

LEGEND

- ==== Major road
- +++++ Railway
- ~~~~~ River
- ▨ City/Town
- ~~~~~ Flood Area
- Ⓟ Stretch No.

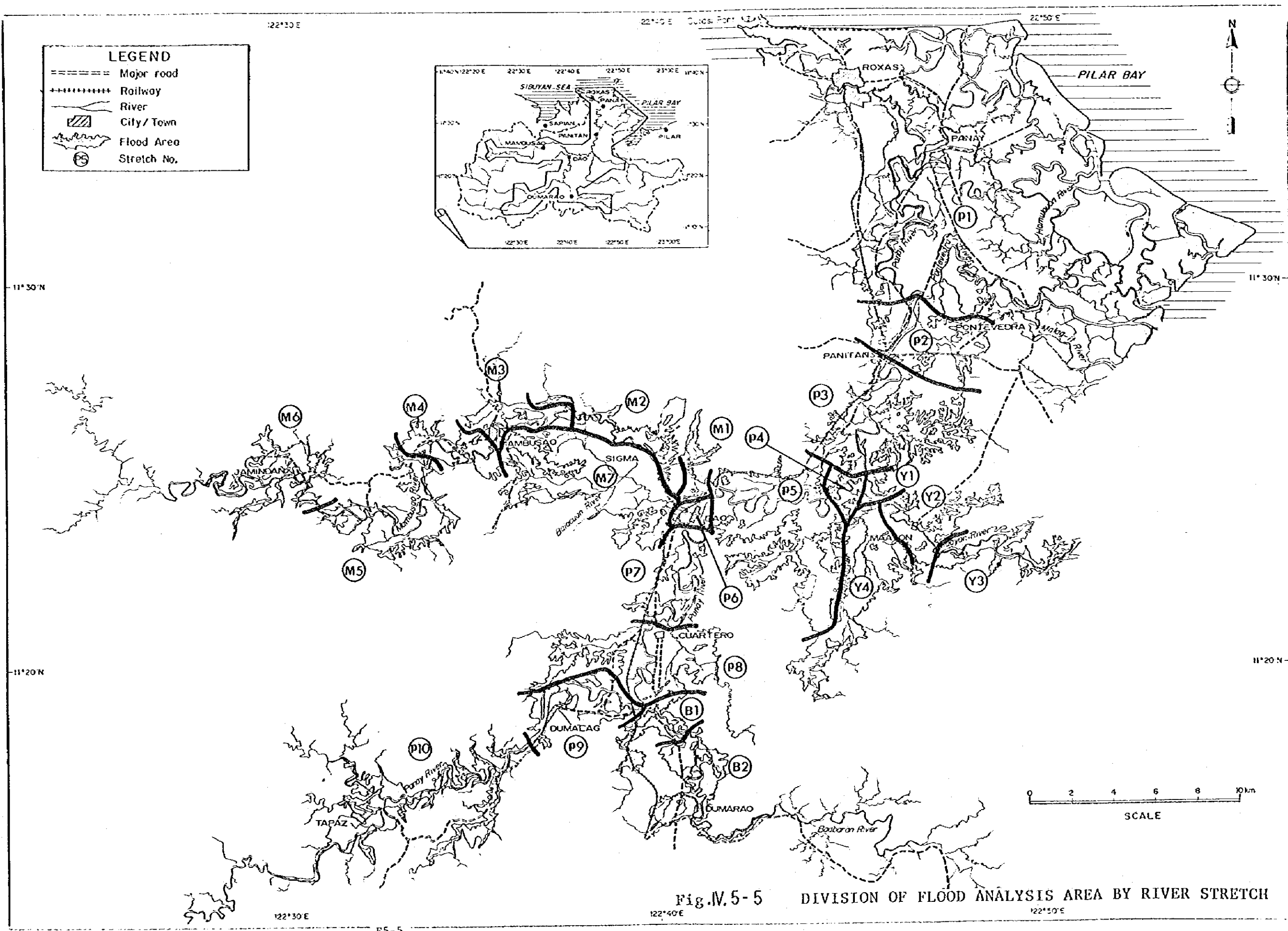
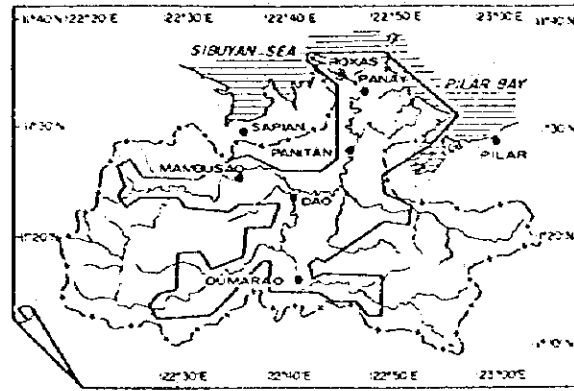


Fig. IV.5-5 DIVISION OF FLOOD ANALYSIS AREA BY RIVER STRETCH

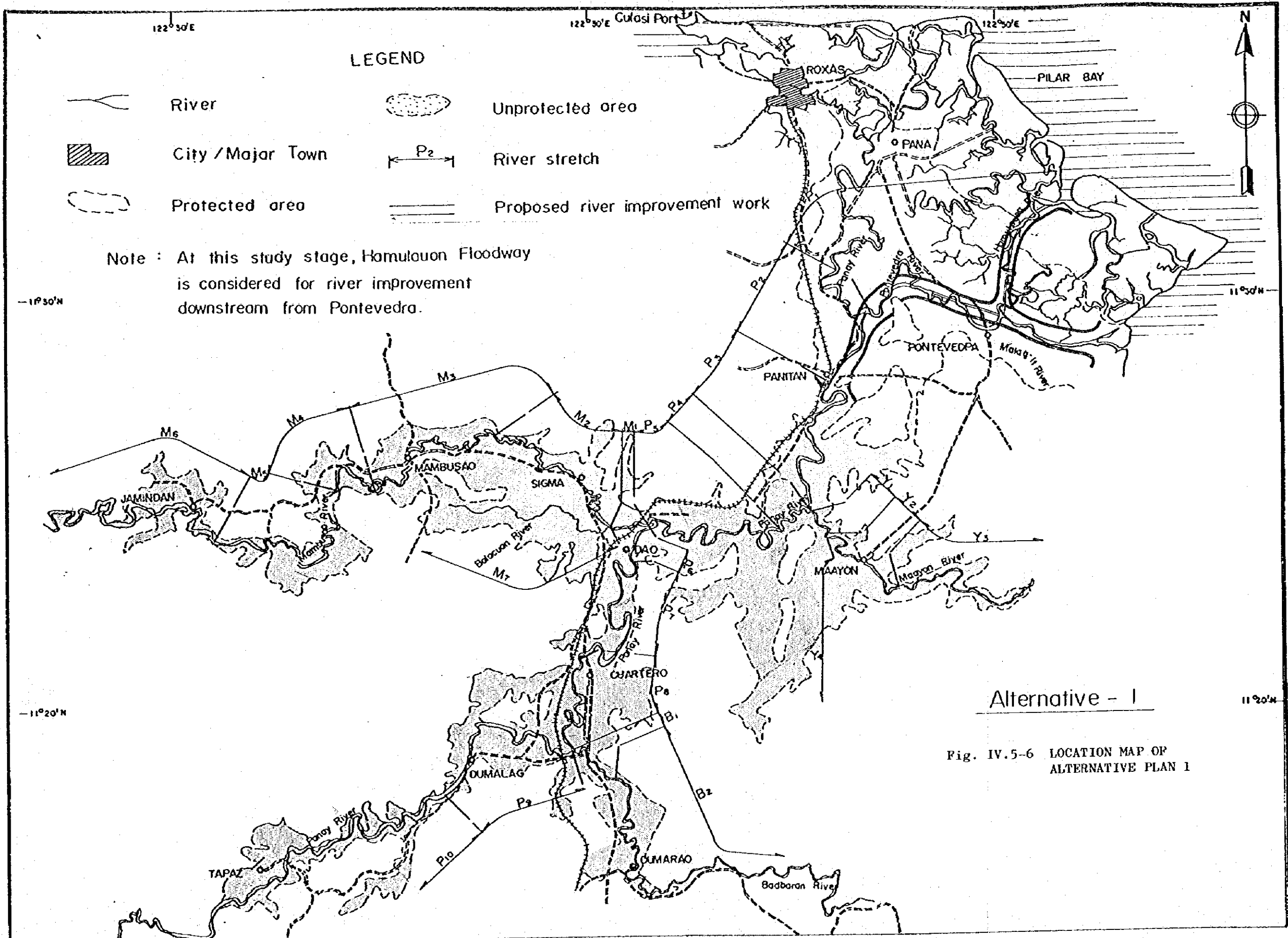
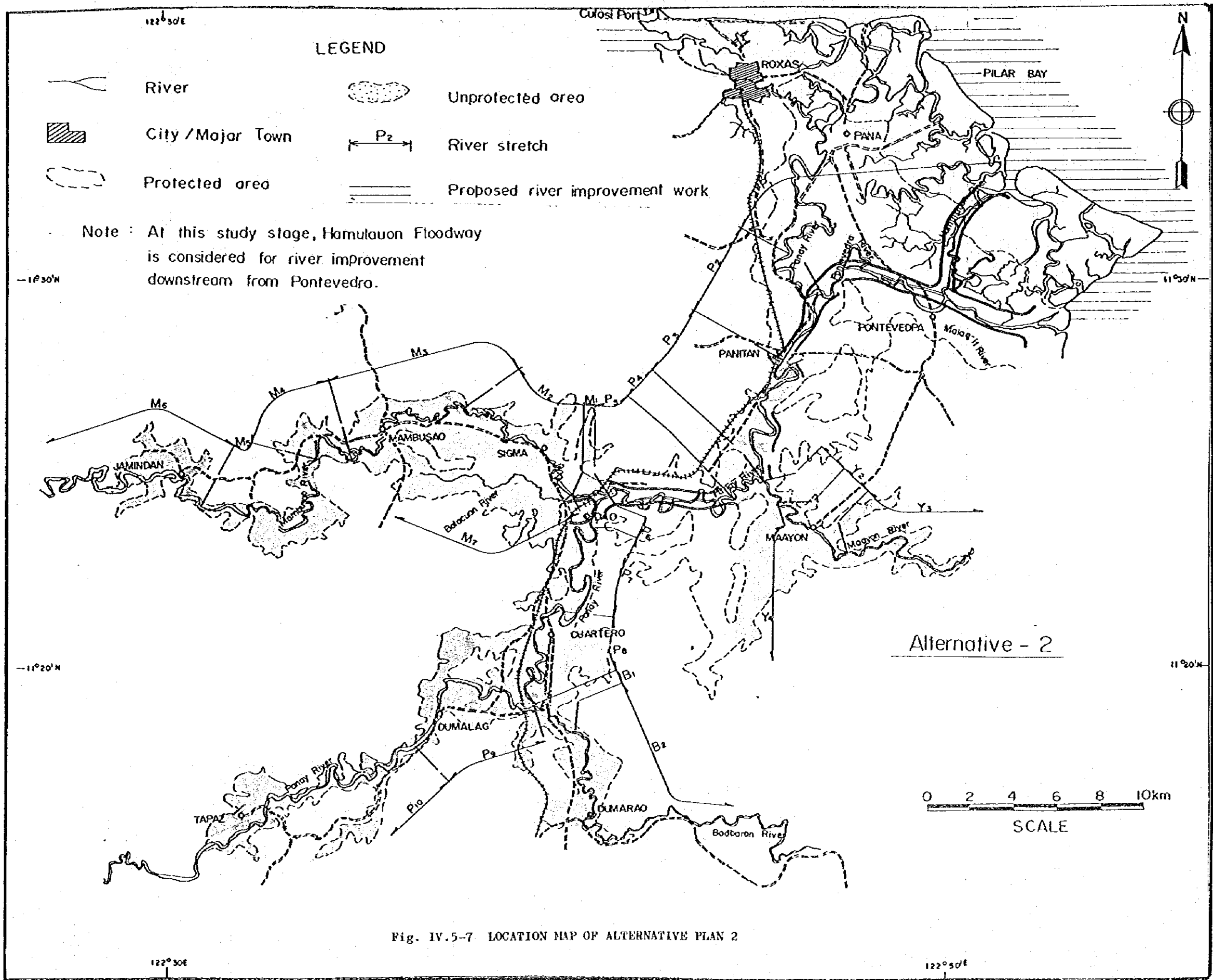
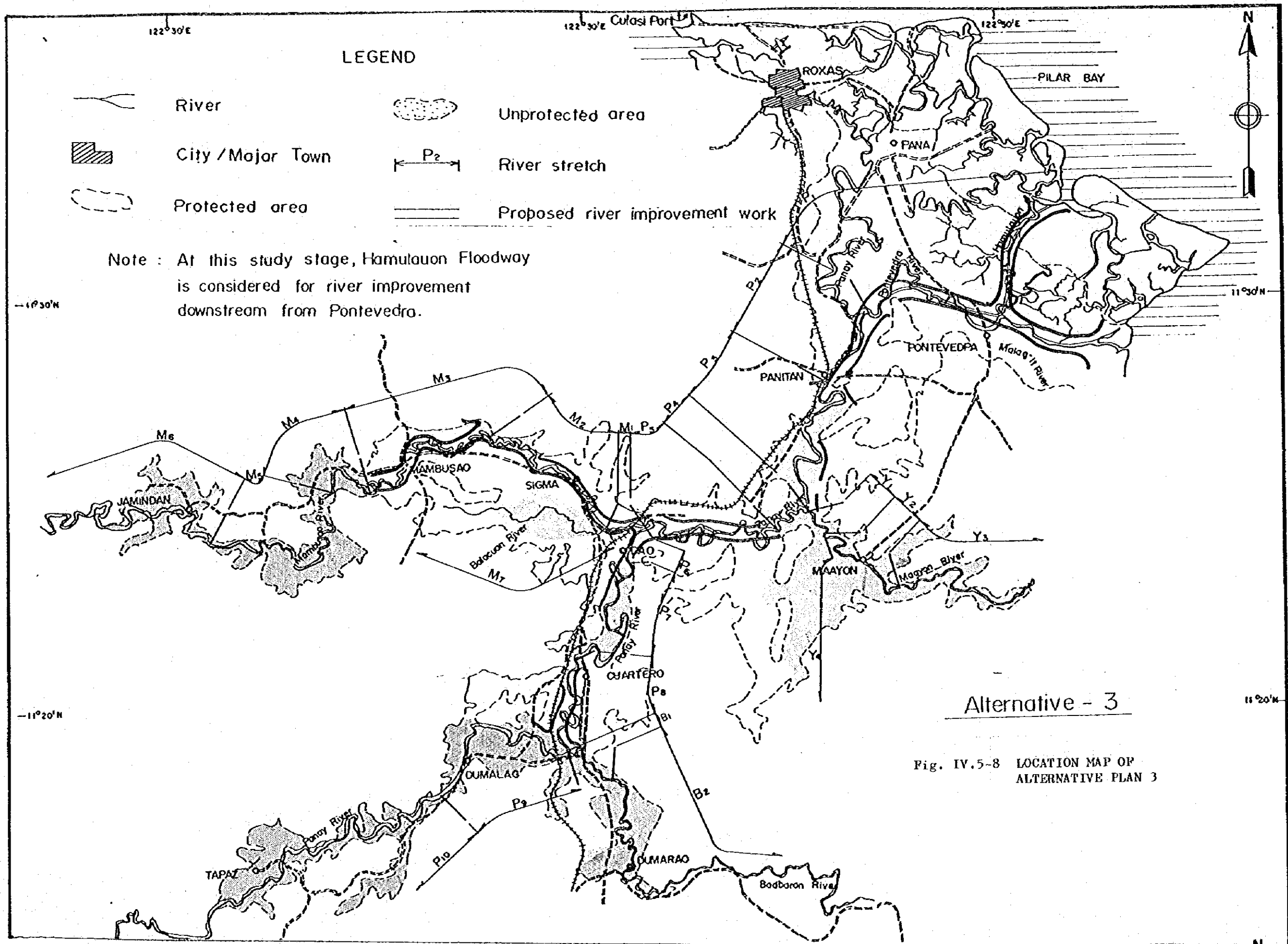
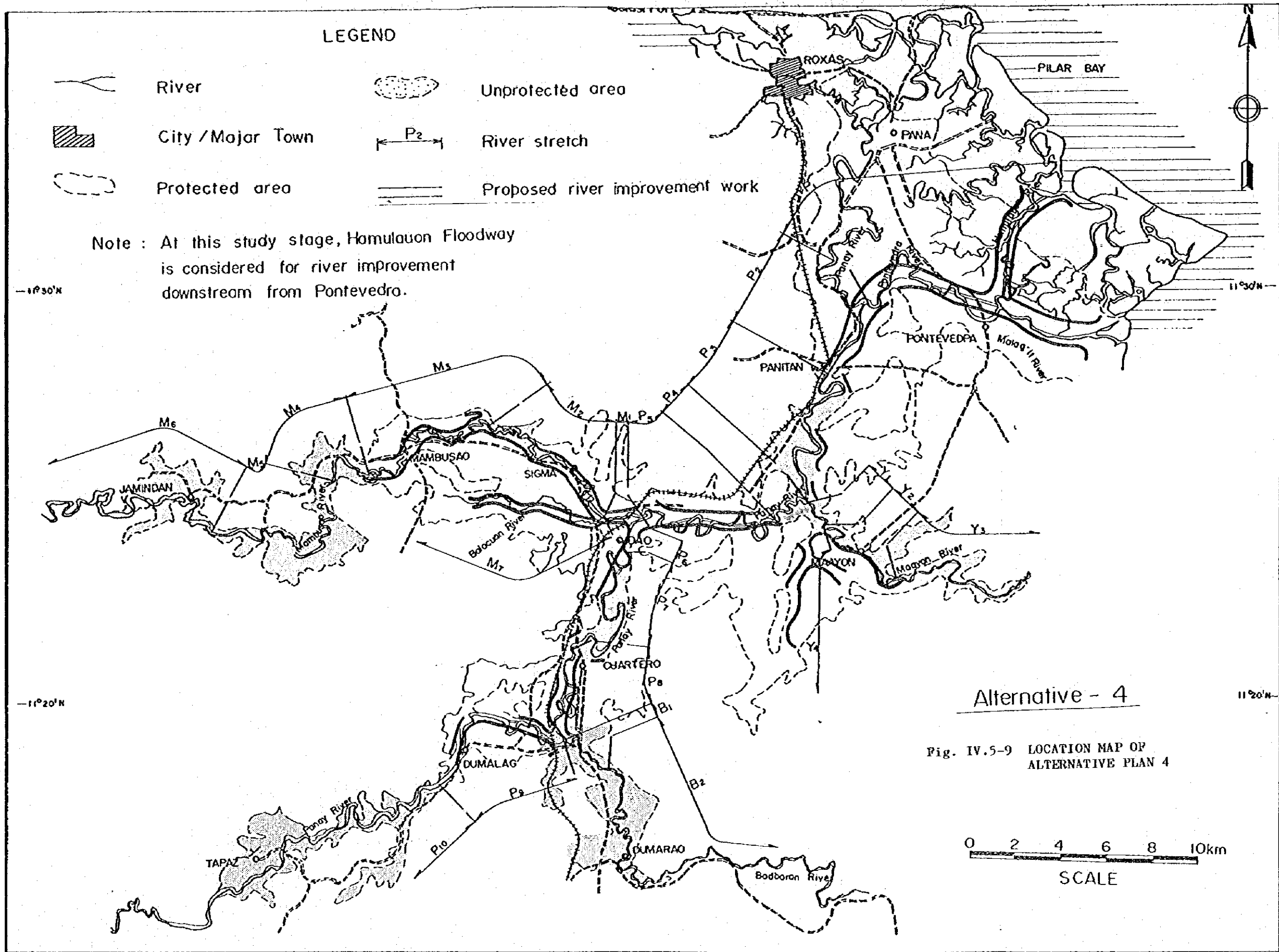


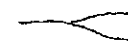

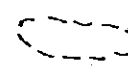
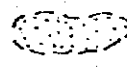
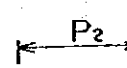
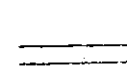
Fig. IV.5-6 LOCATION MAP OF ALTERNATIVE PLAN 1







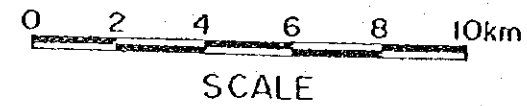
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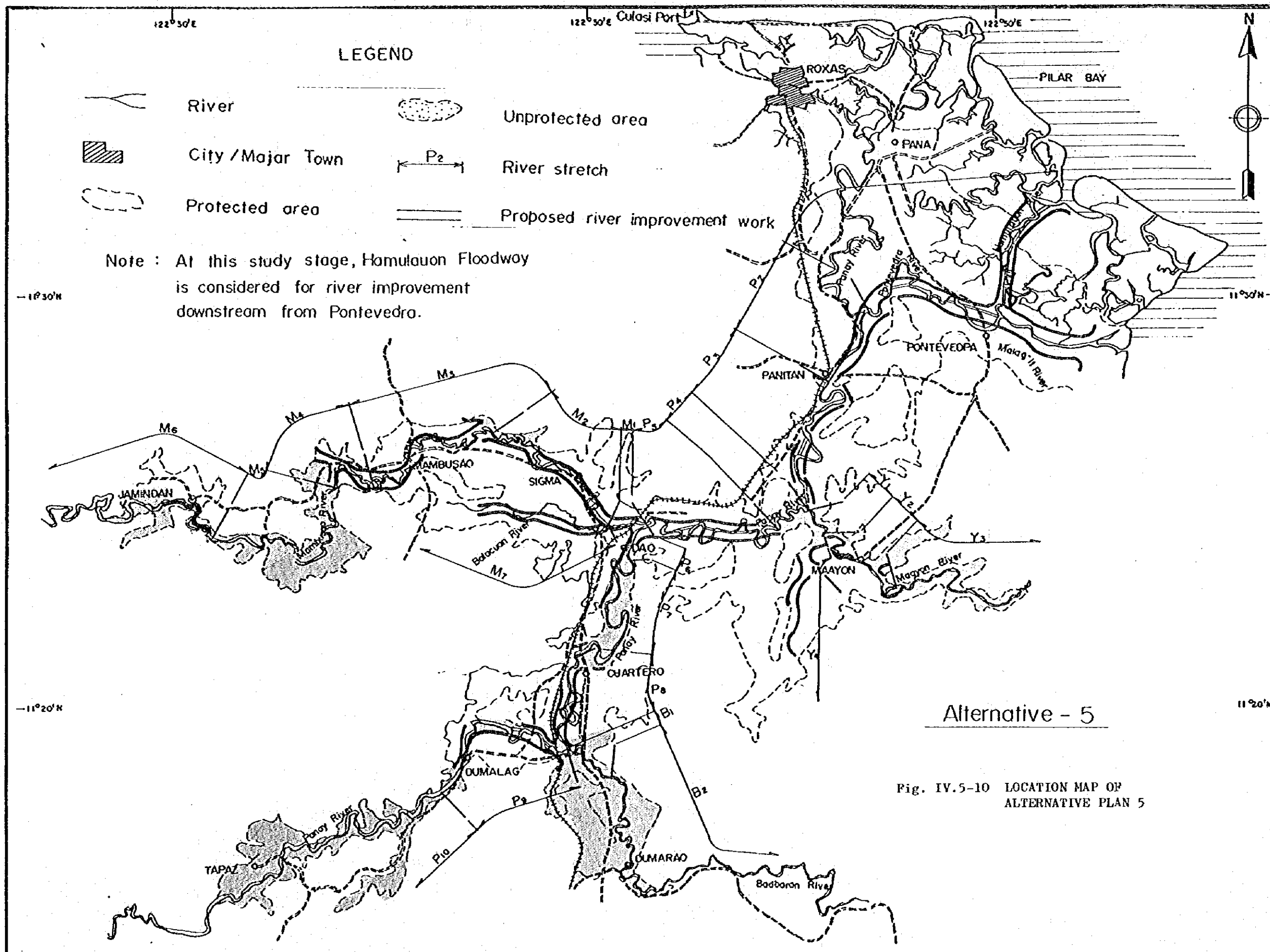
-  River
-  City / Major Town
-  Protected area
-  Unprotected area
-  River stretch
-  Proposed river improvement work

Note : At this study stage, Hamulaon Floodway is considered for river improvement downstream from Pontevedra.

