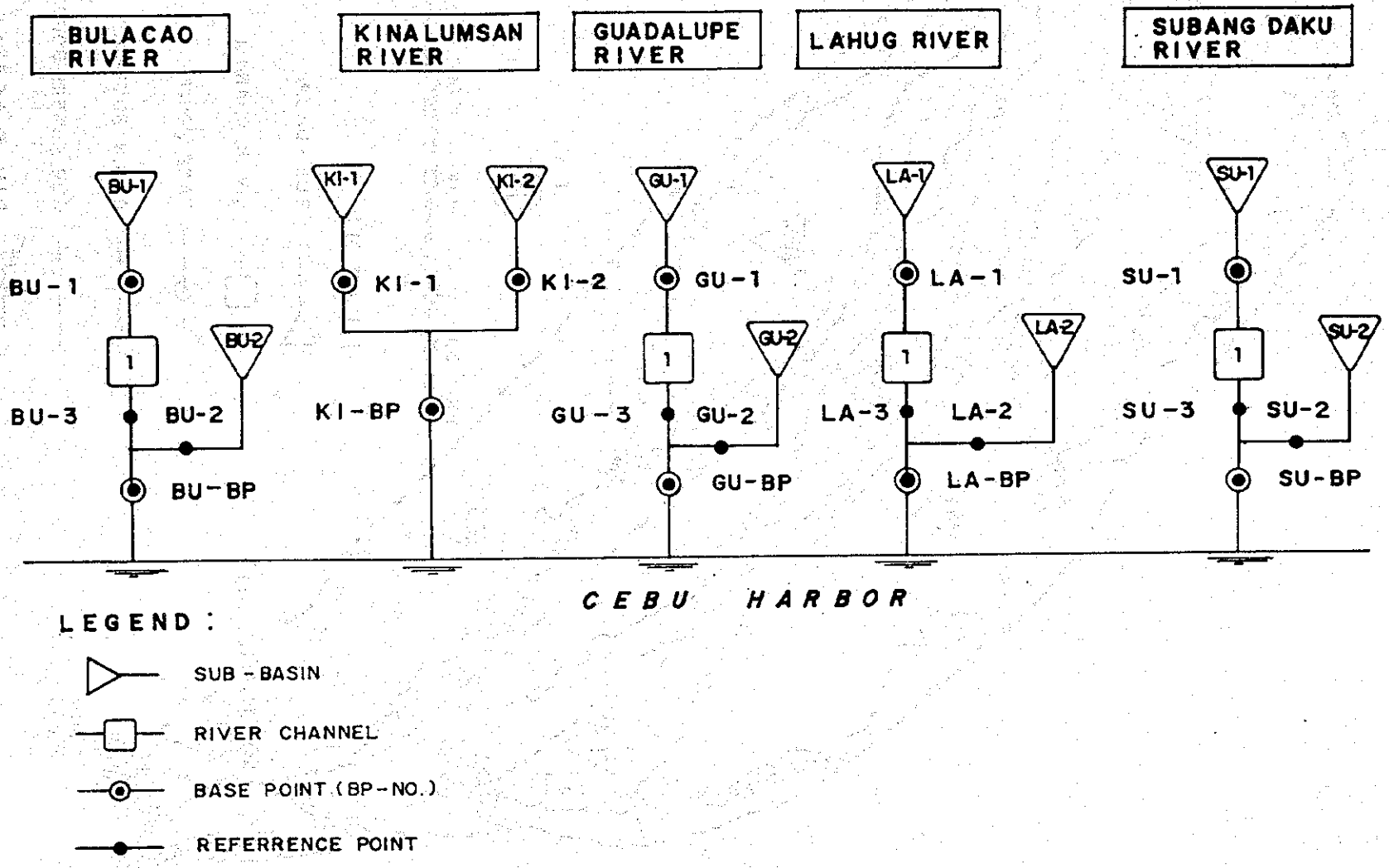
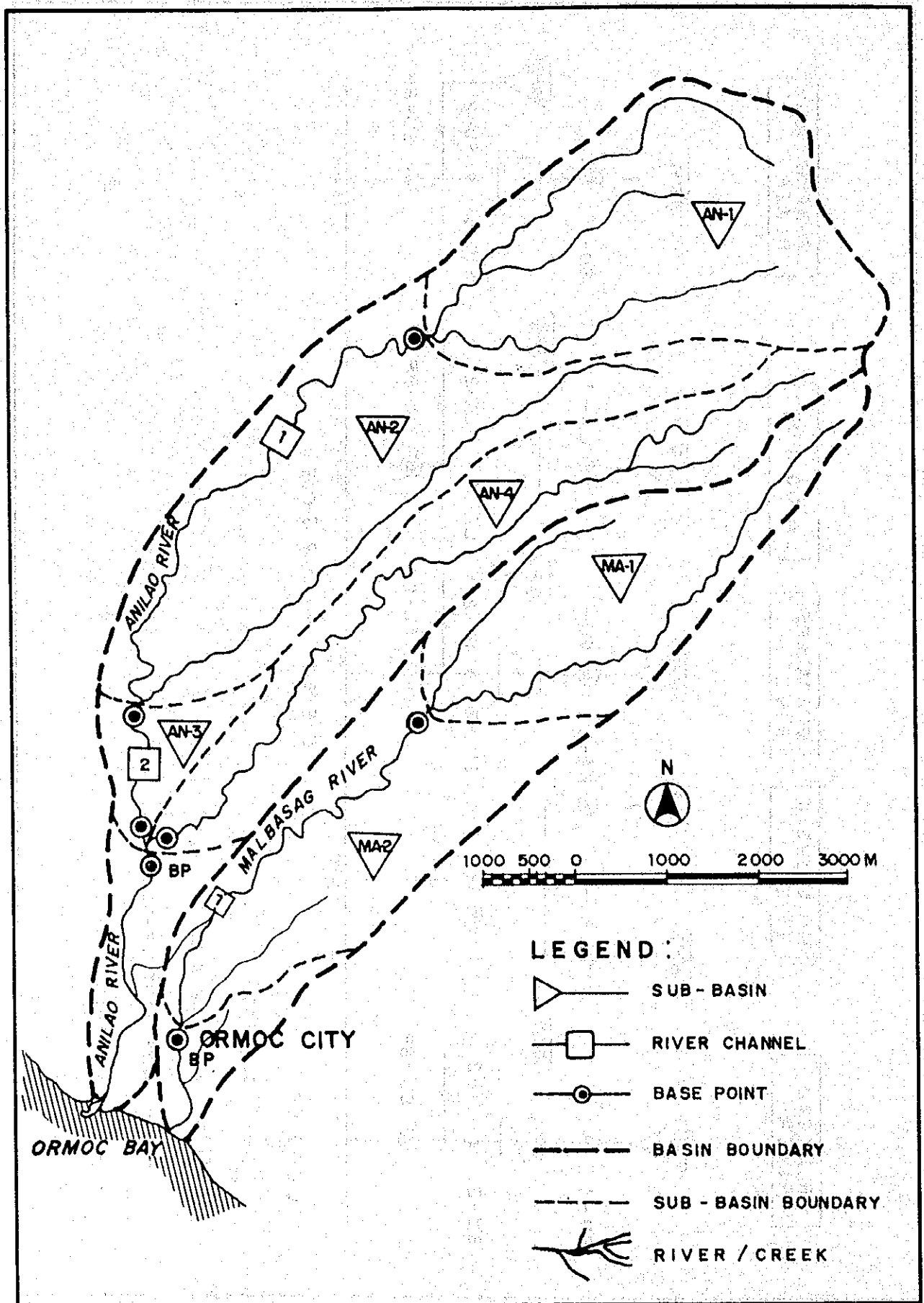


Fig. 3.5 River System Model, Cebu



THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 3.6
Basin Division, Ormoc

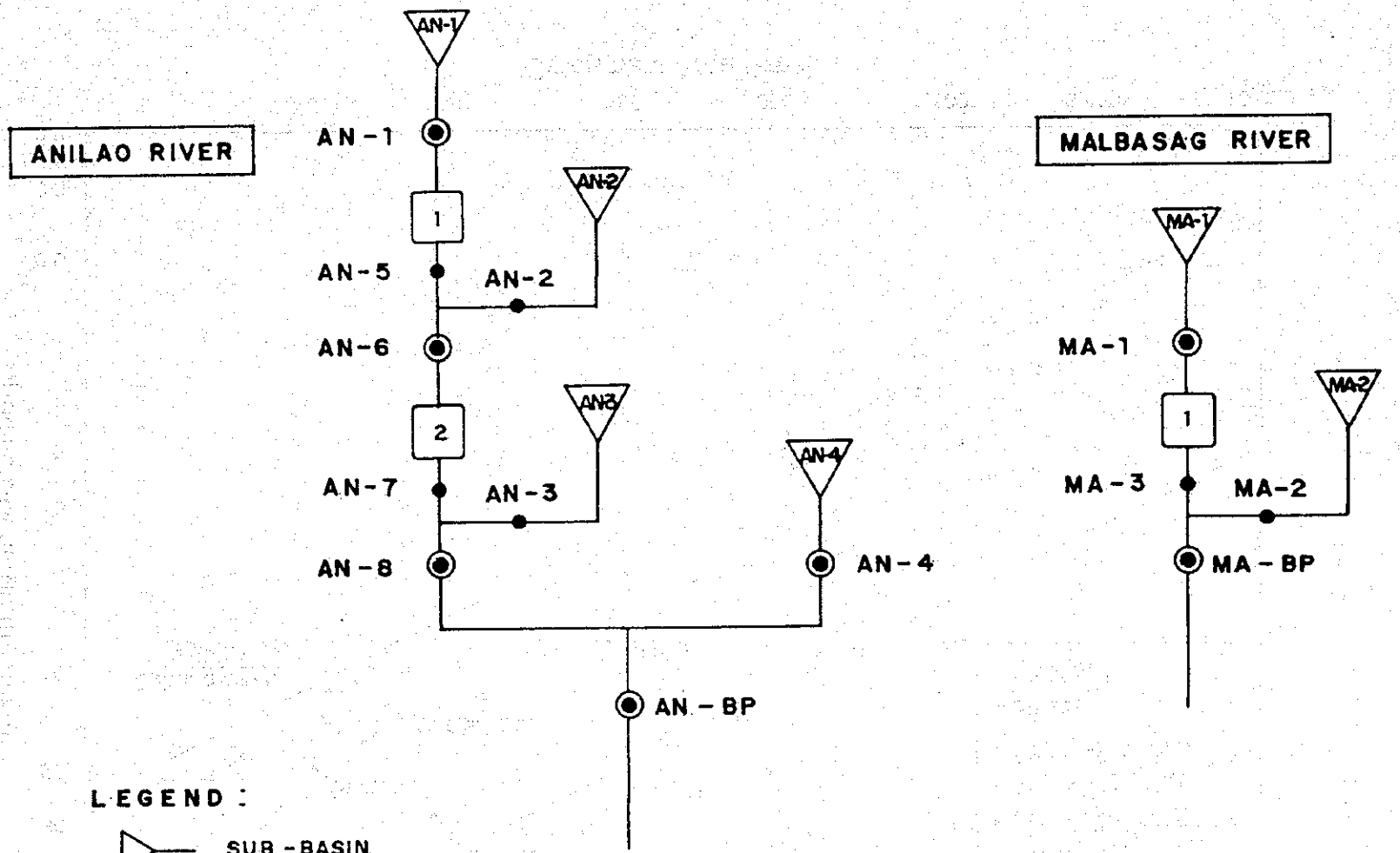
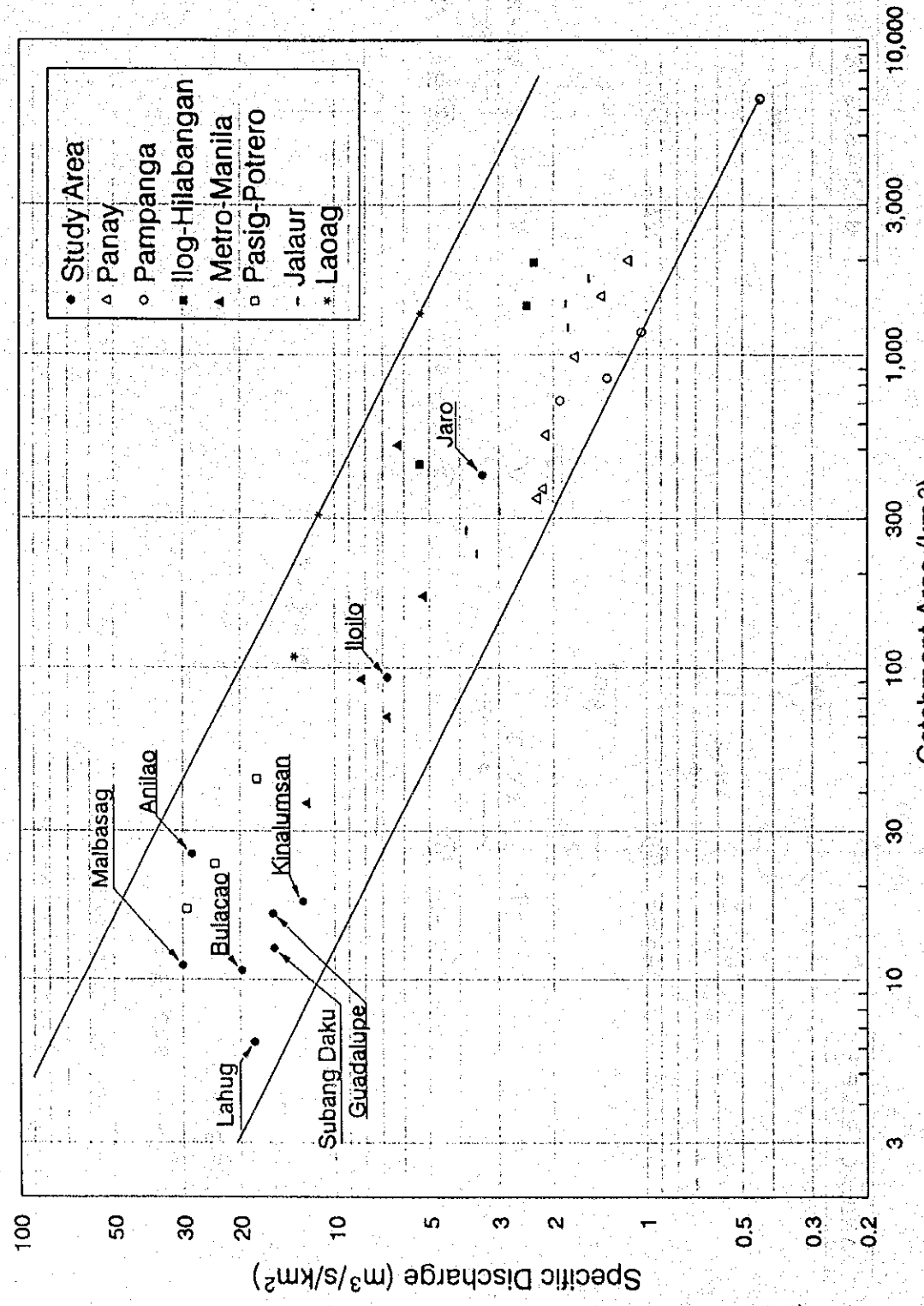


Fig. 3.7
River System Model, Ormoc

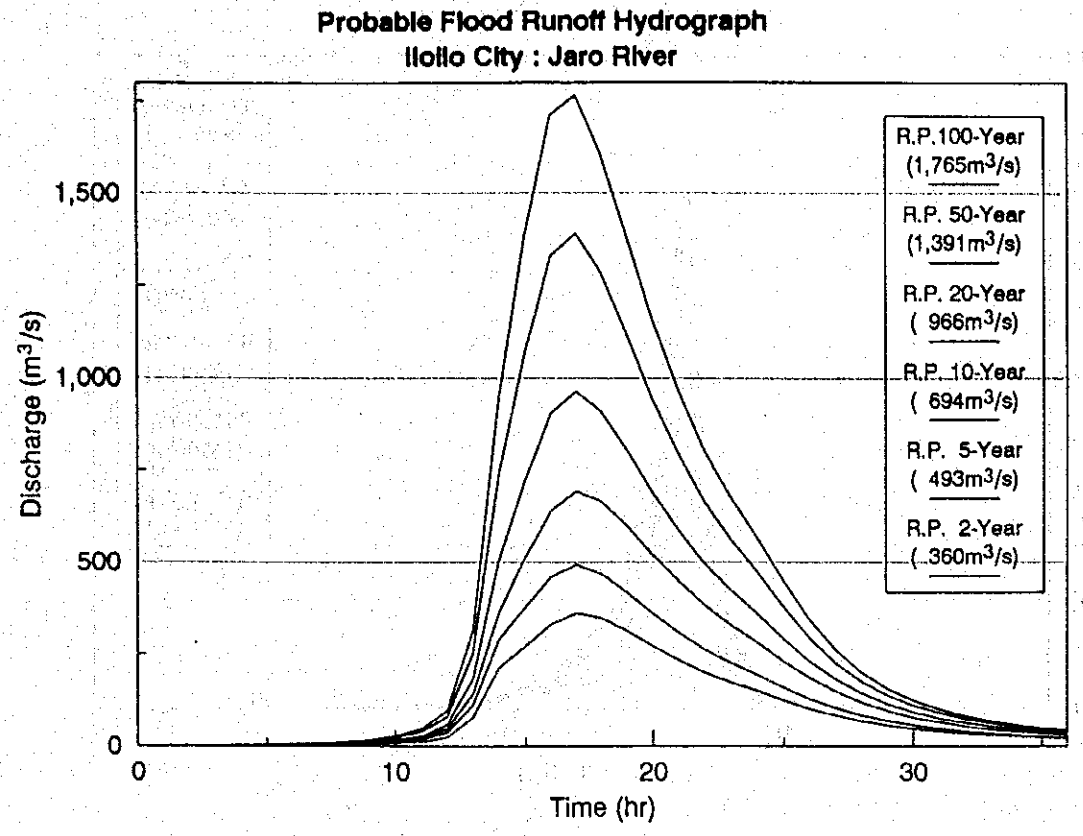
THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

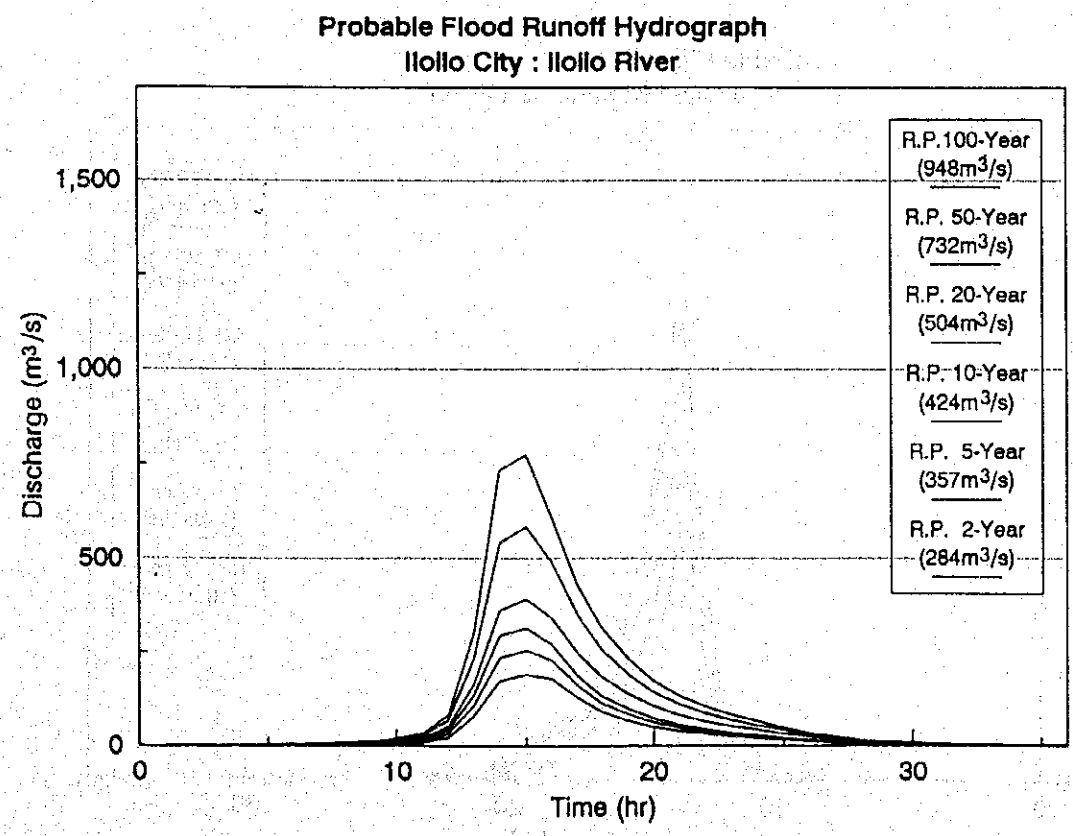


THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

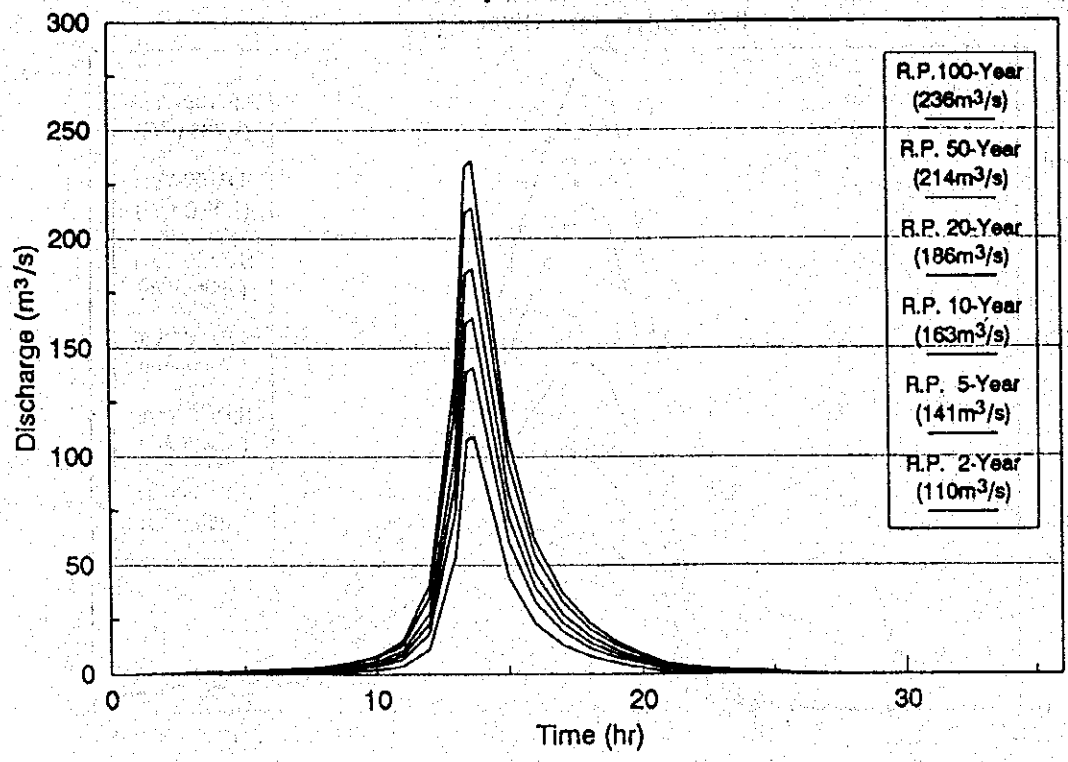
Fig. 3.8
Specific Discharges of 50-Year Return Period



