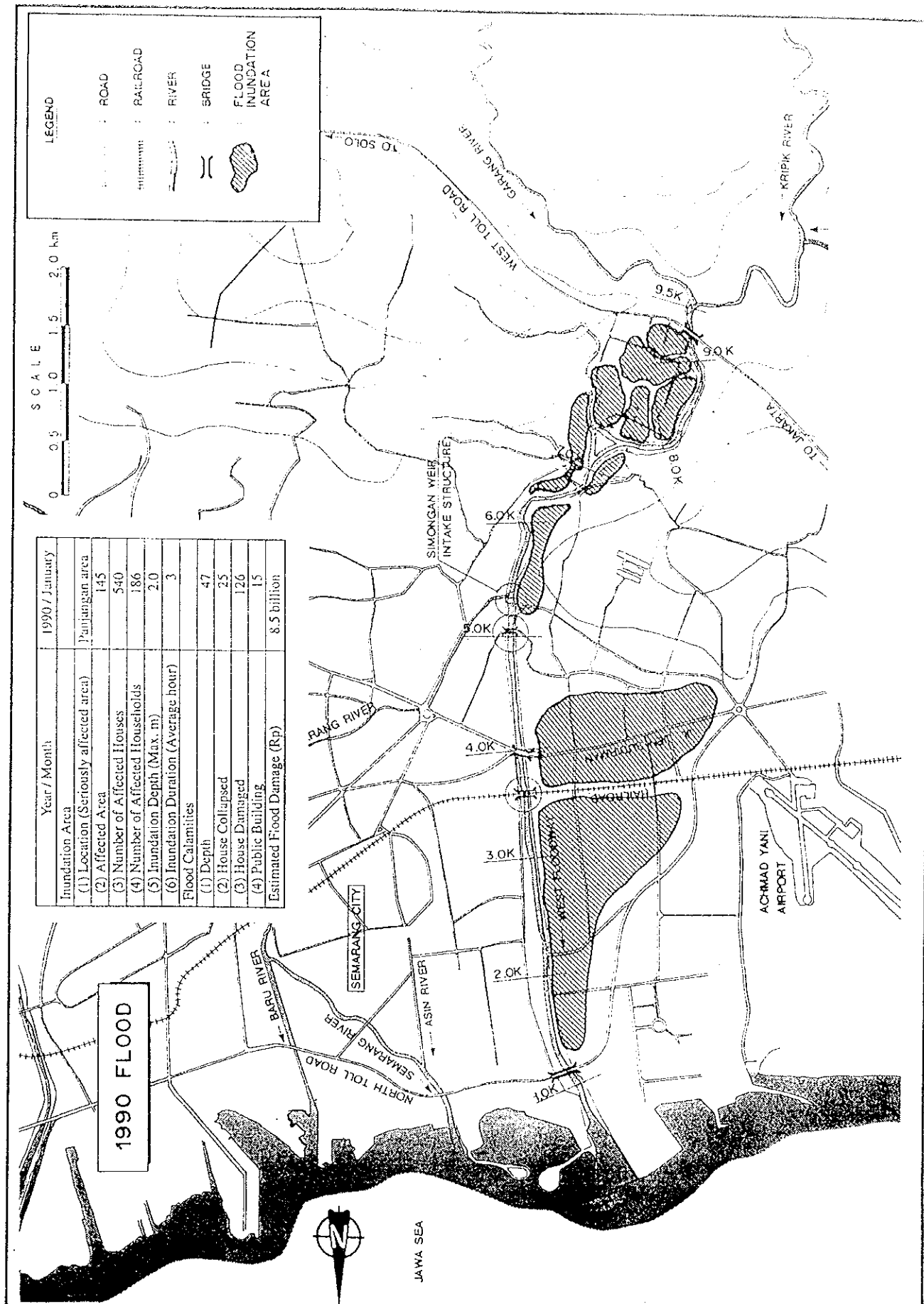
Year / Month		1990 / January
Inundation Area		
(1) Location (Seriously affected area)	Panjang area	
(2) Affected Area		145
(3) Number of Affected Houses		540
(4) Number of Affected Households		186
(5) Inundation Depth (Max. m)		2.0
(6) Inundation Duration (Average hour)		3
Flood Calamities		
(1) Depth		47
(2) House Collapsed		25
(3) House Damaged		126
(4) Public Building		15
Estimated Flood Damage (Rp)		8.5 billion

1990 FLOOD

THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.3.1 (1/2)
FLOOD INUNDATION MAP

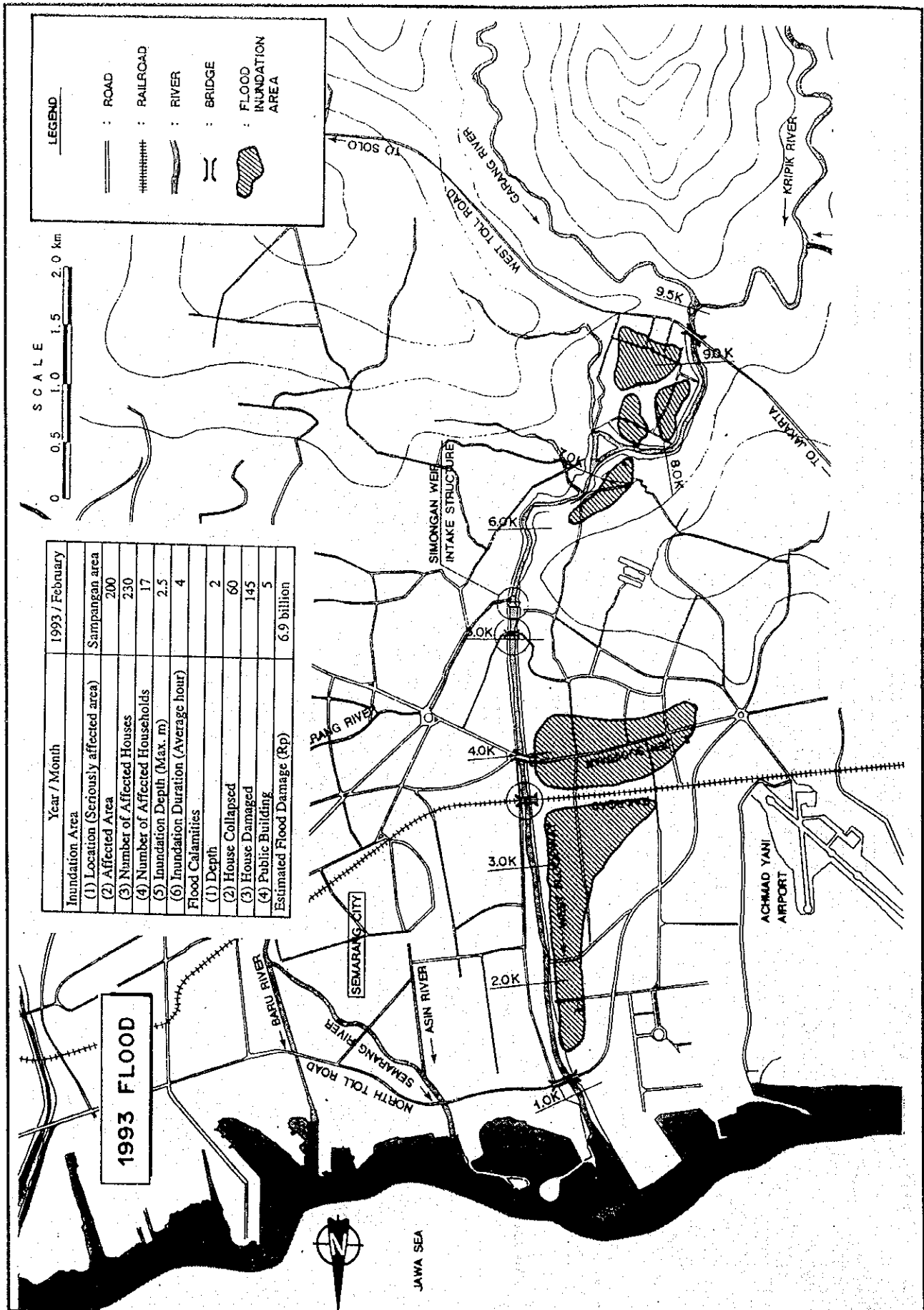
JAPAN INTERNATIONAL COOPERATION AGENCY



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.3.1 (1/2)
FLOOD INUNDATION MAP