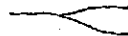



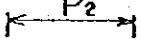

Alternative - 4

Fig. IV.5-9 LOCATION MAP OF ALTERNATIVE PLAN 4





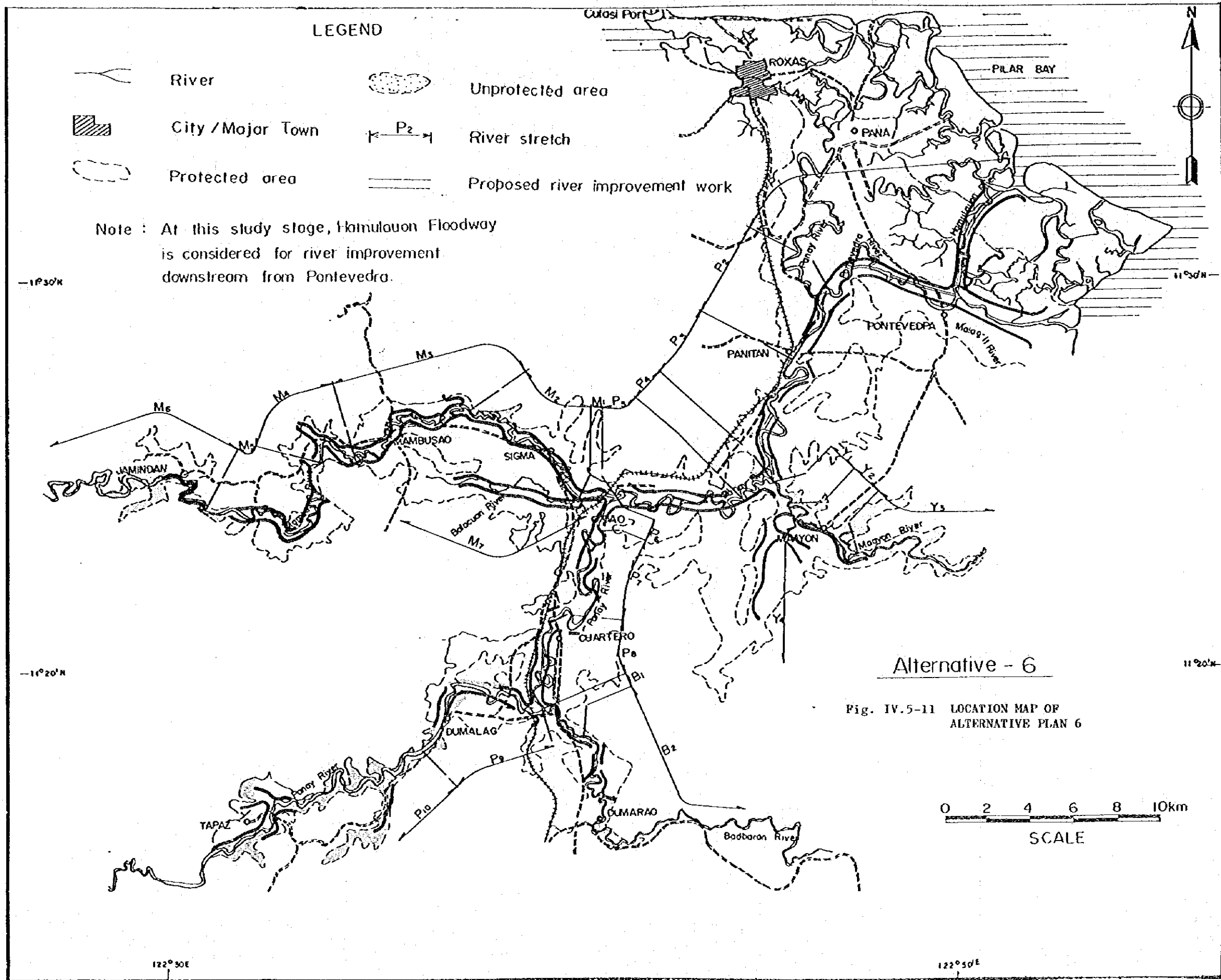
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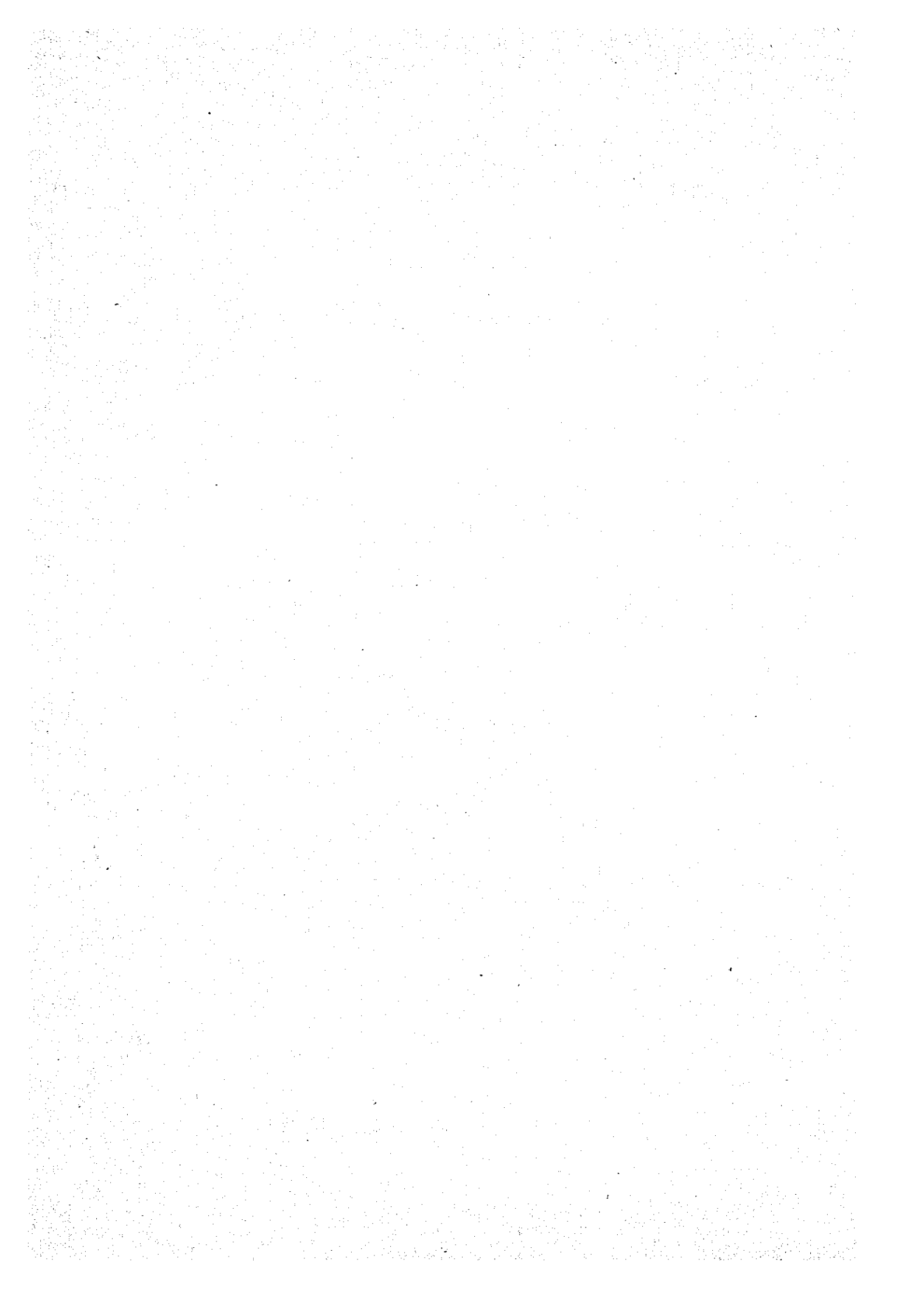
-  River
-  City / Major Town
-  Protected area
-  Unprotected area
-  River stretch
-  Proposed river improvement work

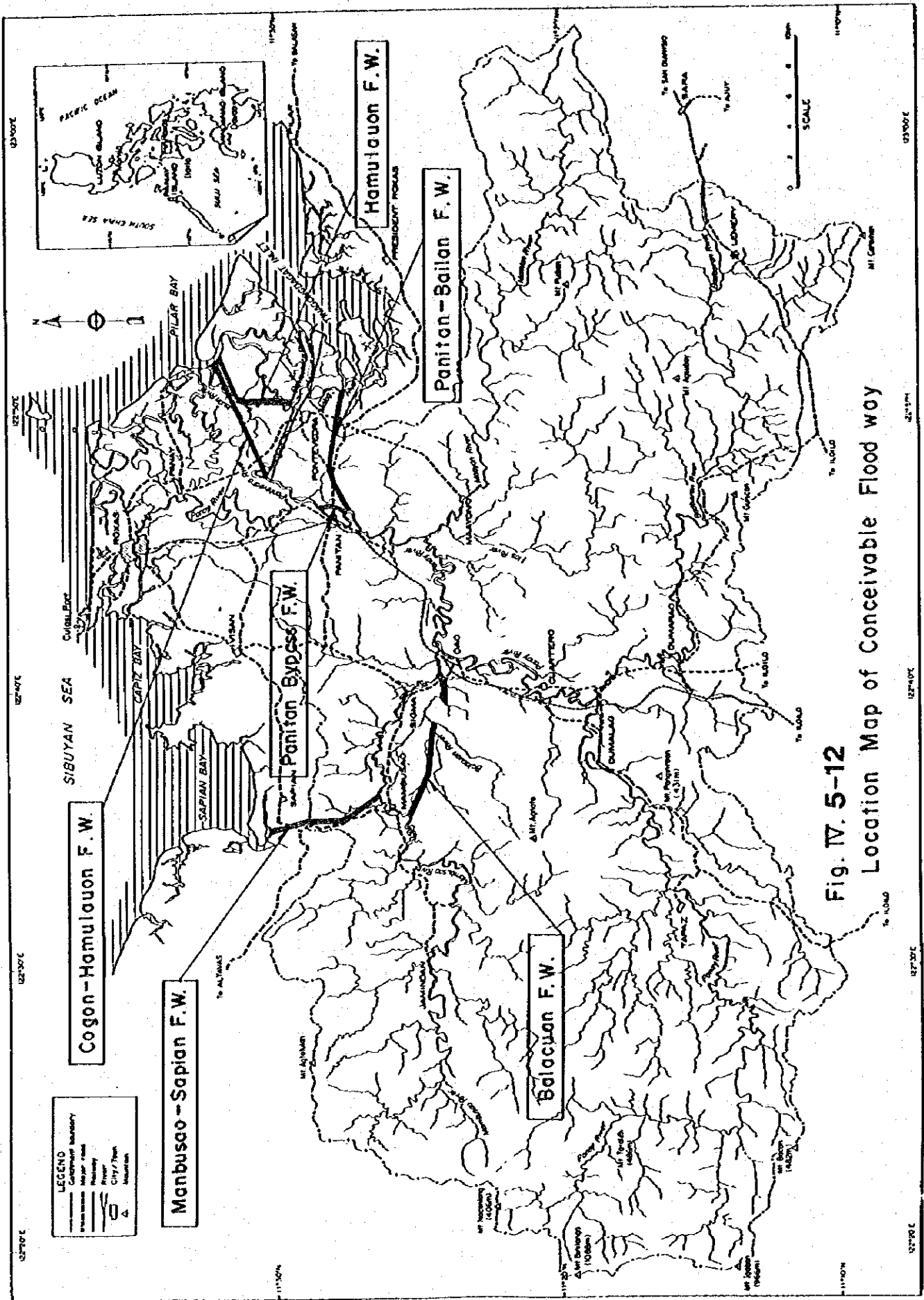
Note : At this study stage, Hamulauon Floodway is considered for river improvement downstream from Pantevedra.

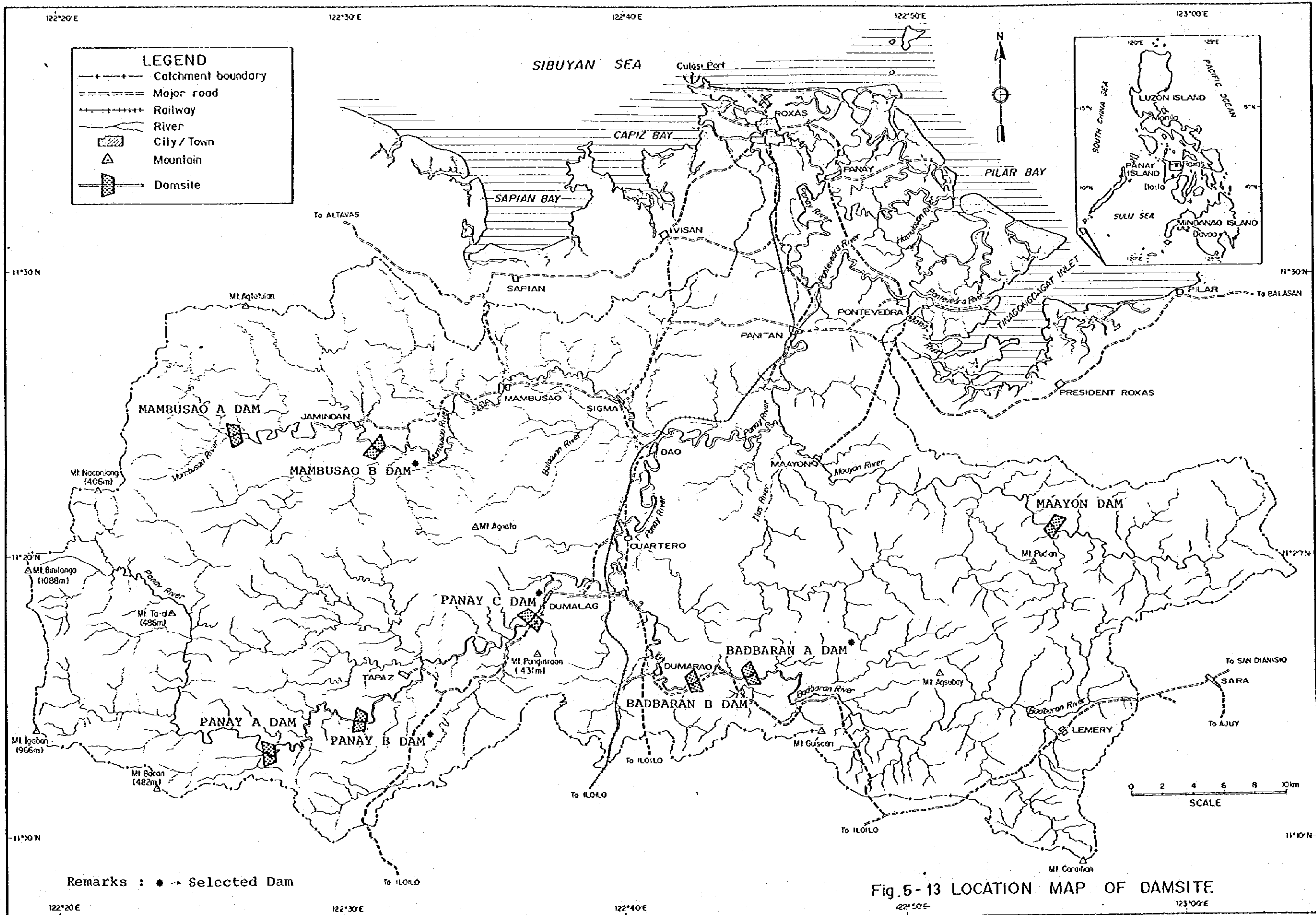
Alternative - 5

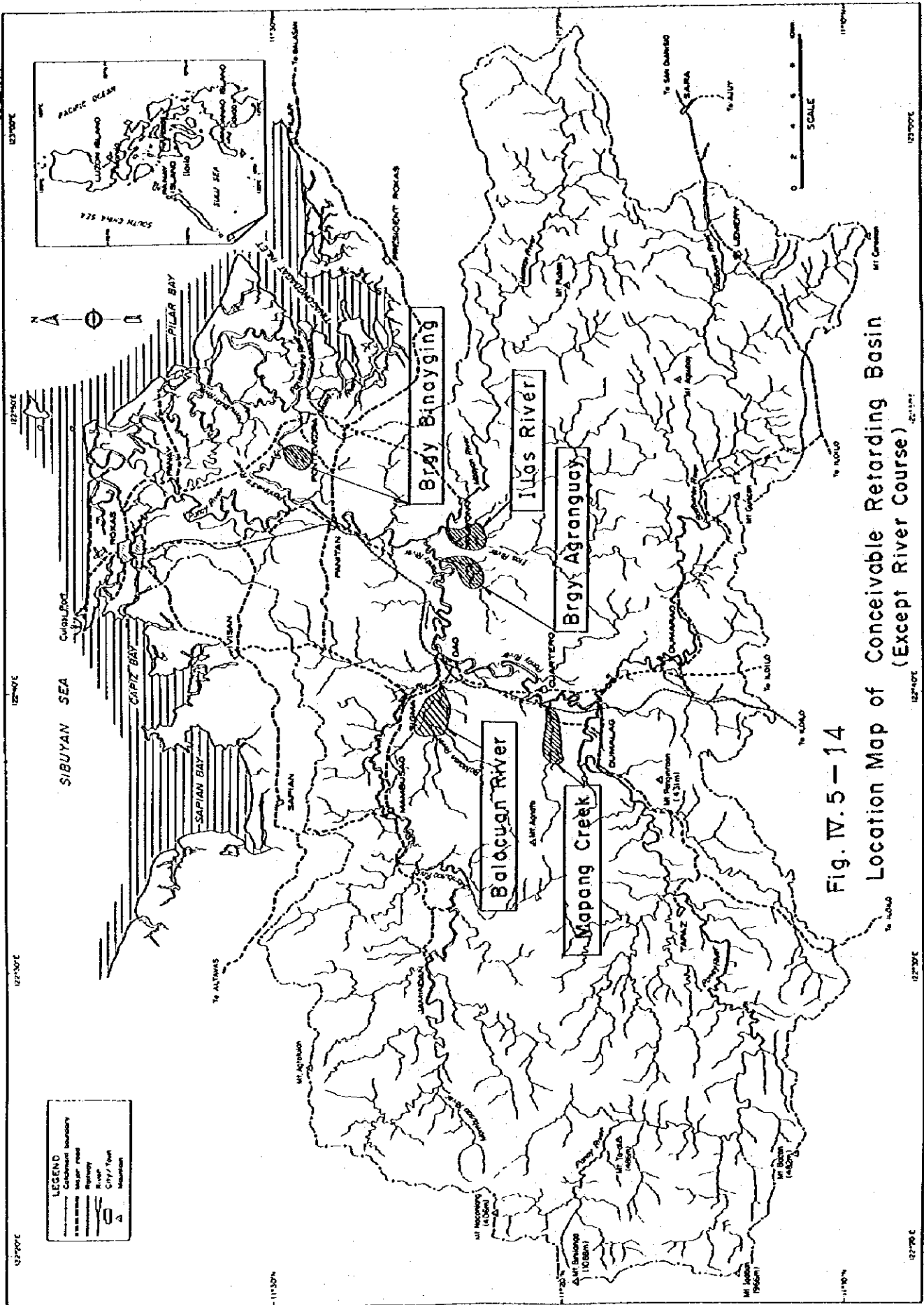
Fig. IV.5-10 LOCATION MAP OF ALTERNATIVE PLAN 5

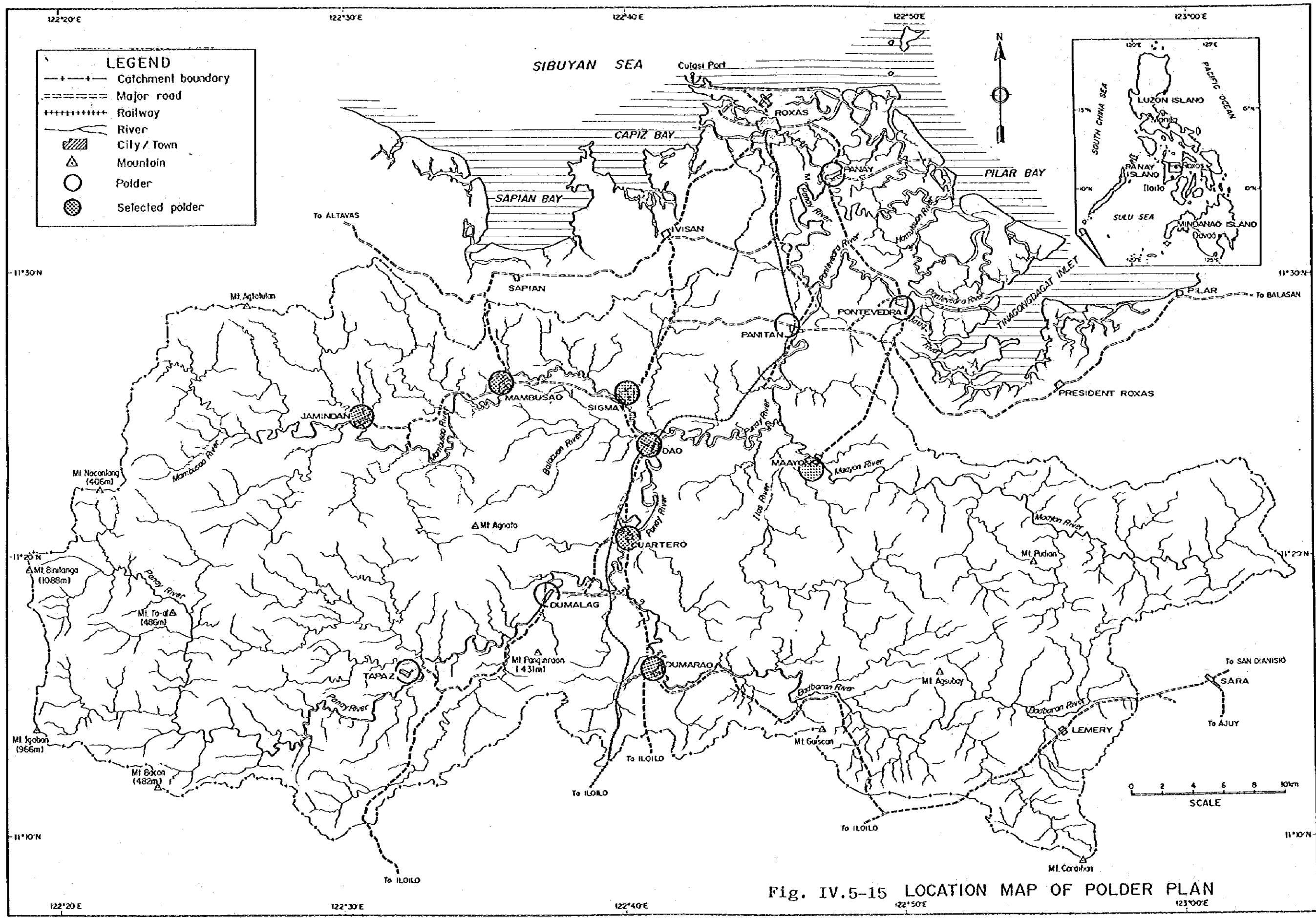














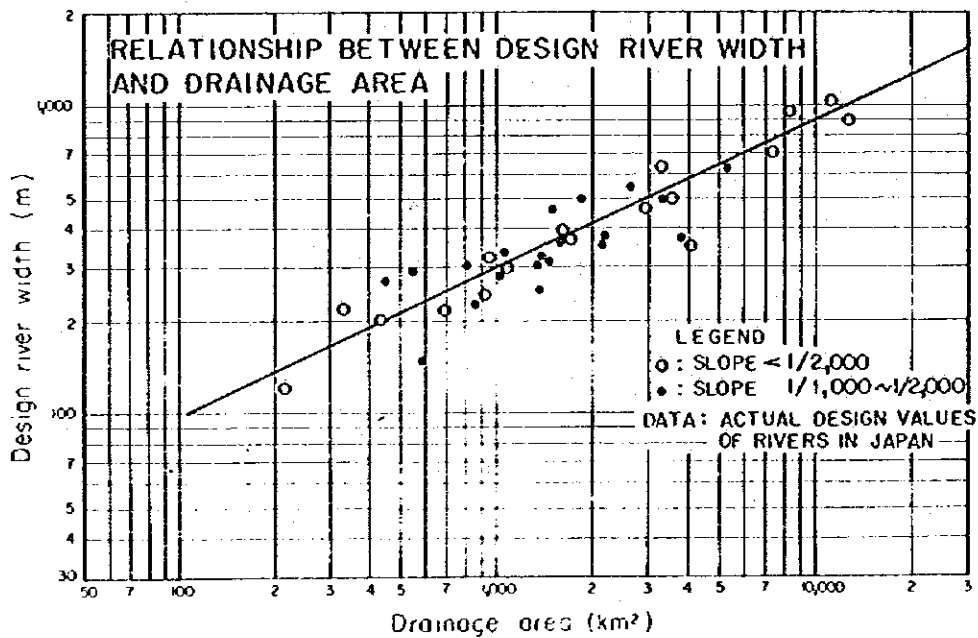
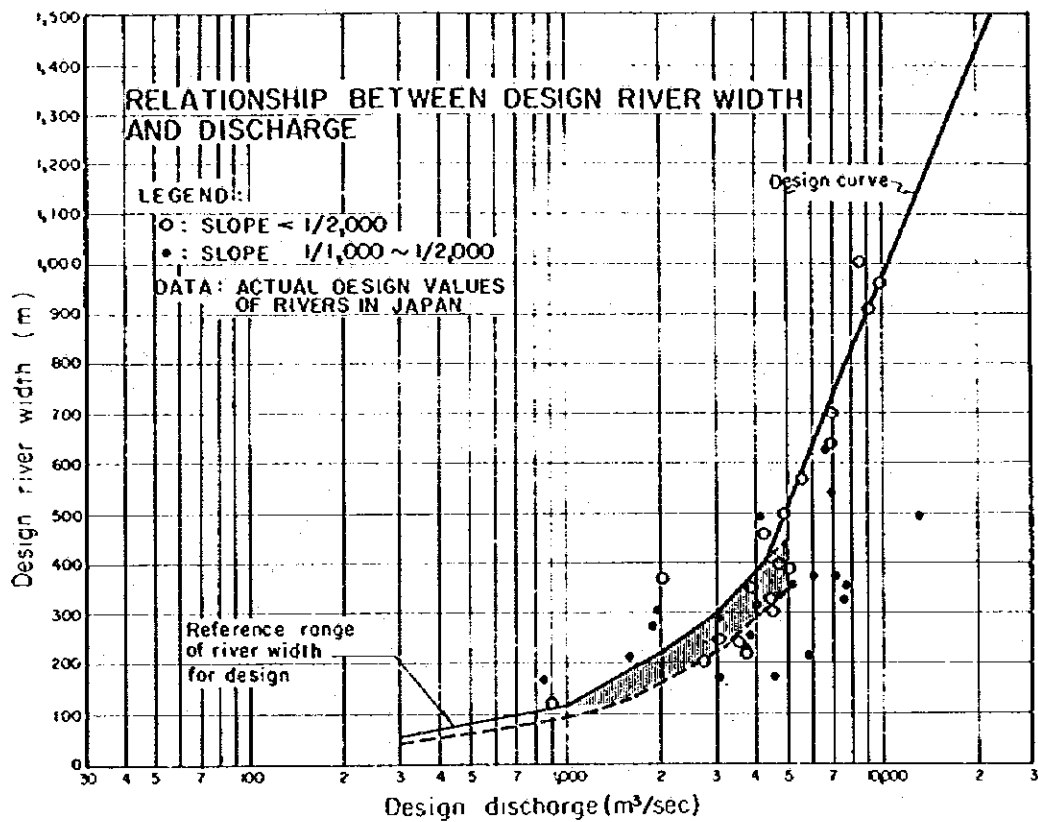