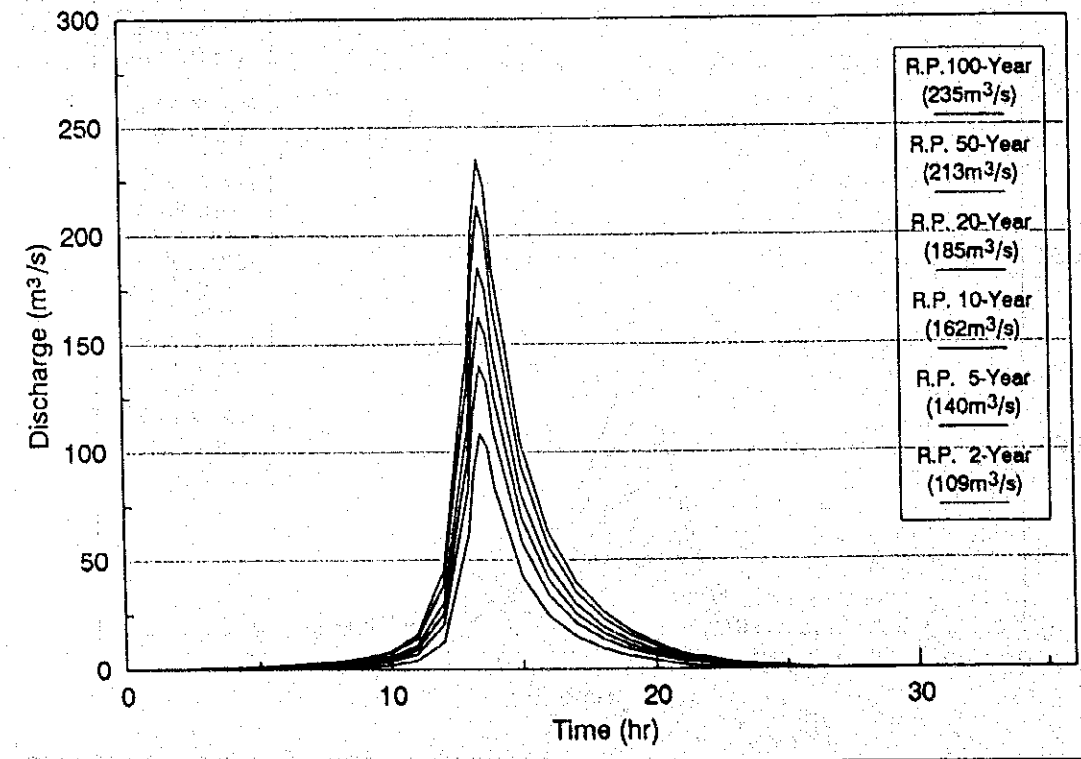


THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.9 Design Hydrograph at Base Points, Iloilo

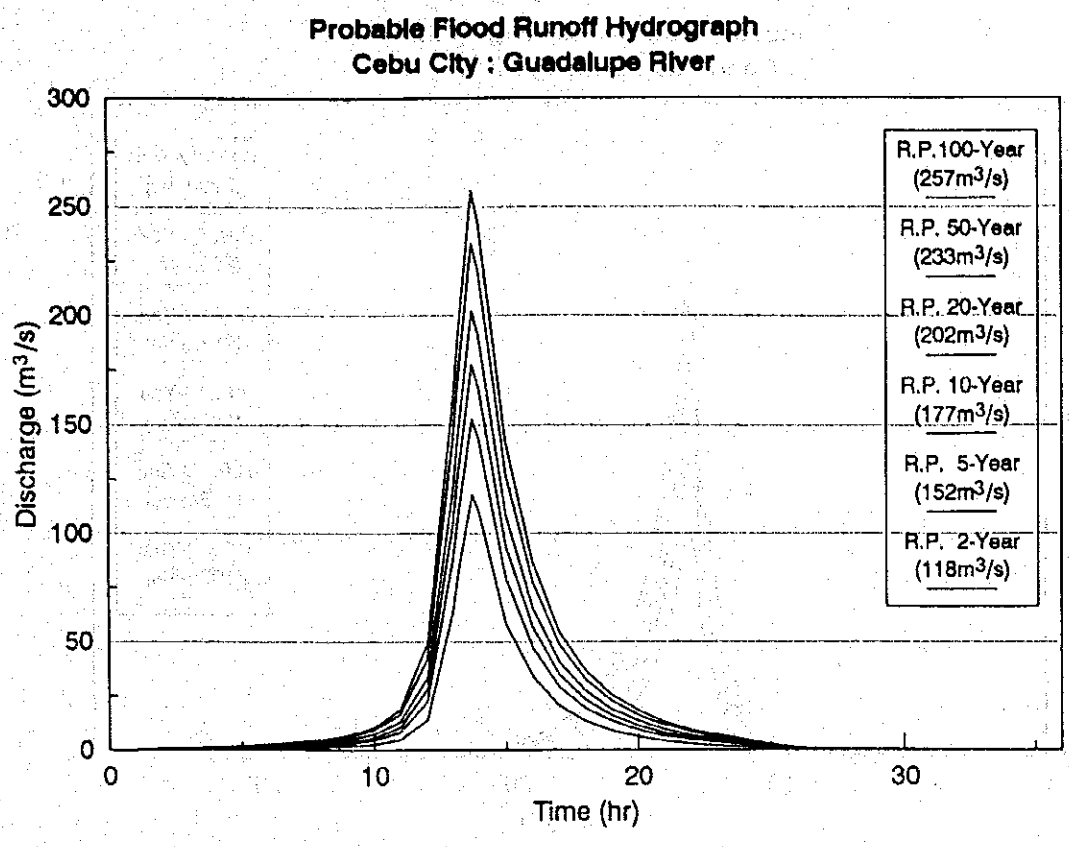
Probable Flood Runoff Hydrograph
Cebu City : Butacao River

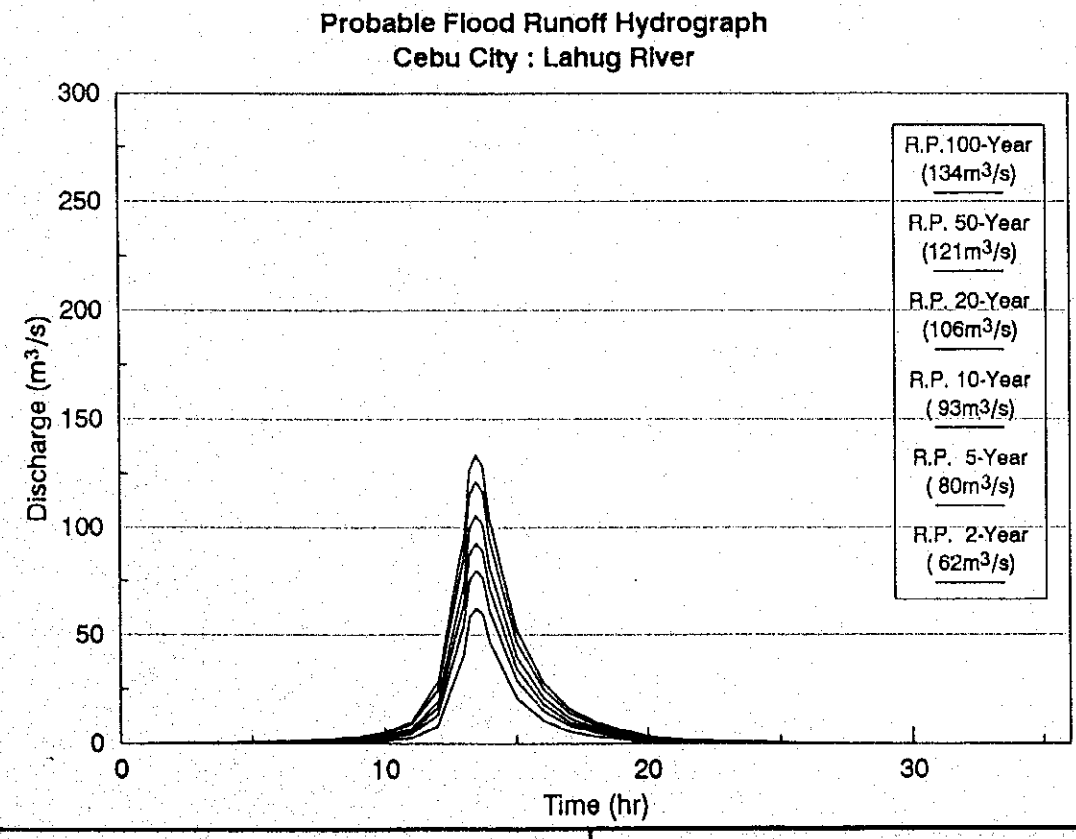


Probable Flood Runoff Hydrograph
Cebu City : Kinalumsan River

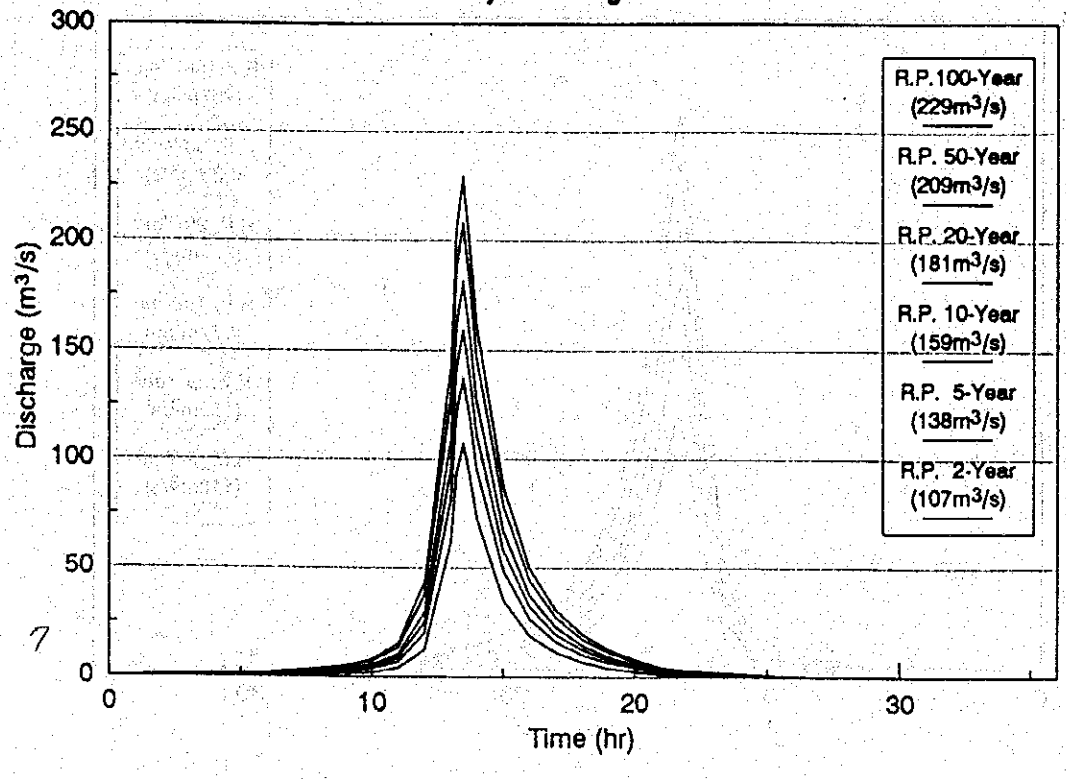


THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.10 (1/3) Design Hydrograph at Base Points, Cebu(1/3)

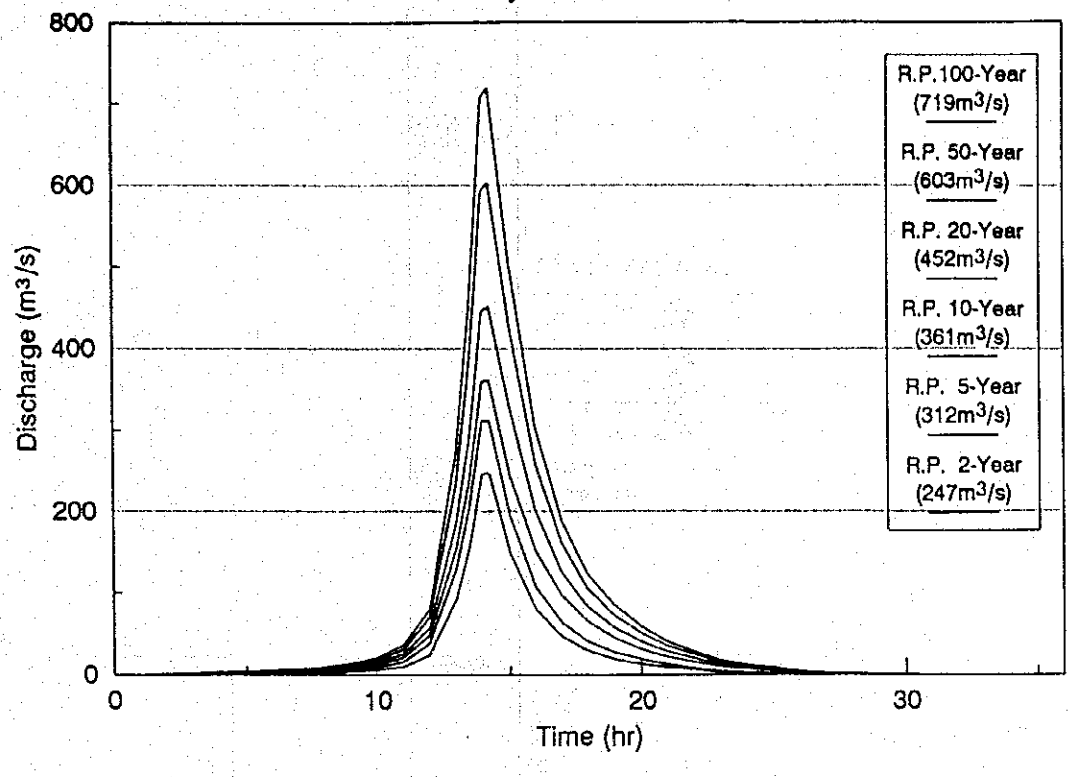


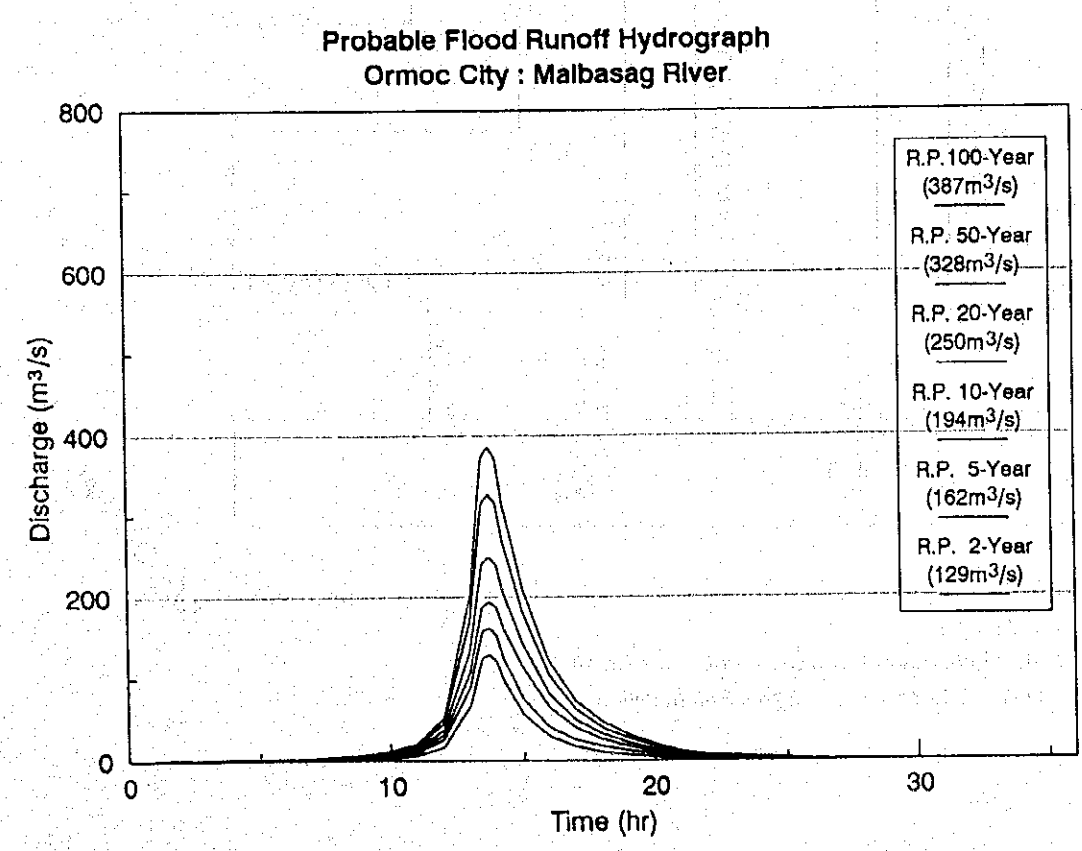


THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.10 (2/3) Design Hydrogragh at Base Points, Cebu(2/3)

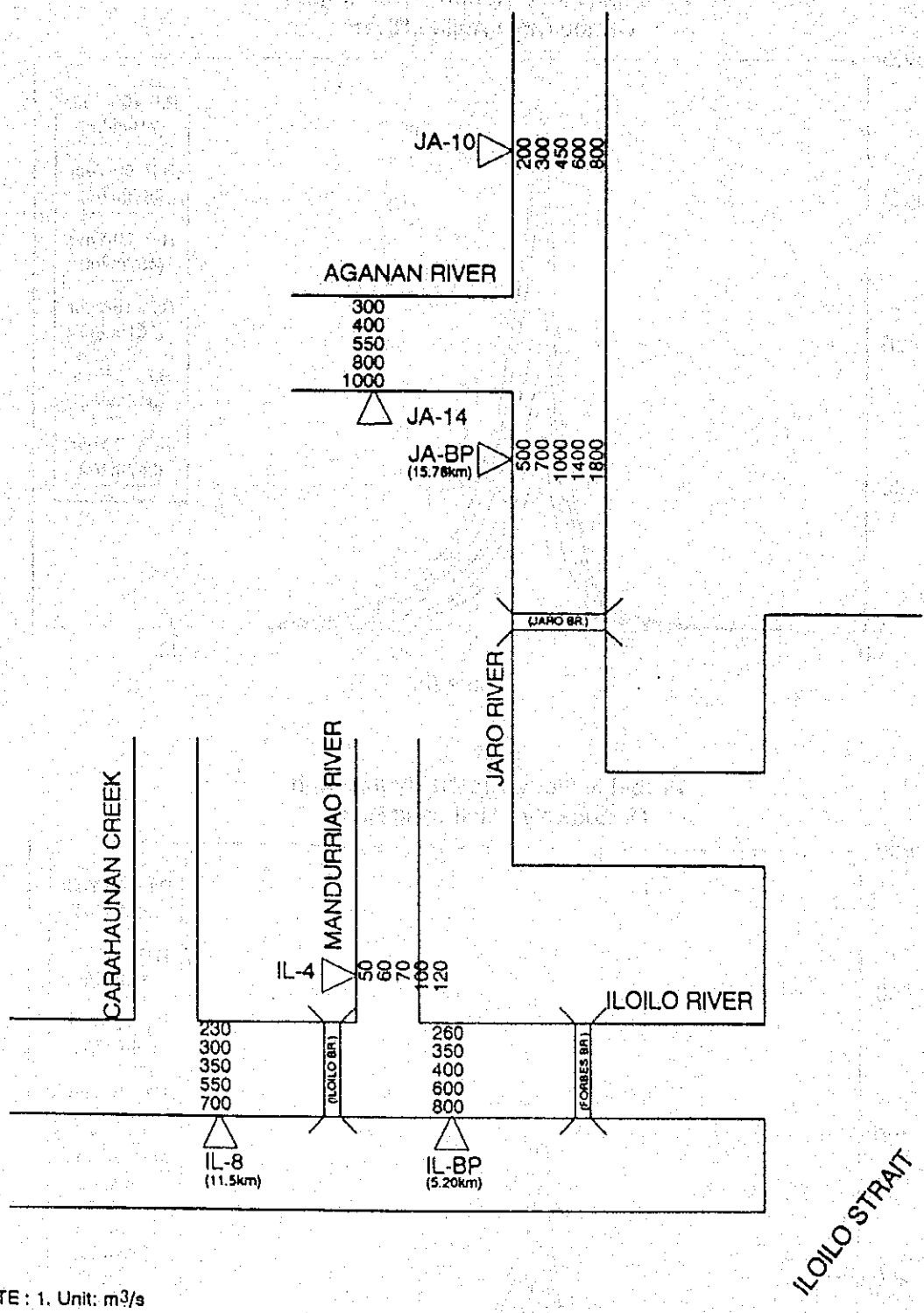


THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.10 (3/3) Design Hydrograph at Base Points, Cebu(3/3)