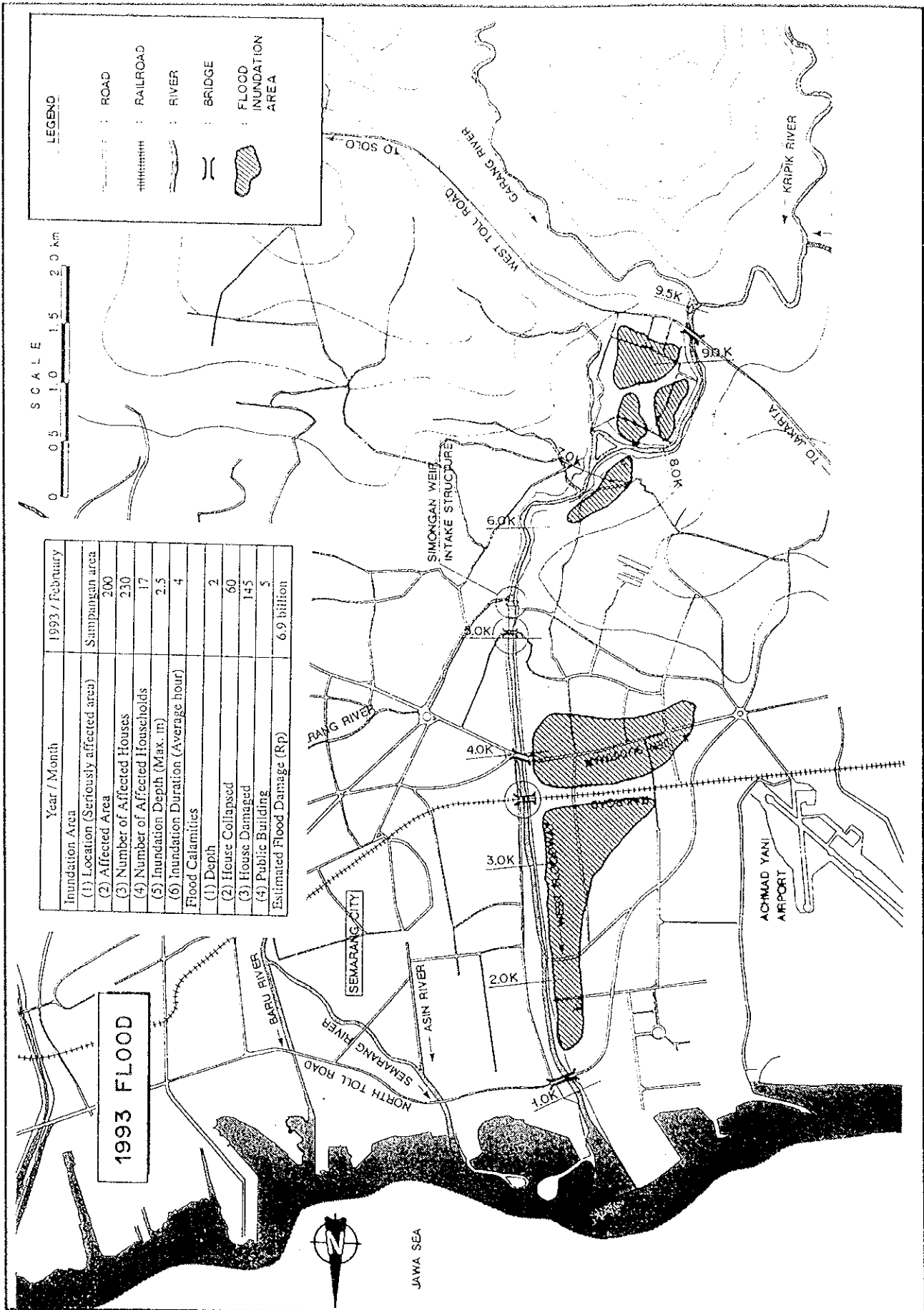
JAPAN INTERNATIONAL COOPERATION AGENCY



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.3.1 (2/2)
FLOOD INUNDATION MAP

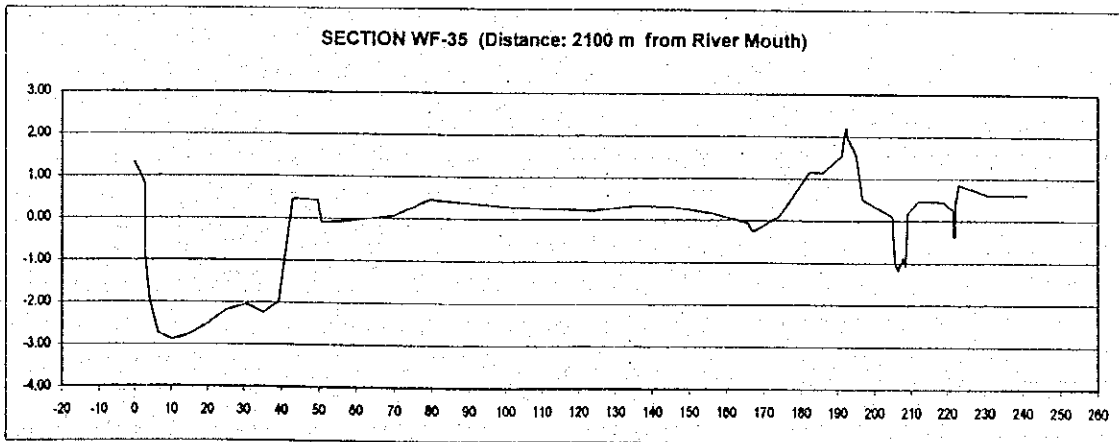
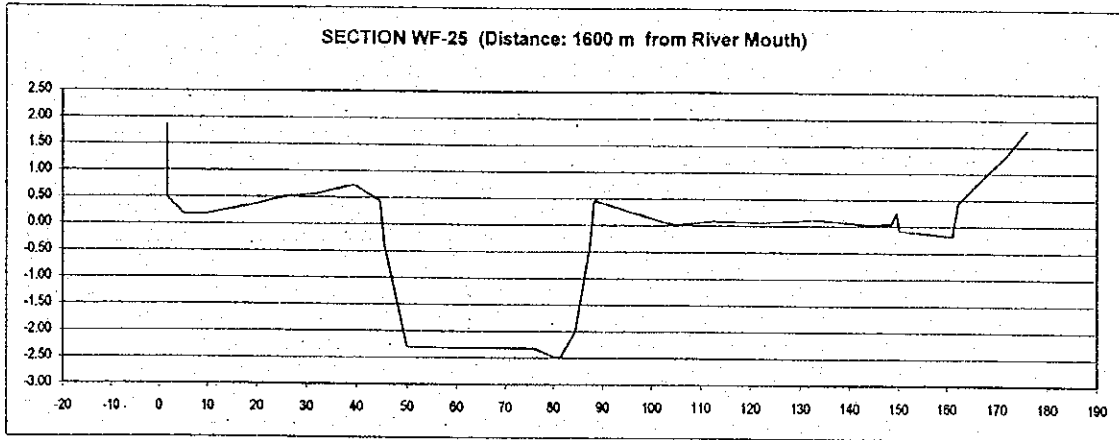
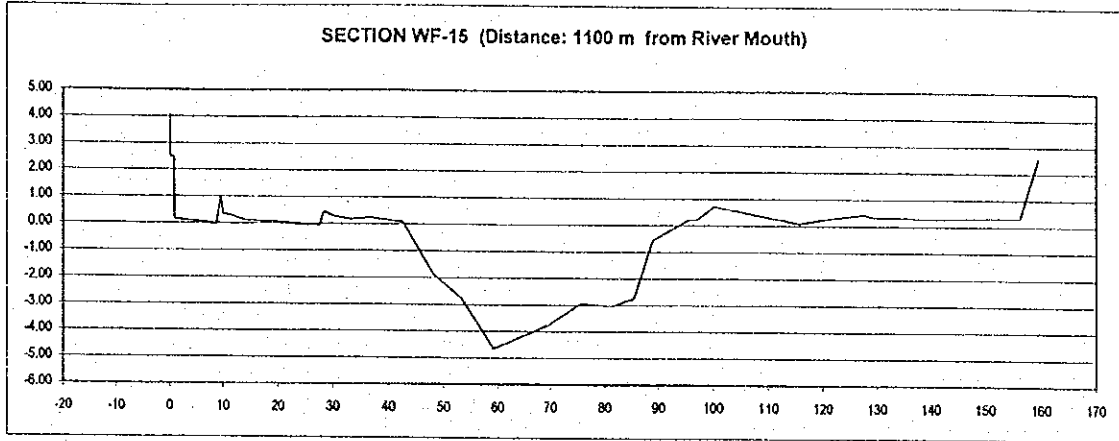
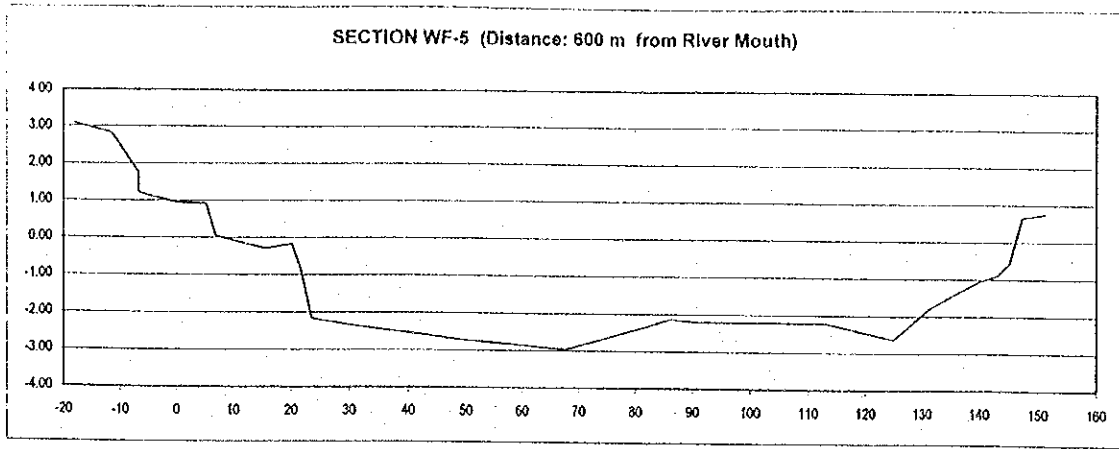
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THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.3.1 (2/2)
FLOOD INUNDATION MAP