FIG. IV. 6-1 STANDARD RIVER WIDTH

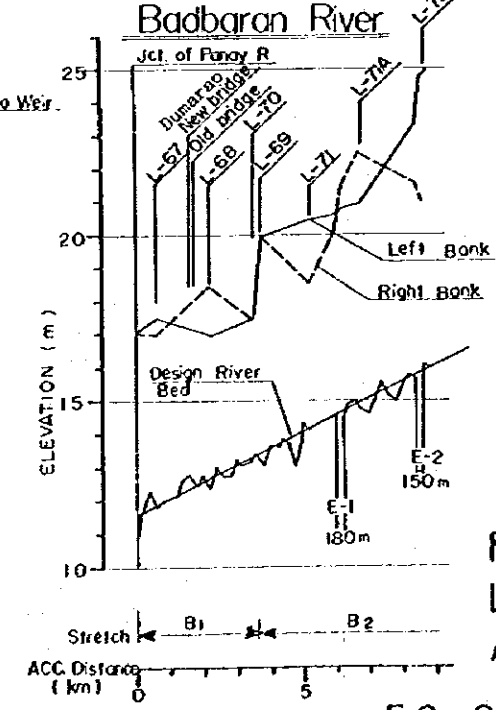
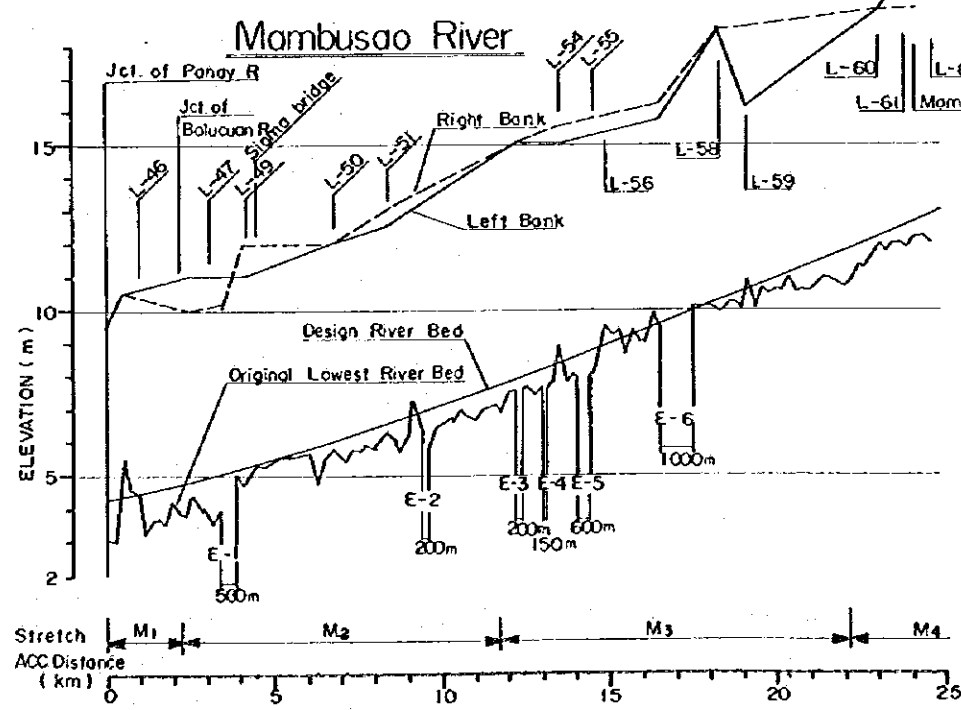
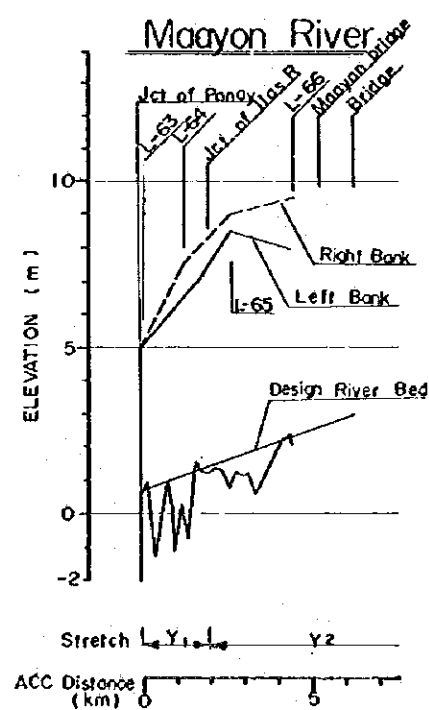
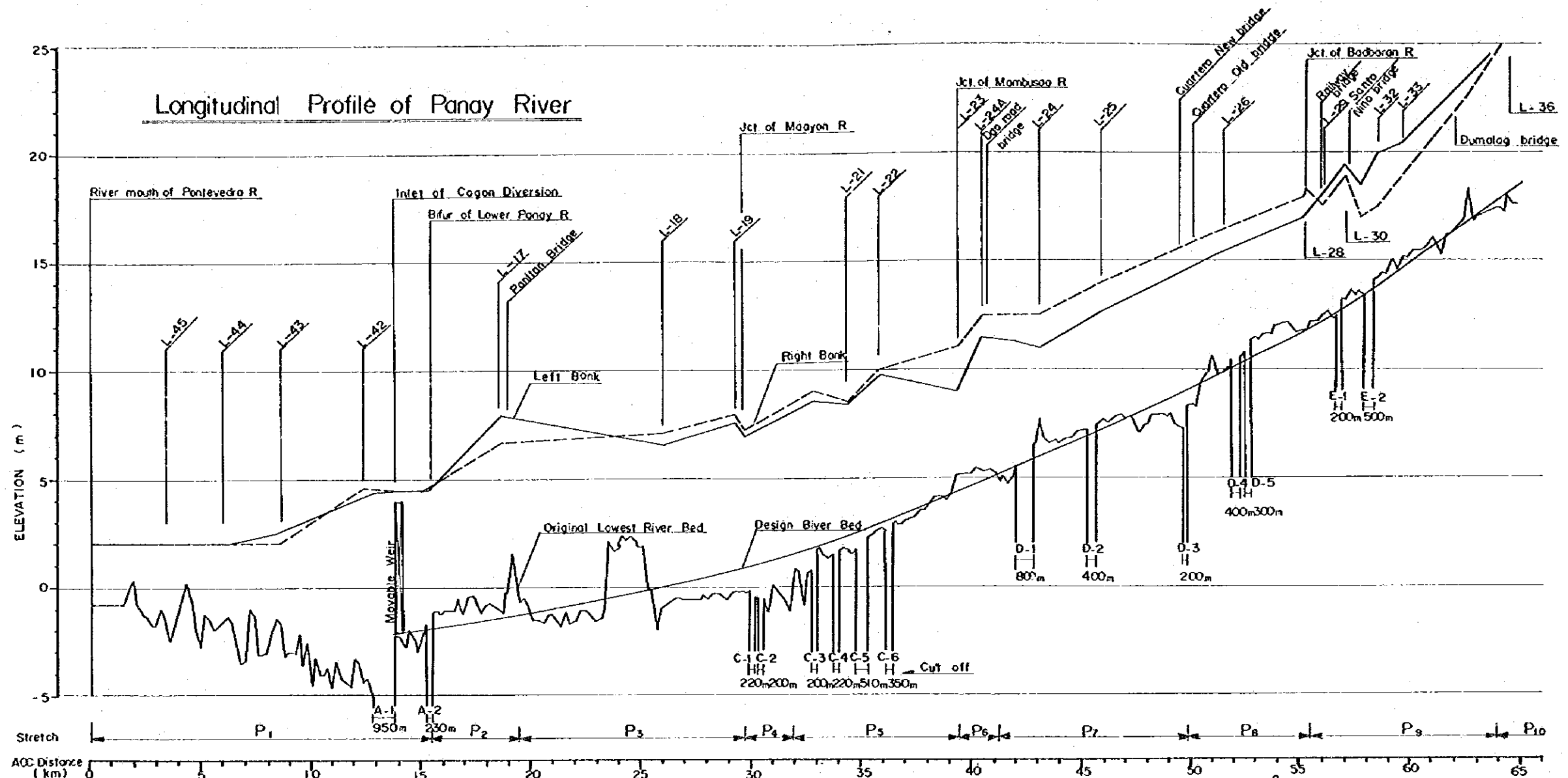
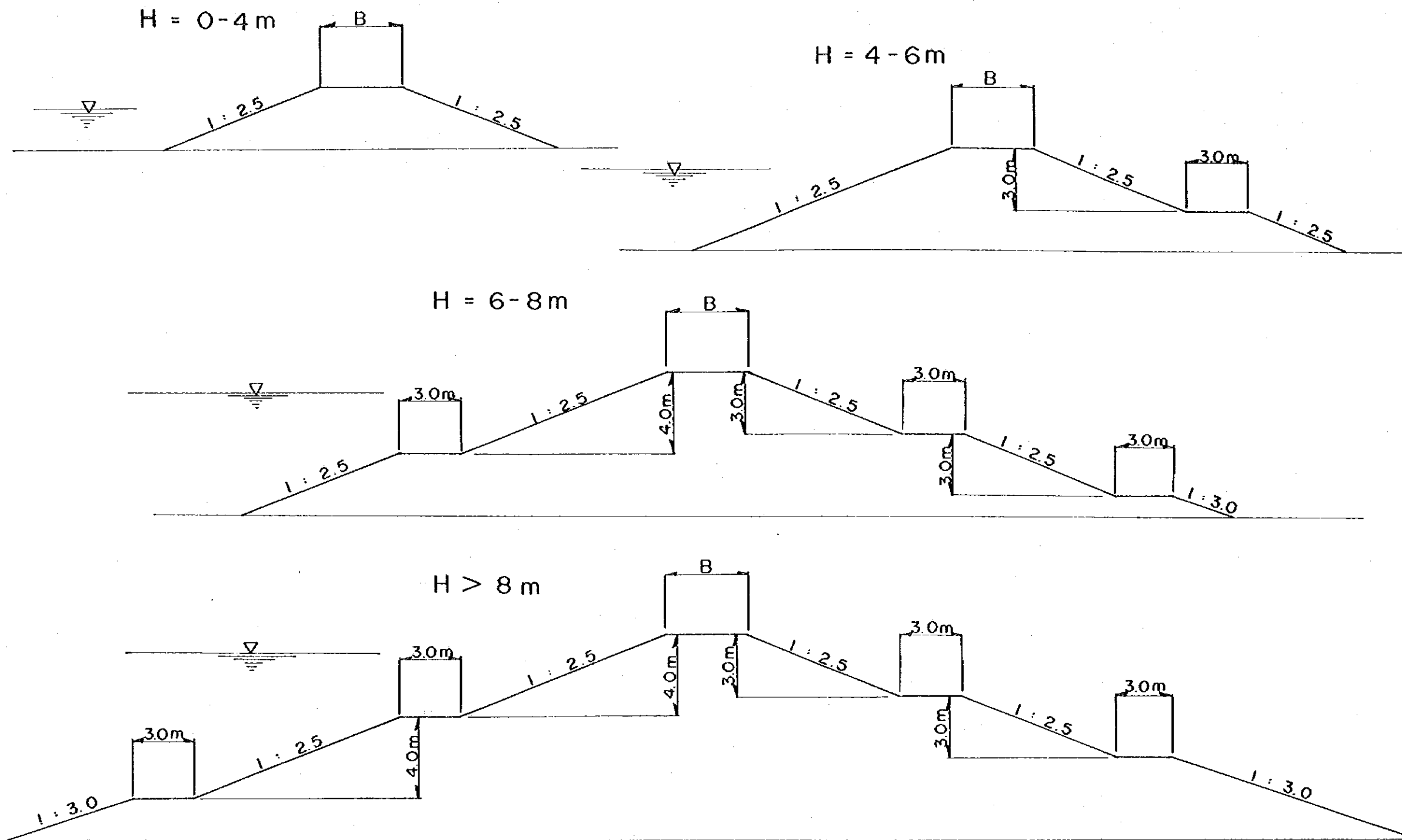


Fig. IV. 6-2
Longitudinal Profile of
Alternative 4



$Q < 500 \text{ m}^3/\text{S}$	$B = 3.0 \text{ m}$
$500 \leq Q < 2000 \text{ m}^3/\text{S}$	$B = 4.0 \text{ m}$
$2000 \leq Q < 5000 \text{ m}^3/\text{S}$	$B = 5.0 \text{ m}$
$5000 \leq Q$	$B = 6.0 \text{ m}$

Fig. M. 6-3 Typical Diking Section

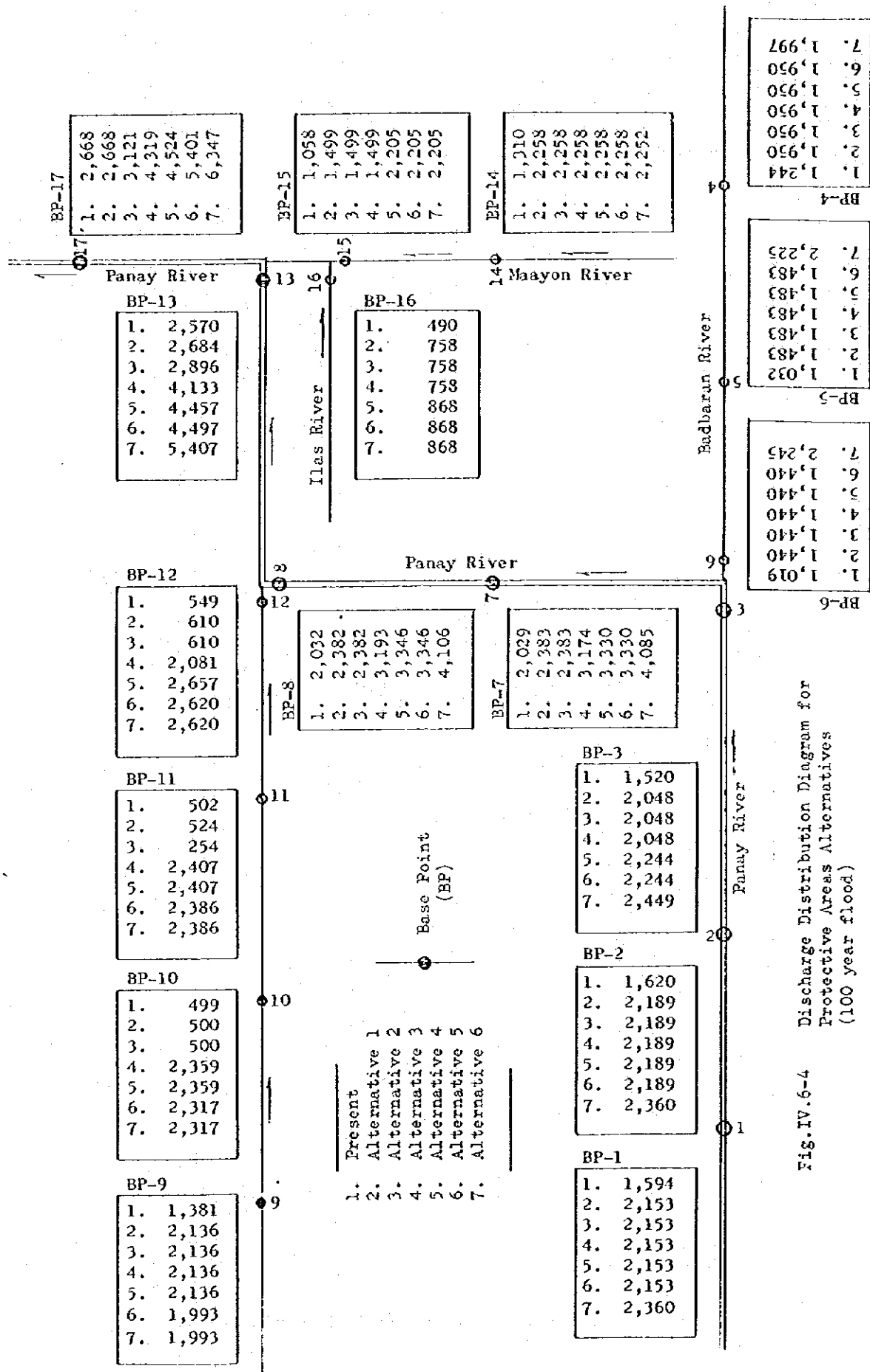


Fig. IV.6-4 Discharge Distribution Diagram for Protective Areas Alternatives (100 year flood)

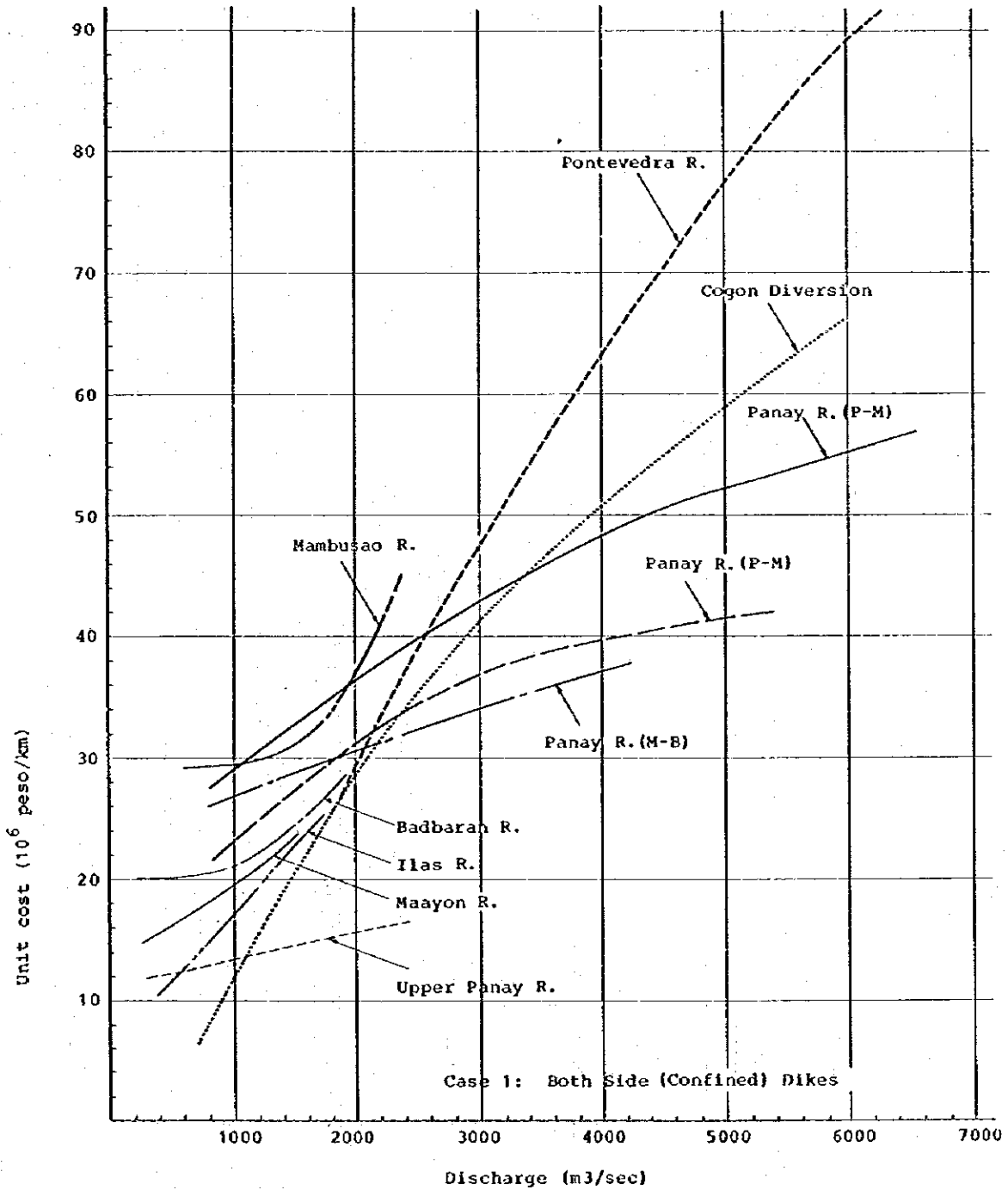


Fig. IV.6-5 Construction Cost Curve for River Improvement (1)

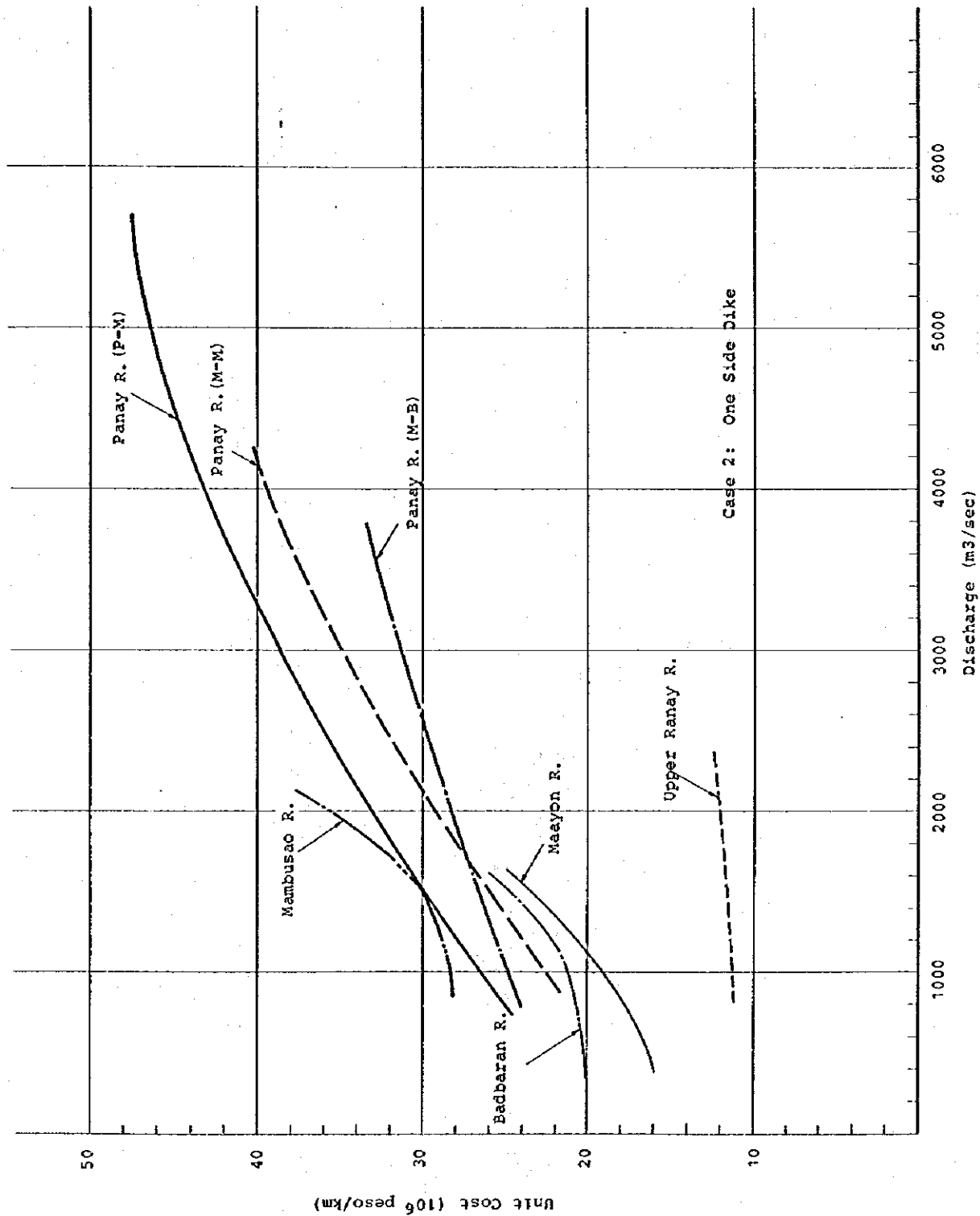


Fig. IV.6-6 Construction Cost Curve for River Improvement (2)

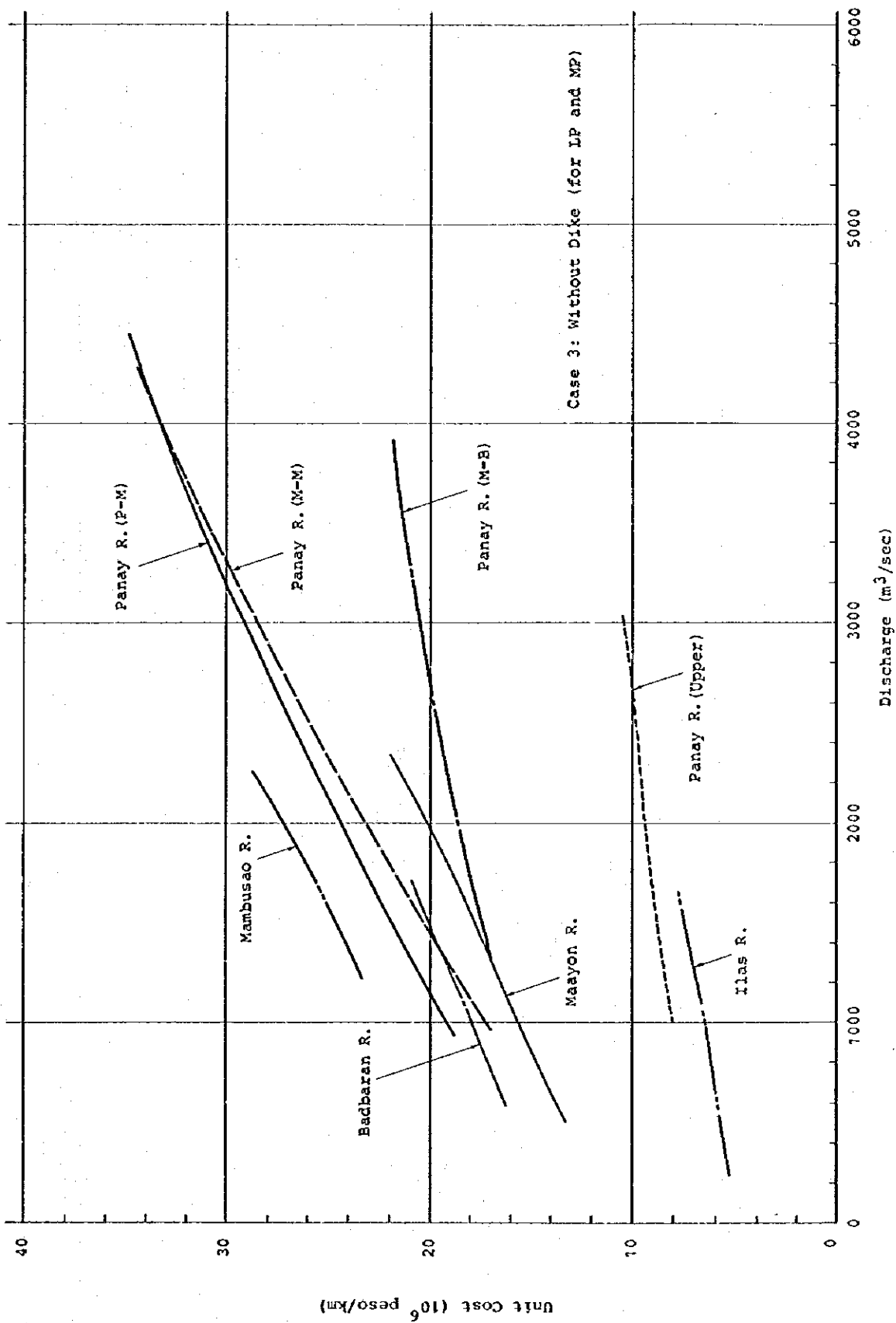


Fig. IV.6-7 Construction Cost Curve for River Improvement (3)

