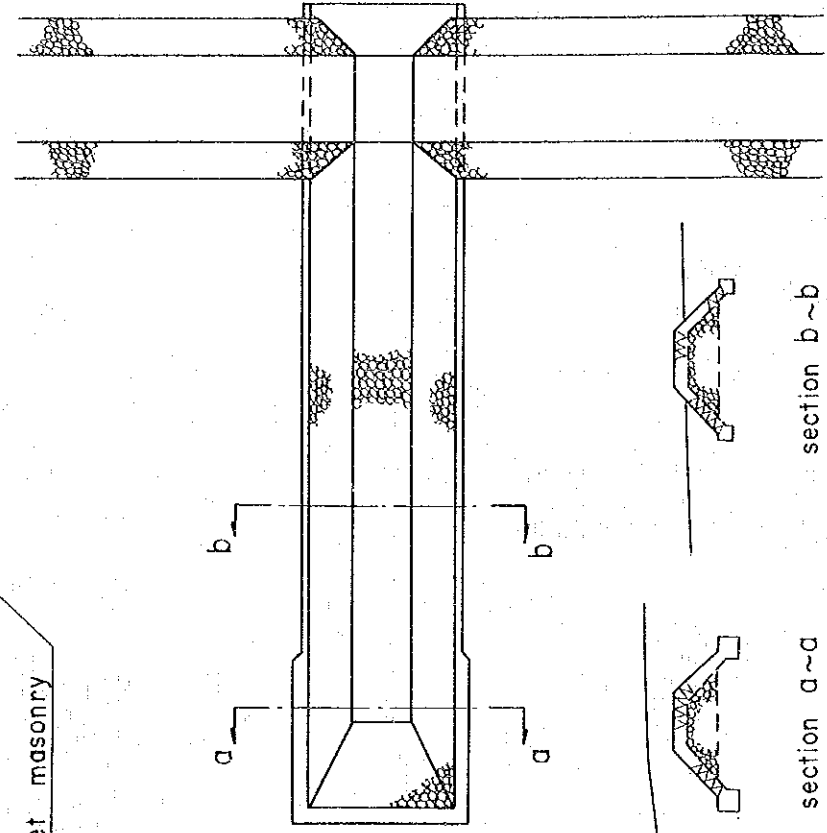
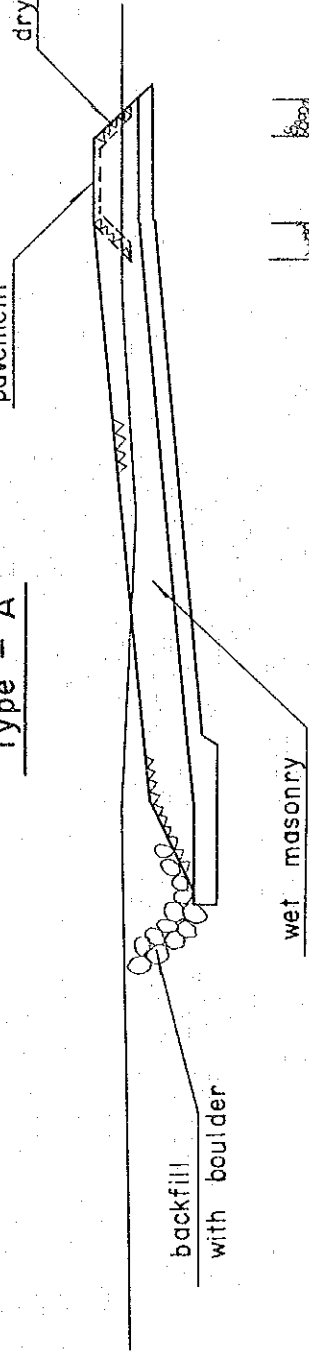