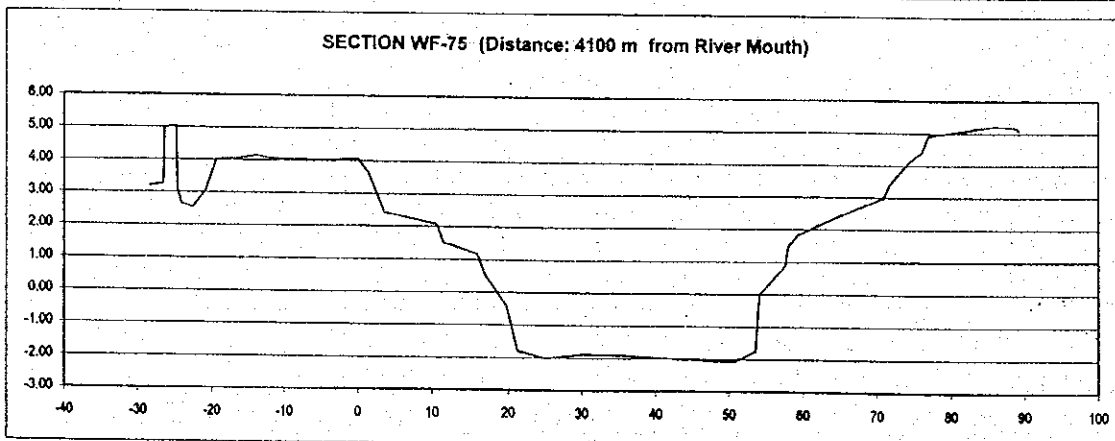
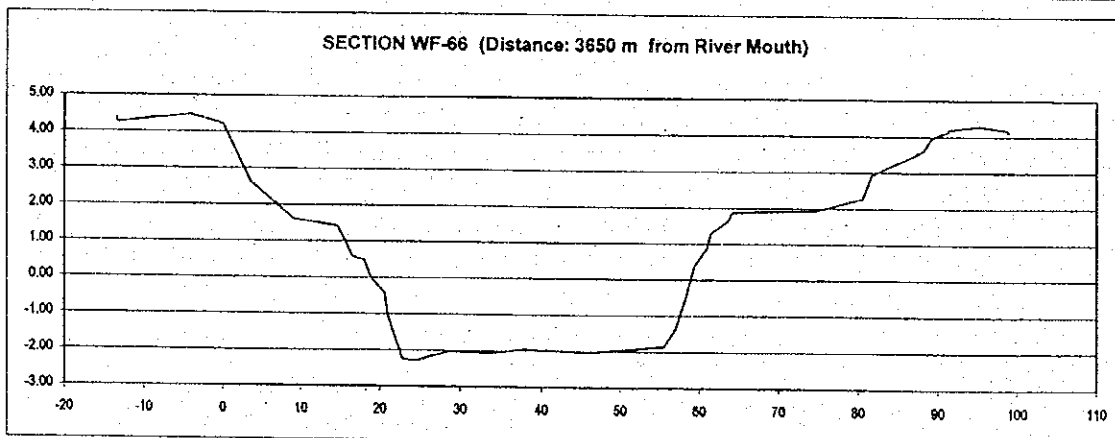
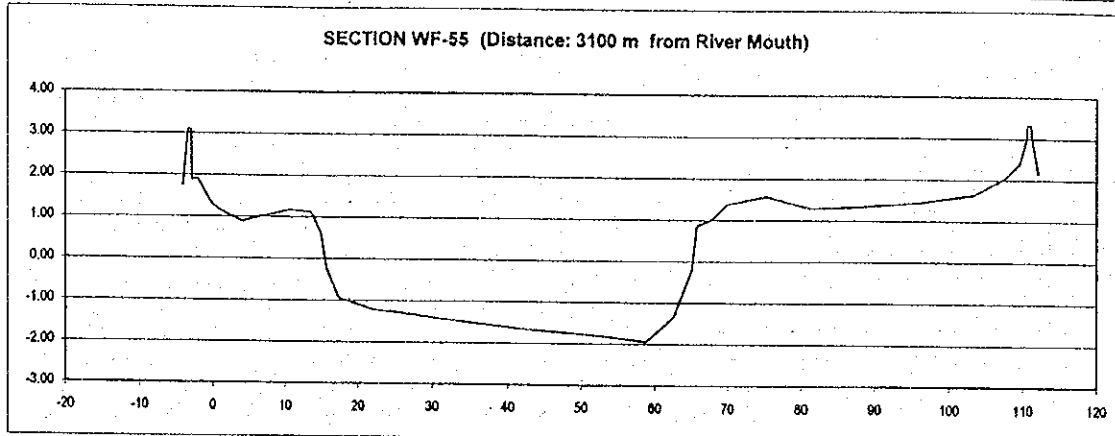
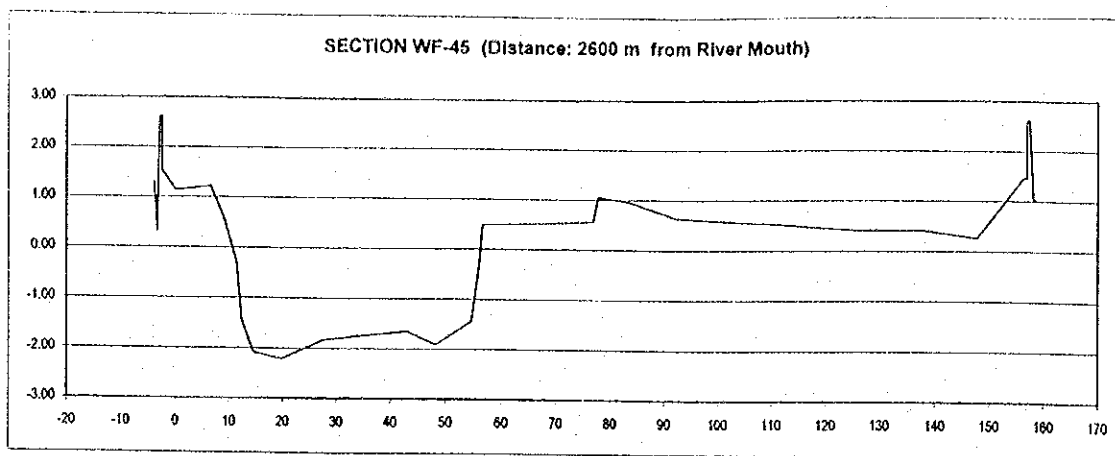
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THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