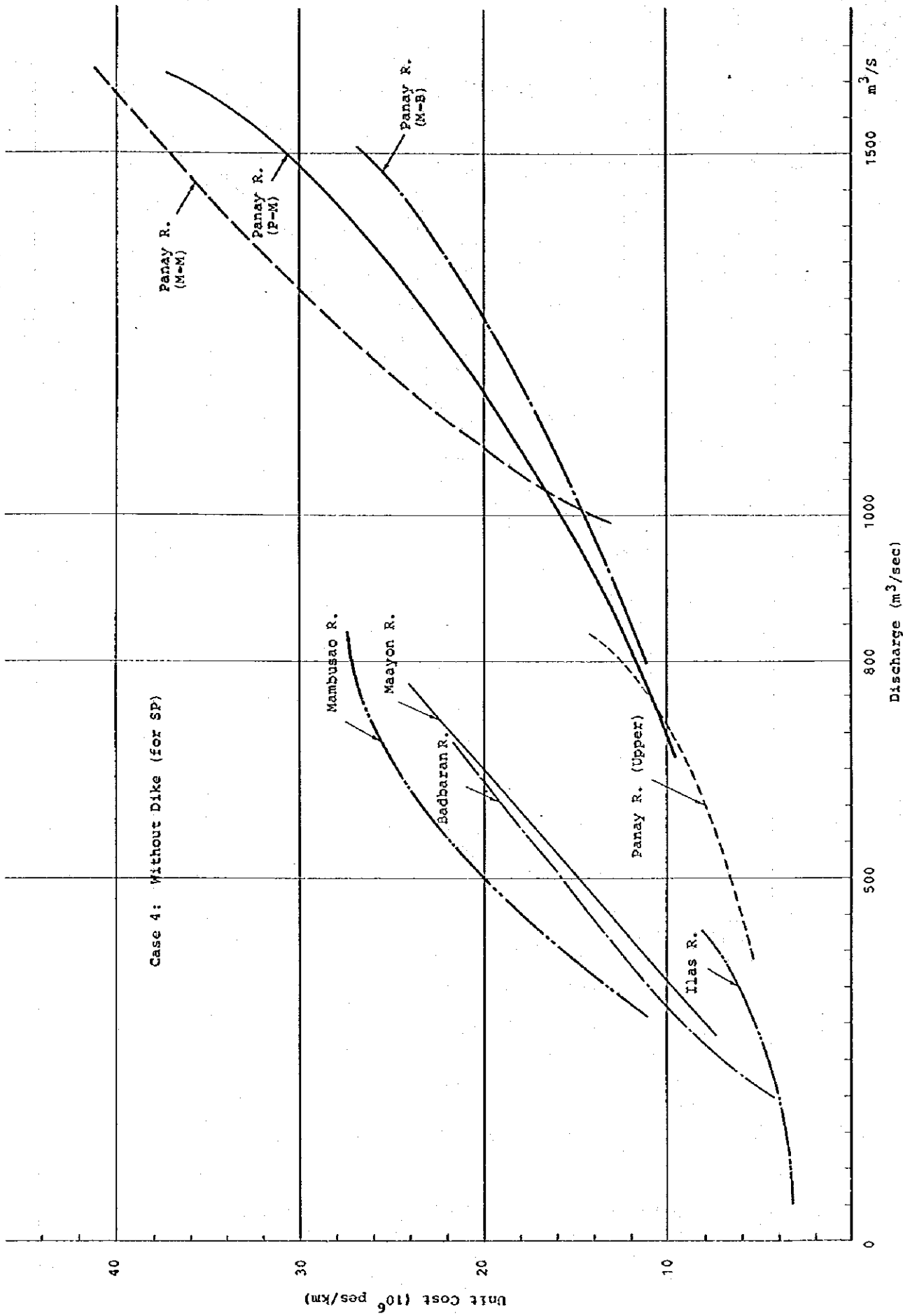
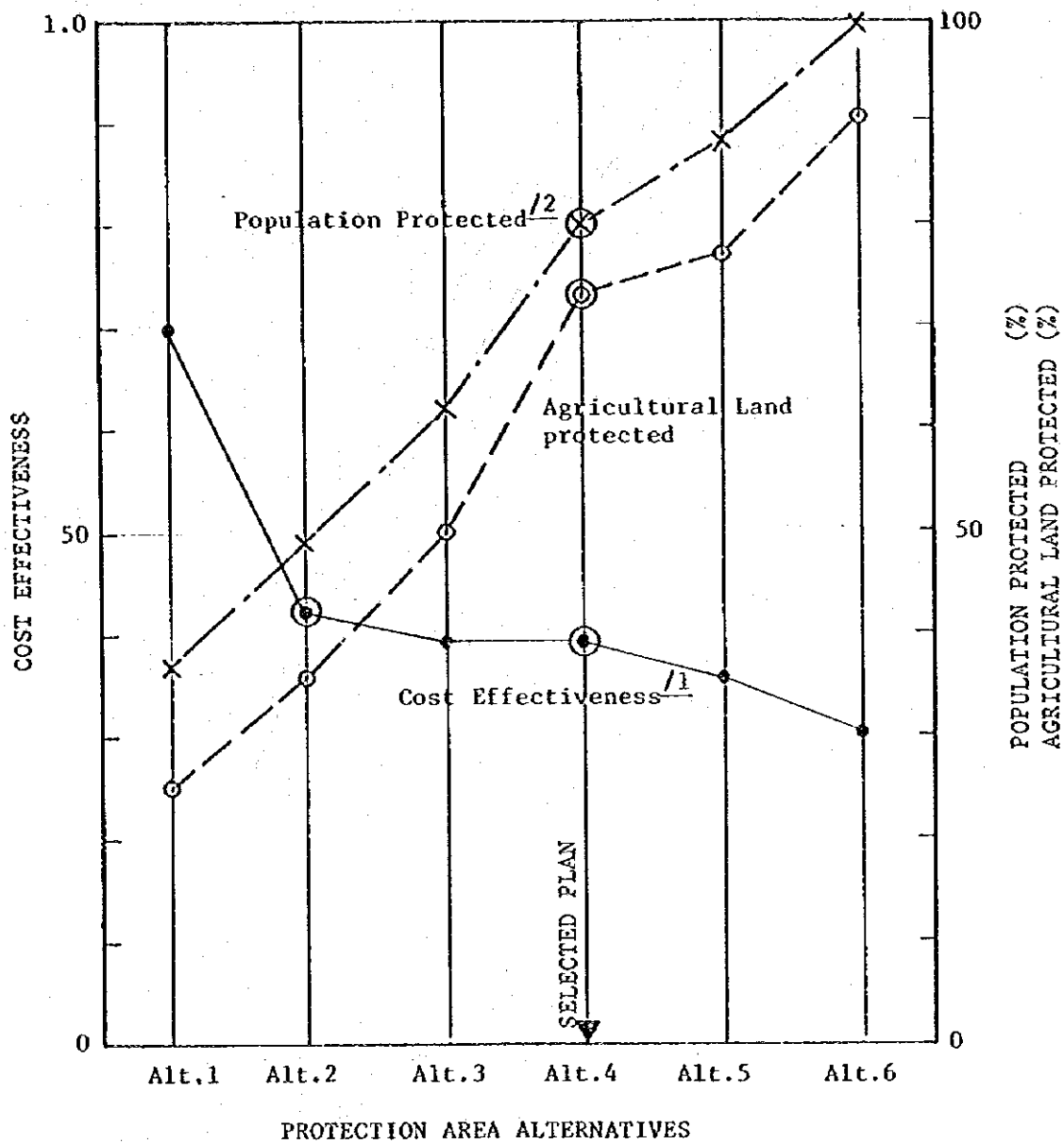


Fig. IV.6-8 Construction Cost Curve for River Improvement (4)



- Notes: /1 Expressed in terms of benefit-cost ratio (present worth of damage reduction/present worth of cost)
- /2 % to total population and agricultural land area in flood prone area
- Points where a notable change in index value is seen.