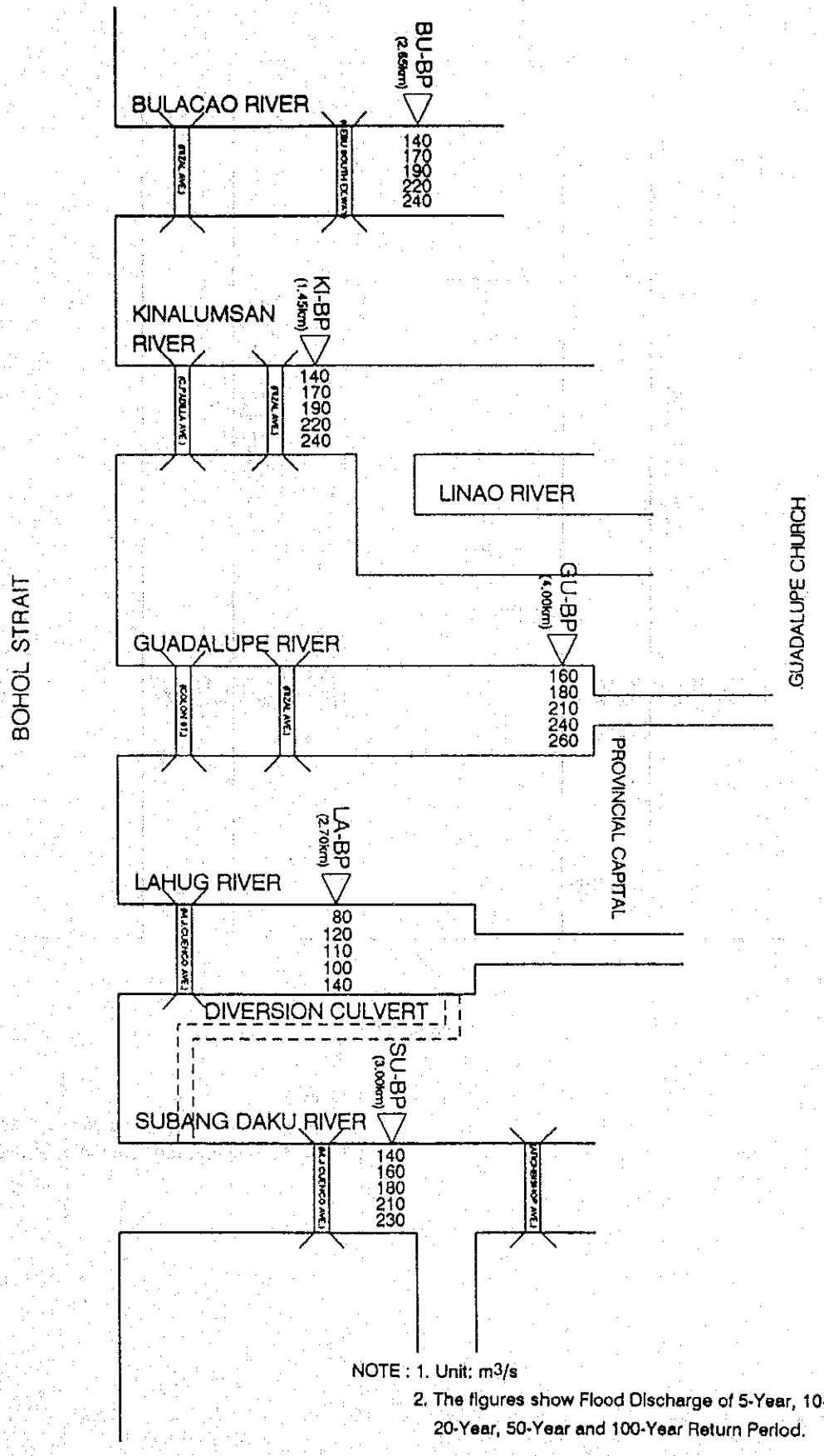
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS	Fig. 3.11
JAPAN INTERNATIONAL COOPERATION AGENCY	Design Hydrograph At Base Points, Ormoc



NOTE : 1. Unit: m^3/s

2. The figures show Flood Discharge of 5-Year, 10-Year 20-Year, 50-Year and 100-Year Return Period.

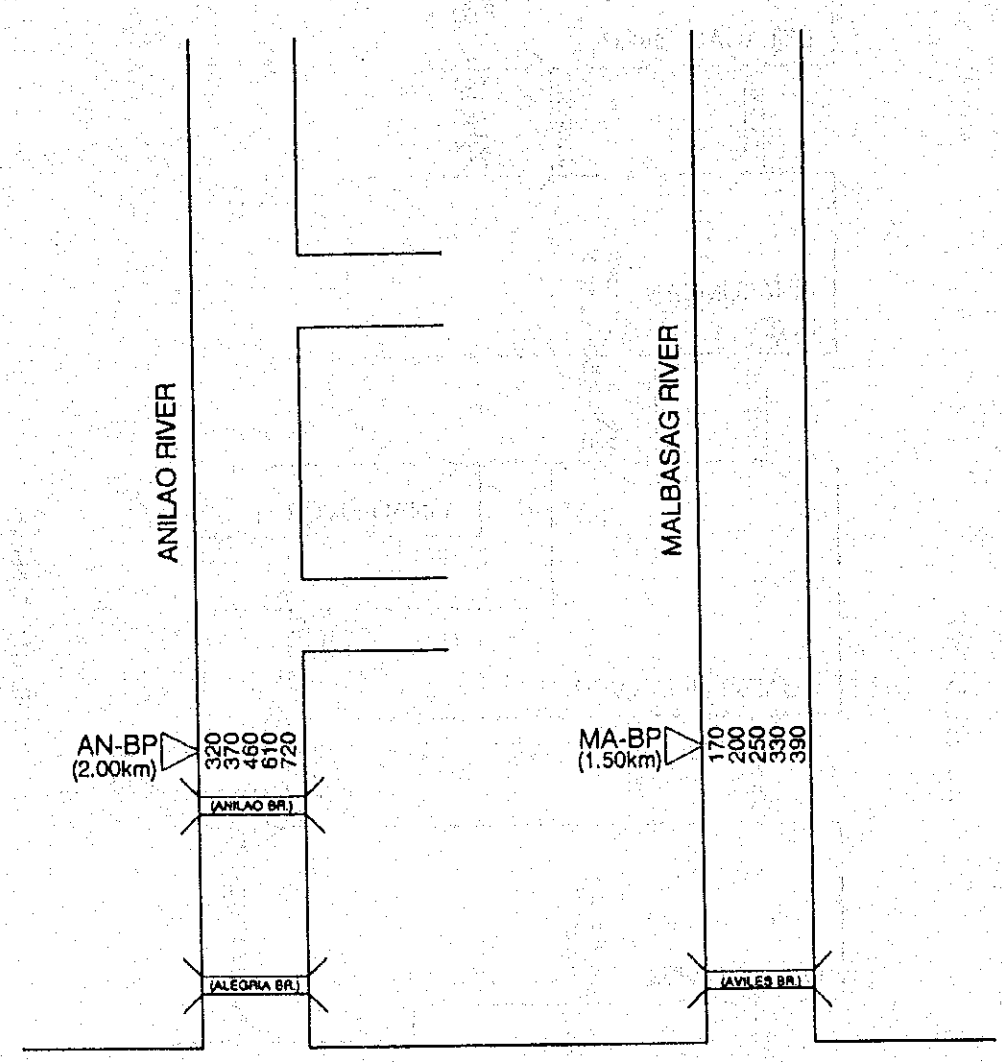
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	**Fig. 3.12** **Distribution of Probable Flood Discharge, Iloilo**



NOTE : 1. Unit: m^3/s

2. The figures show Flood Discharge of 5-Year, 10-Year 20-Year, 50-Year and 100-Year Return Period.

THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.13 Distribution of Probable Flood Discharge, Cebu

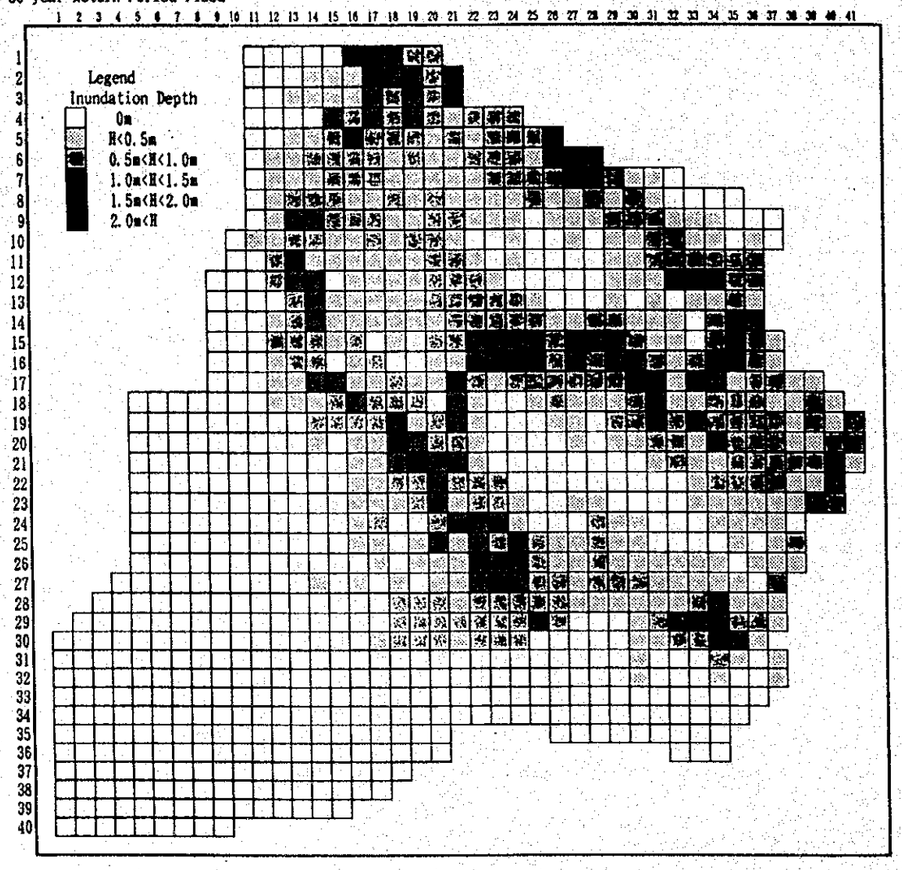


NOTE : 1. Unit: m^3/s

2. The figures show Flood Discharge of 5-Year, 10-Year 20-Year, 50-Year and 100-Year Return Period.

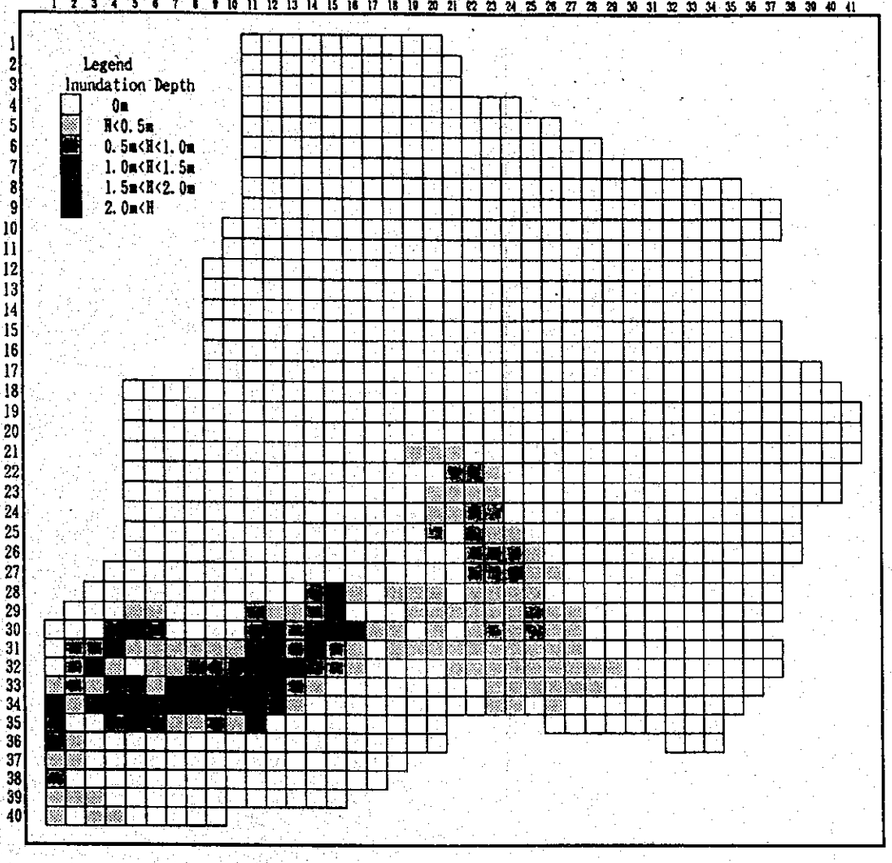
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.14 Distribution of Probable Flood Discharge, Ormoc

Iloilo City (Jaro River)
50-year Return Period Flood



Note
□: Mesh unit (250m x 250m)

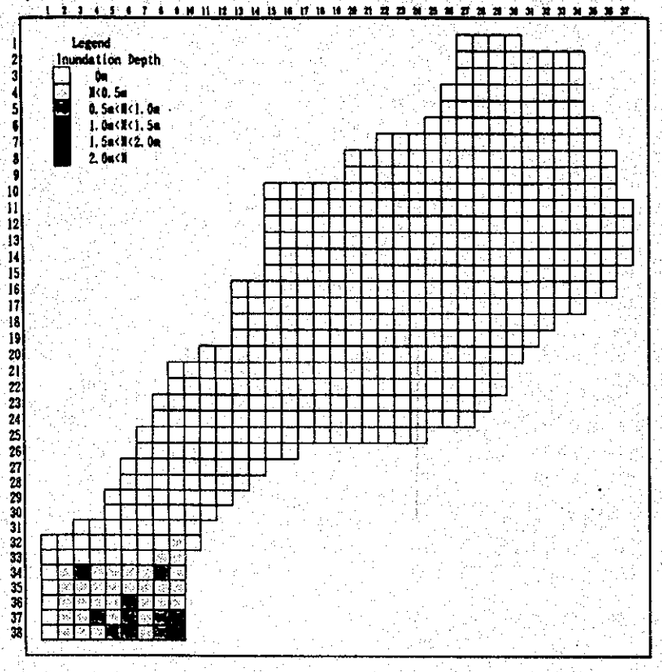
Iloilo City (Iloilo River)
50-year Return Period Flood



Note
□: Mesh unit (250m x 250m)

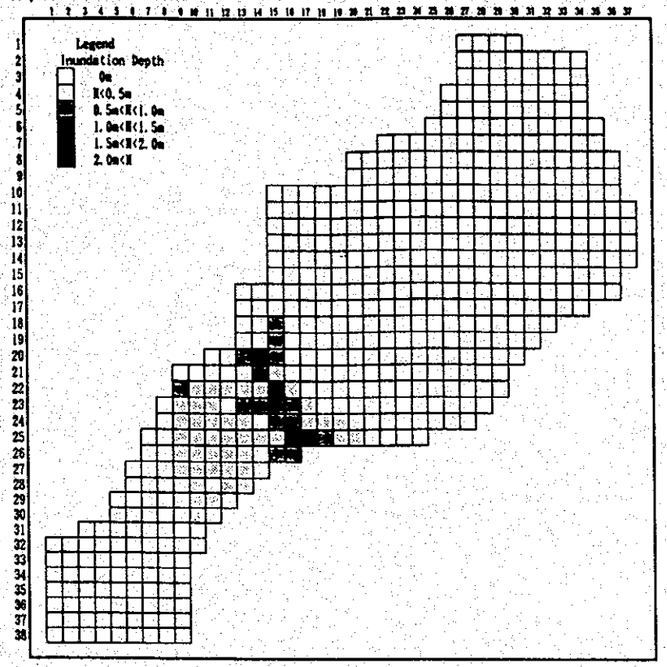
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS	Fig. 3.15(1/3) Result of Inundation Analysis of a 50-Year Return Period Flood, Iloilo City
JAPAN INTERNATIONAL COOPERATION AGENCY	

Cebu City (Bulacao River)
50-year Return Period Flood



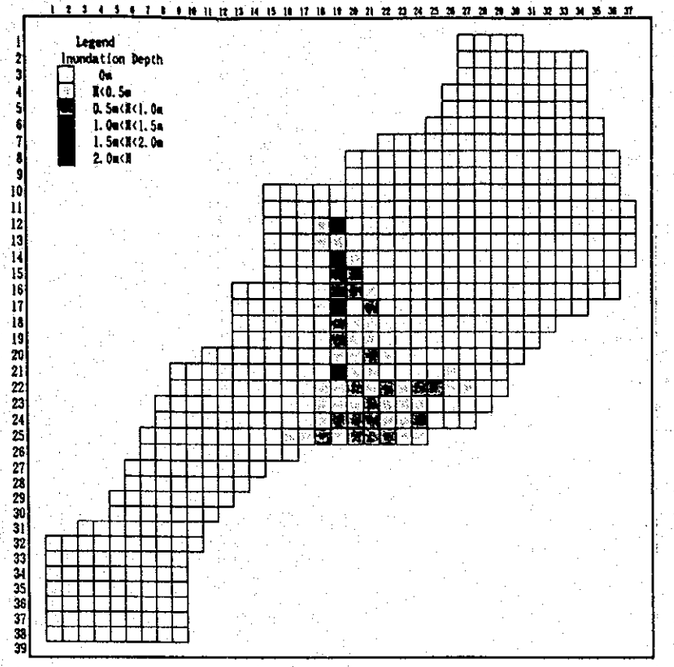
Note
□: Mesh unit (250m x 250m)

Cebu City (Kinaluasan River)
50-year Return Period Flood



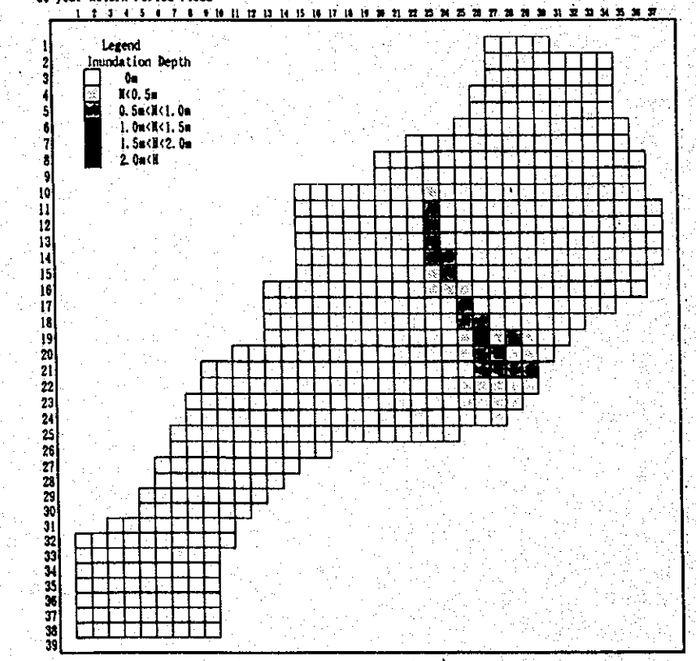
Note
□: Mesh unit (250m x 250m)

Cebu City (Guadalupe River)
50-year Return Period Flood



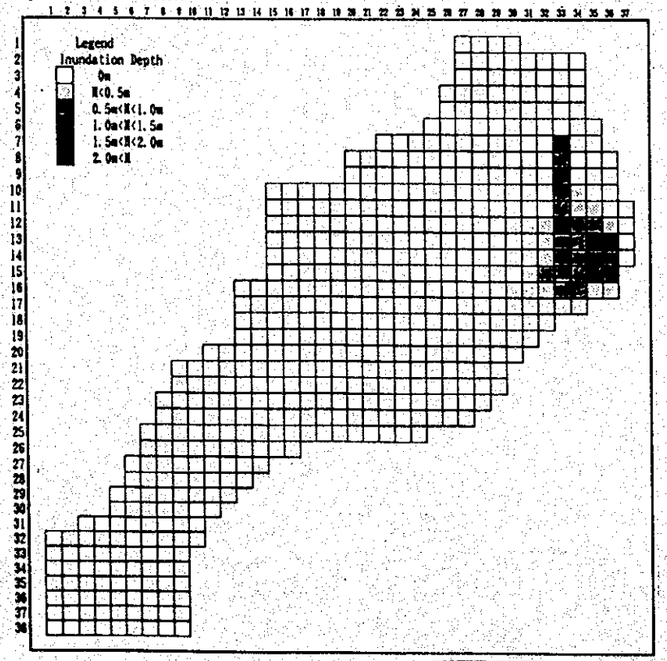
Note
□: Mesh unit (250m x 250m)

Cebu City (Lahug River)
50-year Return Period Flood



Note
□: Mesh unit (250m x 250m)

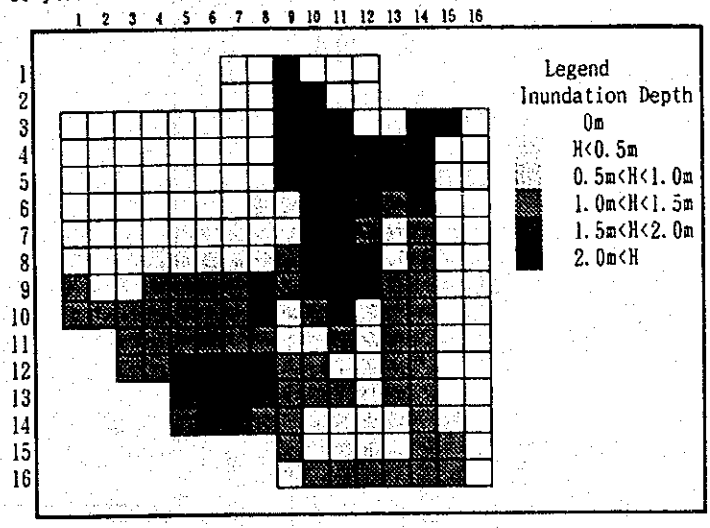
Cebu City (Subang Daku River)
50-year Return Period Flood



Note
□: Mesh unit (250m x 250m)