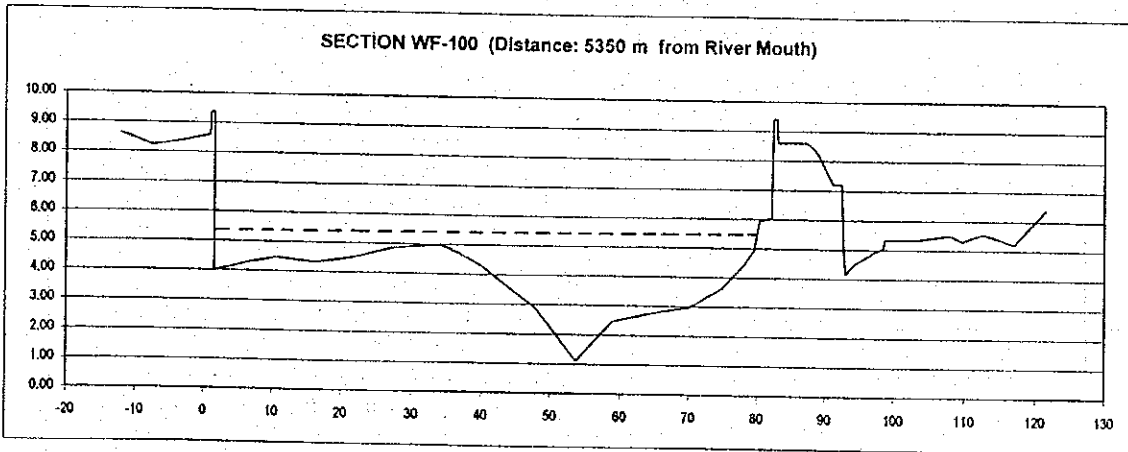
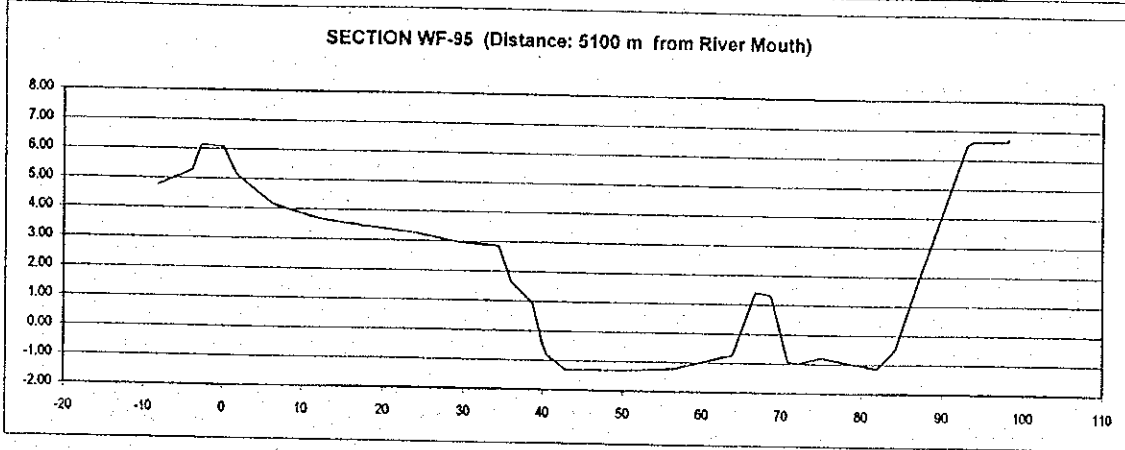
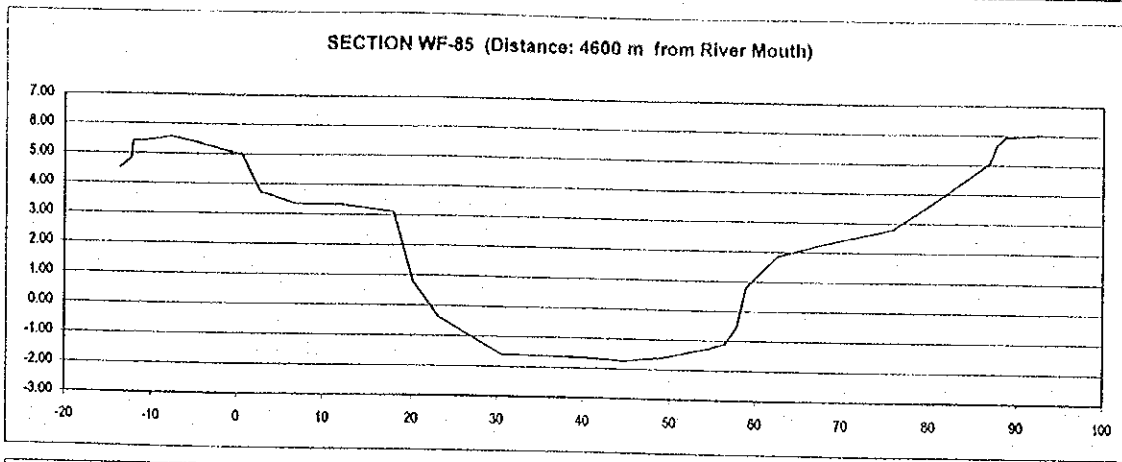
Fig. 2.3.2 (1/5)
EXISTING RIVER CROSS SECTIONS