Fig.IV.6-9 COMPARISON OF FLOOD PROTECTION AREA ALTERNATIVES

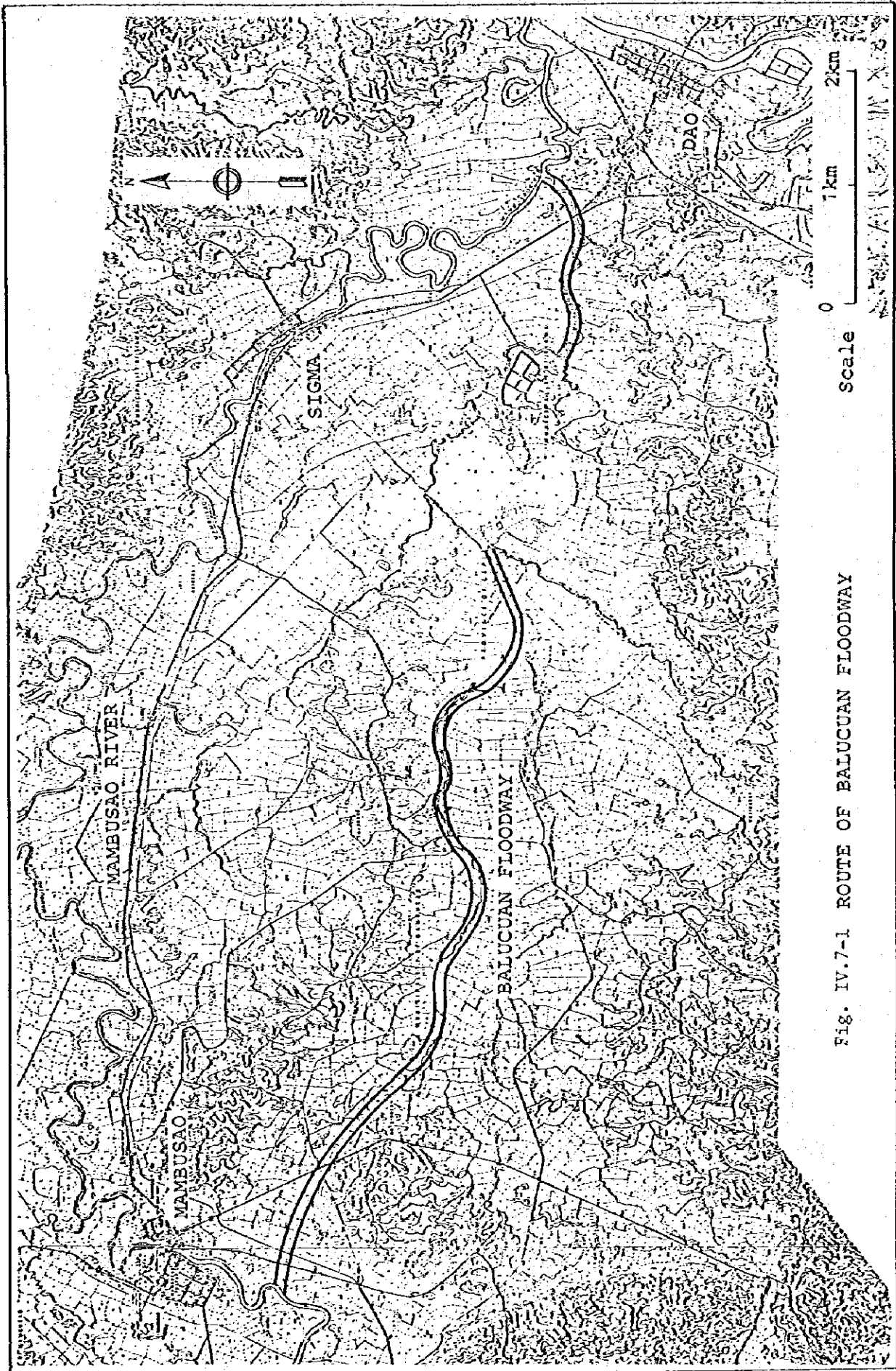


FIG. IV.7-1 ROUTE OF BALUCUAN FLOODWAY

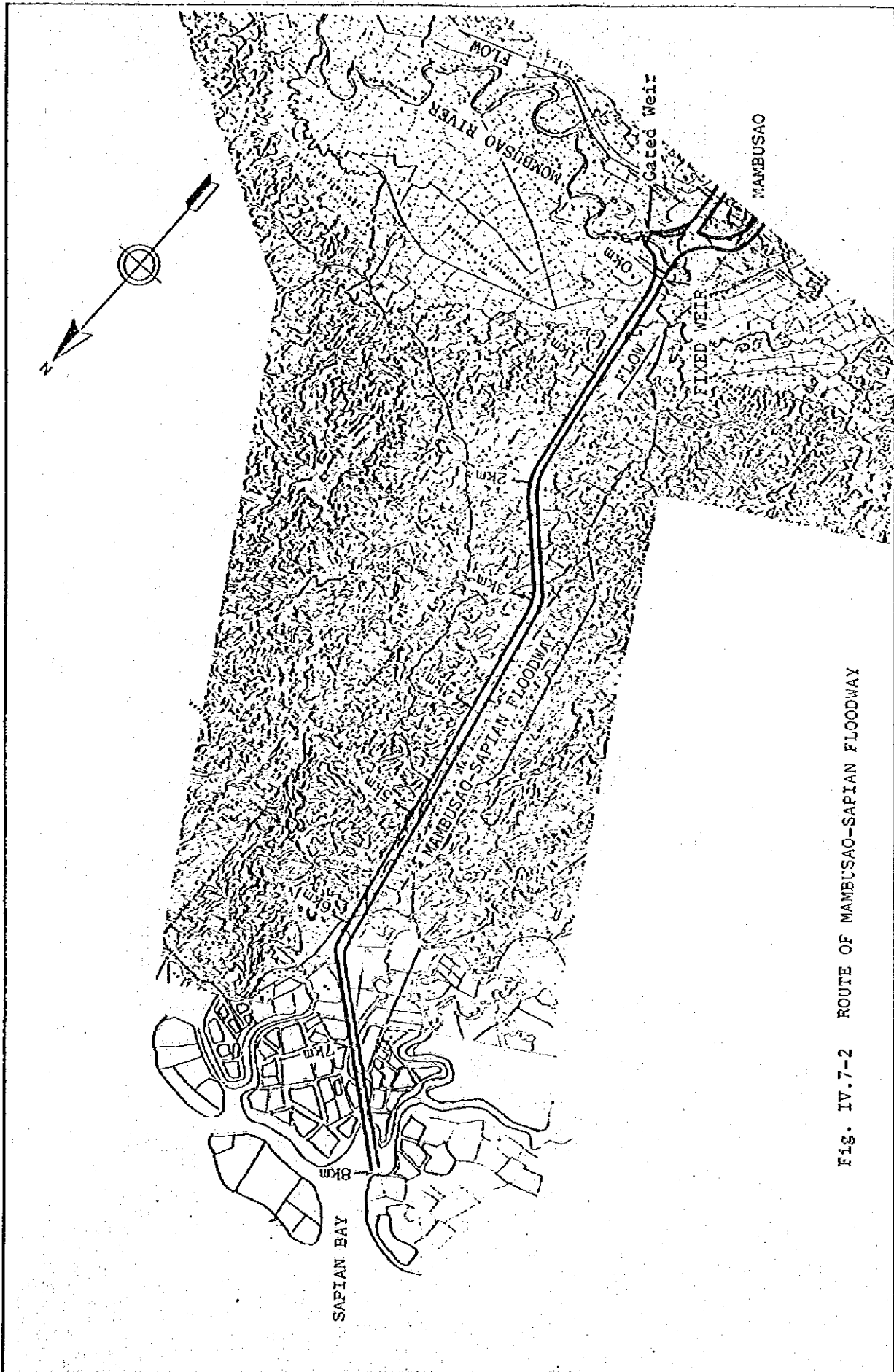


FIG. IV.7-2 ROUTE OF MAMBUSAO-SAPIIAN FLOODWAY

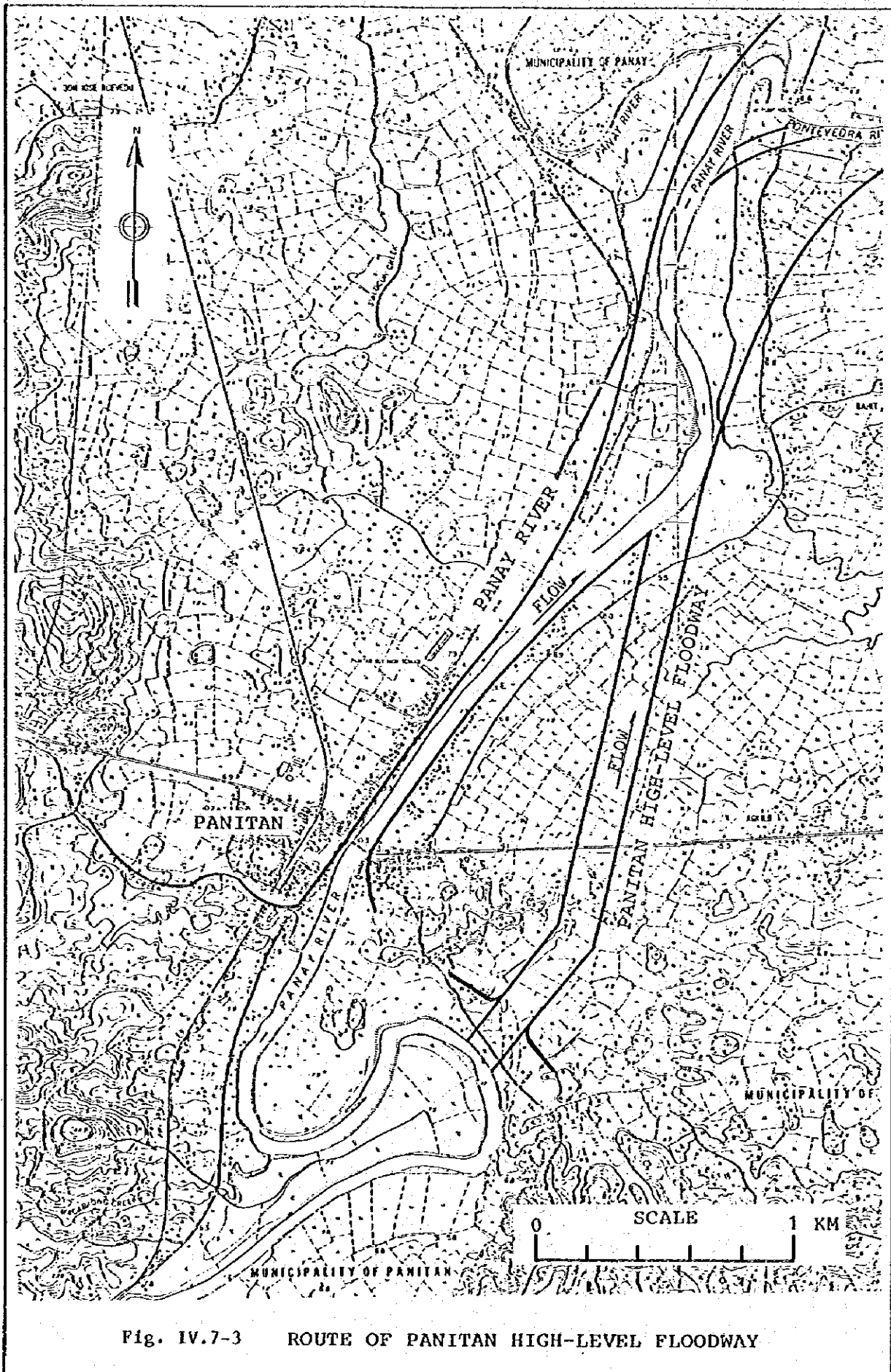


Fig. IV.7-3 ROUTE OF PANITAN HIGH-LEVEL FLOODWAY

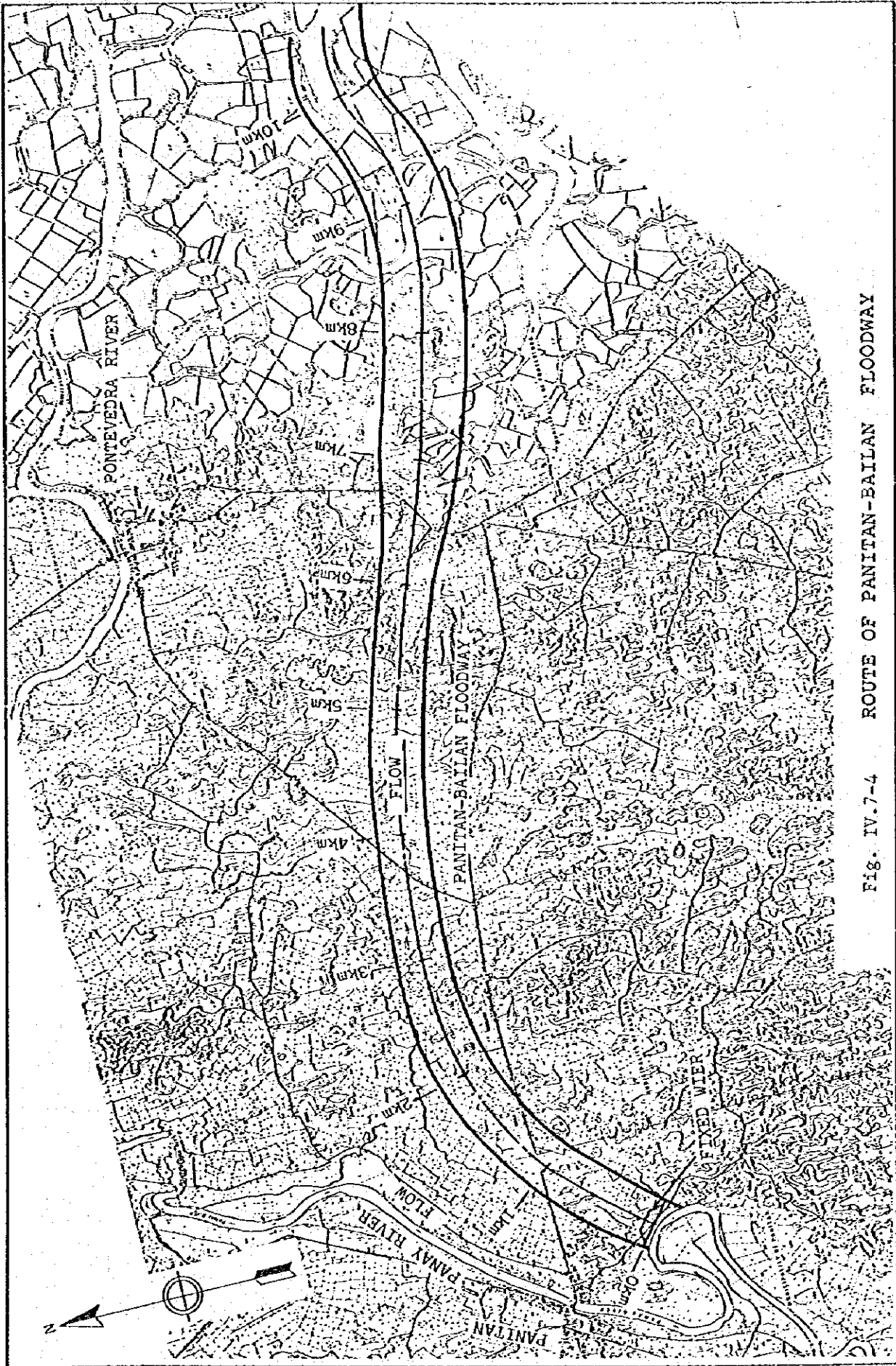


Fig. IV.7-4 ROUTE OF PANITAN-BAILAN FLOODWAY

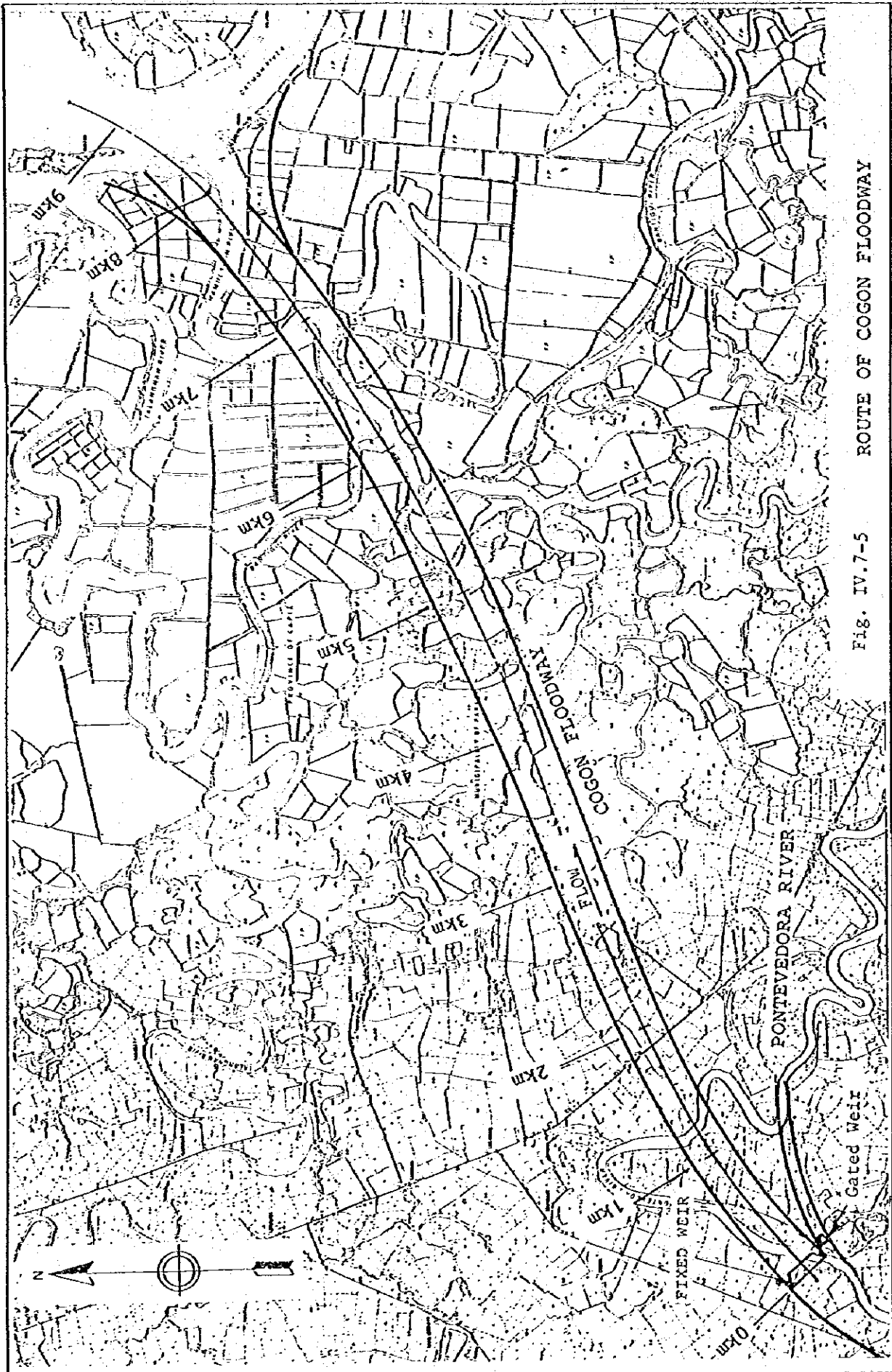


Fig. IV.7-5 ROUTE OF COGON FLOODWAY

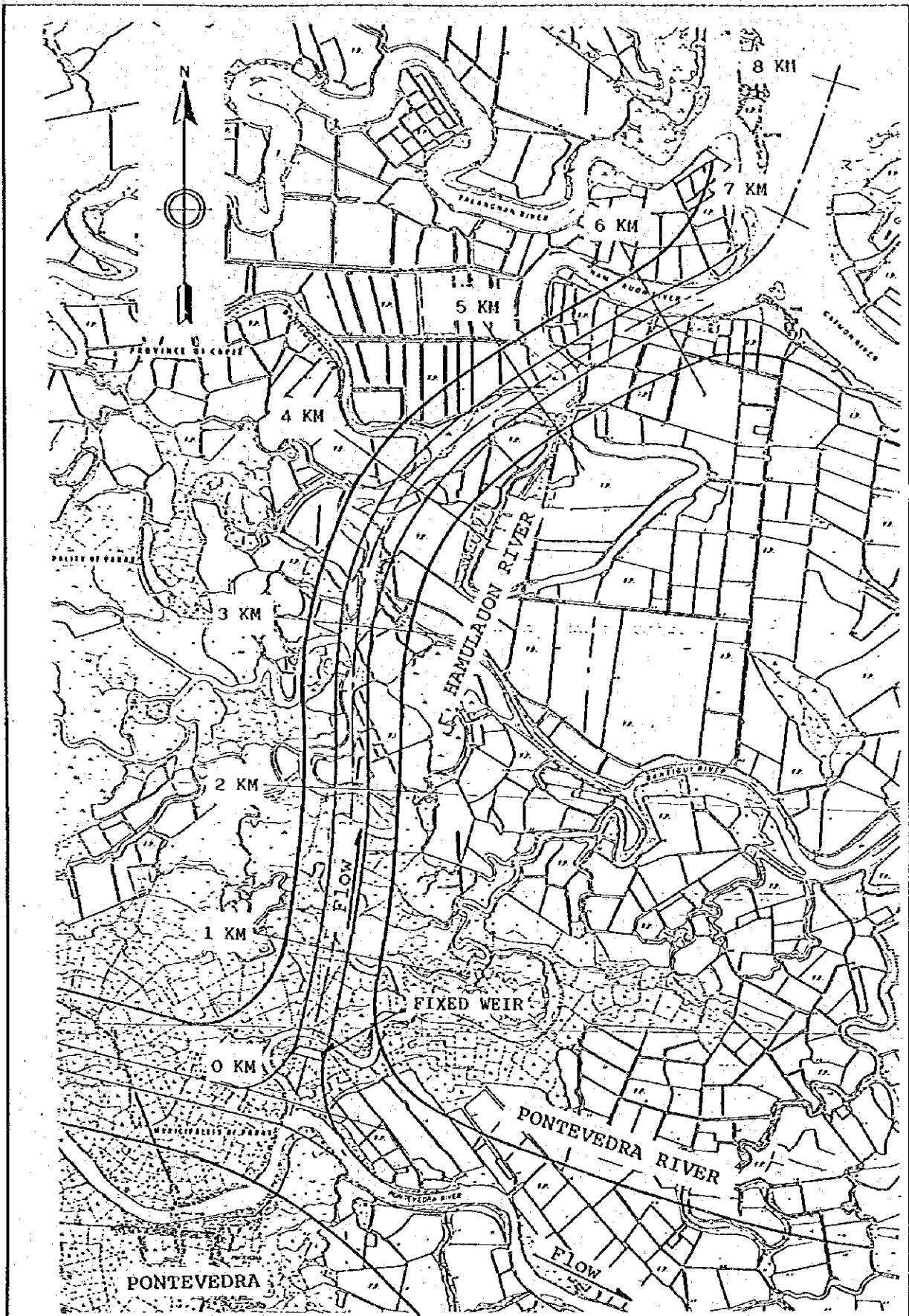


Fig. IV.7-6 ROUTE OF HAMULAUN FLOODWAY

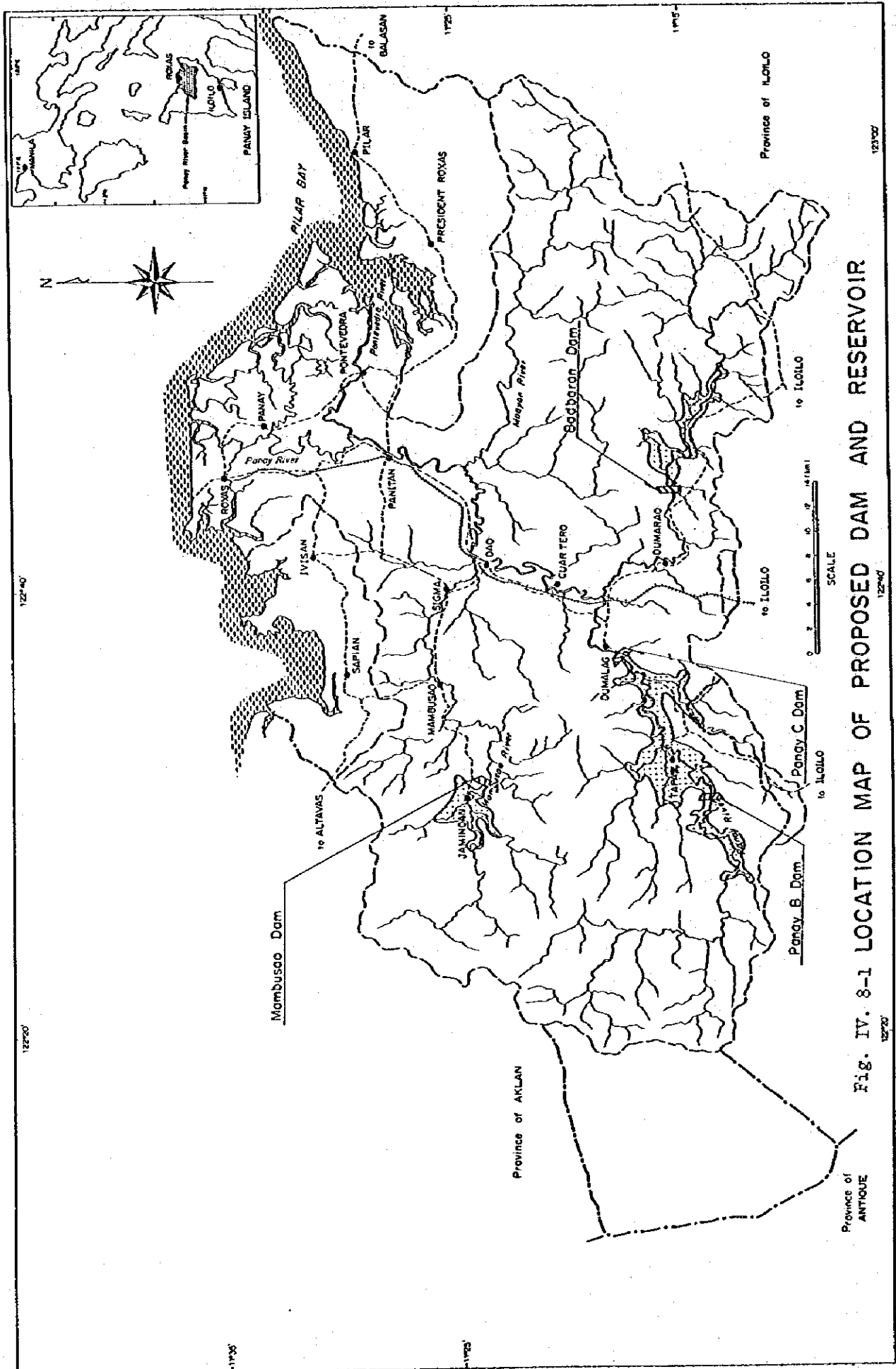
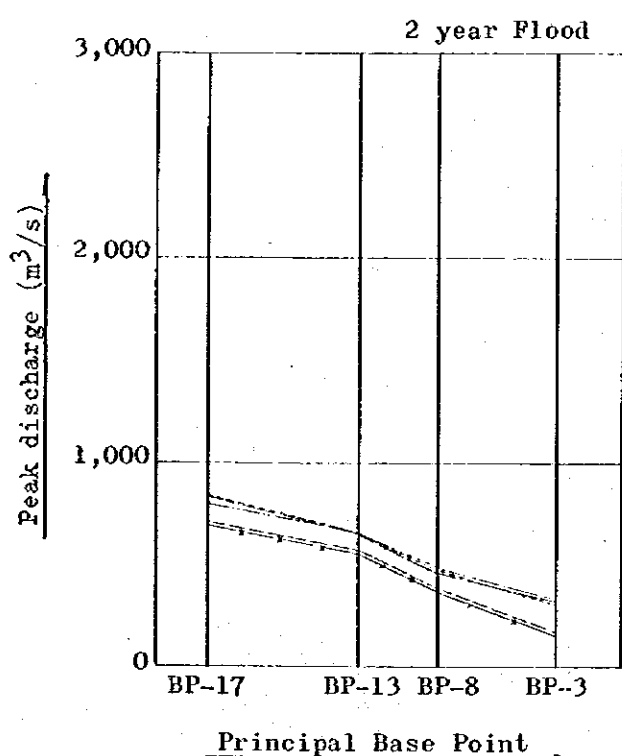
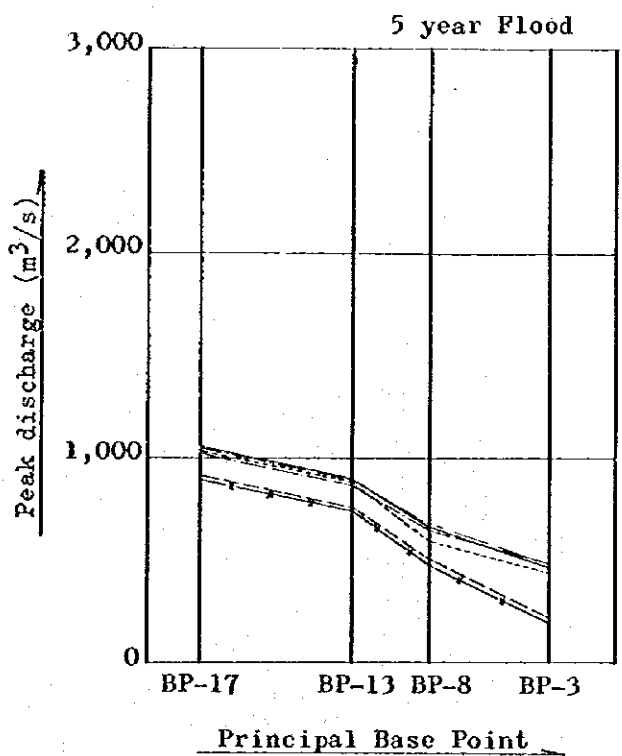
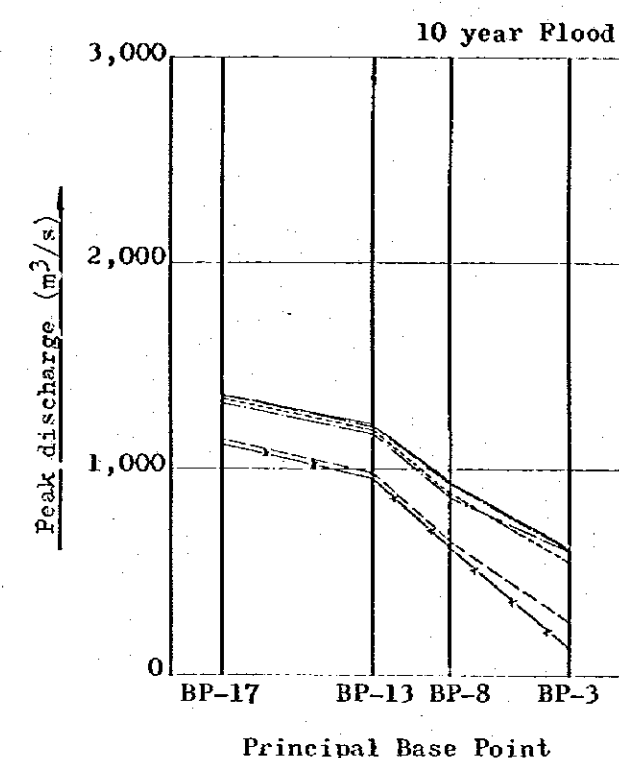
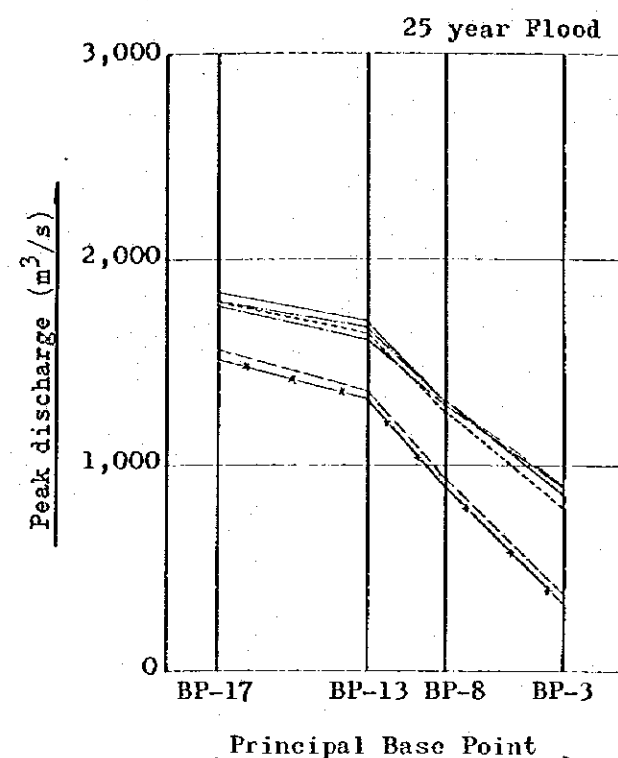
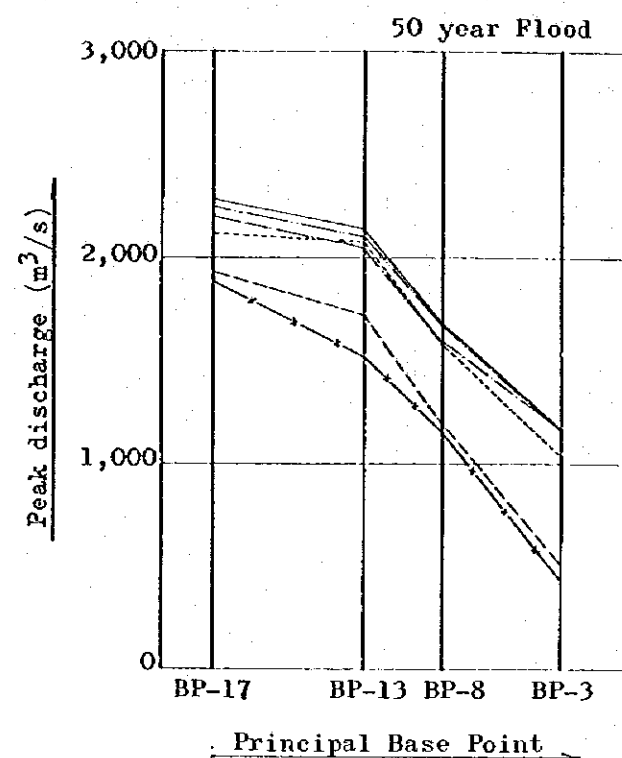
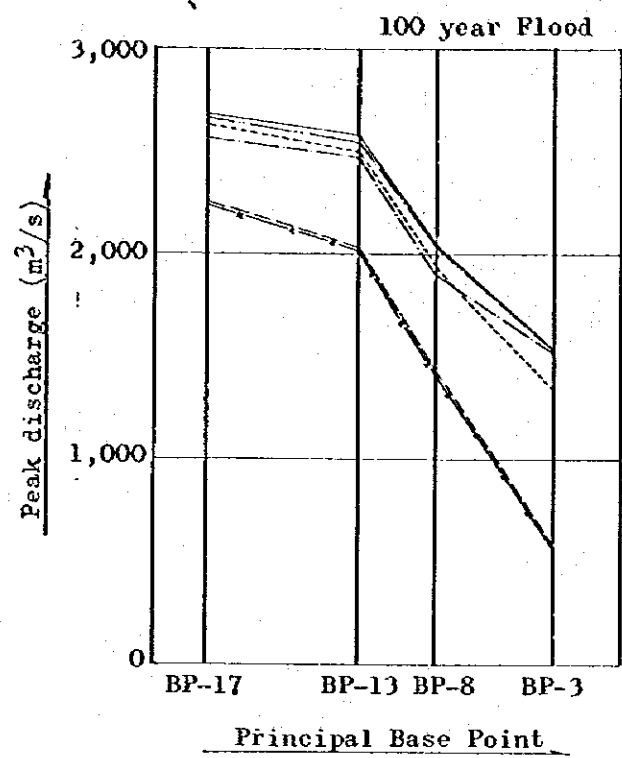


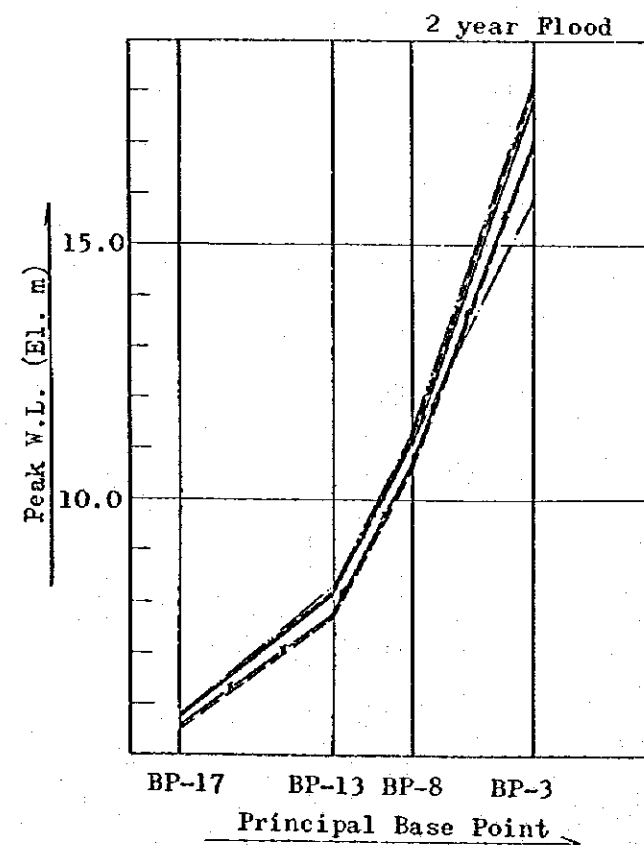
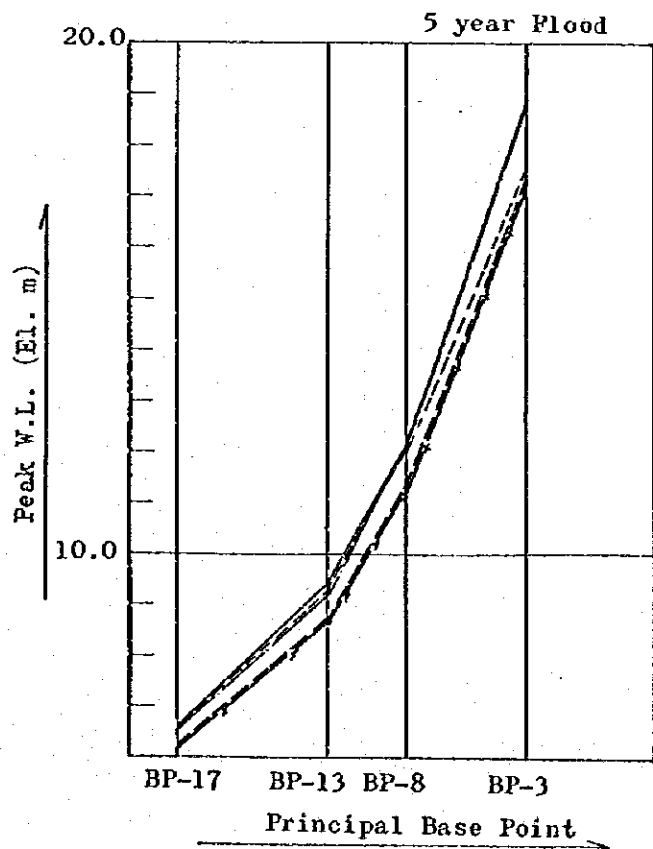
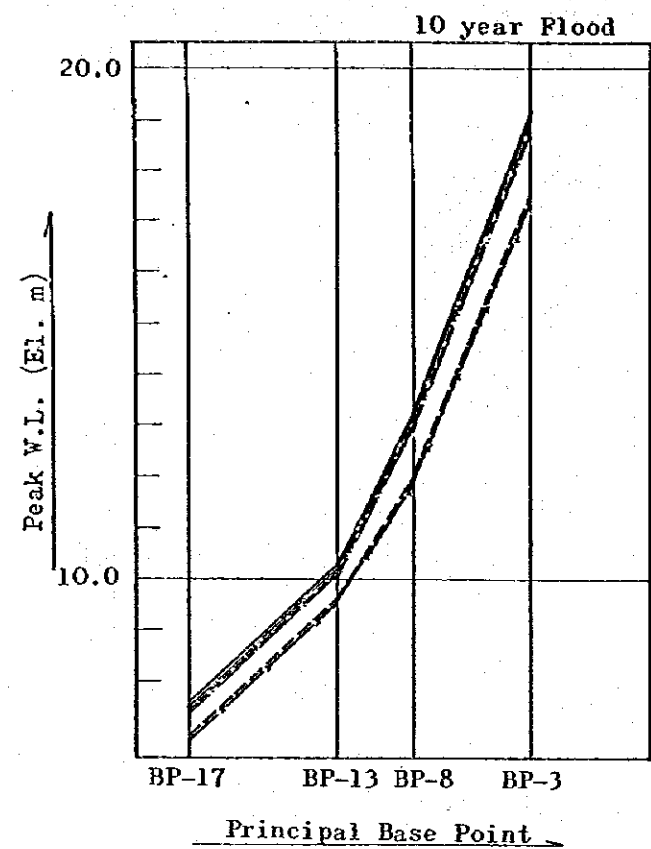
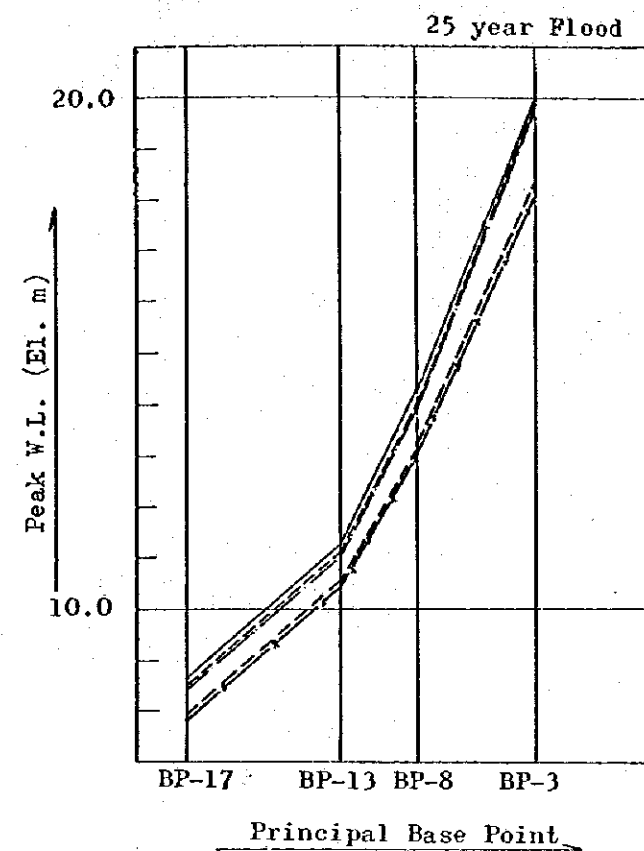
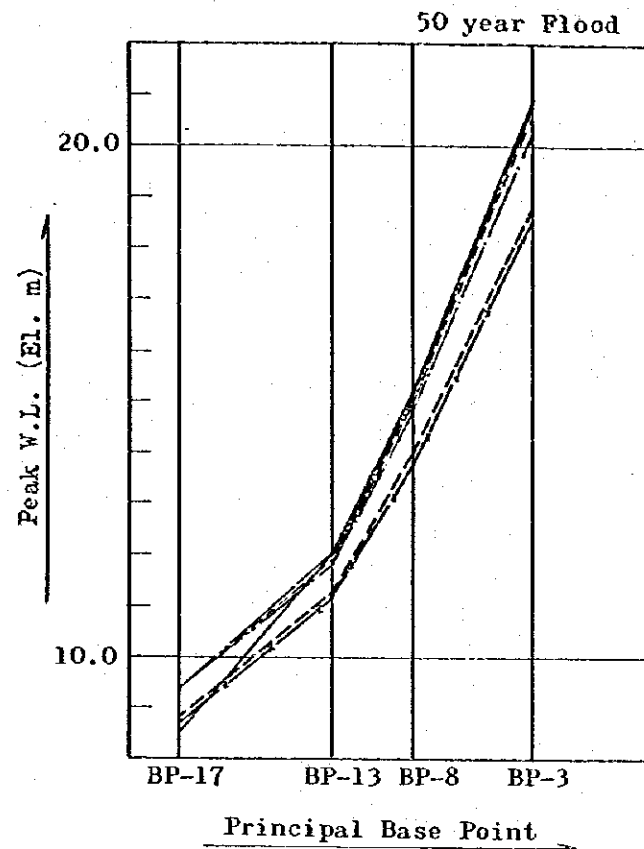
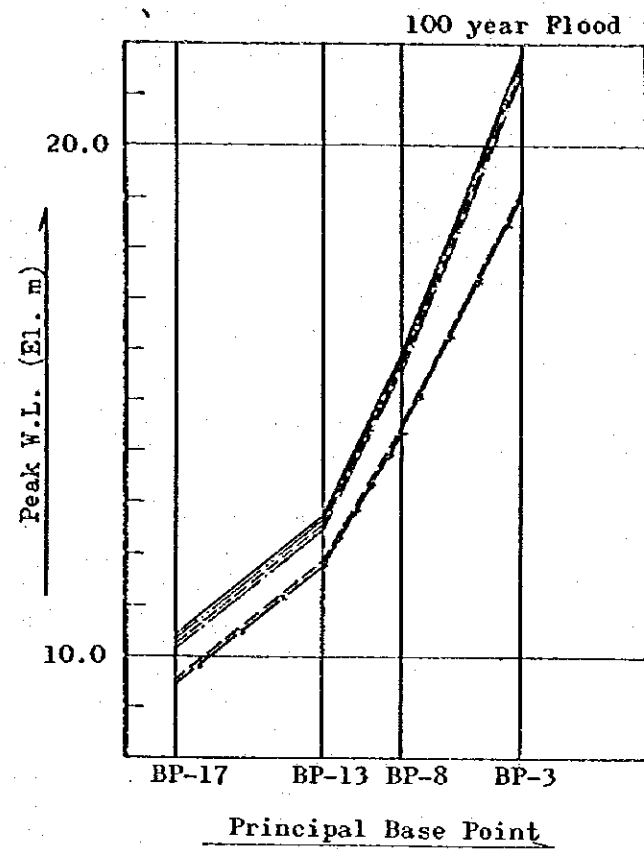
Fig. IV. 8-1 LOCATION MAP OF PROPOSED DAM AND RESERVOIR