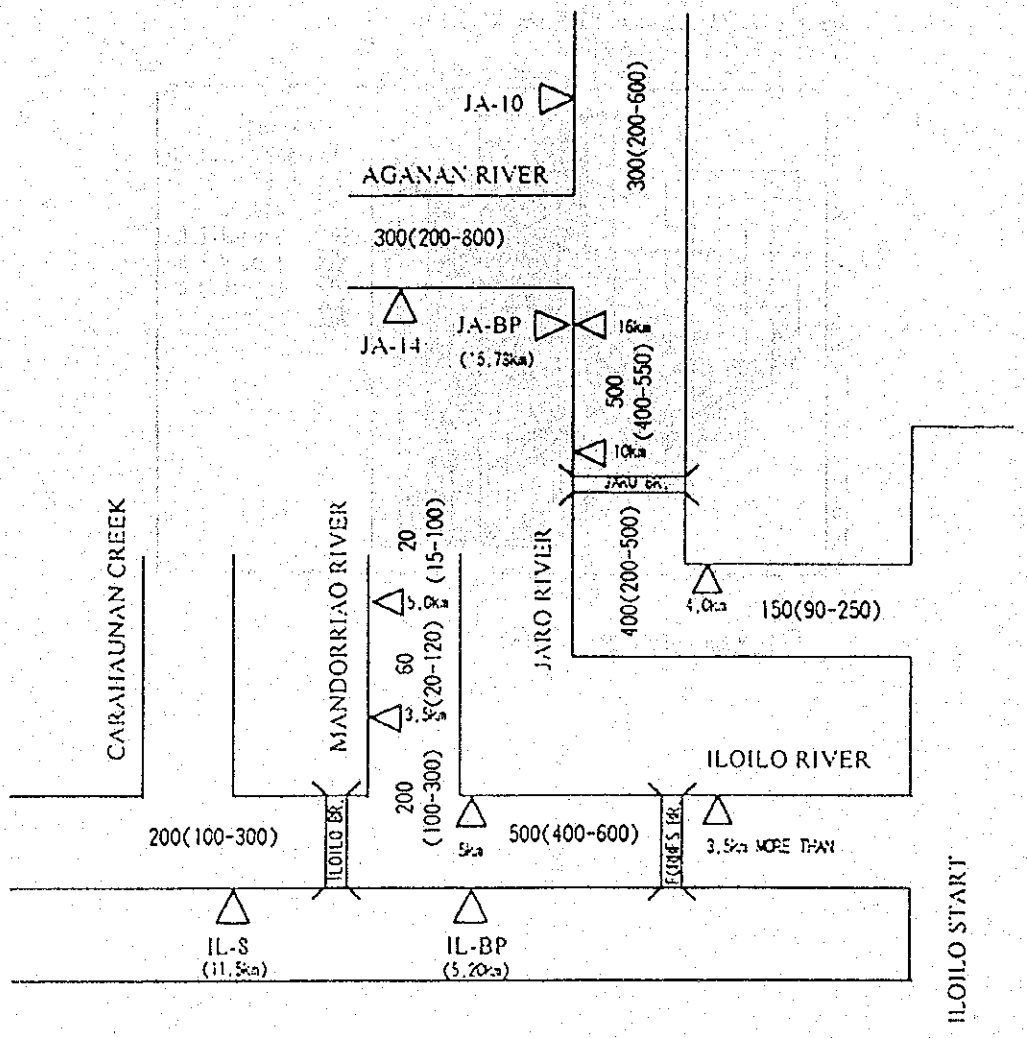
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS	Fig. 3.15(2/3) Result of Inundation Analysis of a 50-Year Return Period Flood, Cebu City
JAPAN INTERNATIONAL COOPERATION AGENCY	

Ormoc City (Anilao and Maibasag Rivers)
50-year Return Period Flood



Note
□ : Mesh unit (125m x 125m)

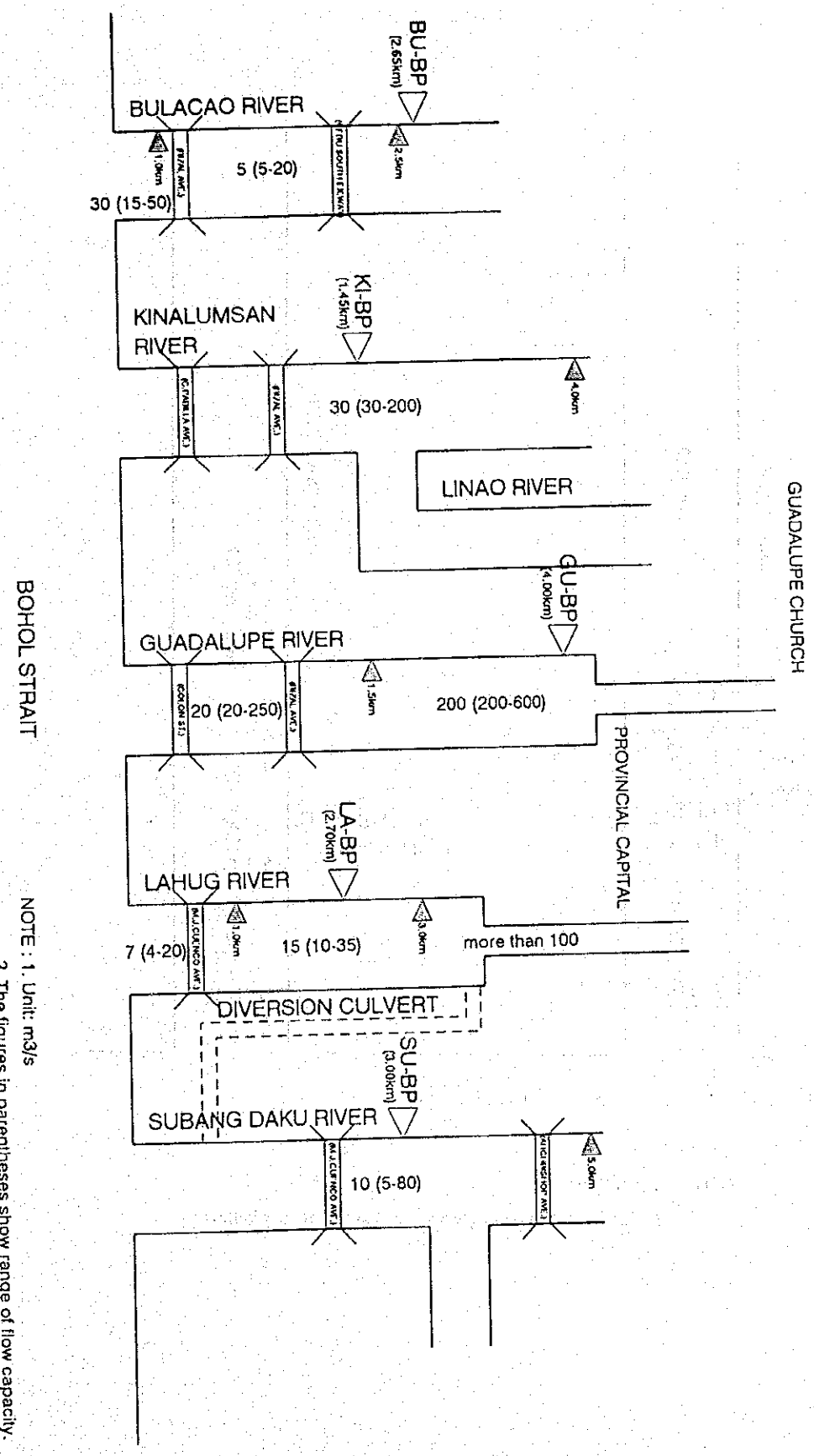
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS	Fig. 3.15(3/3) Result of Inundation Analysis of a 50-Year Return Period Flood, Ormoc City
JAPAN INTERNATIONAL COOPERATION AGENCY	



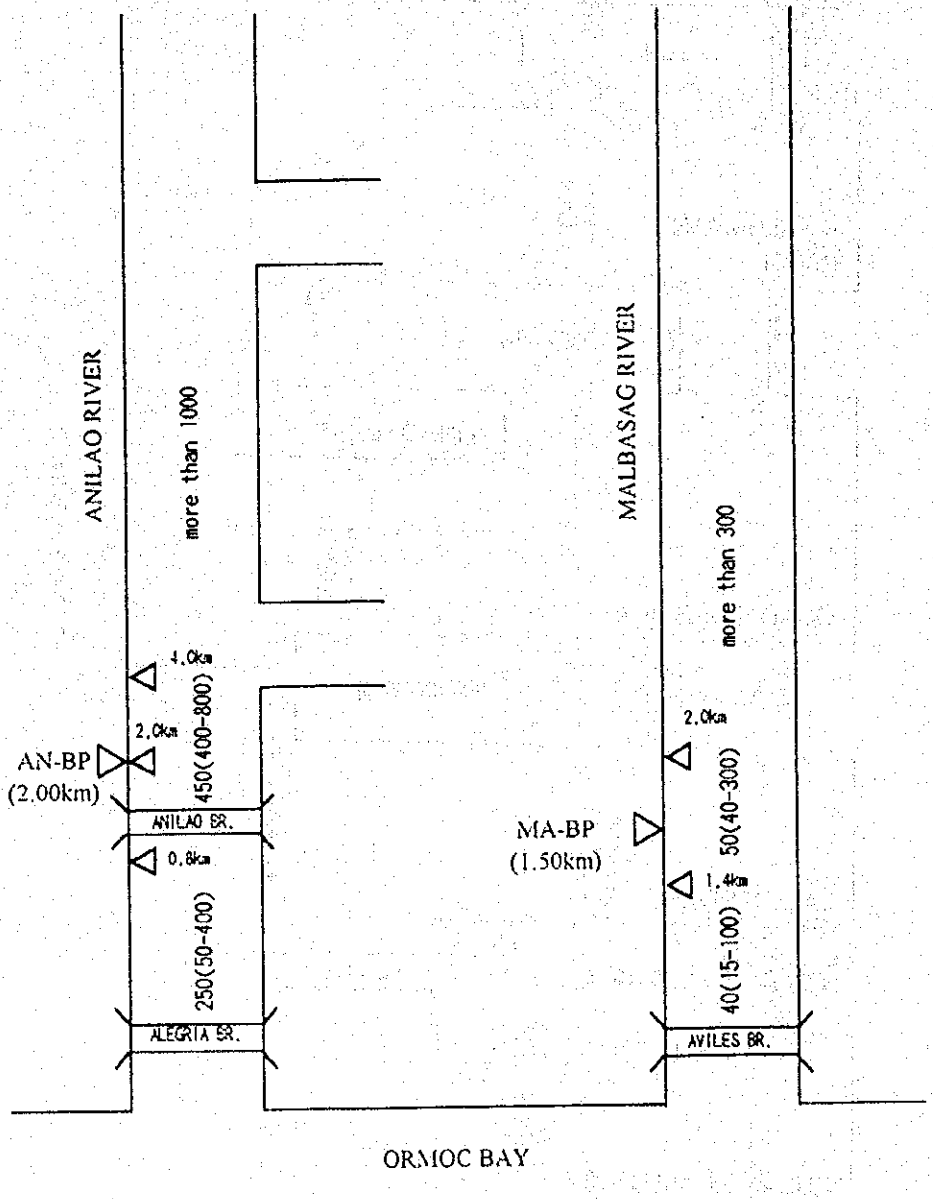
NOTE : 1. Unit: m3/s

2. The figures in parentheses show range of flow capacity.

THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.16 Summary of Flow Capacity, Iloilo



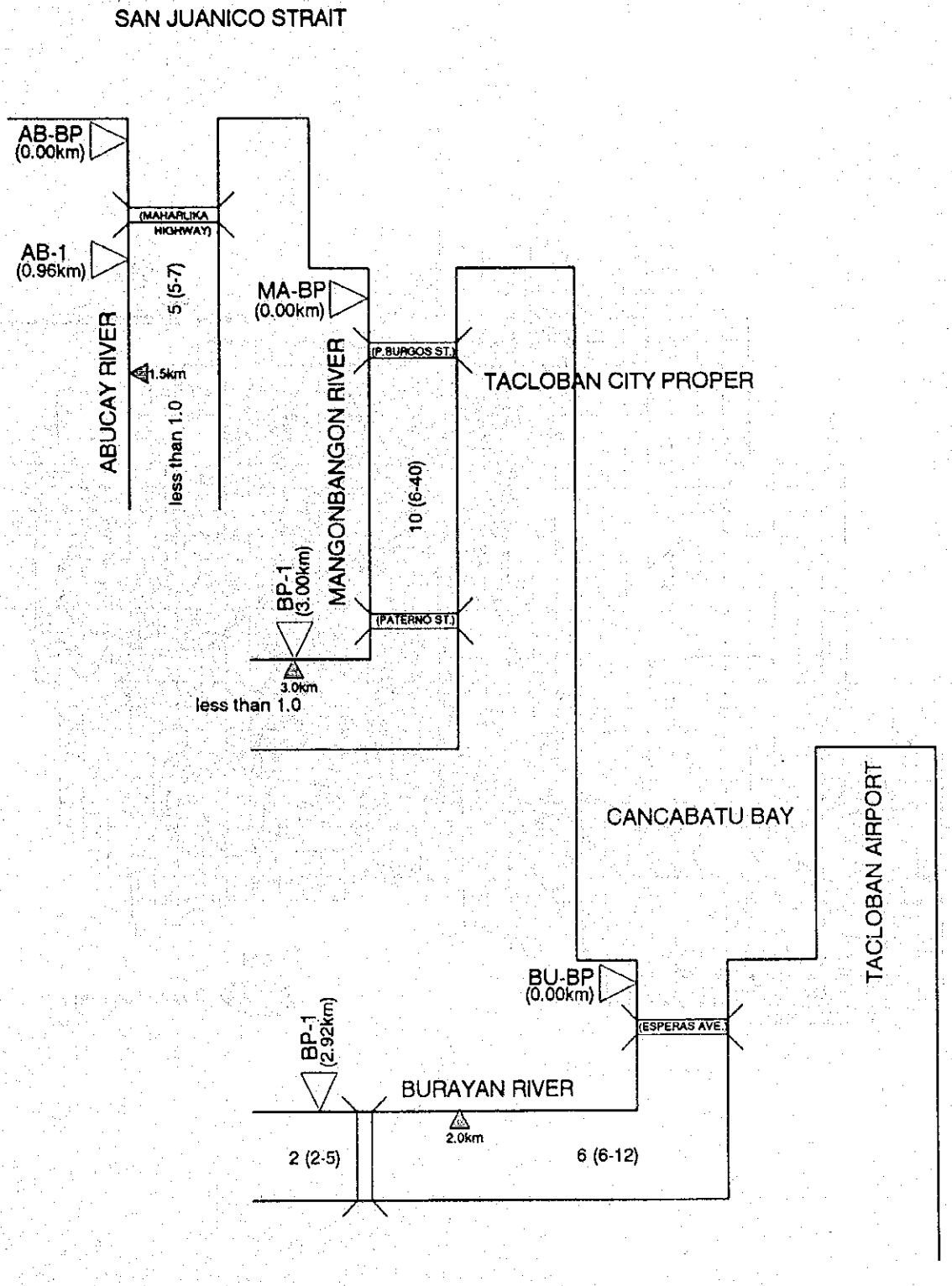
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.17 Summary of Flow Capacity, Cebu



NOTE : 1. Unit: m3/s

2. The figures in parentheses show range of flow capacity.

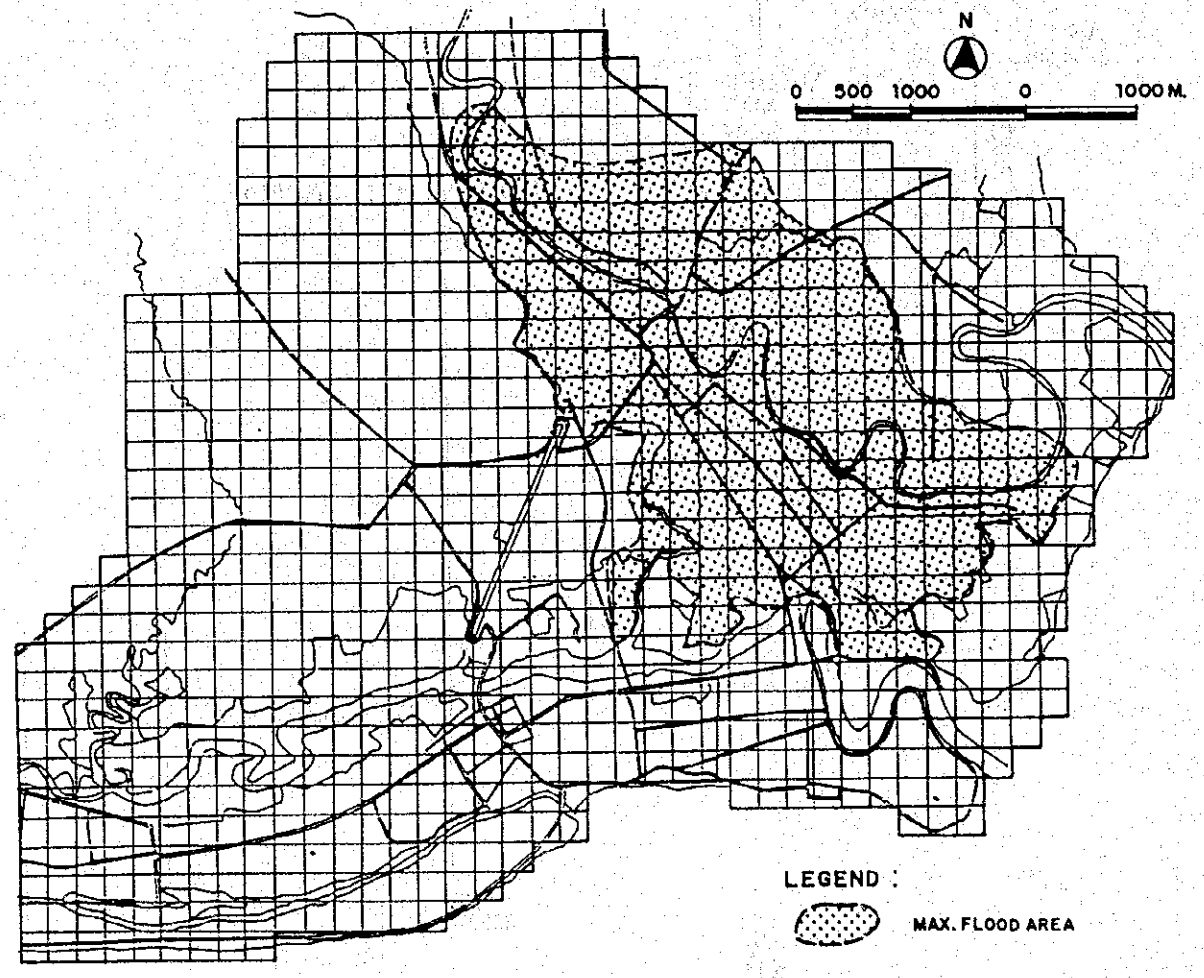
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.18 Summary of Flow Capacity, Ormoc



NOTE : 1. Unit: m3/s

2. The figures in parentheses show range of flow capacity.

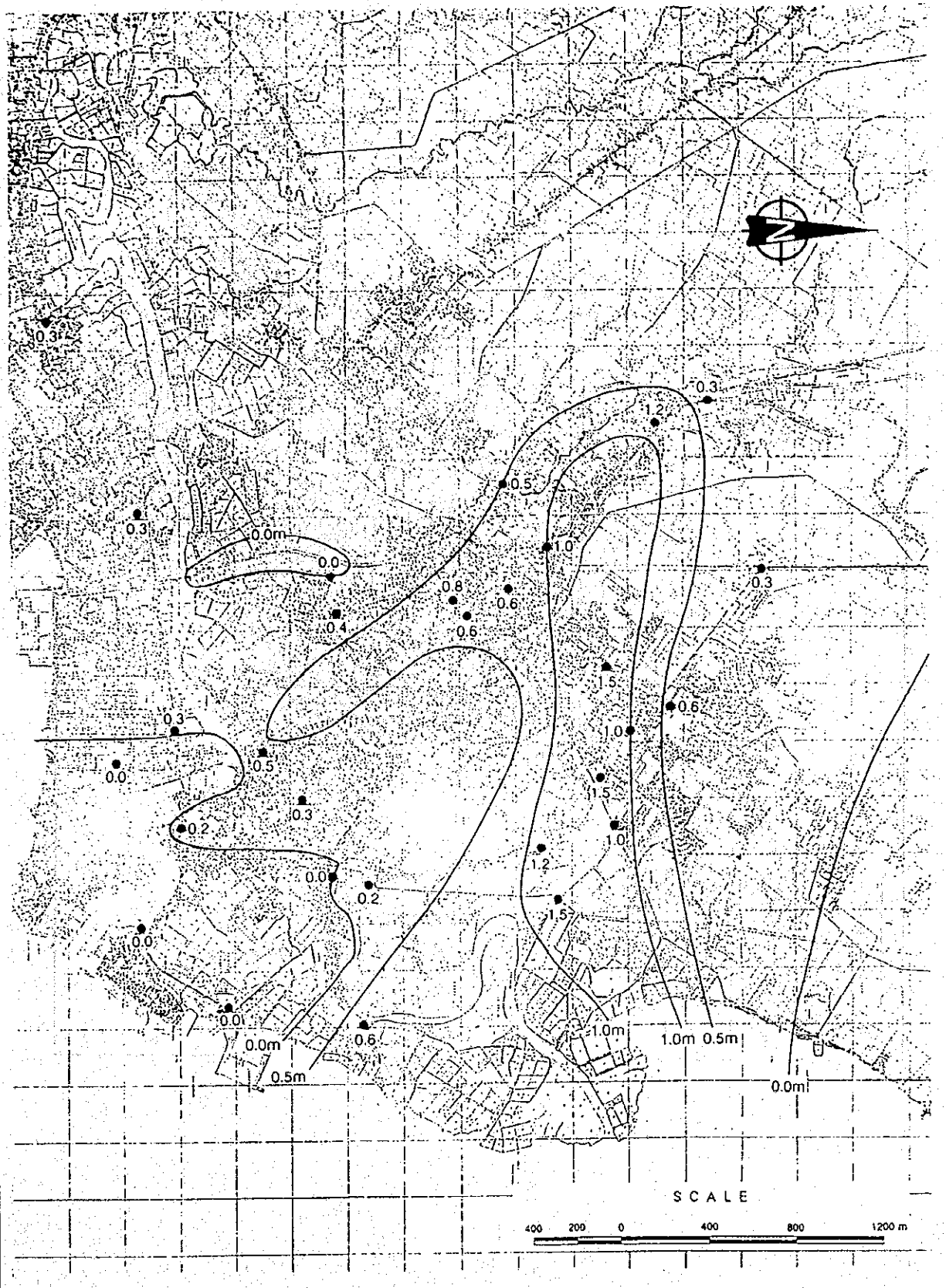
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.19 Summary of Flow Capacity, Tacloban



THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

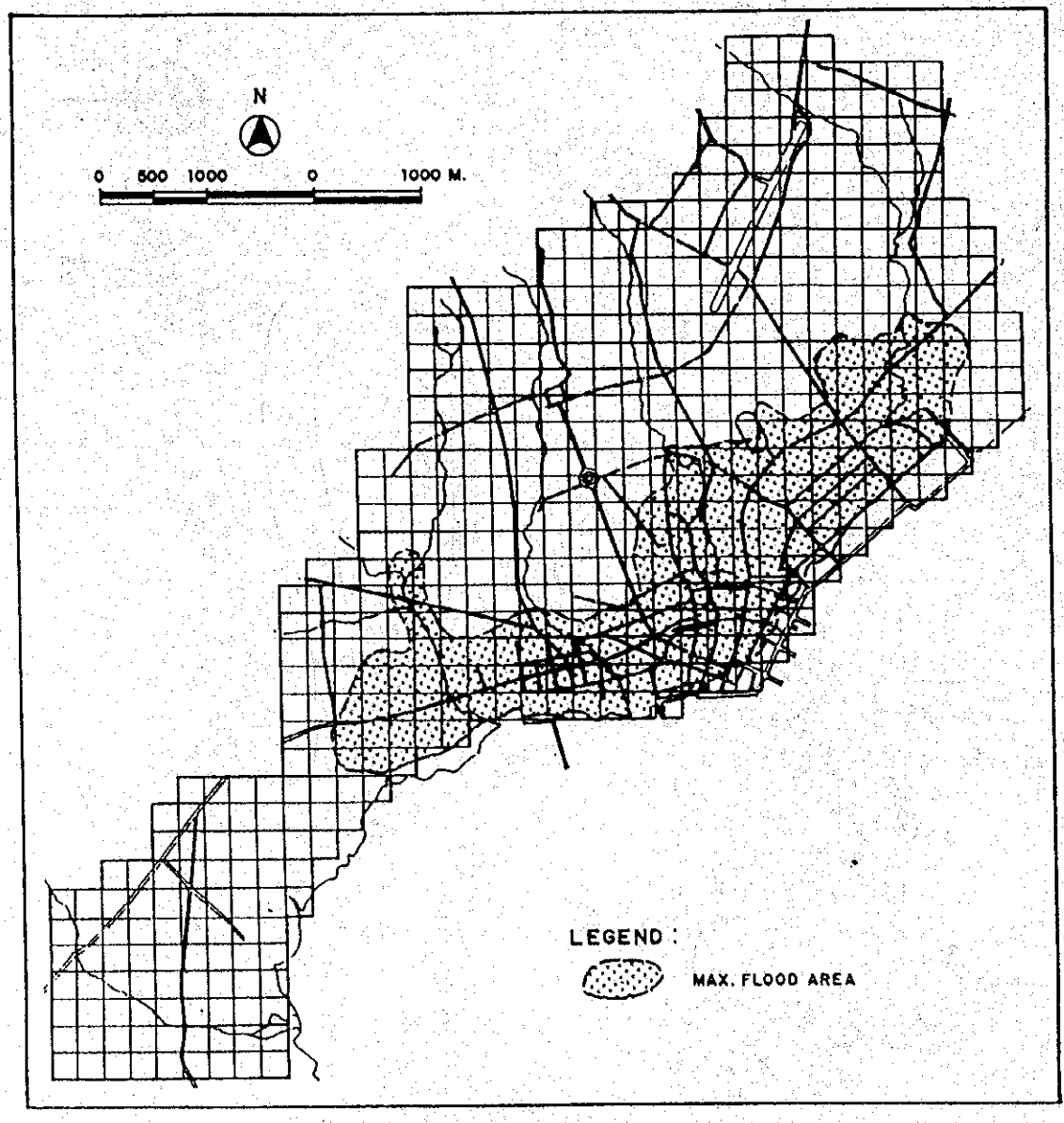
Fig. 3.20
Maximum Record Flood Area, Iloilo



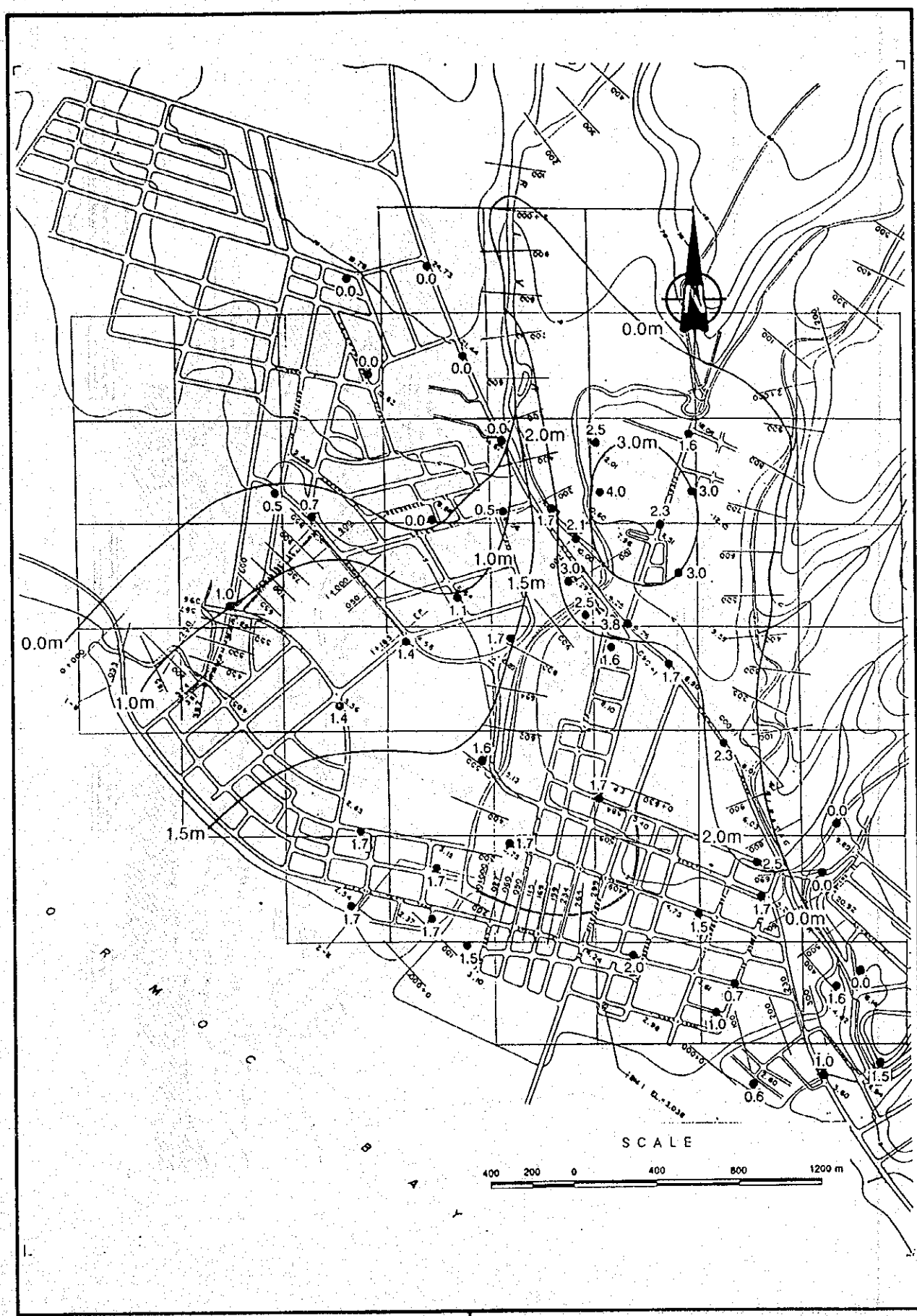
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

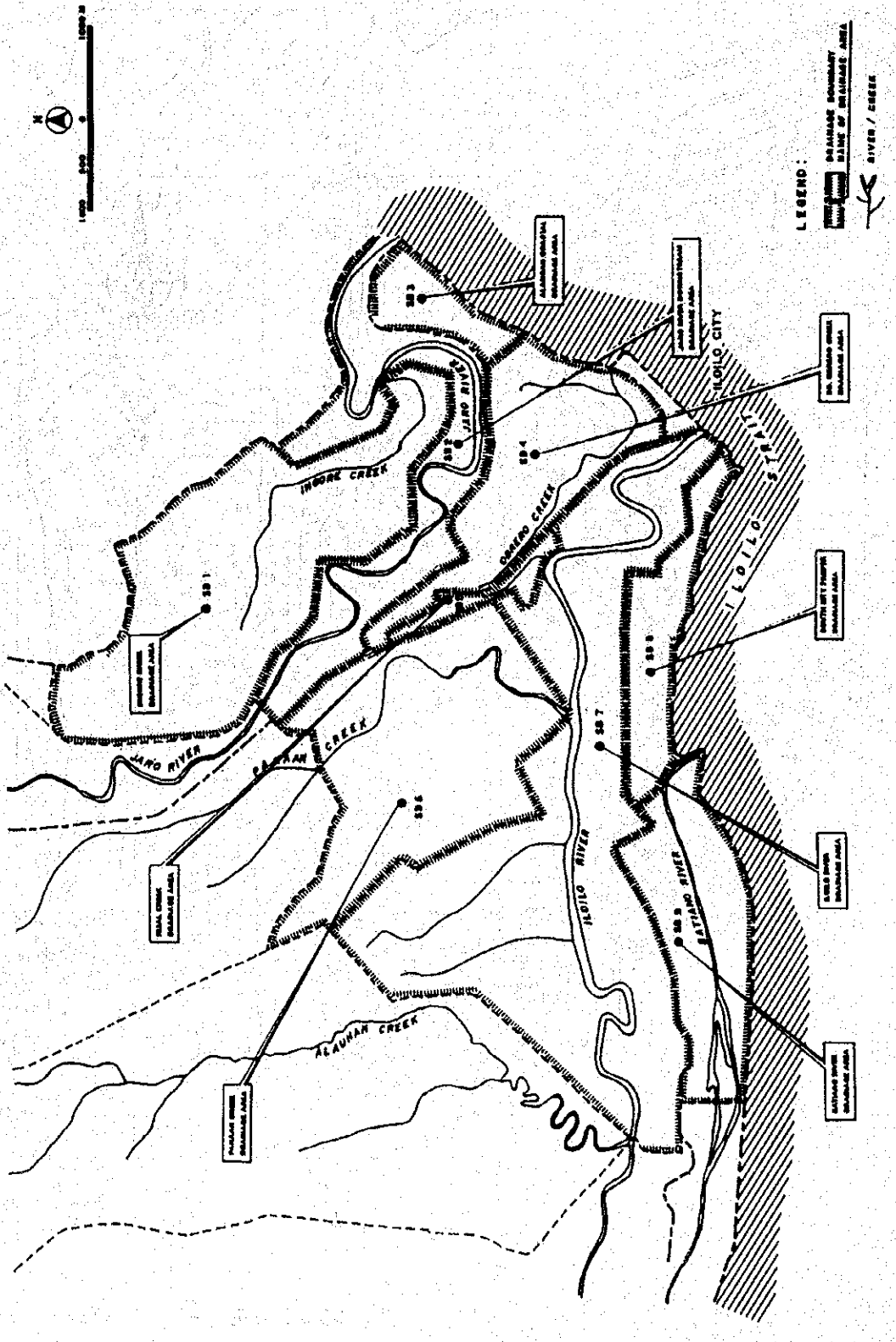
Fig. 3.21
Area of Flood on July 29, 1994, Iloilo



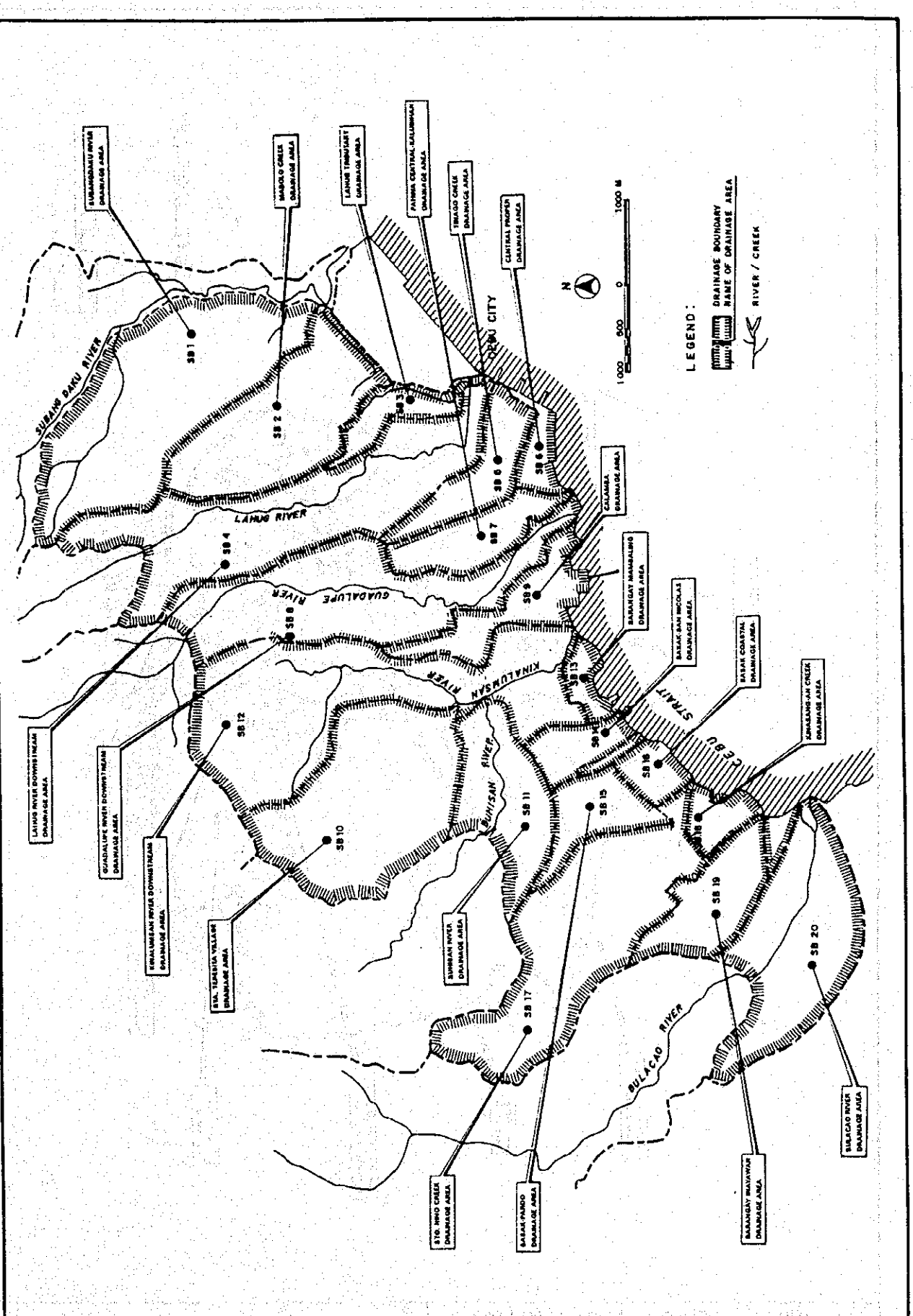
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.22 Maximum Record Flood Area, Cebu



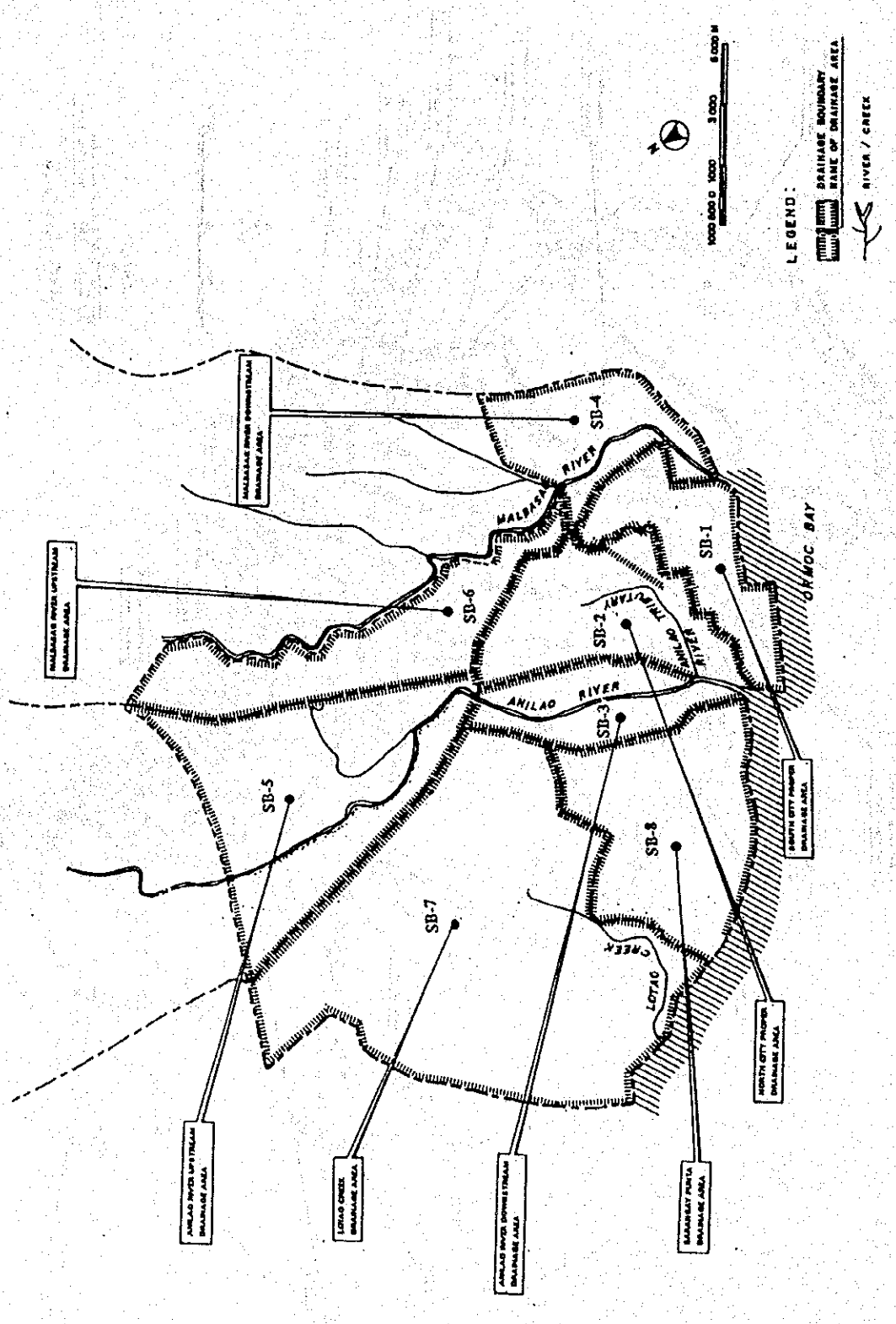
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.23 Maximum Record Flood Area, Ormoc



THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.24 Delineated Drainage Basin and Subbasin, Iloilo



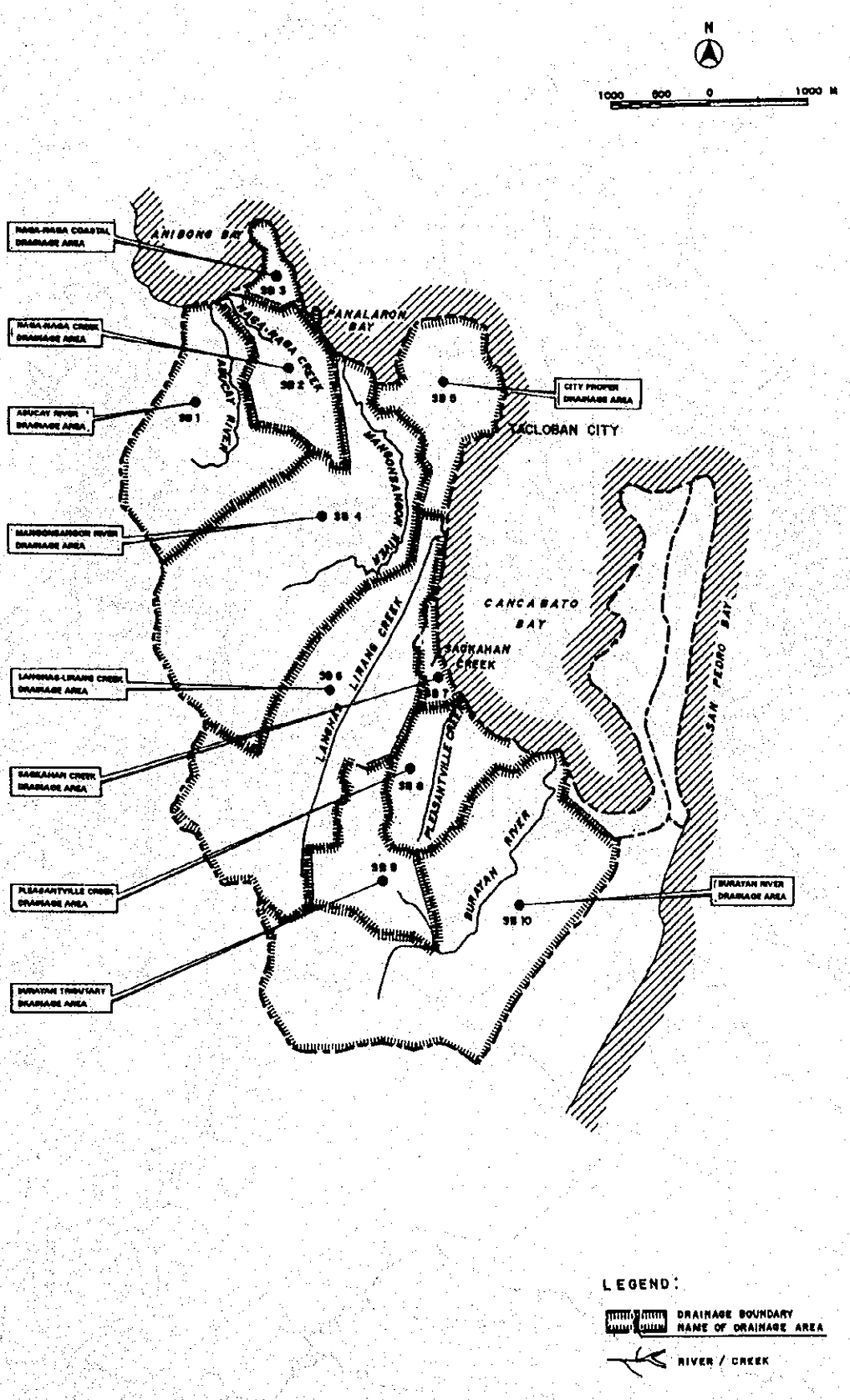
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.25 Delineated Drainage Basin and Subbasin, Cebu