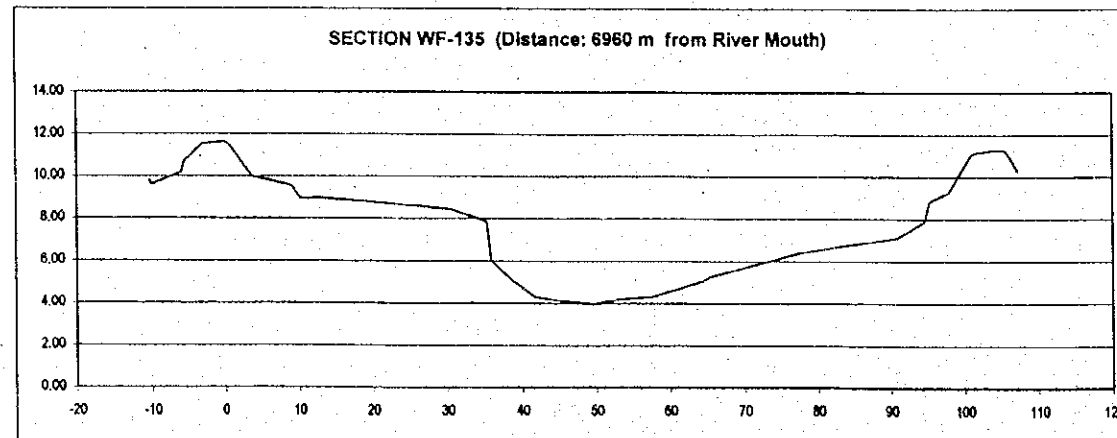
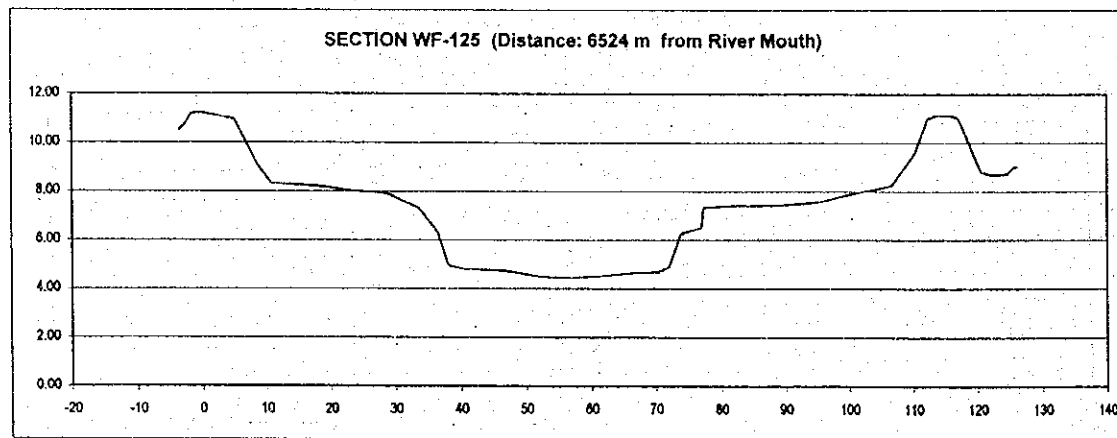
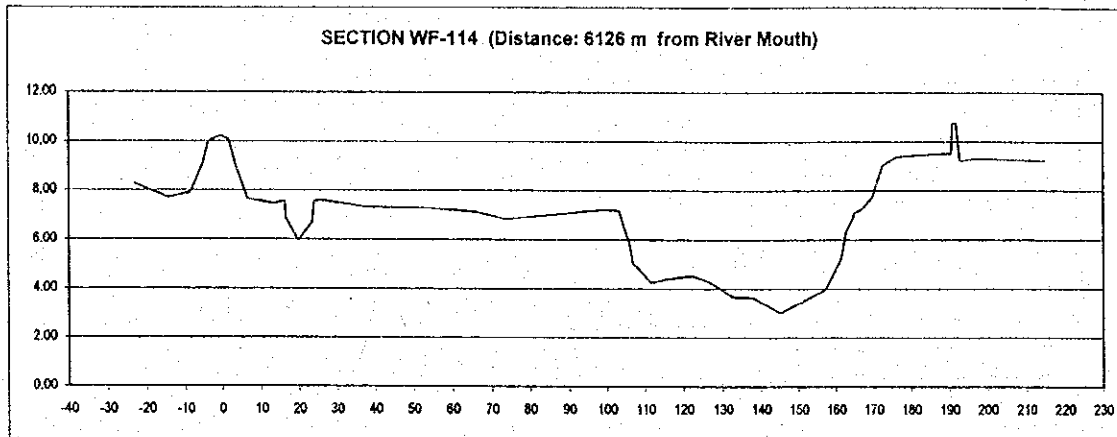
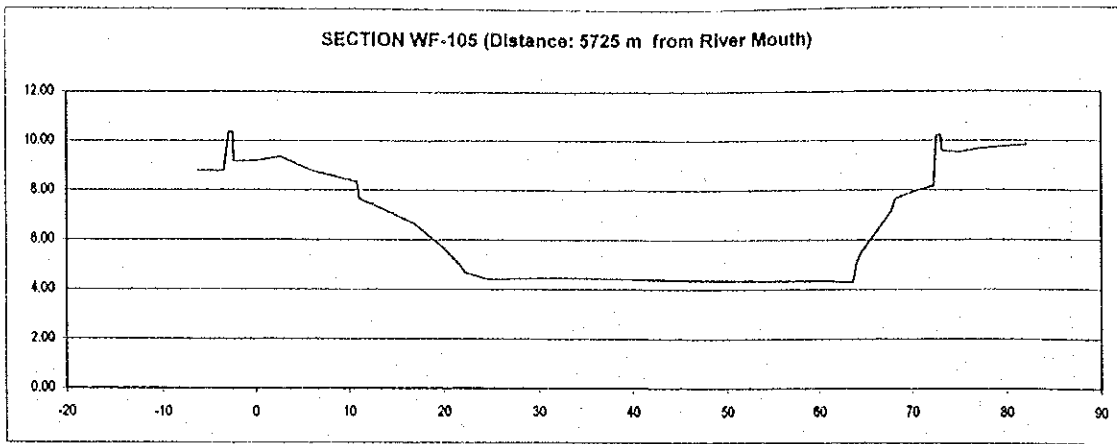


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.3.2 (2/5)
EXISTING RIVER CROSS SECTIONS

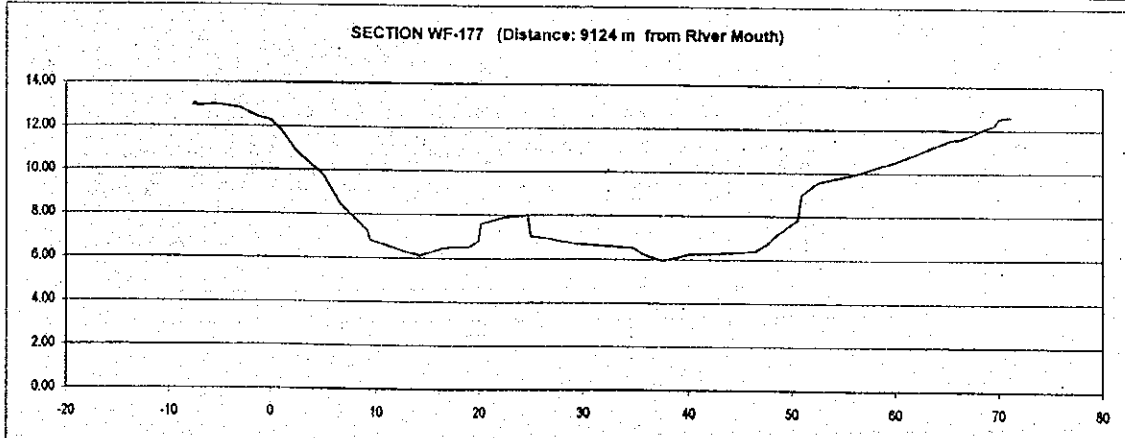
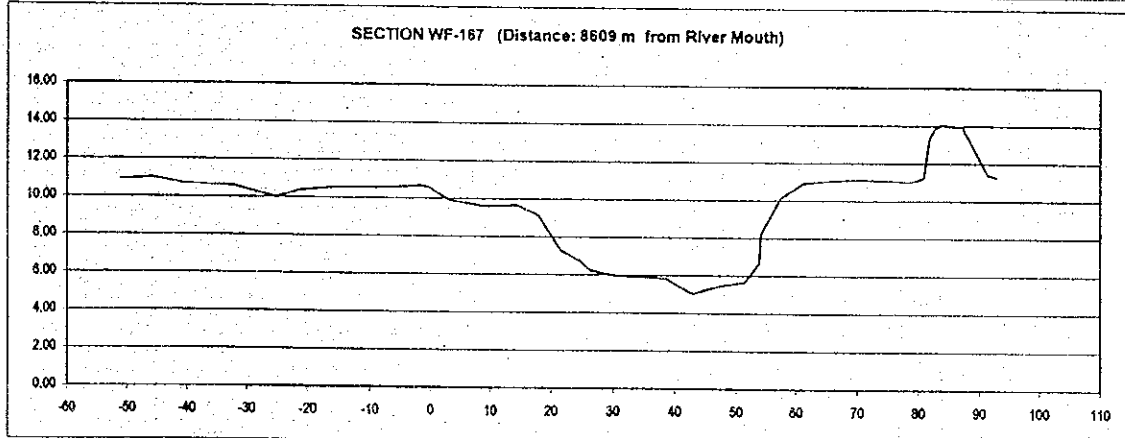
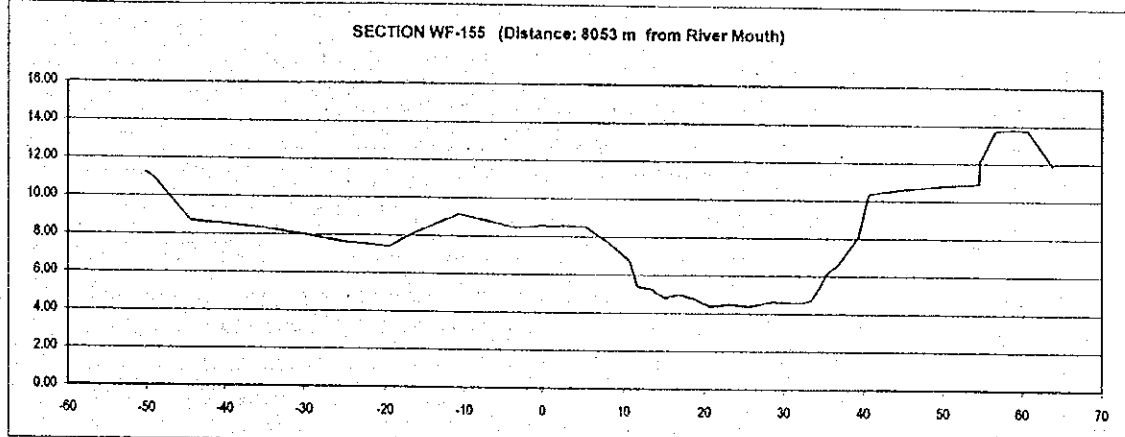
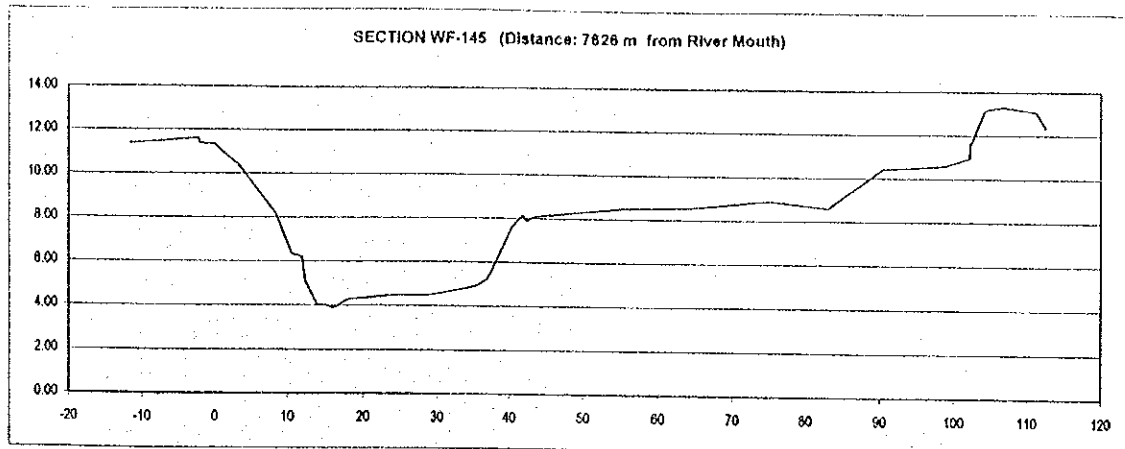




THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.3.2 (4/5)
EXISTING RIVER CROSS SECTIONS

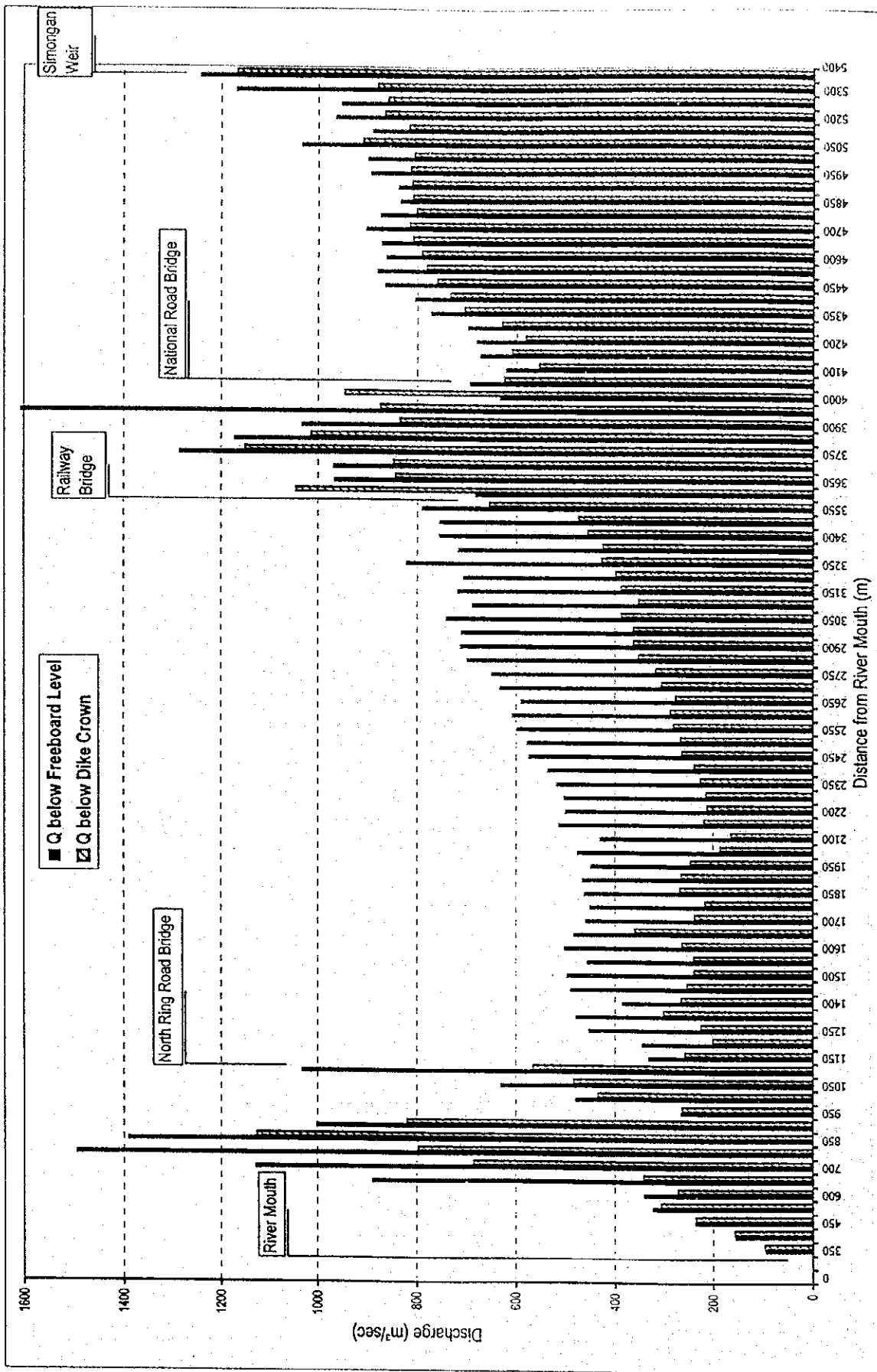
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THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.3.2 (5/5)
EXISTING RIVER CROSS SECTIONS