LEGEND

- Present
- - - - - Panay B dam
- - - - - Panay C dam
- - - - - Badbaran dam
- - - - - Mambusao dam
- x-x-x- Panay B dam + Panay C dam
- BP-17 At Panitan
- BP-13 Just Upstream of Confluence with Maayon River
- BP-8 Just Upstream of Confluence with Mambusao River
- BP-3 Just Upstream of Confluence with Badbaran River

Fig. N. 8-2 Peak Discharge at Principal Base Points of Dam Alternatives (Under the present river condition)

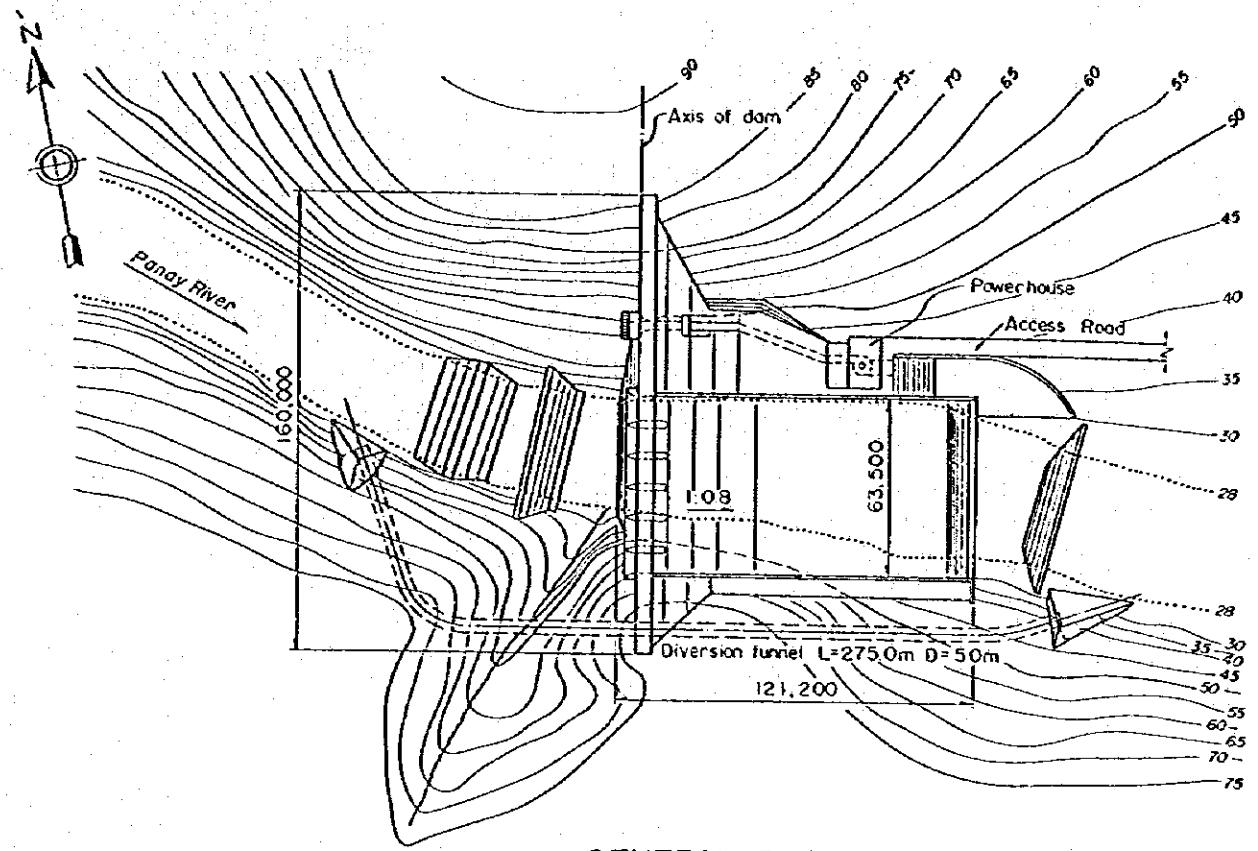


LEGEND

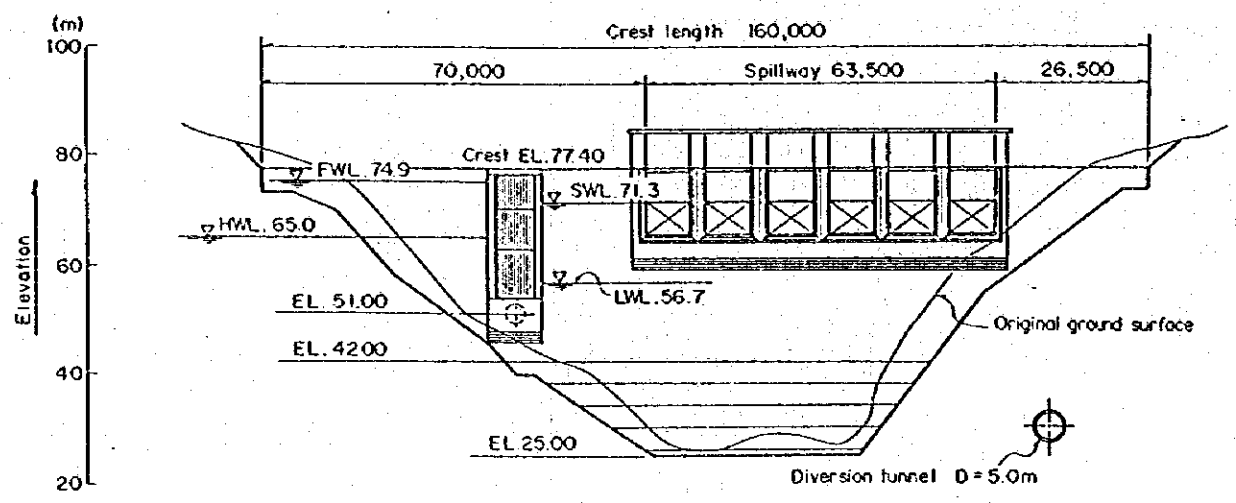
- Present
- - - Panay B dam
- · - Panay C dam
- · - Badbaran dam
- · - Mambusao dam
- x - x - Panay B dam + Panay C dam
- BP-17 At Panitan
- BP-13 Just Upstream of Confluence with Maayon River
- BP-8 Just Upstream of Confluence with Mambusao River
- BP-3 Just Upstream of Confluence with Badbaran River

Note; Probability at Panitan Base

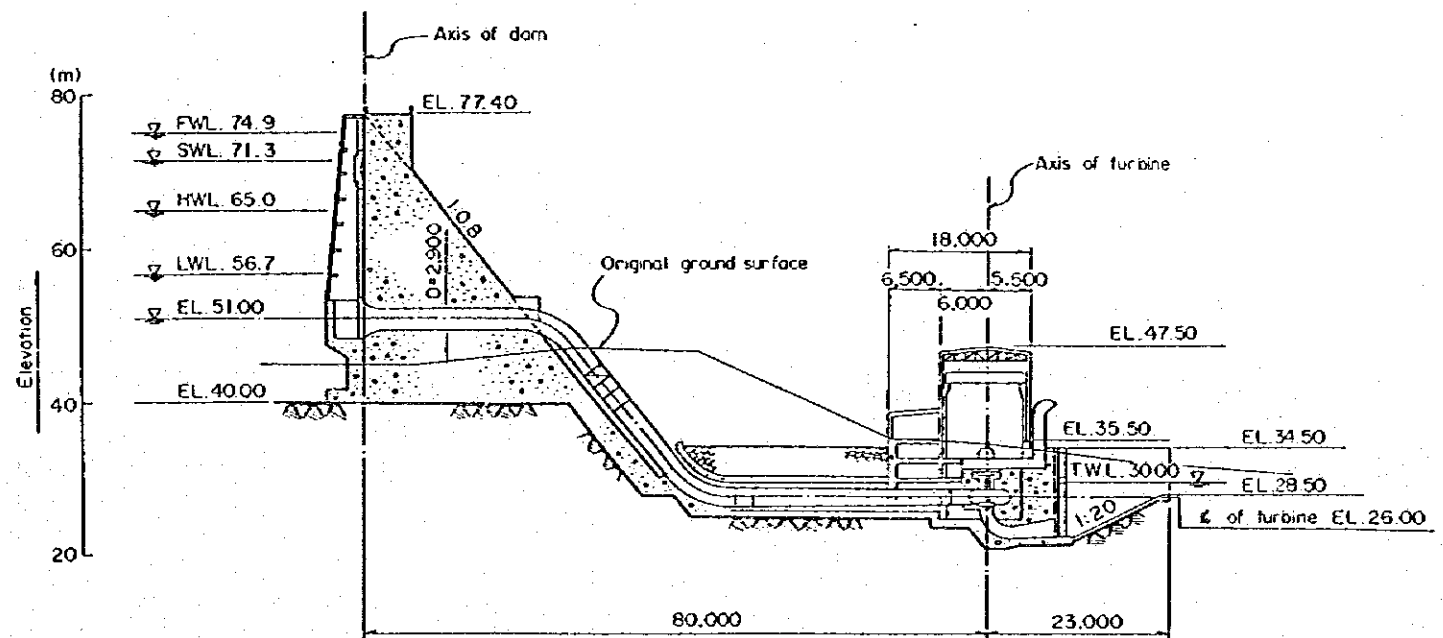
Fig. IV. 8-3 Peak Water Level at Principal Base Points of Dam Alternatives (Under the present river condition)



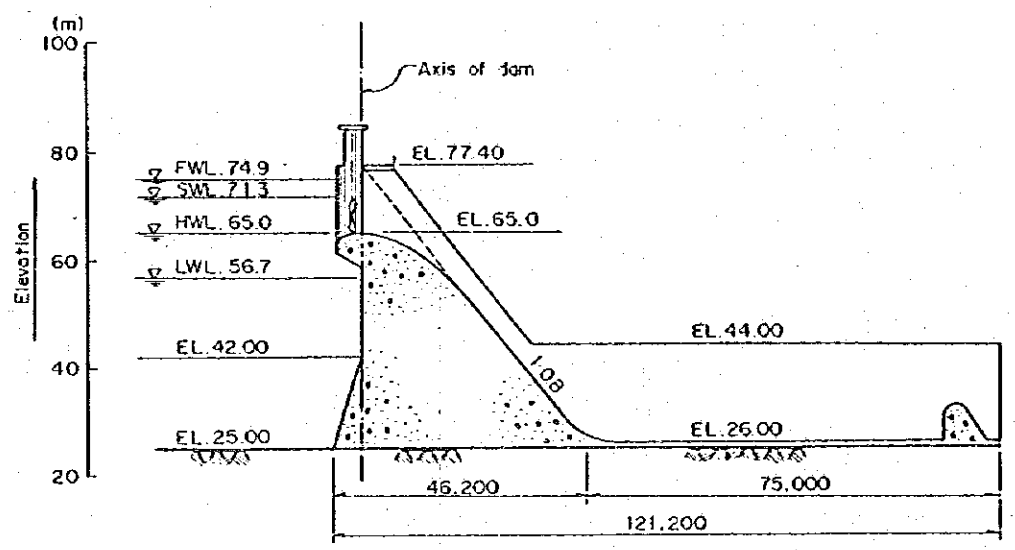
GENERAL PLAN SCALE A



VIEW FROM UPSTREAM SCALE B



WATERWAY AND POWERHOUSE SCALE C



TYPICAL SECTION OF DAM SCALE B

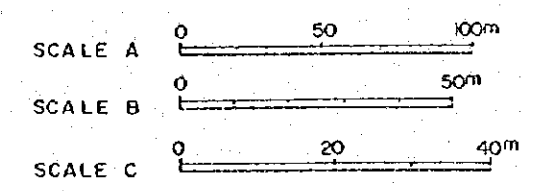
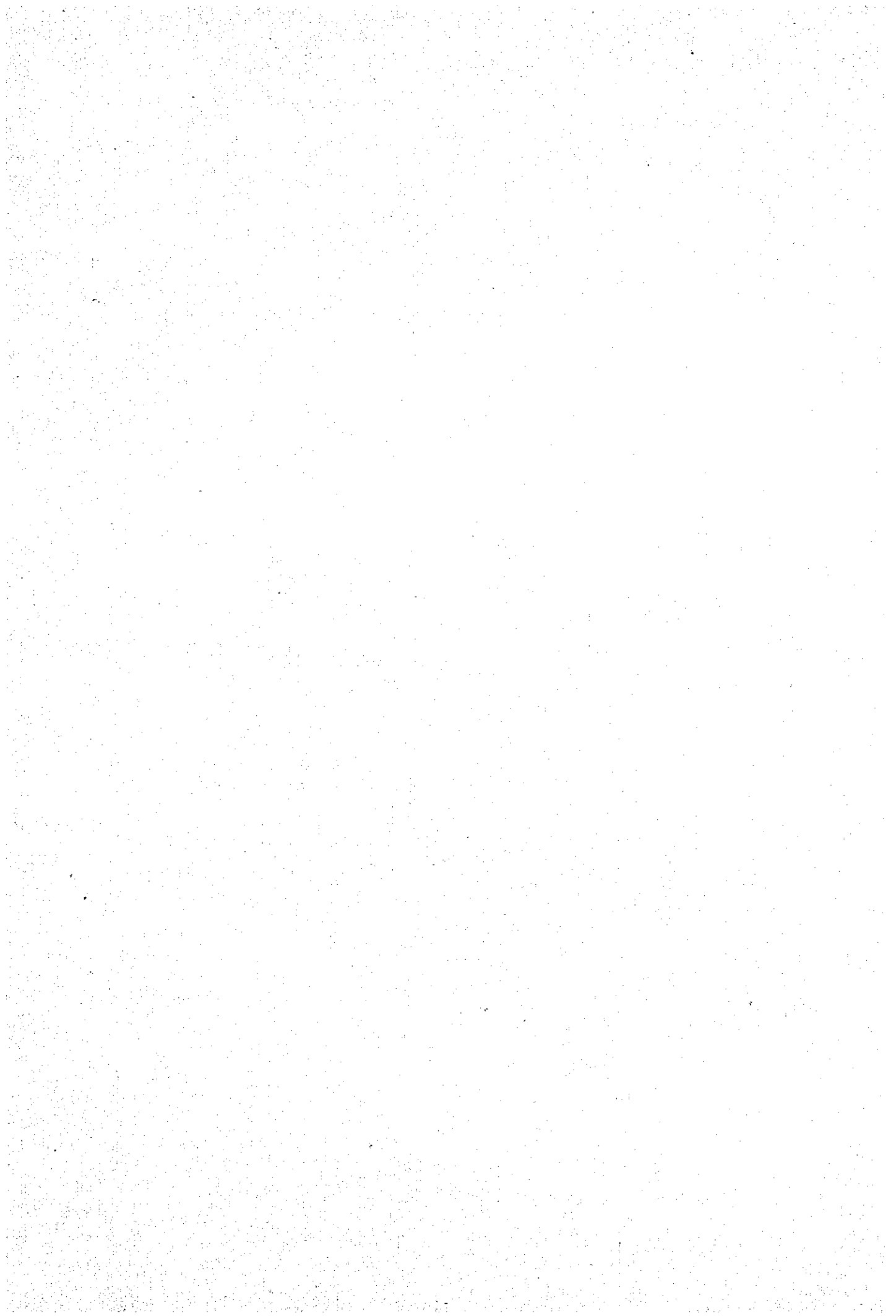


Fig. IV. 8-4 PANAY B DAM SCHEME



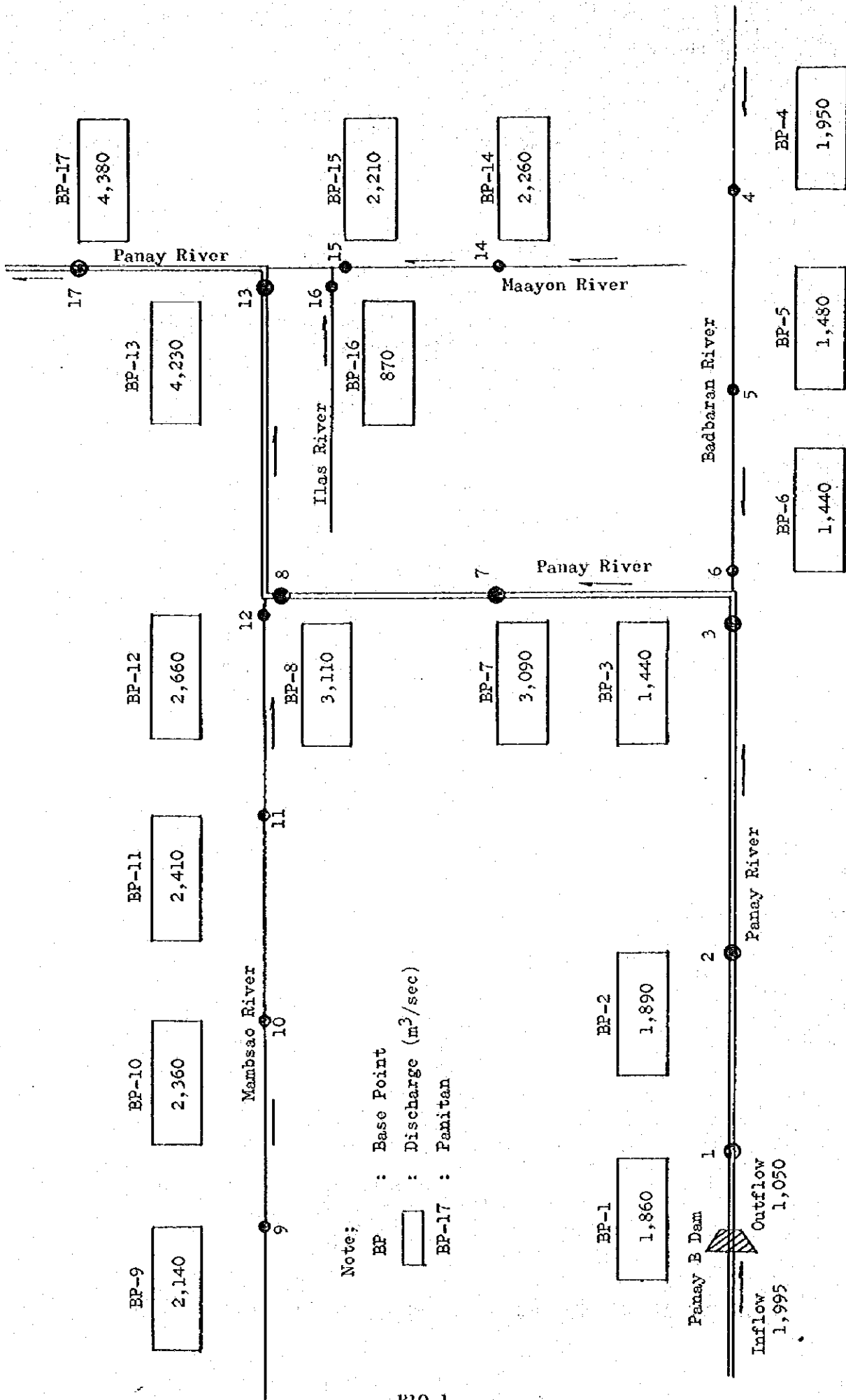
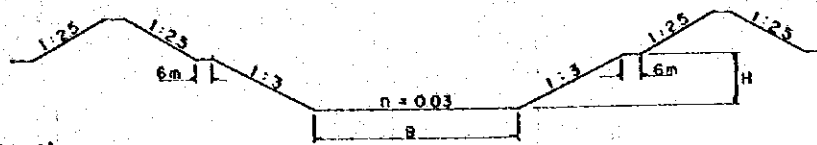
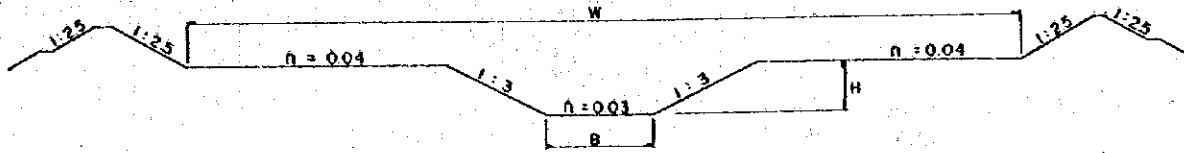


Fig. IV. 10-1 Design Flood Discharge Distribution
 in case of LP Alternative DR-1

Cogon Floodway



Panay River Reaches



Stretch	Improvement	Design Discharge (m ³ /s)	Bed Slope	B (m)	W (m)	H (m)
<u>Cogon Floodway</u>						
Upstream	o	3,900	1/5,300	240	-	5.2
Downstream	o	3,900	1/5,300	320	-	5.2
<u>Panay River</u>						
P1	o	4,400	1/9,300	160	800	6.5
P2	o	4,400	1/6,200	80	400	7.5
P3	*	4,400	1/4,700	80	-	7.5
P4	#	4,300	1/3,500	-	-	6.5
P5	o	4,300	1/2,800	70	400	6.5
P6	o	3,100	1/2,300	60	300	6.5
P7	*	3,100	1/2,200	60	-	5.5
P8	o	3,100	1/2,000	60	300	5.5
P9	o	2,000	1/1,500	50	300	5.0
P10	x	-	-	-	-	-
<u>Maayon River</u>						
Y1	#	2,200	1/2,900	-	-	5.0
Y2	o	2,300	1/2,800	40	300	6.0
Y3	x	-	-	-	-	-
Y4	o	900	1/1,500	20	150	4.0
<u>Mambusao River</u>						
M1	o	2,700	1/5,000	50	200	6.0
M2	o	2,400	1/3,200	50	200	6.0
M3	o	2,400	1/2,600	50	200	6.5
M4	x	-	-	-	-	-
M5	x	-	-	-	-	-
M6	x	-	-	-	-	-
M7	#	300	1/1,500	5	-	4.0
<u>Badbaran River</u>						
B1	x	-	-	-	-	-
B2	x	-	-	-	-	-
B3	x	-	-	-	-	-

- Notes: o River improvement by both side levees and excavation/enlargement of low water channel.
 * River improvement by one side levees and excavation/enlargement of low water channel.
 # Partial improvement of low water channel.
 x To be left as present river condition.