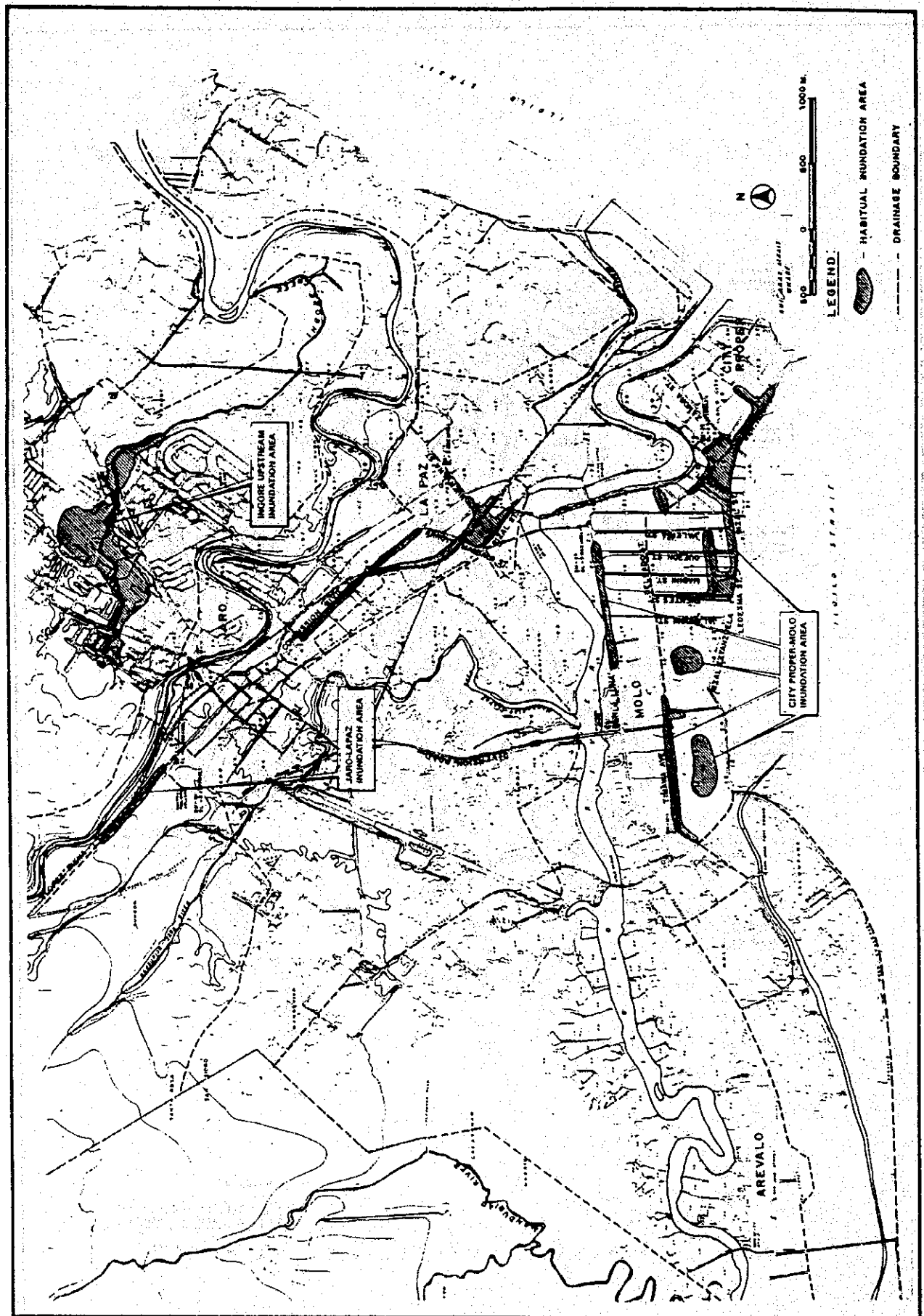
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 3.26
Delineated Drainage Basin and Subbasin, Ormoc



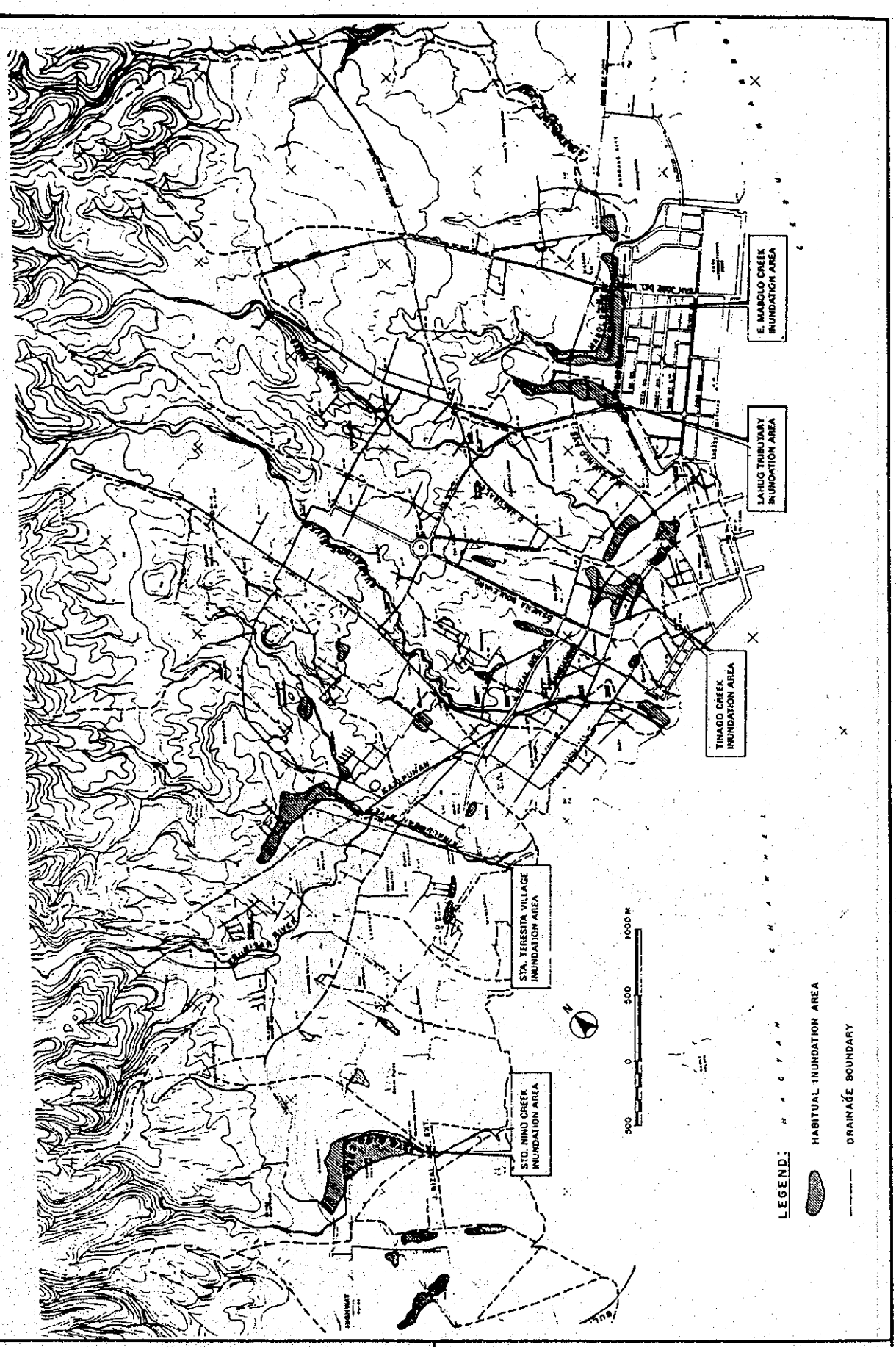
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.27 Delineated Drainage Basin and Subbasin, Tacloban



THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

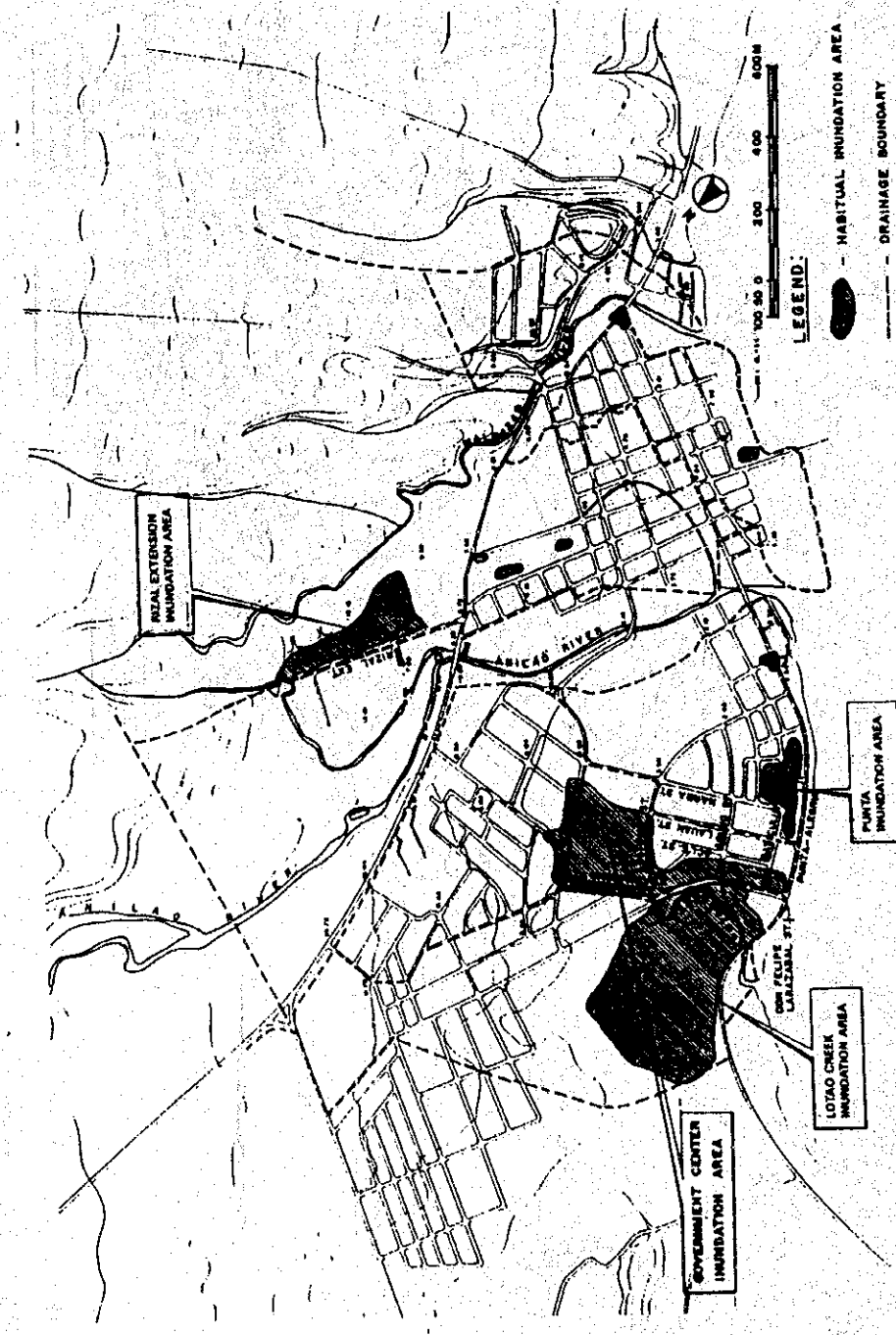
Fig. 3.28
Habitual Inundation Area, Iloilo



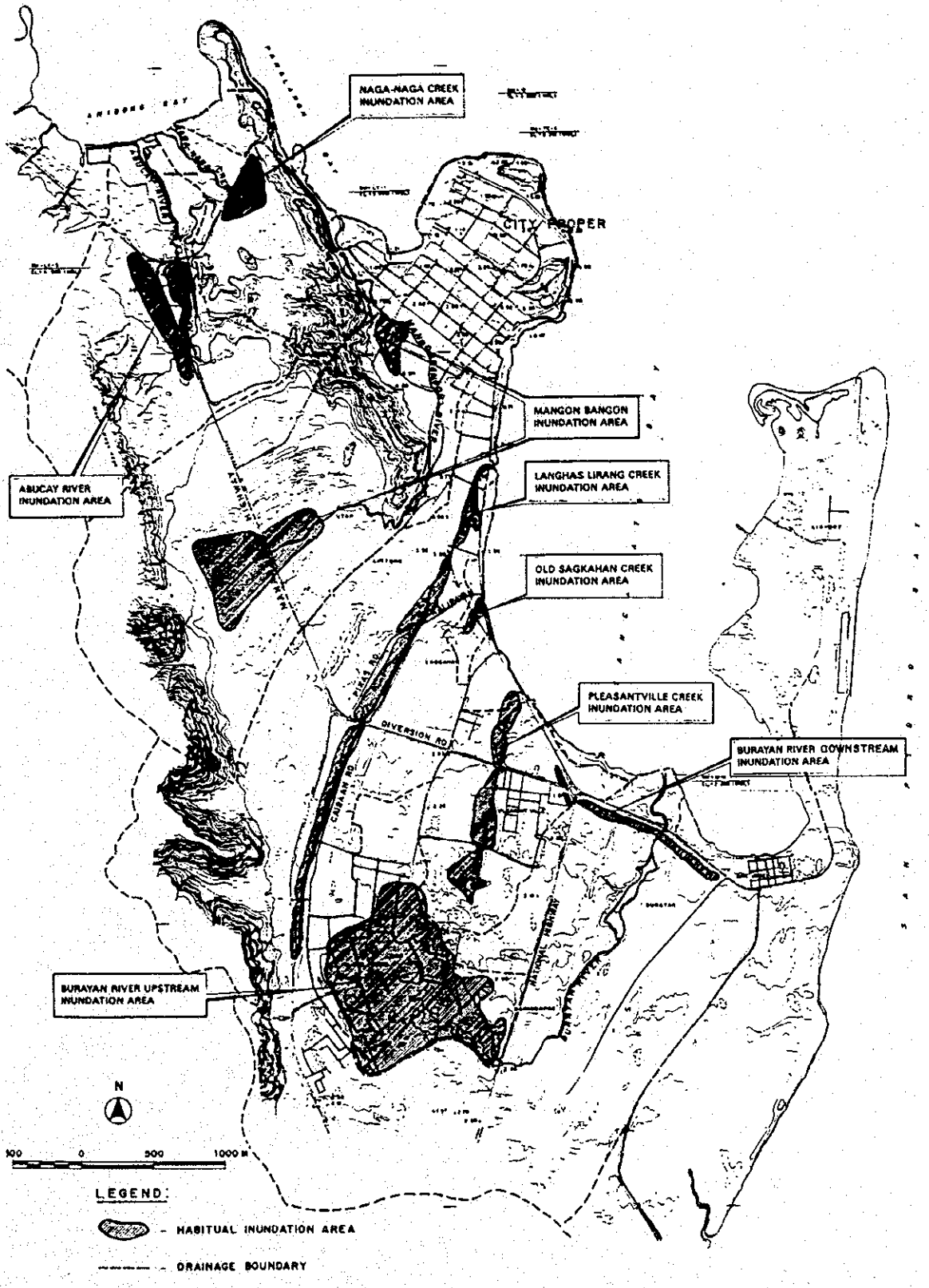
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

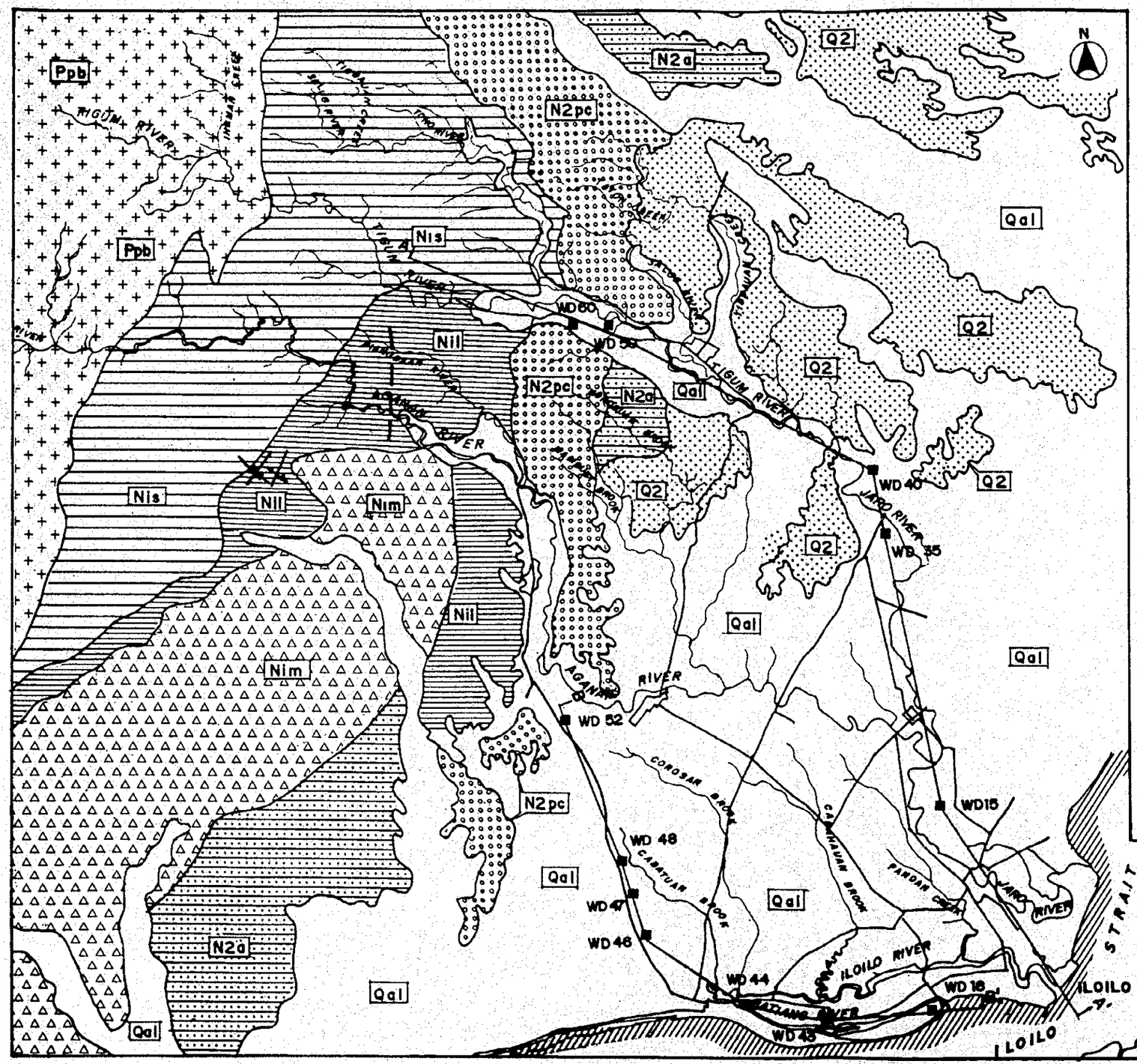
Fig. 3.29
Habitual Inundation Area, Cebu

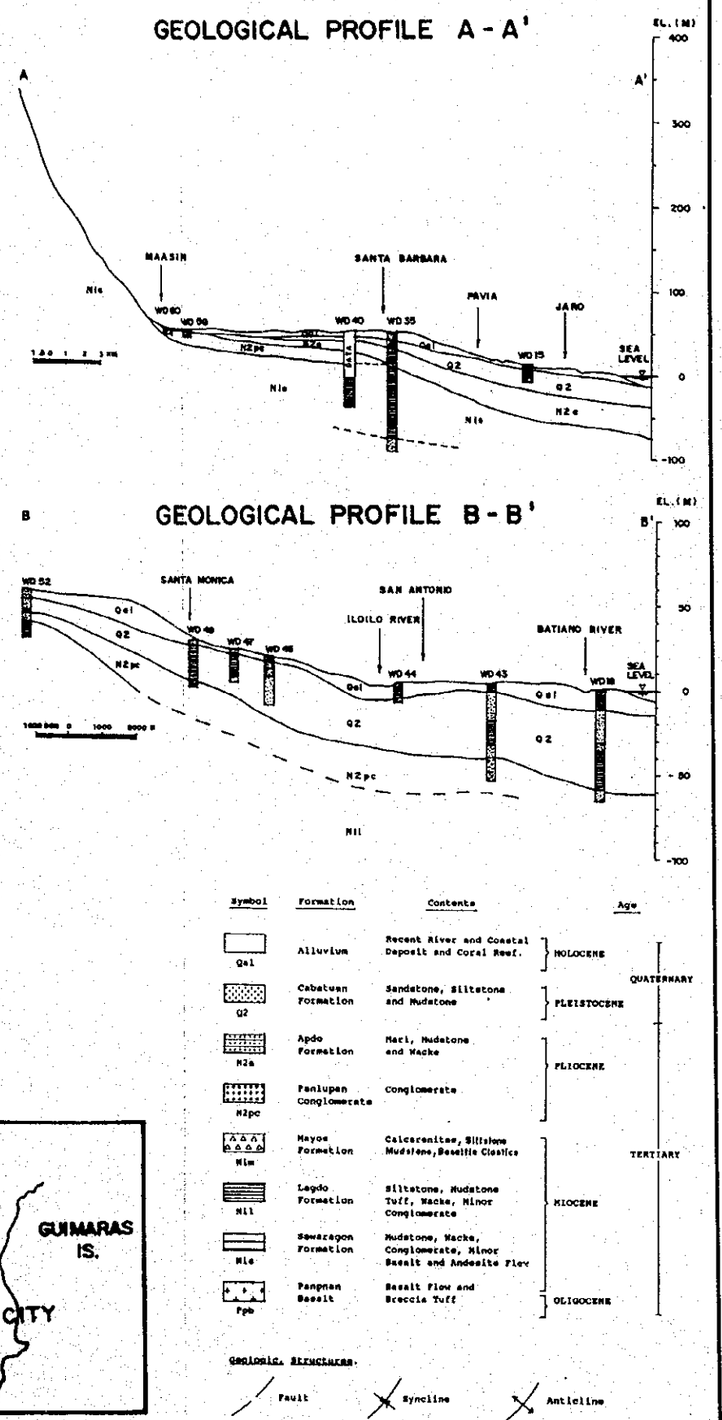


THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.30 Habitual Inundation Area, Ormoc



THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 3.31 Habitual Inundation Area, Tacloban

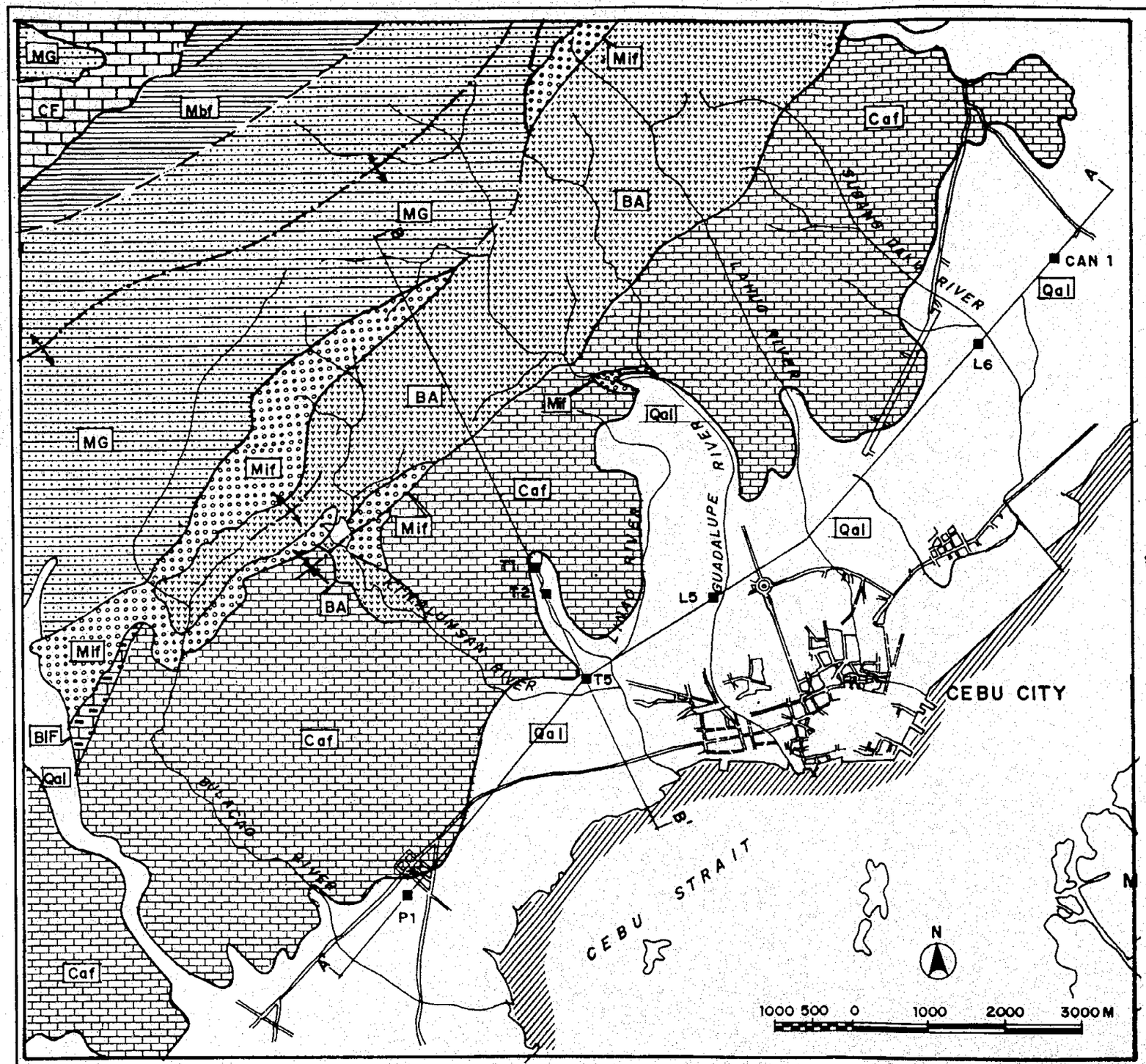




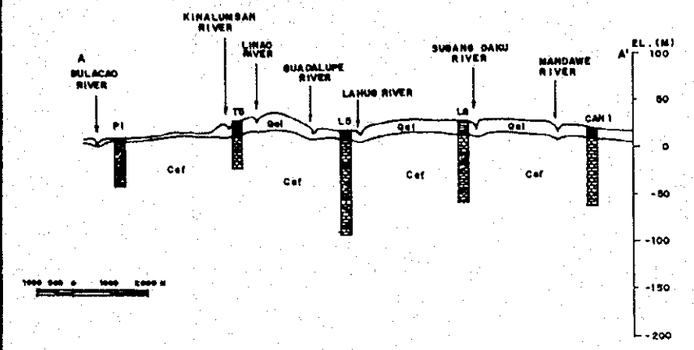
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

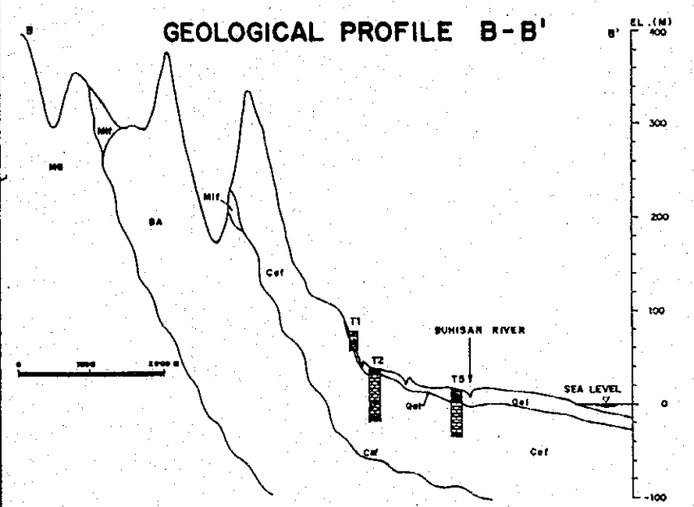
Fig. 3.32
Geological Map of Iloilo



GEOLOGICAL PROFILE A-A'



GEOLOGICAL PROFILE B-B'



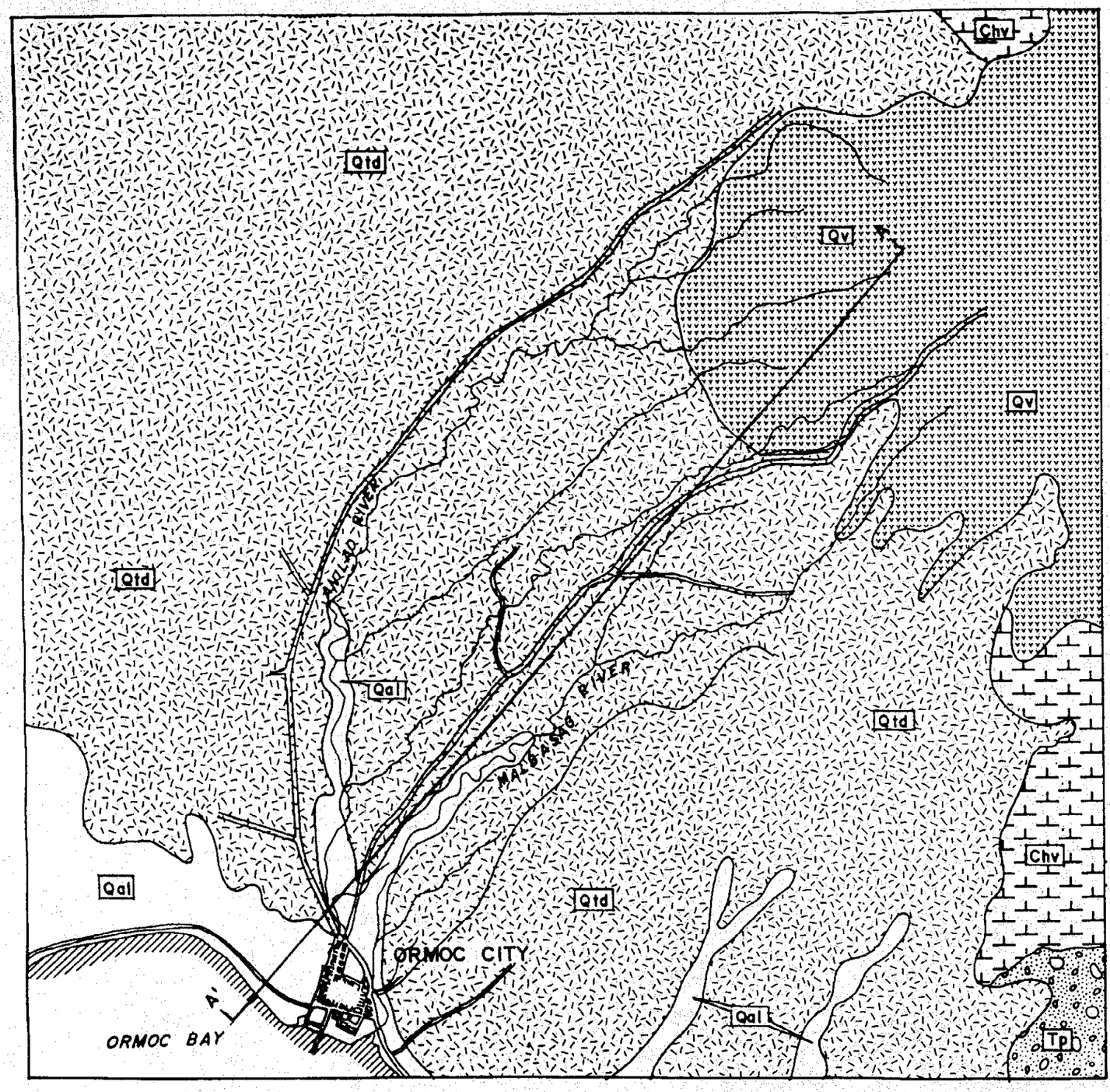
Symbol	Formation	Contents	Age	
Qal	Alluvium	Coral Reef and detrital deposit mostly Sand, Gravel.	HOLOCENE	QUATERNARY
Caf	Carcar Formation	Limestone, partly dolomitic and contains marine fossils	PLEISTOCENE	
		Unconformity.		
BIF	Barili Formation	Lower Limestone hard, locally porous	PLIOCENE	
		Unconformity.		
Mif	Malingit Formation	Congromerates with inter bedded Shale, Sandstone and Limestone	MIOCENE	TERTIARY
BA	Buleaco Andesite	Porphyritic Andesite; partly intrusive Breccia		
Mbf	Malubog Formation	Mudstone, Shale and occasional beds of Conglomerate, limestone and Coal.	OLIGOCENE	
Cf	Cebu Formation	Consists of an upper orbitoidal Limestone, a lower clastic unit with Coal Measures.		
		Unconformity.		
MG	Manenga Group	Clastic sedimentary rocks, Andesitic to Basaltic Pyroclastics and Lava.	CRETACEOUS	

Geologic Structures: Fault, Syncline, Anticline

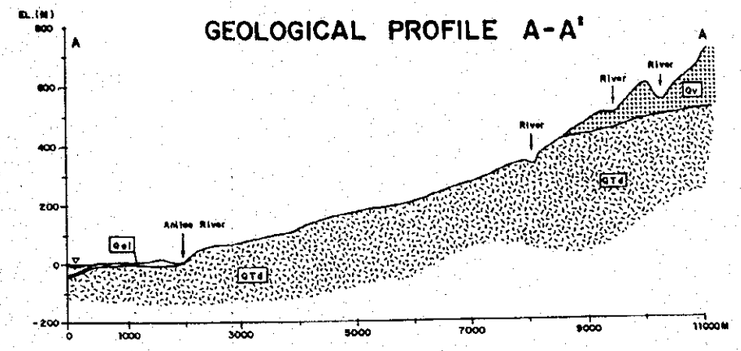
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

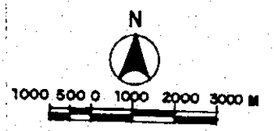
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 3.33
Geological Map of Cebu



GEOLOGICAL PROFILE A-A'



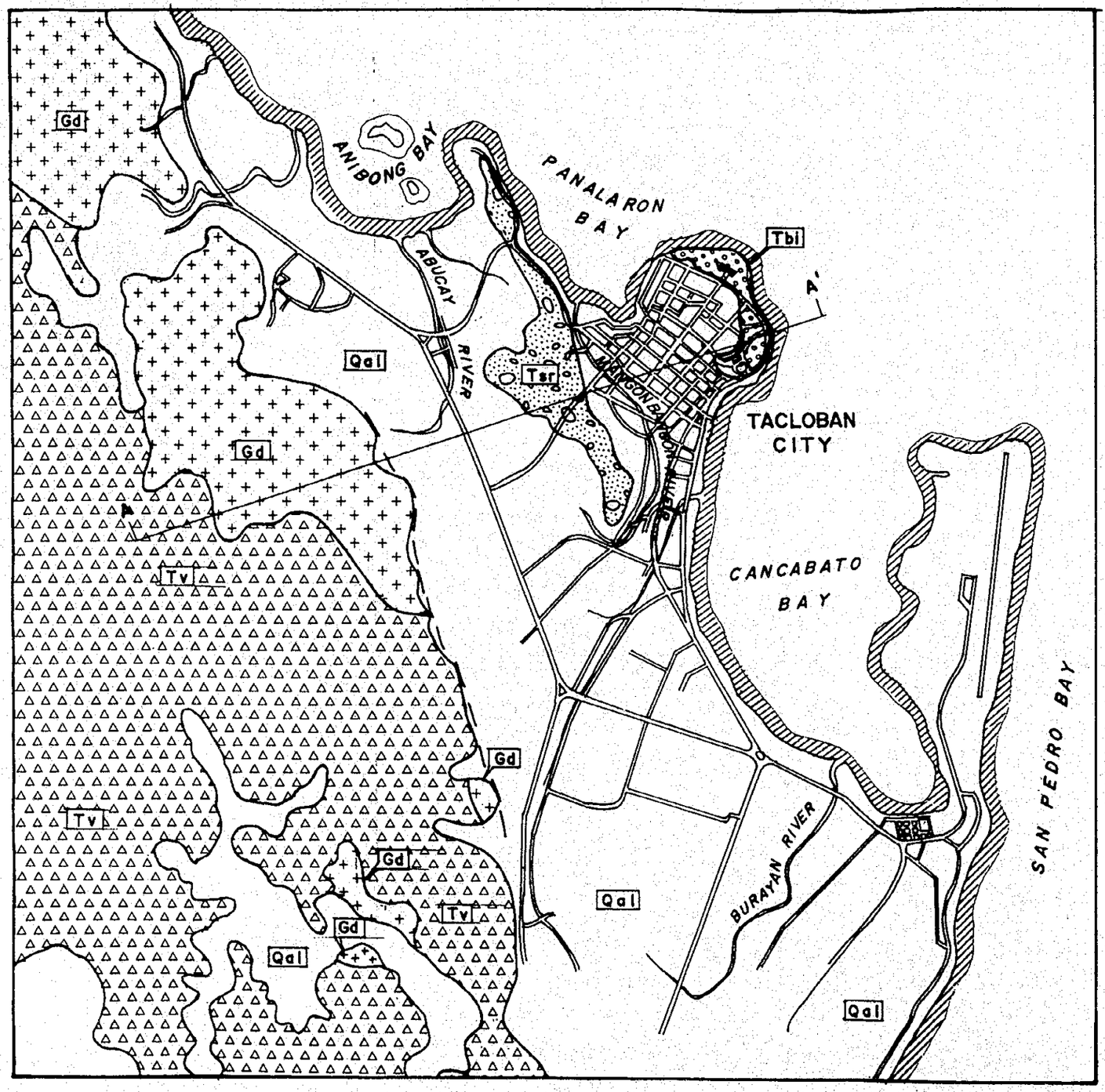


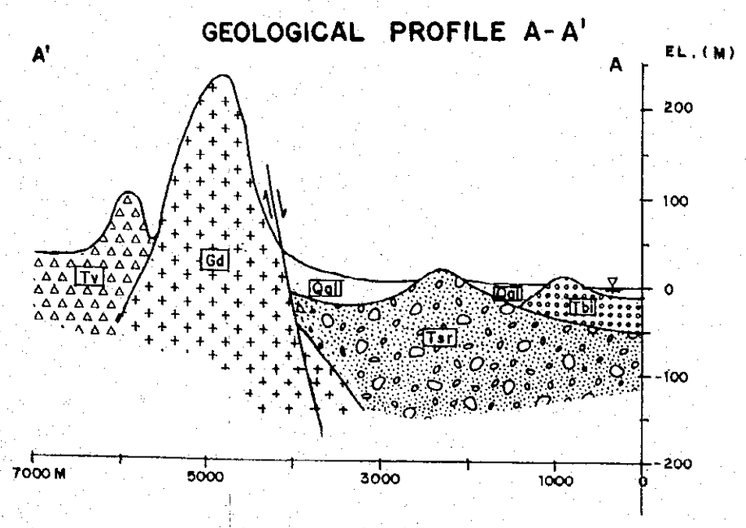
Symbol	Formation	Contents	Age	
Qal	Alluvium	Recent River and Coastal Deposits, and Coral Reef	HOLOCENE	QUATERNARY
Qv		Yong Volcanic Cone		
Qtd	Dolores Formation	Andesitic Pyroclastics with Alternation of Low Dipping Sediments	PLEISTOCENE	
Tp	Pangasugan Formation	Massive and Compact Conglomerate and Pyroclastic Rocks.	PLIOCENE	TERTIARY
Chv	Central Highland Volcanic	Flows and some Intrusive Hornblend Pyroxene Andesite.	MIOCENE	

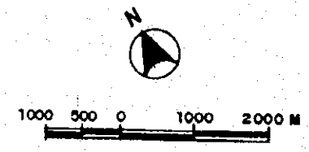
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 3.34
Geological Map of Ormoc





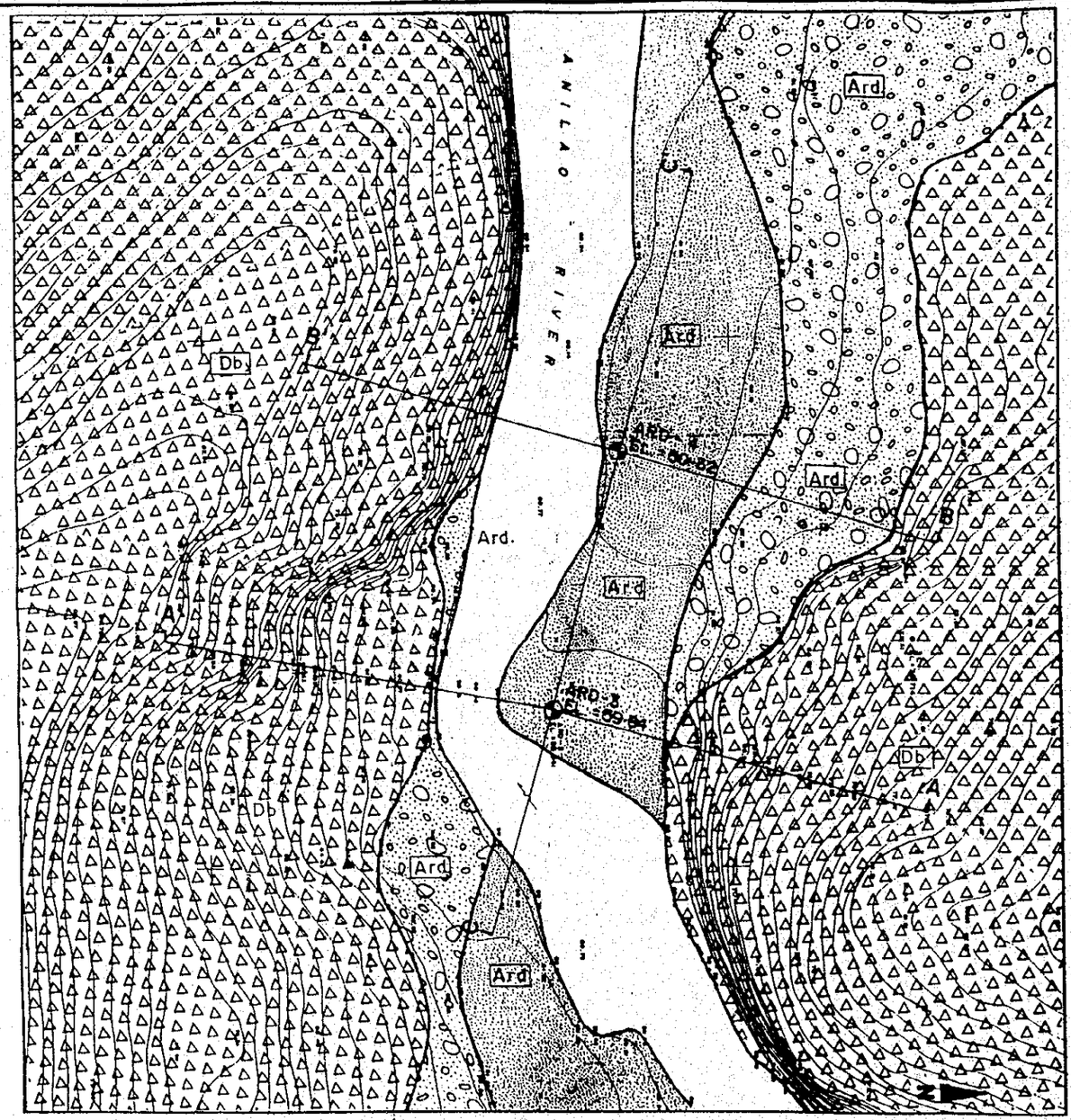


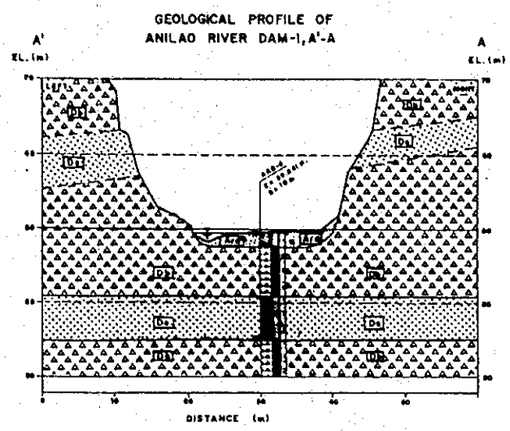
Symbol	Formation	Contents	Age	
Qal	Alluvium	Recent River and Coastal Deposit and Coral Reef.	HOLOCENE	QUATERNARY
Tbl	Bagahupi Formation	Well Bedded Conglomerate Sandstone and Shale	PLIOCENE	TERTIARY
Tsr	Sanricardo Formation	Sandstone, Conglomerate and Shale	MIOCENE	
Tv	Tacloban Volcanics	Basalt and Andesite with Sediments		CRETACEOUS
Gd		Gabbro Diabase		