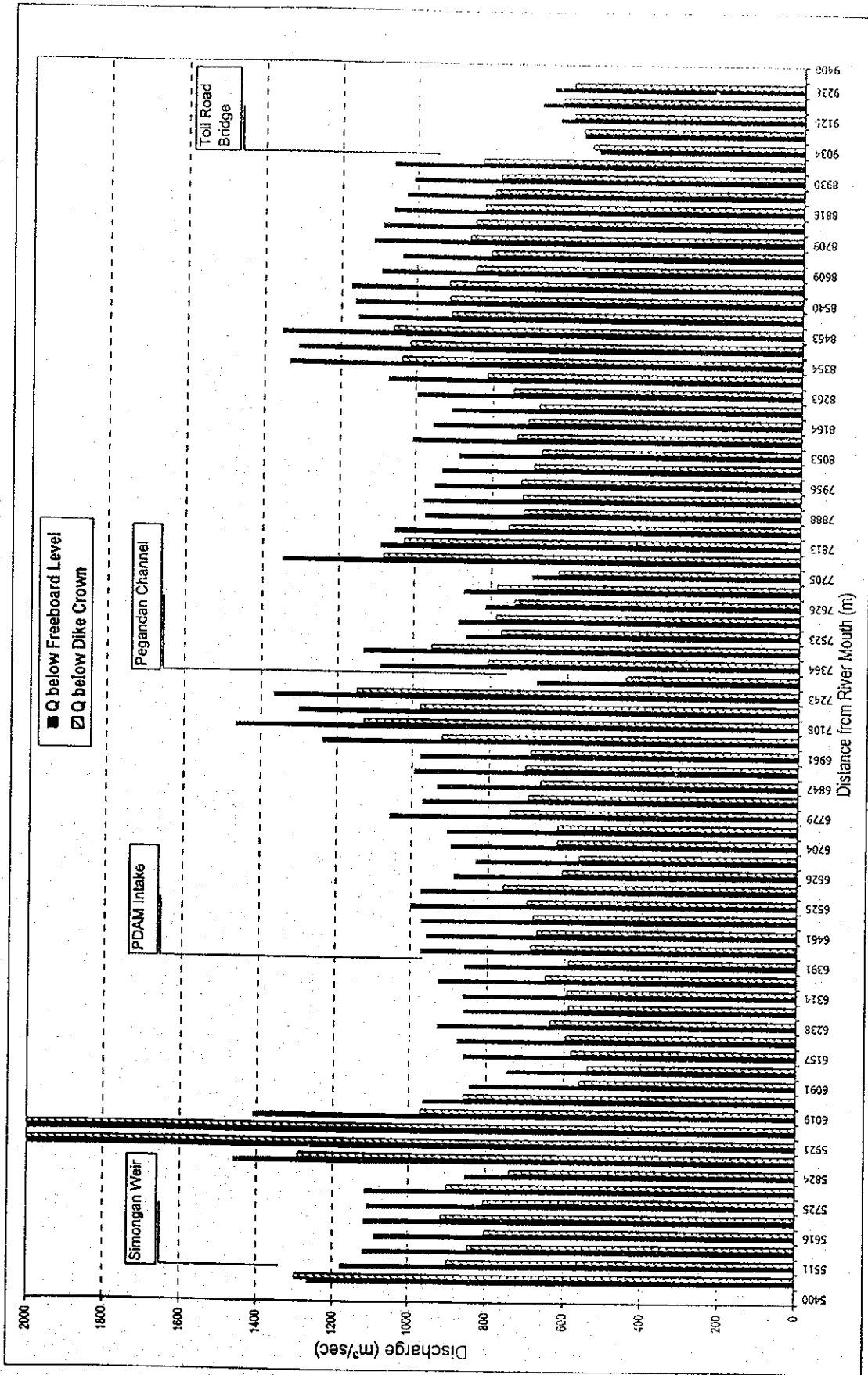
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THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.3.3 FLOW CAPACITY OF EXISTING WEST FLOODWAY CHANNEL

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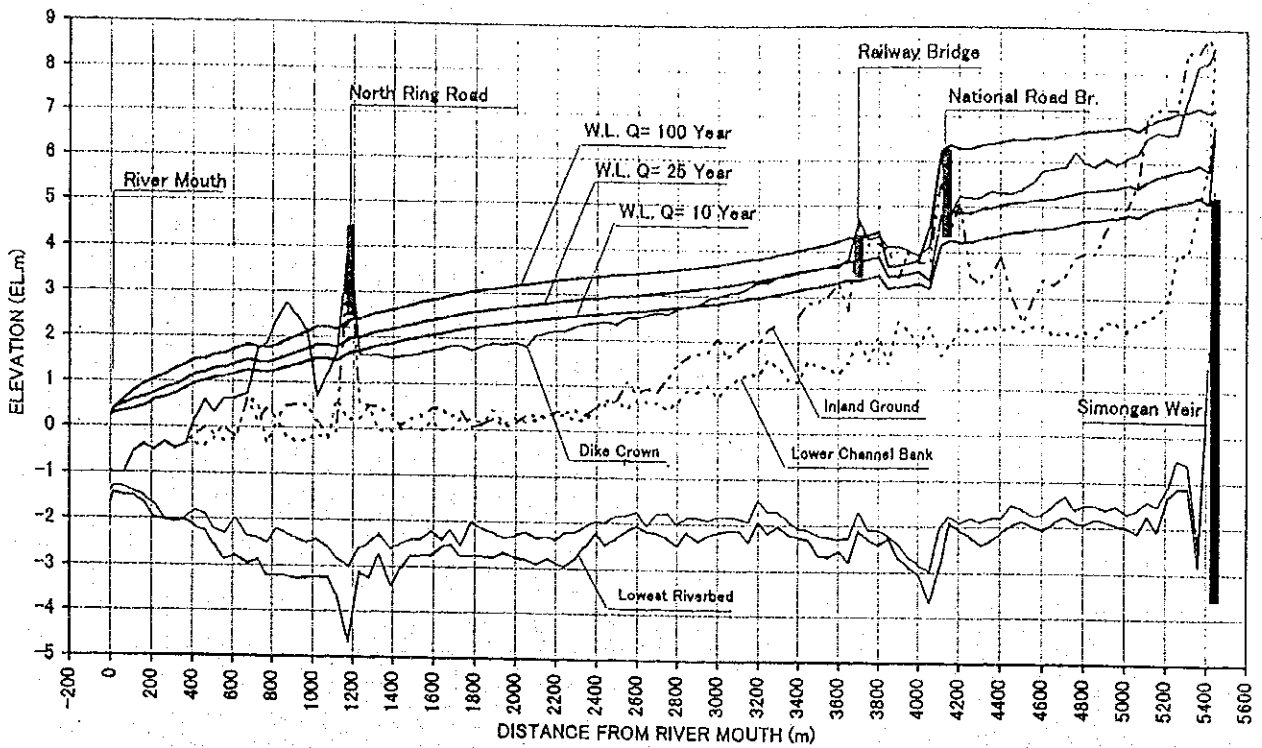


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

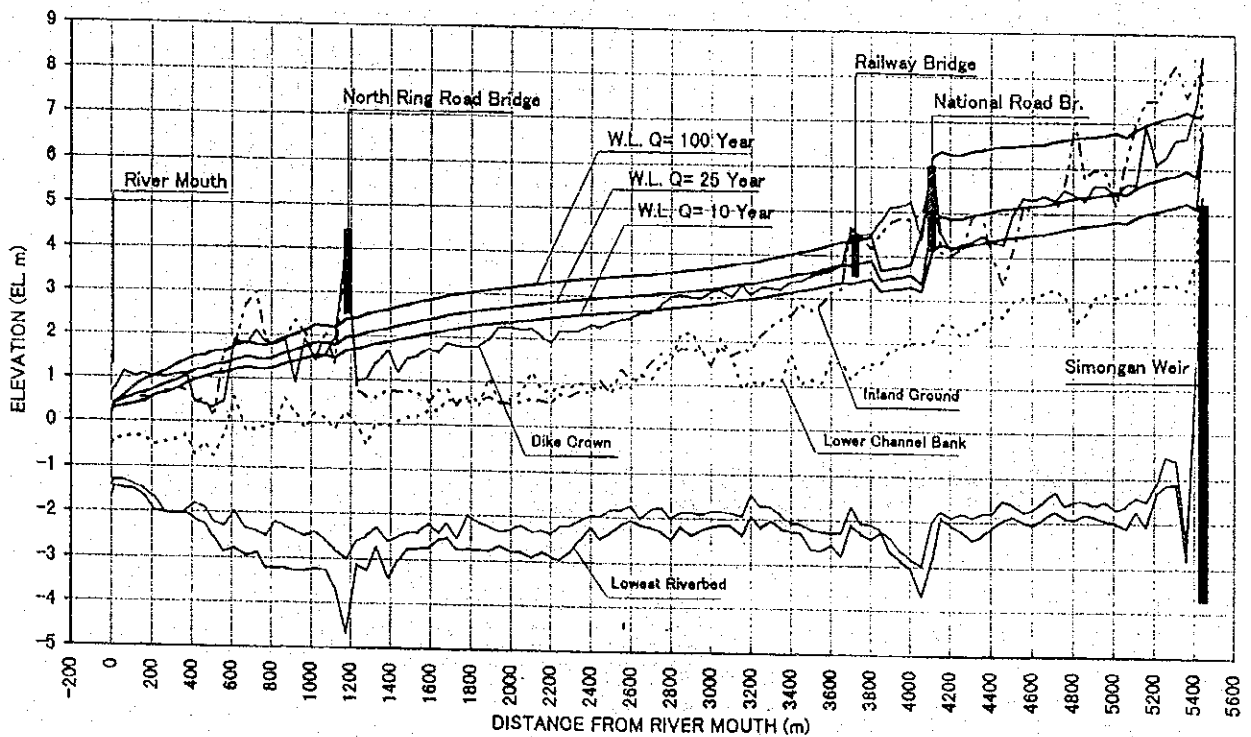
Fig. 2.3.4 FLOW CAPACITY OF EXISTING GARANG RIVER CHANNEL.