Fig. IV.10-2 Standard River Cross Section of LP

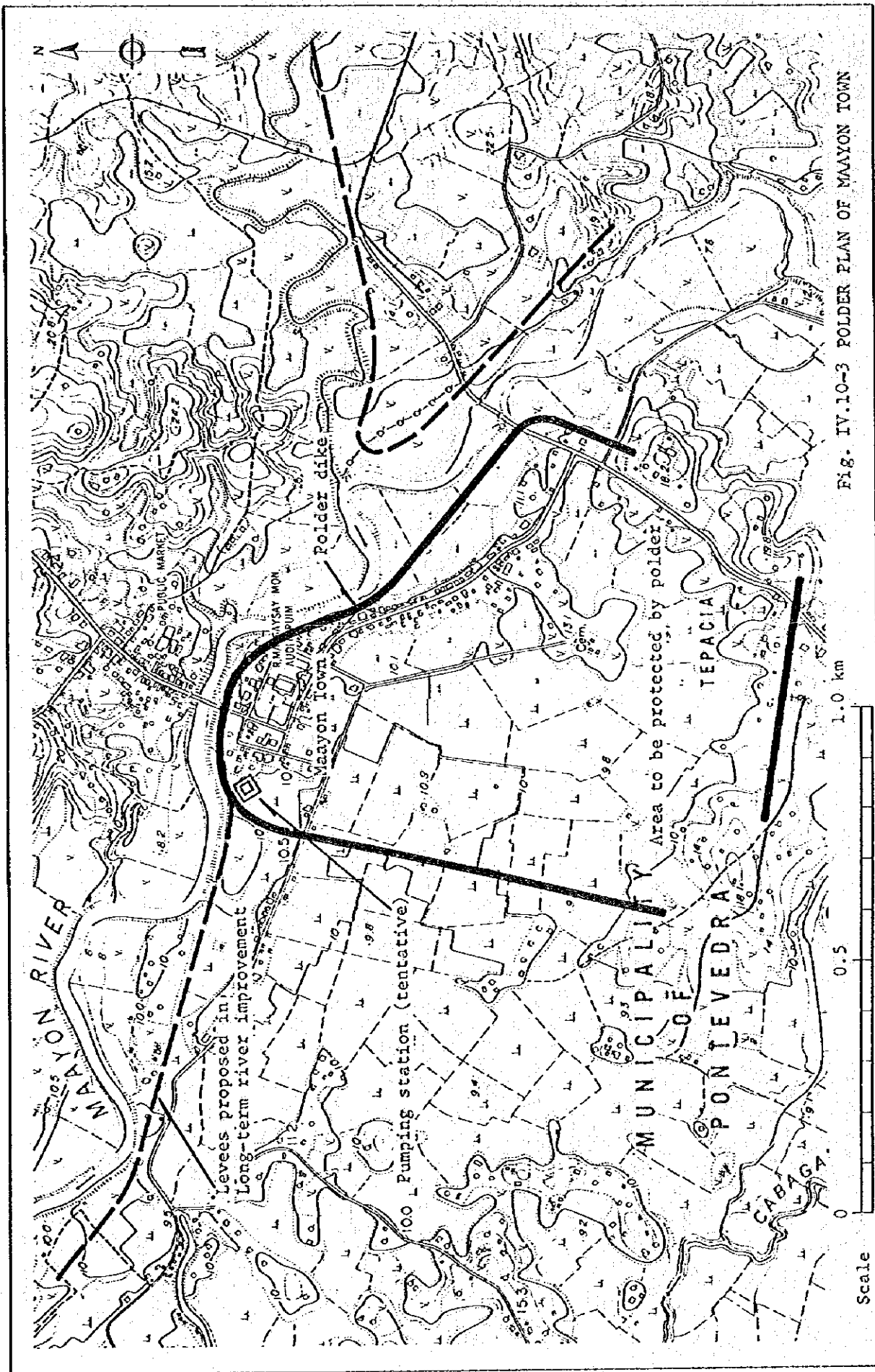


FIG. IV.10-3 POLDER PLAN OF MAAYON TOWN

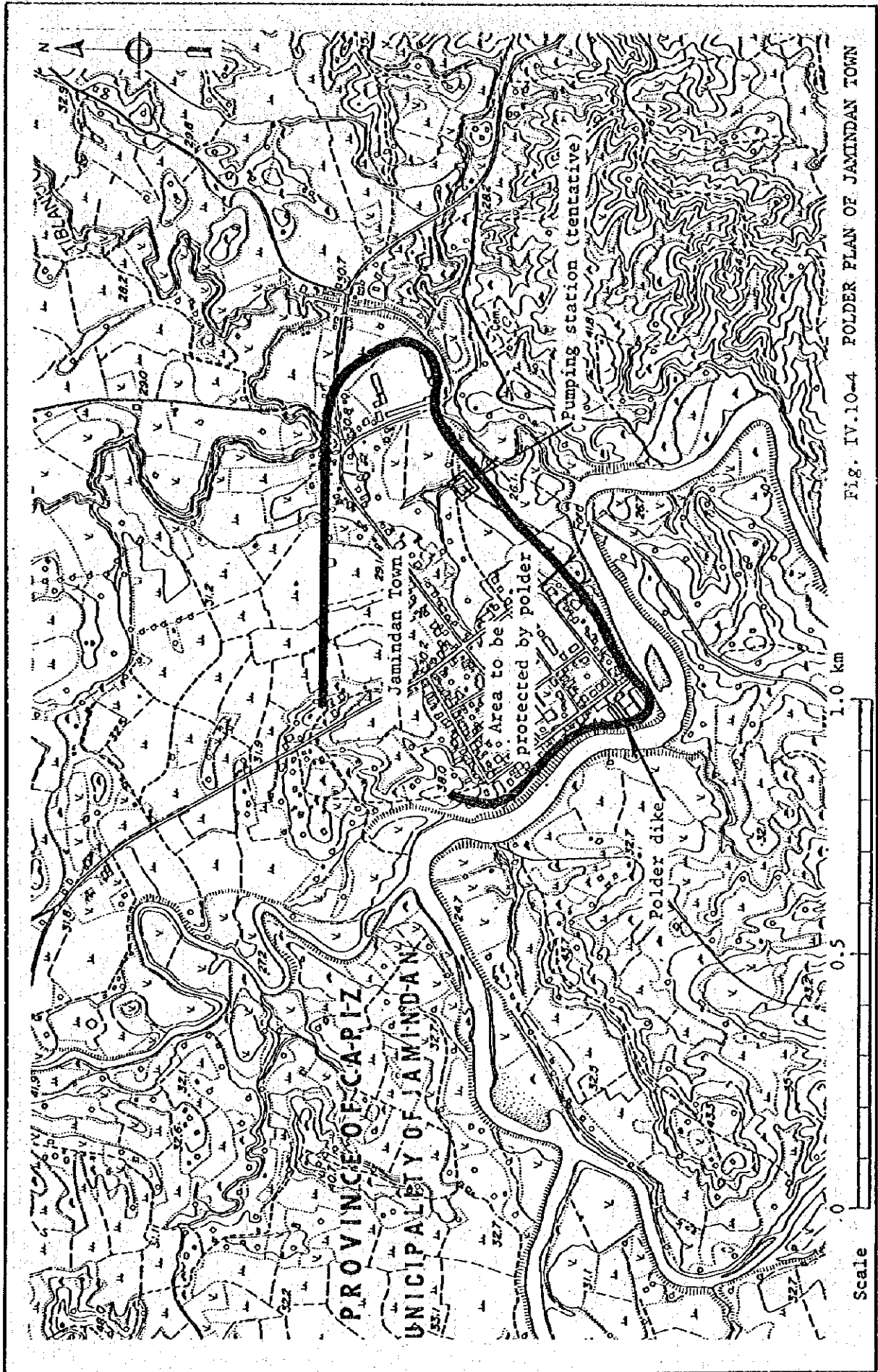


Fig. IV.10-4 FOLDER PLAN OF JAMINDAN TOWN

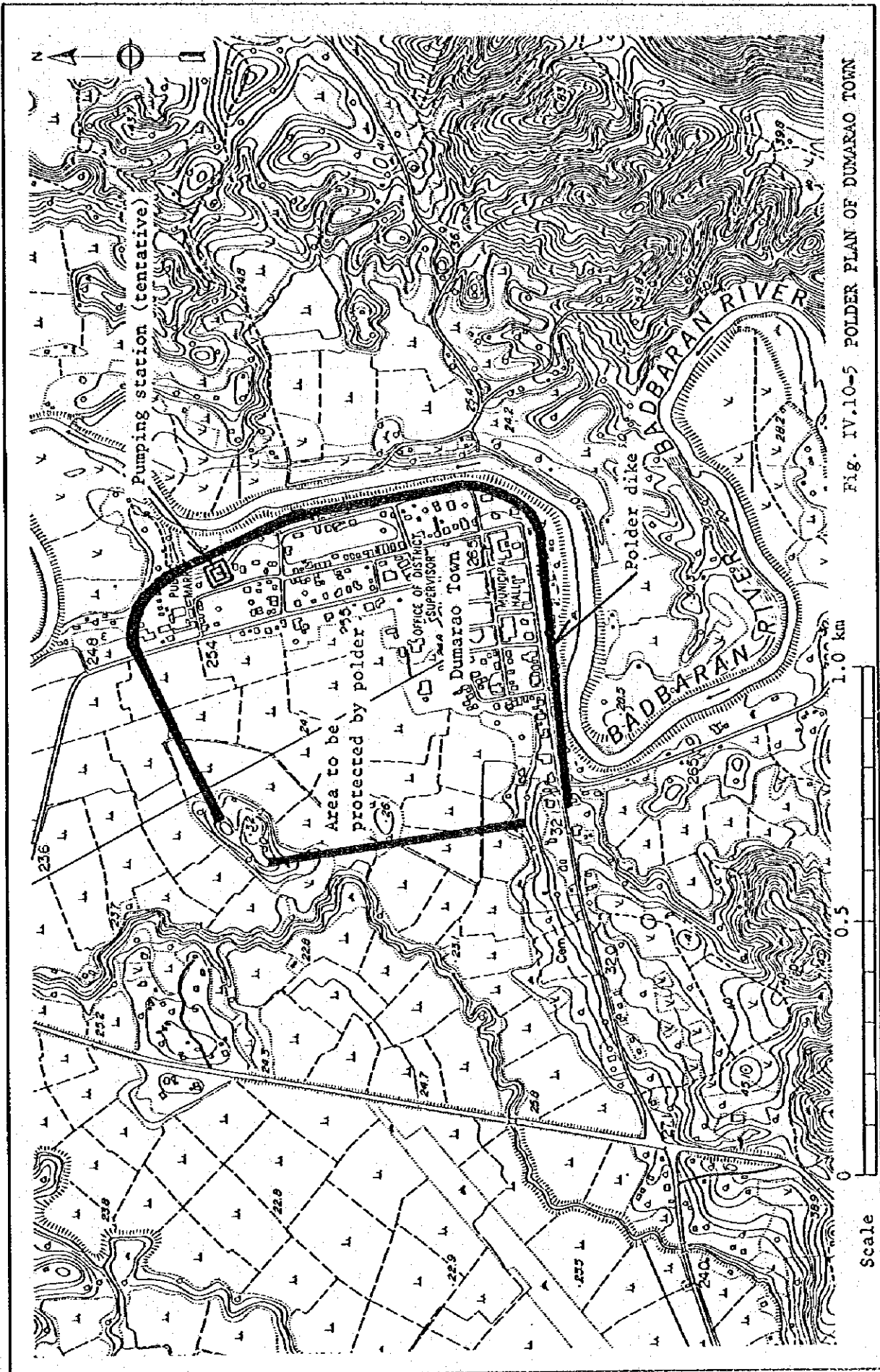
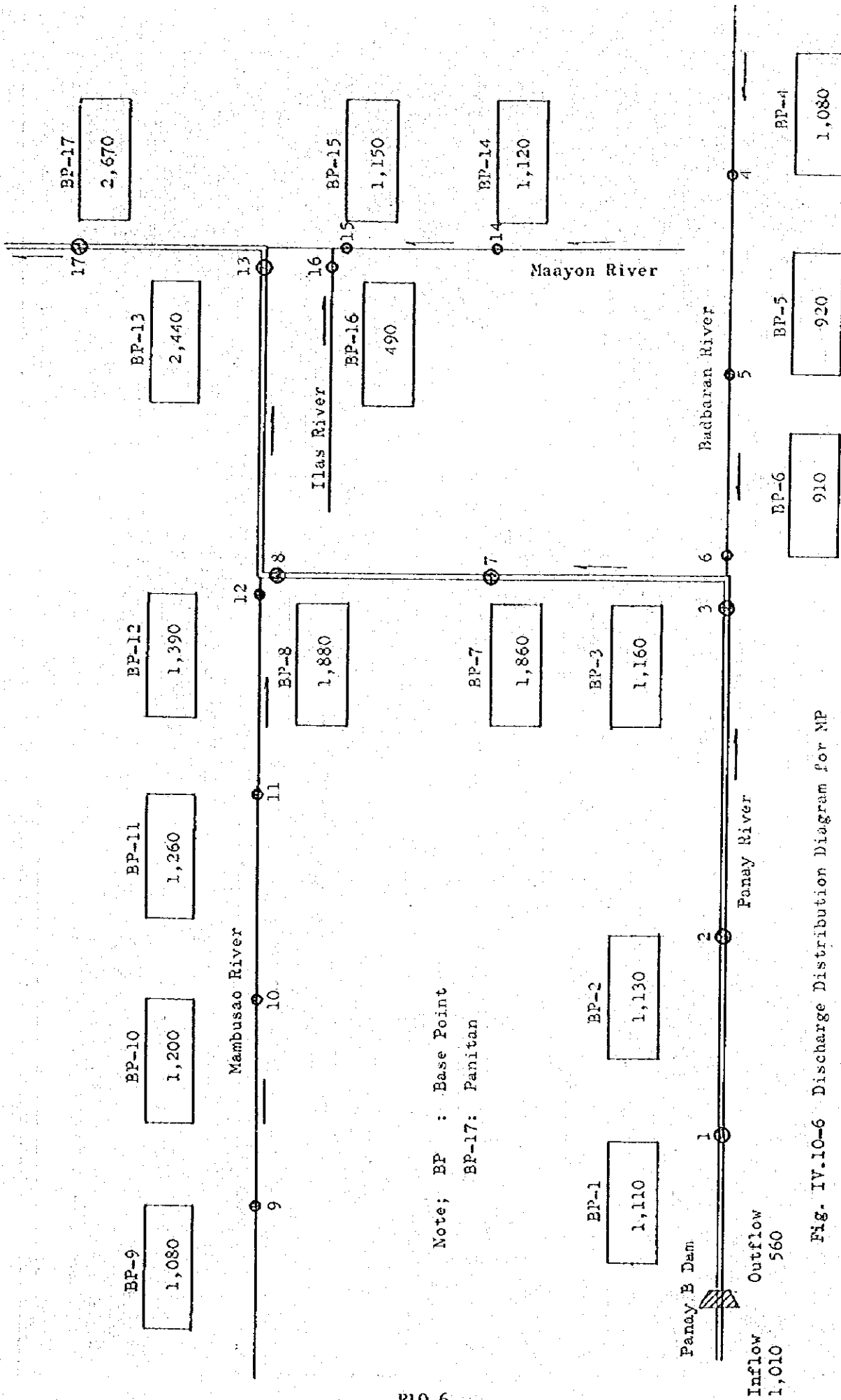


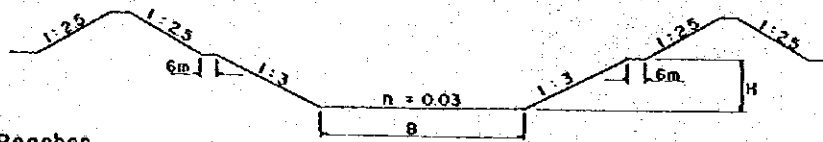
Fig. IV.10-5 POLDER PLAN OF DUMARAO TOWN



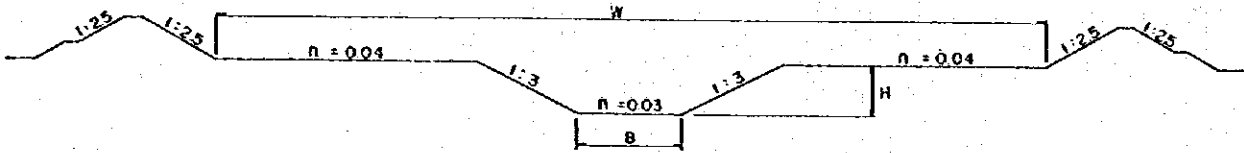
Note; BP : Base Point
 BP-17: Panitan

Fig. IV.10-6 Discharge Distribution Diagram for NP

Cogon Floodway



Panay River Reaches



Stretch	Improvement	Design Discharge (m ³ /s)	Bed Slope	B (m)	V (m)	H (m)
Cogon Floodway						
Upstream	o	2,200	1/5,300	150	-	5.2
Downstream	o	2,200	1/5,300	170	-	5.2
Panay River						
P1	o	2,700	1/9,300	100	600	6.5
P2	o	2,700	1/6,200	70	400	7.5
P3	*	-	-	-	-	-
P4	#	-	-	-	-	-
P5	o	-	-	-	-	-
P6	o	-	-	-	-	-
P7	*	-	-	-	-	-
P8	o	-	-	-	-	-
P9	x	-	-	-	-	-
P10	x	-	-	-	-	-
Maayon River						
Y1	x	-	-	-	-	-
Y2	x	-	-	-	-	-
Y3	x	-	-	-	-	-
Y4	x	-	-	-	-	-
Mambusao River						
M1	o	-	-	-	-	-
M2	o	-	-	-	-	-
M3	o	-	-	-	-	-
M4	x	-	-	-	-	-
M5	x	-	-	-	-	-
M6	x	-	-	-	-	-
M7	x	-	-	-	-	-
Badbaran River						
B1	x	-	-	-	-	-
B2	x	-	-	-	-	-
B3	x	-	-	-	-	-

- Notes: o River improvement by both side levees and excavation/enlargement of low water channel.
 * River improvement by one side levees and excavation/enlargement of low water channel.
 # Partial improvement of low water channel.
 x To be left as present river condition.