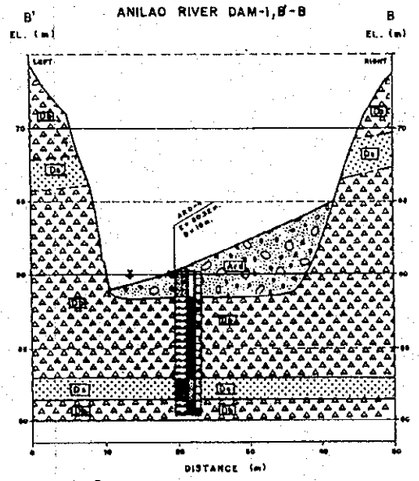
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

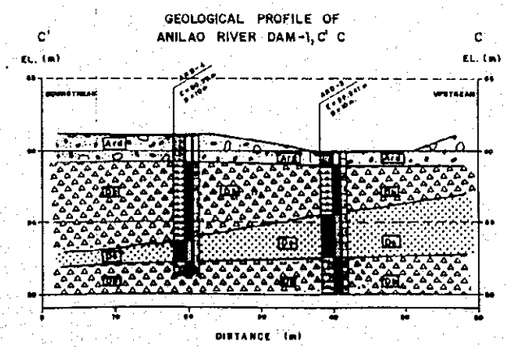
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 3.35
Geological Map of Tacloban





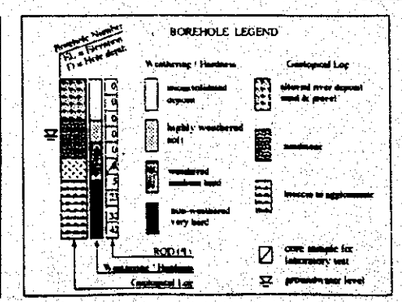




GEOLOGICAL LEGEND

SYMBOL	FORMATION	CONTENTS	FACIES	AGE
(Qal)	Alluvium	alluvium deposit	clay, silt and sand	Holocene
(Ard)		recent river deposit	sand, gravel, cobble and boulder	
(Db)	Dolores Formation (Qd)	andesite Pyroclastics with alternation of low dipping sediments	volcanic breccia	pleistocene
(Ds)			volcanic sandstone	

Quaternary



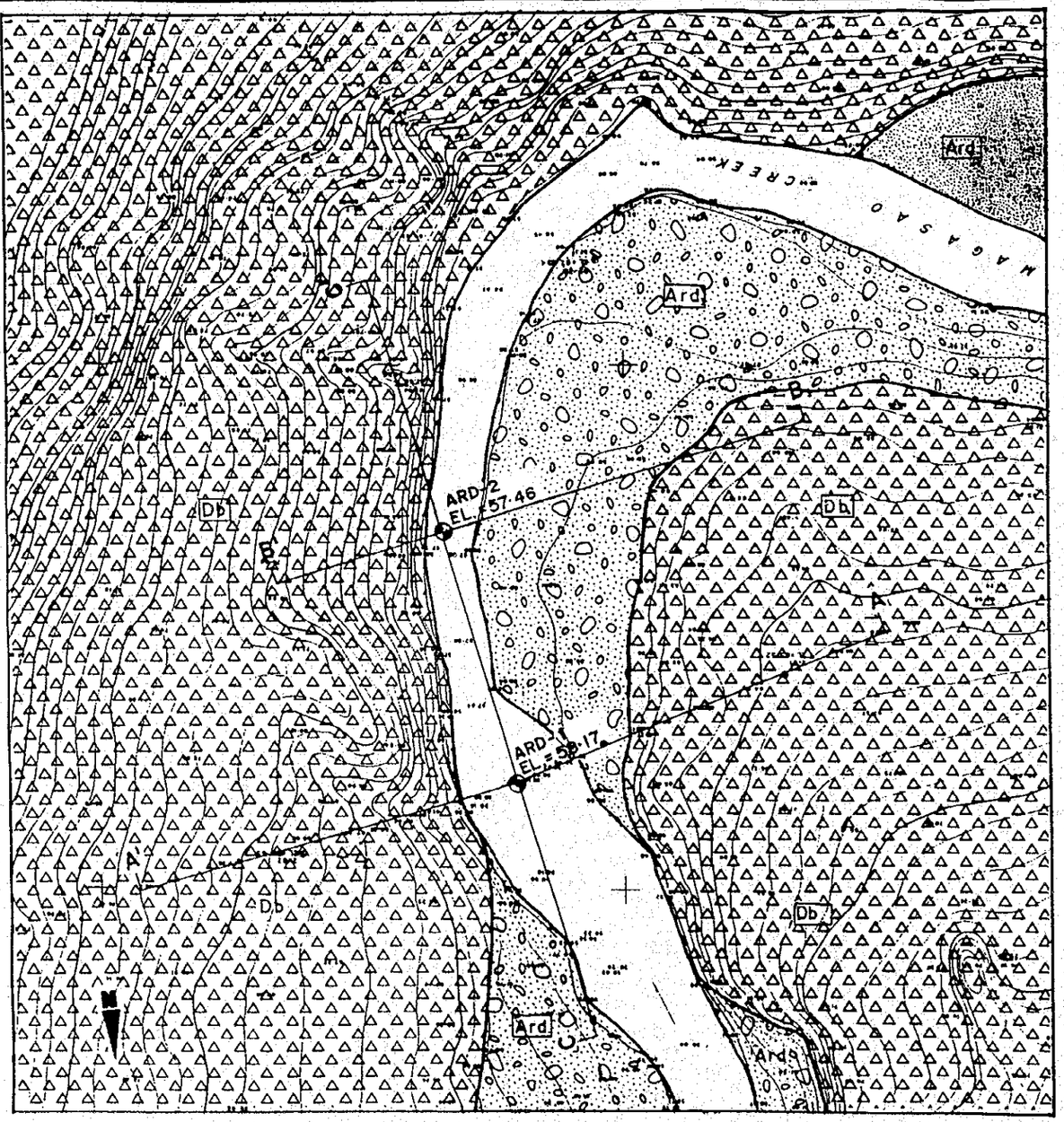
SCALE 1:400

0 10 20 30m

THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 3.36
Geological Map of Anilao River Dam-1



GEOLOGICAL LEGEND

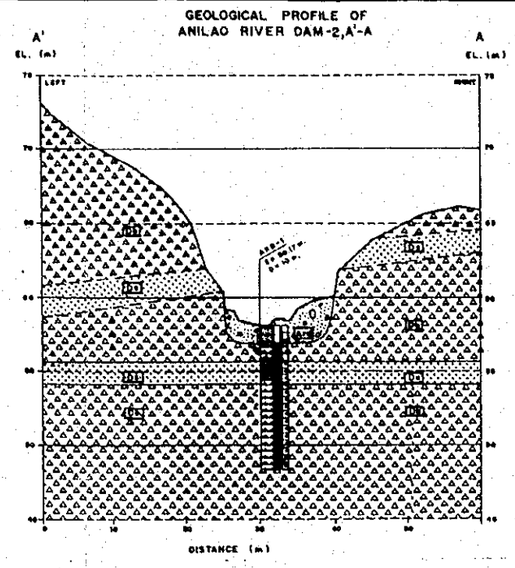
SYMBOL	FORMATION	CONTENTS	FACIES	AGE	
(Qal)	Alluvium	alluvium deposit	clay, silt and sand	Holocene	Quaternary
		recent river deposit	sand, gravel, cobble and boulder		
(Ard)	Dolores Formation (Qtd)	andesitic Pyroclastics with alternation of low dipping sediments	volcanic breccia	pleistocene	
(Db)			volcanic sandstone		
(Ds)					

BOREHOLE LEGEND

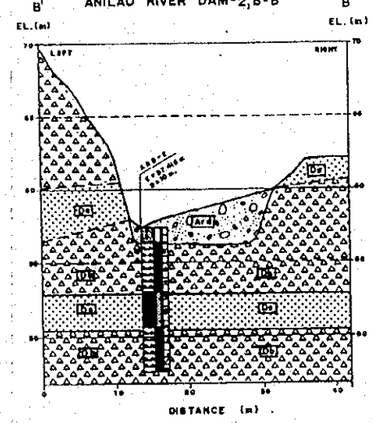
SCALE 1:400

0 10 20 30m

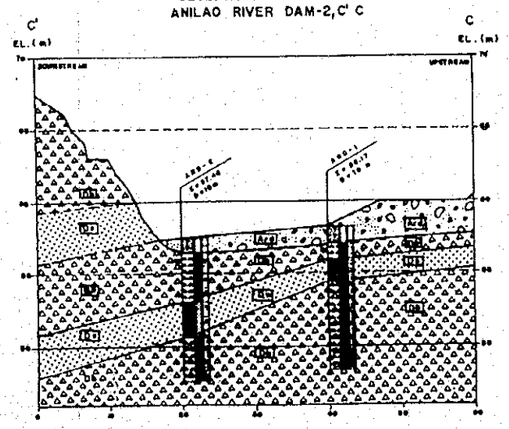
GEOLOGICAL PROFILE OF ANILAO RIVER DAM-2,A'-A



GEOLOGICAL PROFILE OF ANILAO RIVER DAM-2,B'-B



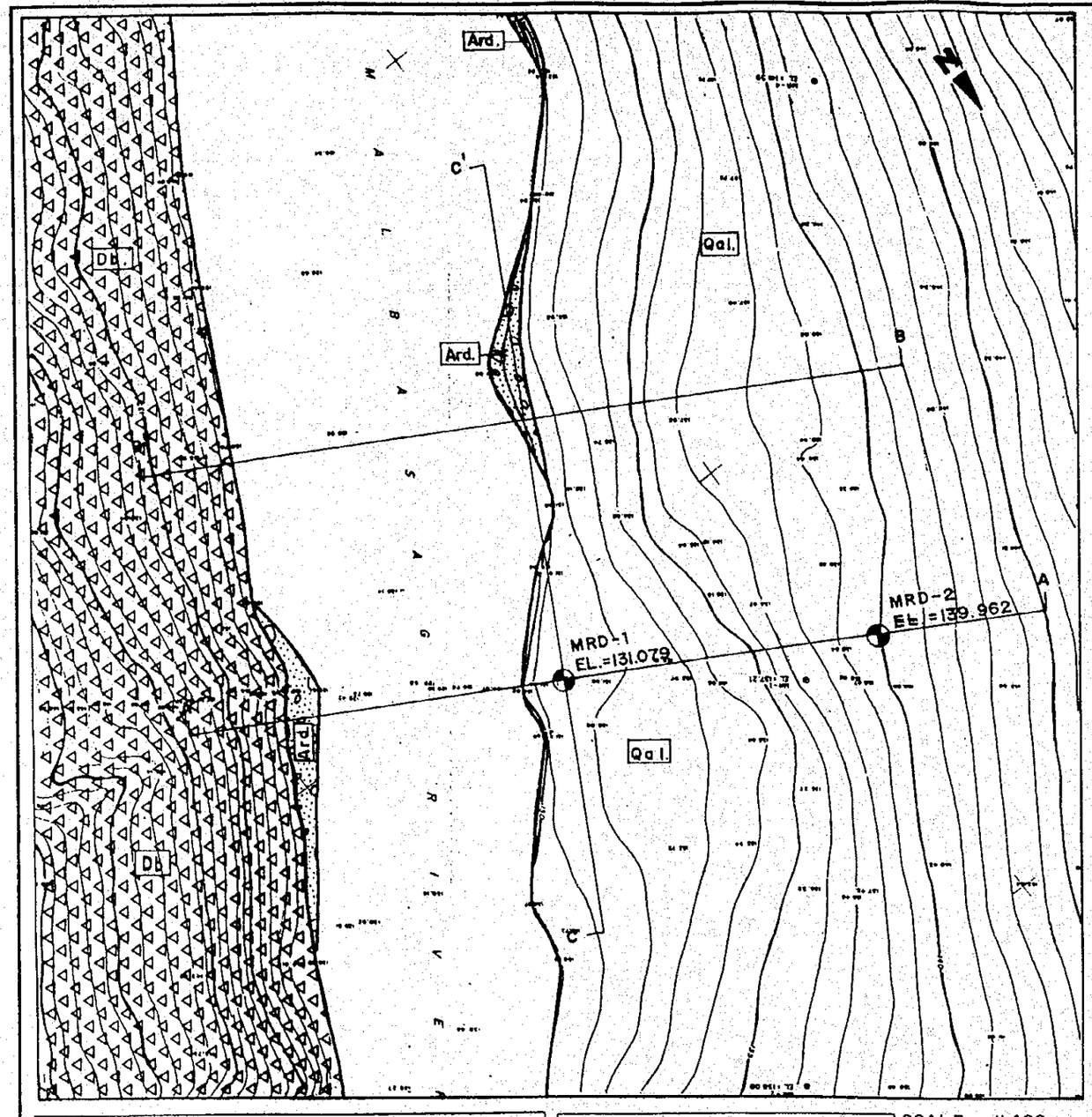
GEOLOGICAL PROFILE OF ANILAO RIVER DAM-2,C' C

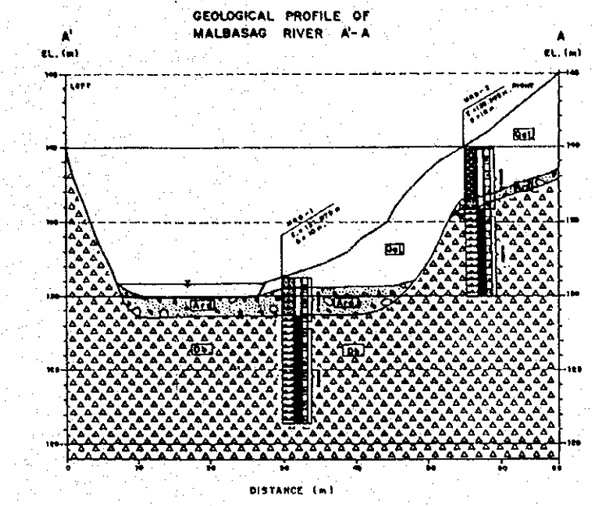


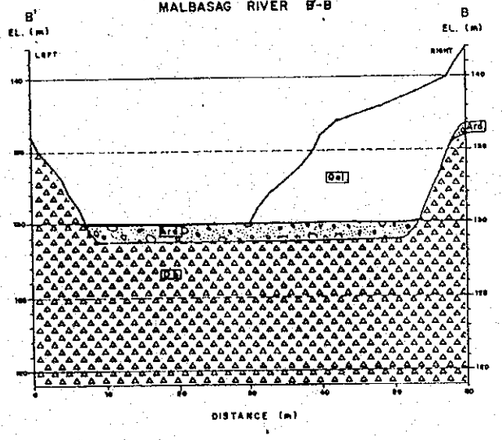
THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

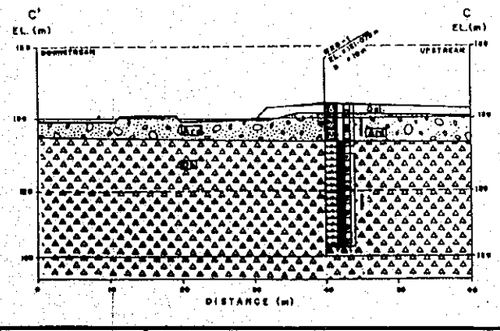
JAPAN INTERNATIONAL COOPERATION AGENCY

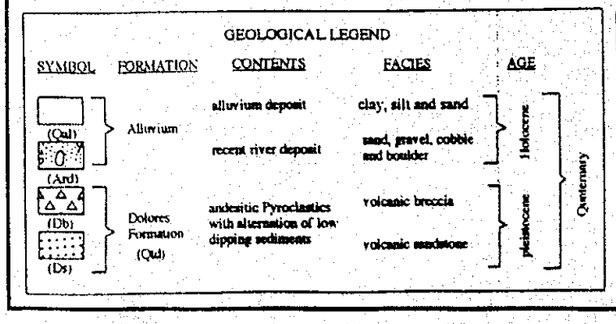
Fig. 3.37
Geological Map of Anilao River Dam-2

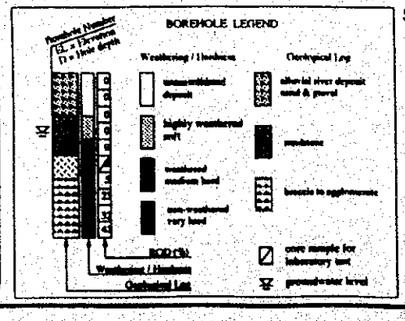












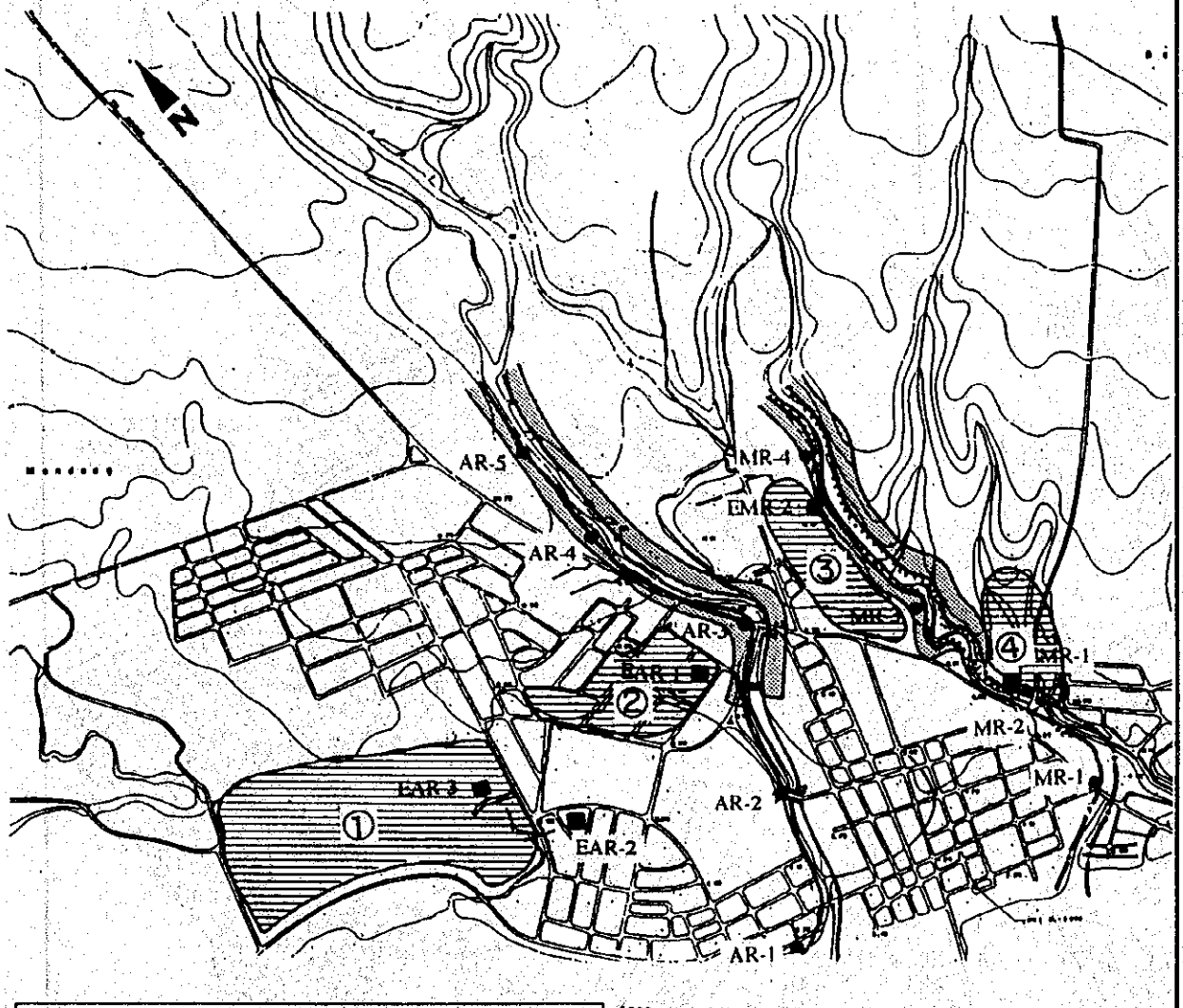
SCALE 1:400

0 10 20 30m

THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 3.38
Geological Map of Malbasag River Dam



Legend
- AR-1 : Boring test site
- EAR-1 : Sampling site for soil test for embankment materials

1000 750 500 250 0 500

SCALE 1 : 20,000 MTRS

PROPOSED BORROW LAND

AREA,EXCAVATED SOIL CAN BE USED

REPRESENTED GRAIN SIZE DISTRIBUTION

	GRAVEL	SAND	SILT	CLAY
①	17 %	46%	18 %	19%
②	0 %	33%	49%	18%
③	0 %	33%	67%	0%
④	1 %	47 %	26%	26%

THE STUDY ON THE FLOOD CONTROL FOR RIVERS IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 3.39
Proposed Borrow Land for Embankment Materials in Ormoc