JAPAN INTERNATIONAL COOPERATION AGENCY

WEST FLOODWAY RIGHT BANK



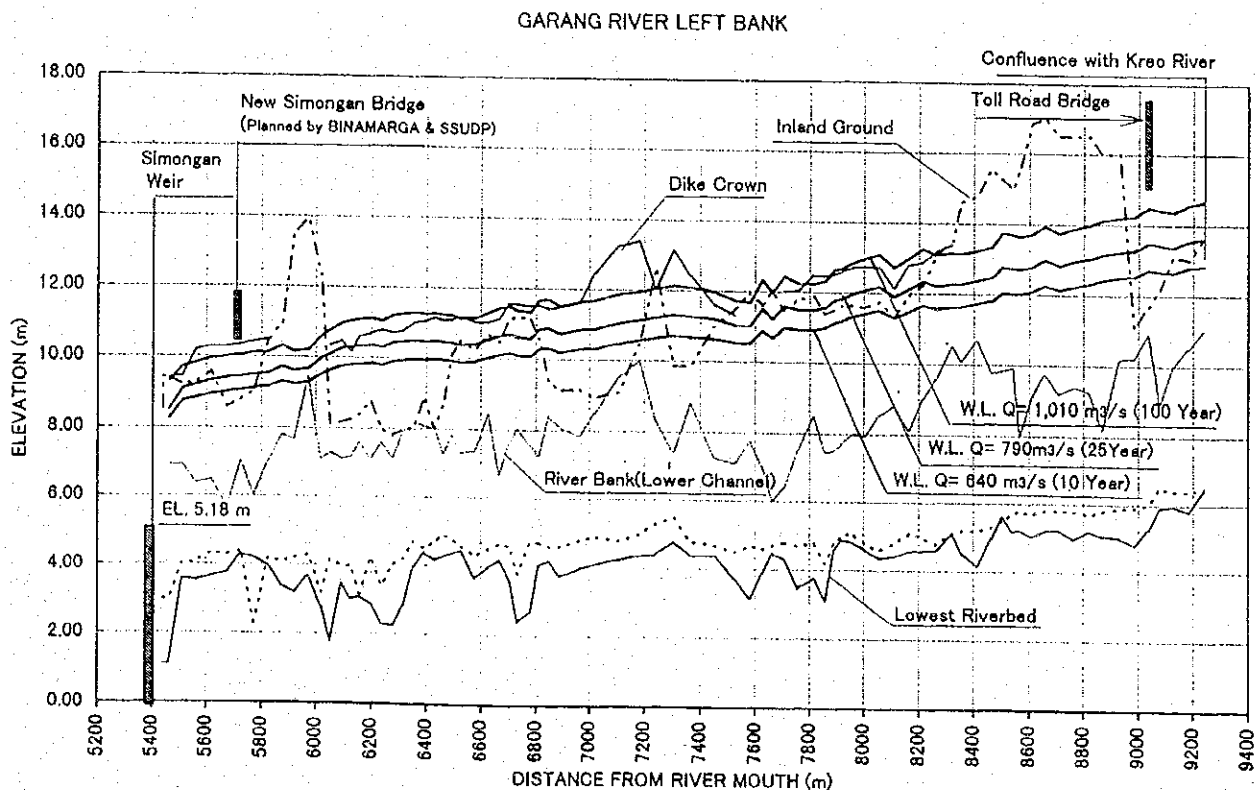
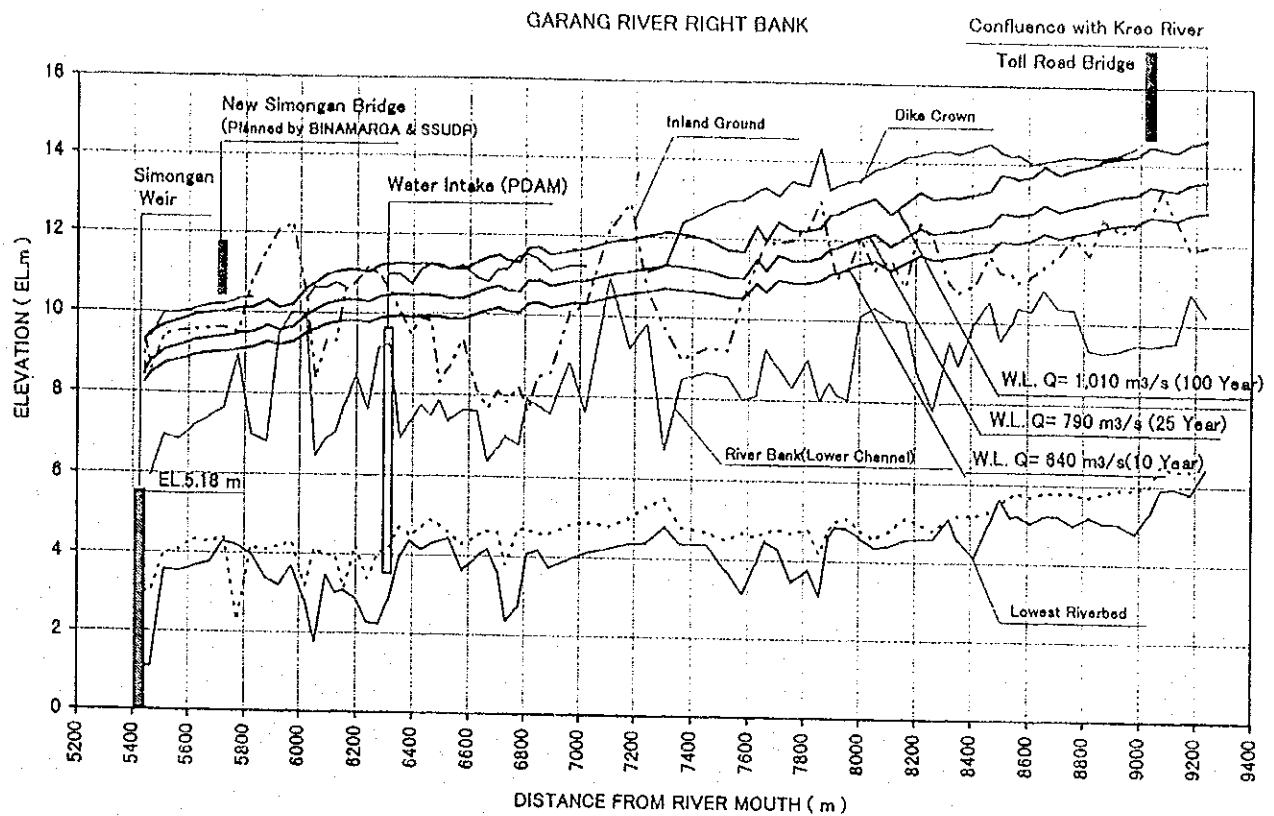
WEST FLOODWAY LEFT BANK



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.3.5 (1/2)
FLOOD WATER LEVEL PROFILE OF EXISTING WEST FLOODWAY



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.3.5 (2/2)
FLOOD WATER LEVEL PROFILE OF EXISTING WEST FLOODWAY