Fig. IV.10-7 Standard River Cross Section of MP

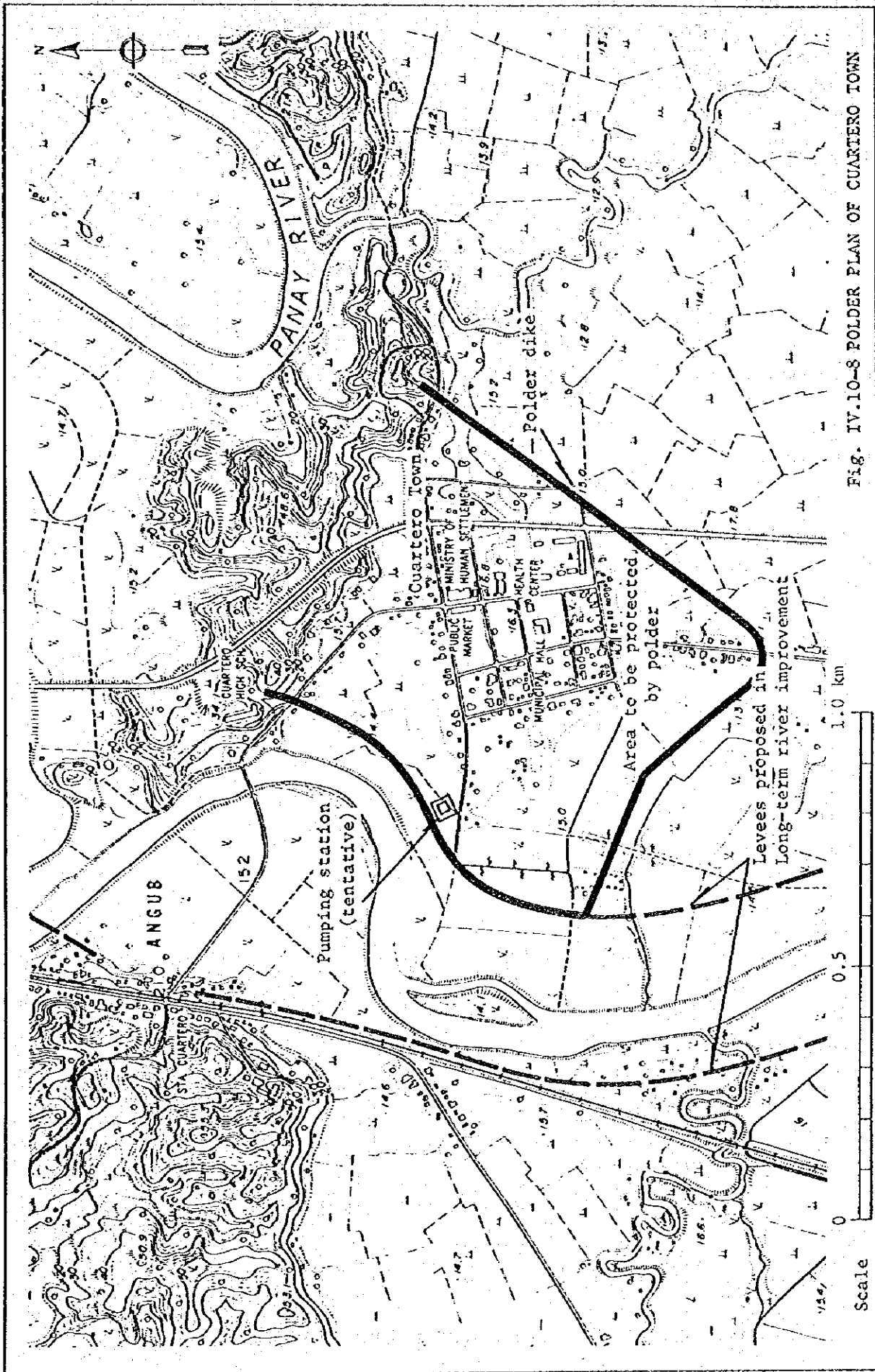


Fig. IV.10-8 POLDER PLAN OF CUARTERO TOWN

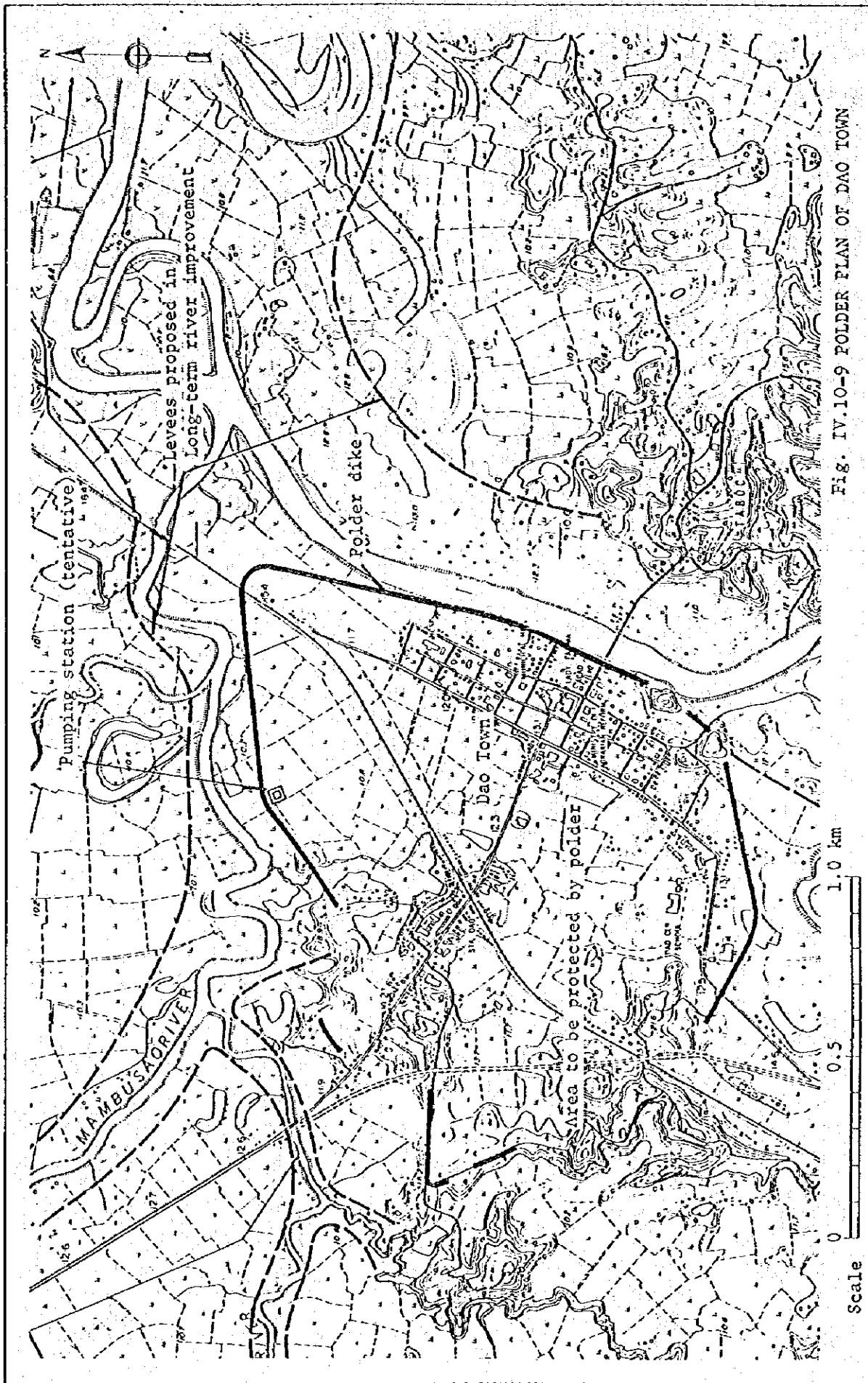


Fig. IV.10-9 FOLDER PLAN OF DAO TOWN

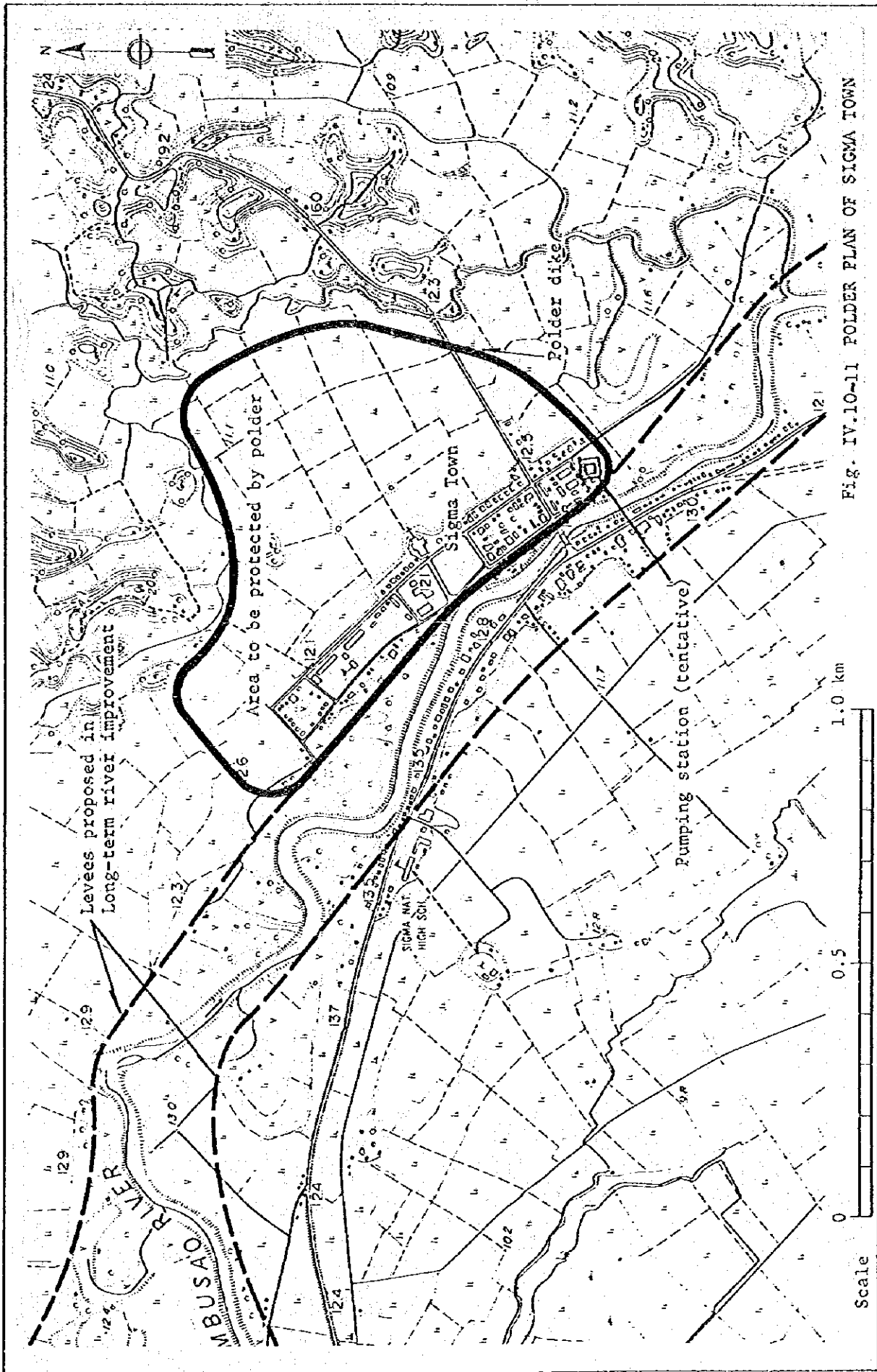


FIG. IV.10-11 POLDER PLAN OF SIGMA TOWN

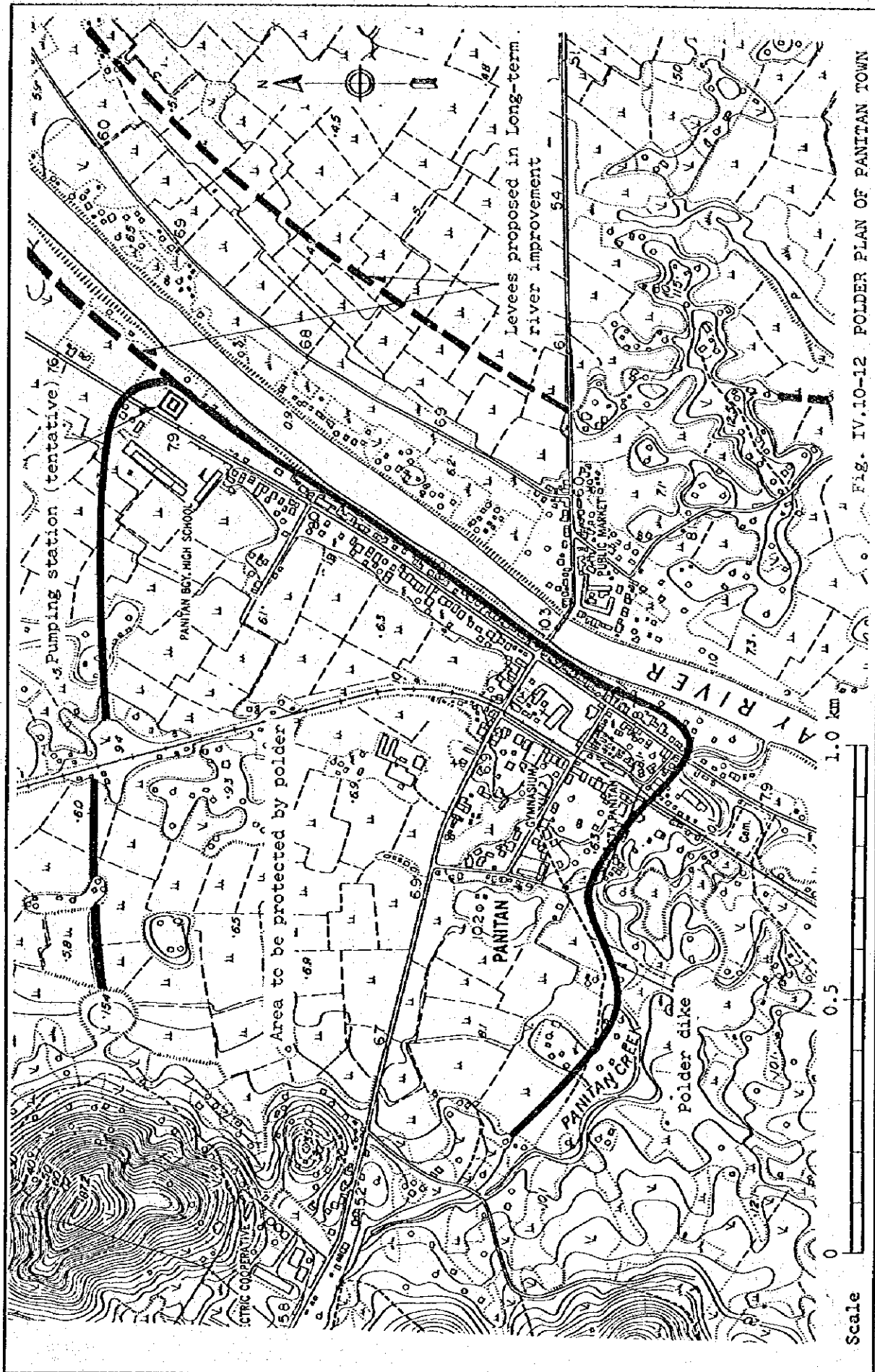


Fig. IV.10-12 FOLDER PLAN OF PANITAN TOWN

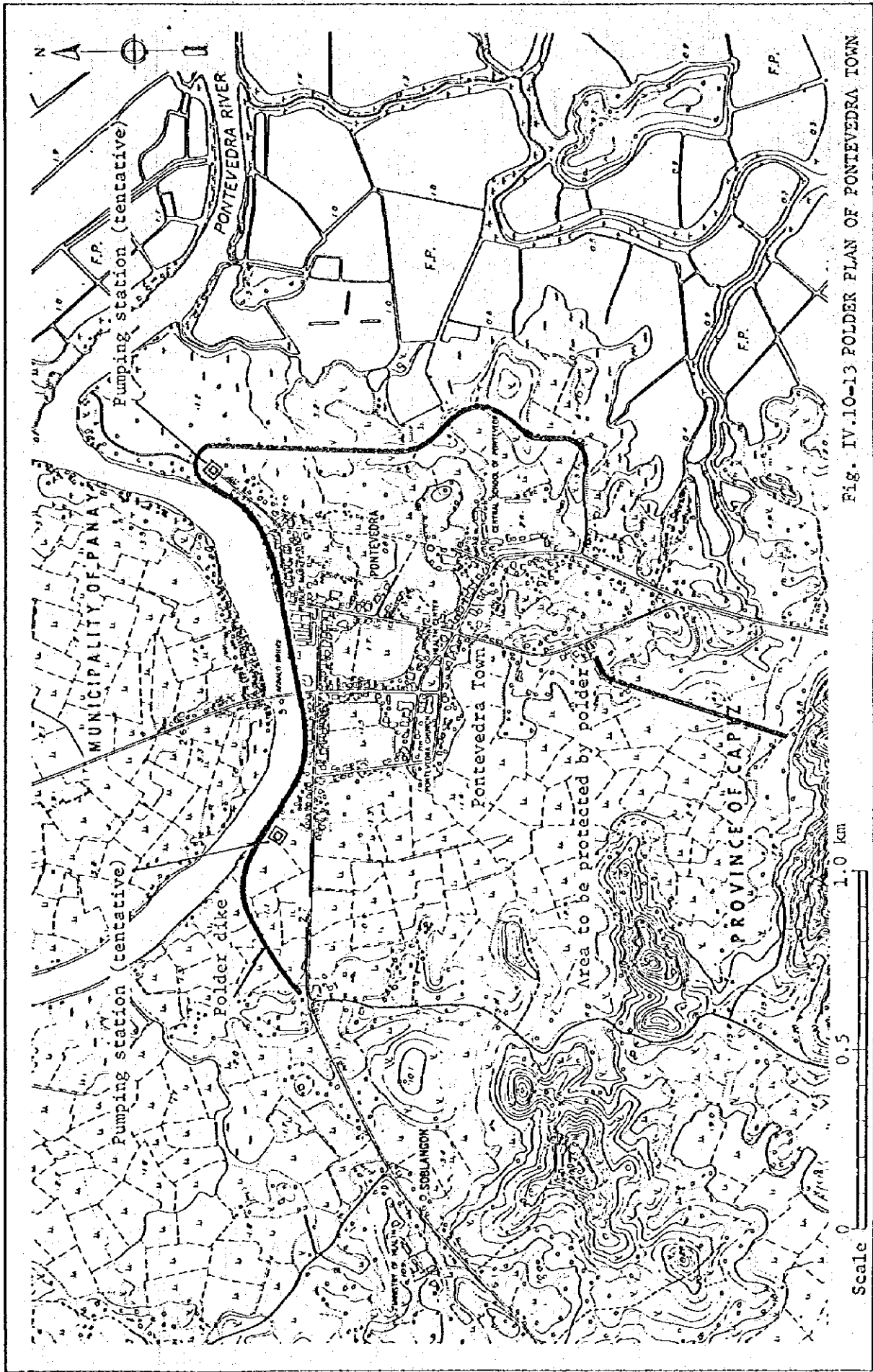
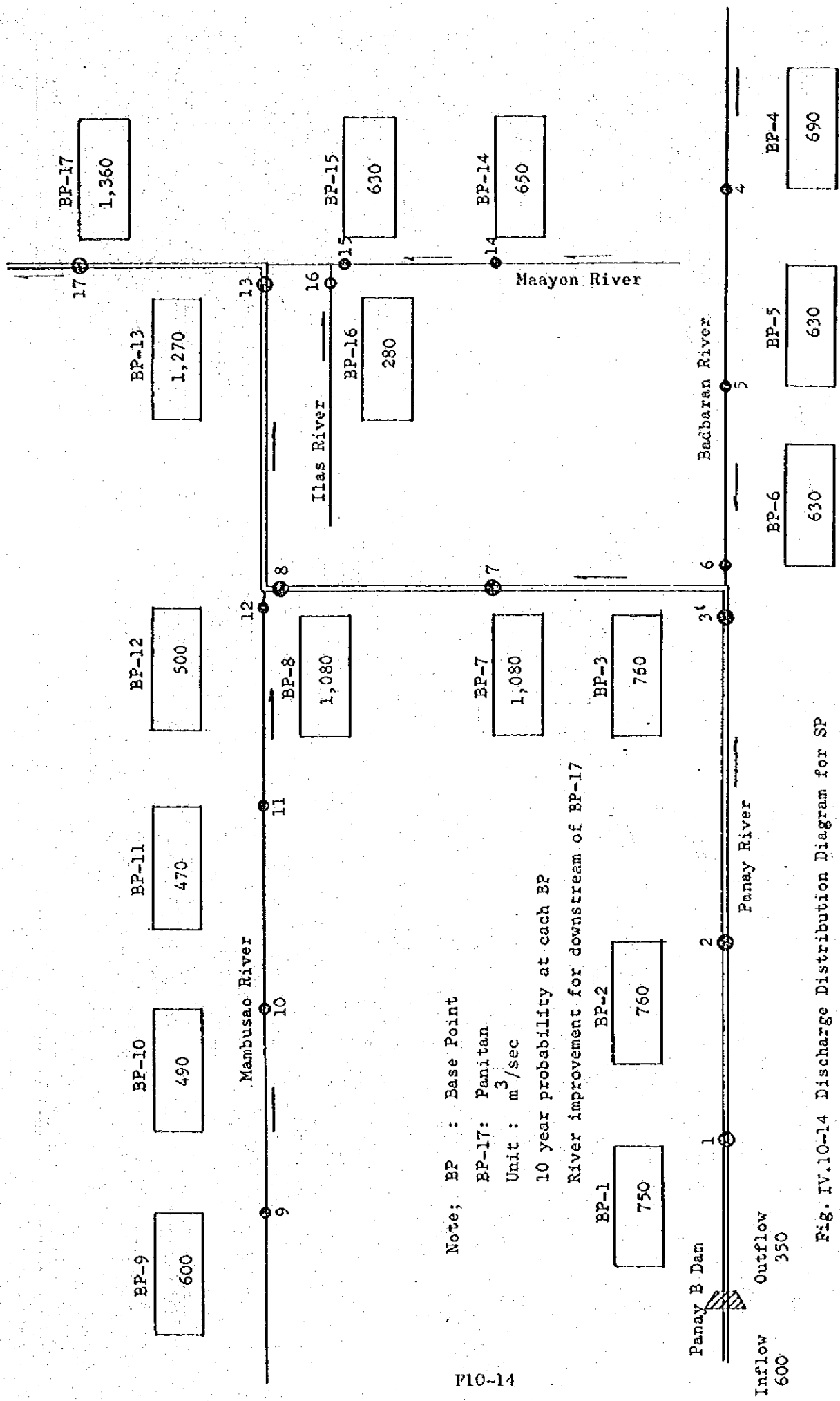


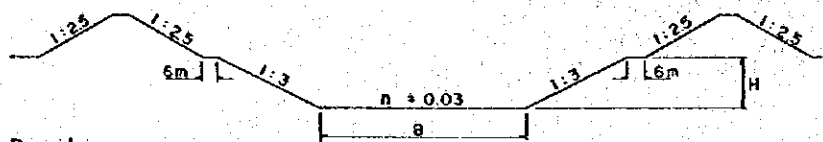
Fig. IV.10-13 POLDER PLAN OF PONTEVEDRA TOWN



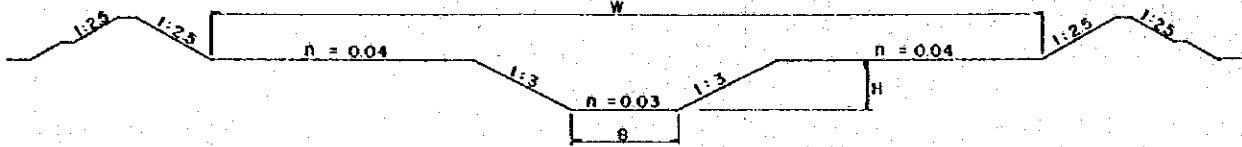
Note; BP : Base Point
 BP-17: Panitan
 Unit : m^3/sec
 10 year probability at each BP
 River improvement for downstream of BP-17

Fig. IV.10-14 Discharge Distribution Diagram for SP

Cogon Floodway



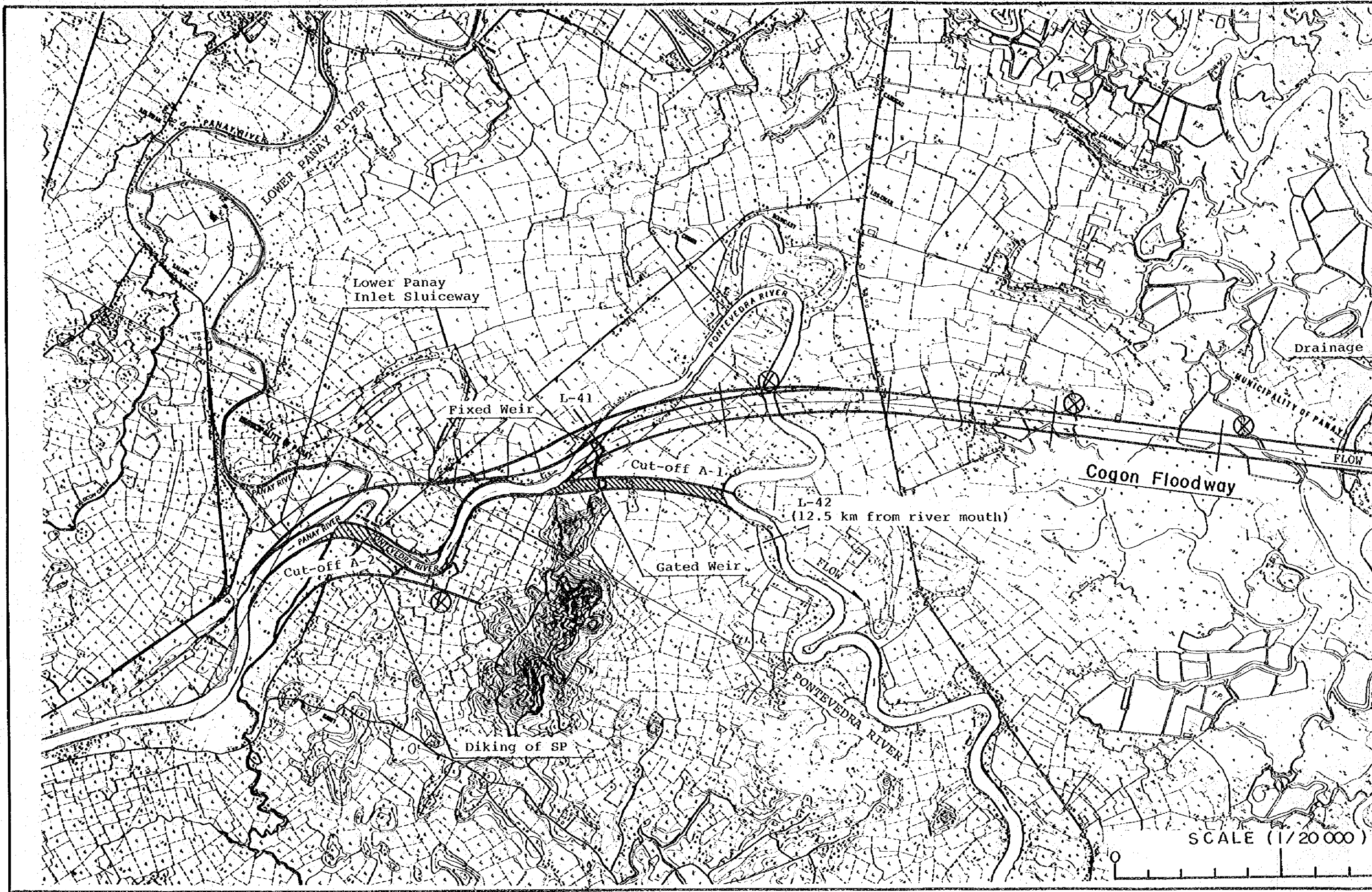
Panay River Reaches



Stretch	Improvement	Design Discharge (m ³ /s)	Bed Slope	B (m)	W (m)	H (m)
Cogon Floodway						
Upstream	o	1,000	1/5,300	60	-	5.2
Downstream	o	1,000	1/5,300	70	-	5.2
Panay River						
P1	o	1,500	1/9,300	60	300	6.5
P2	o	1,500	1/6,200	60	300	7.5
P3	x	-	-	-	-	-
P4	x	-	-	-	-	-
P5	x	-	-	-	-	-
P6	x	-	-	-	-	-
P7	x	-	-	-	-	-
P8	x	-	-	-	-	-
P9	x	-	-	-	-	-
P10	x	-	-	-	-	-
Maayon River						
Y1	x	-	-	-	-	-
Y2	x	-	-	-	-	-
Y3	x	-	-	-	-	-
Y4	x	-	-	-	-	-
Mambusao River						
M1	x	-	-	-	-	-
M2	x	-	-	-	-	-
M3	x	-	-	-	-	-
M4	x	-	-	-	-	-
M5	x	-	-	-	-	-
M6	x	-	-	-	-	-
M7	x	-	-	-	-	-
Badbaran River						
B1	x	-	-	-	-	-
B2	x	-	-	-	-	-
B3	x	-	-	-	-	-

Notes: o River improvement by both side levees and excavation/enlargement of low water channel.
 * River improvement by one side levees and excavation/enlargement of low water channel.
 # Partial improvement of low water channel.
 x To be left as present river condition.

Fig. IV.10-15 Standard River Cross Section of SP



Lower Panay
Inlet Sluiceway

Fixed Weir L-41

Cut-off A-1

Cogon Floodway

L-42
(12.5 km from river mouth)

Gated Weir

Cut-off A-2

Diking of SP

SCALE (1/20 000)

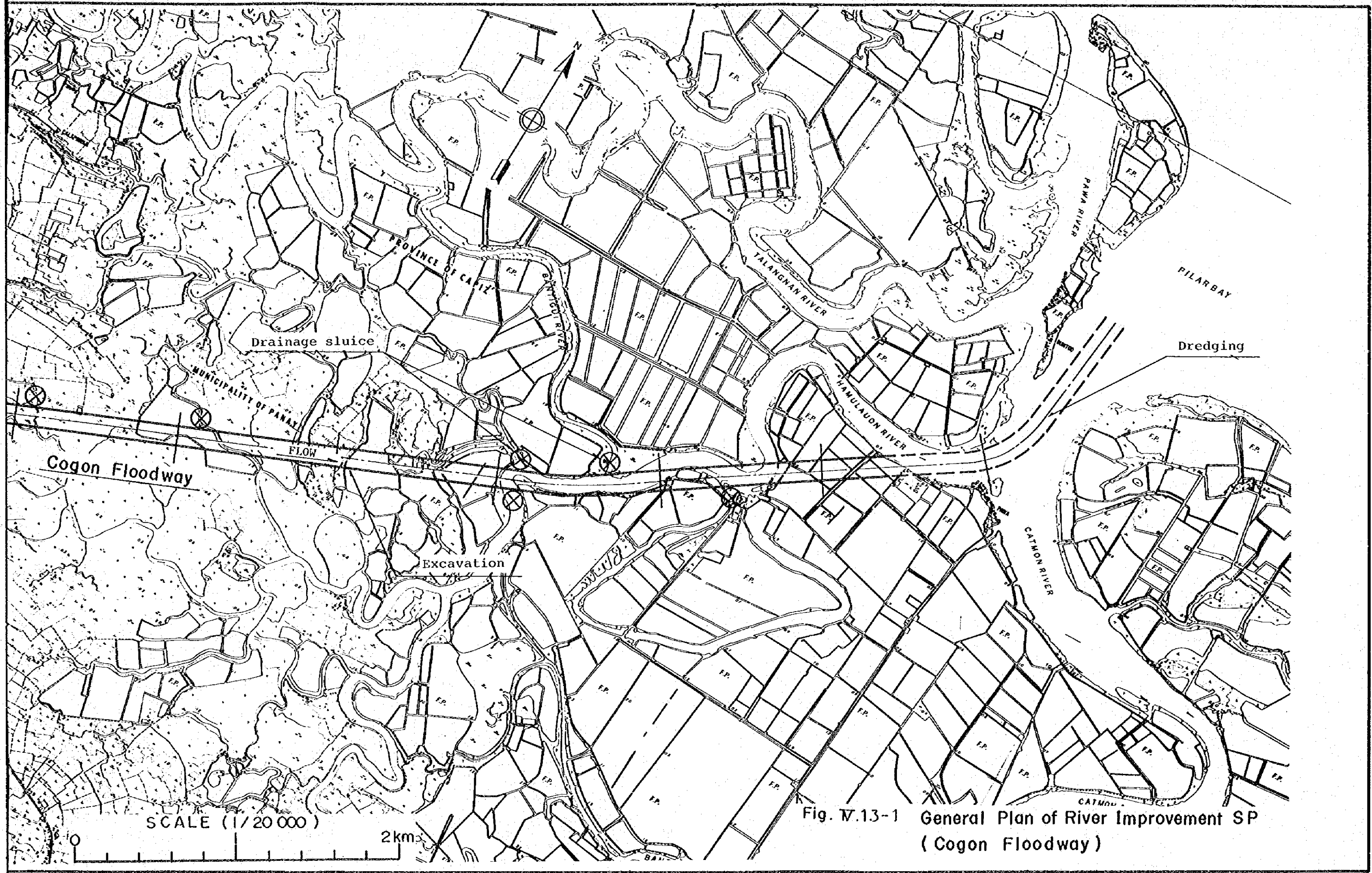


Fig. N.13-1 General Plan of River Improvement SP (Cogon Floodway)