FIG. -4.3.10(a) GROIN FOR THE NASISI RIVER

Scale
0 5 10 15 20m

Type - A



Type - B

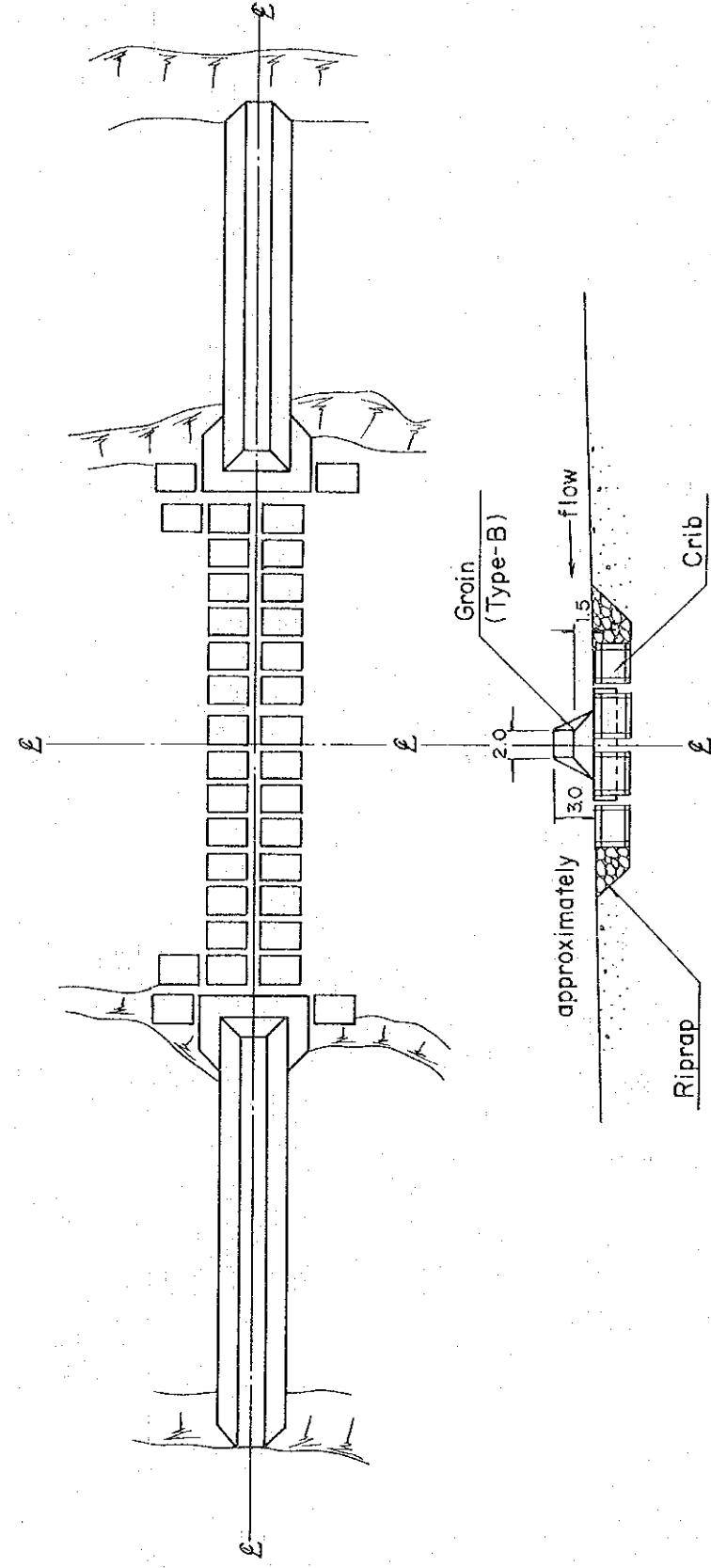
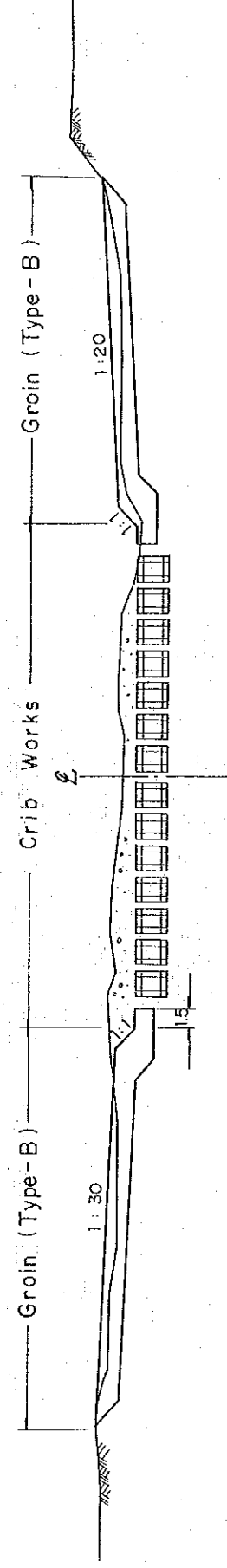
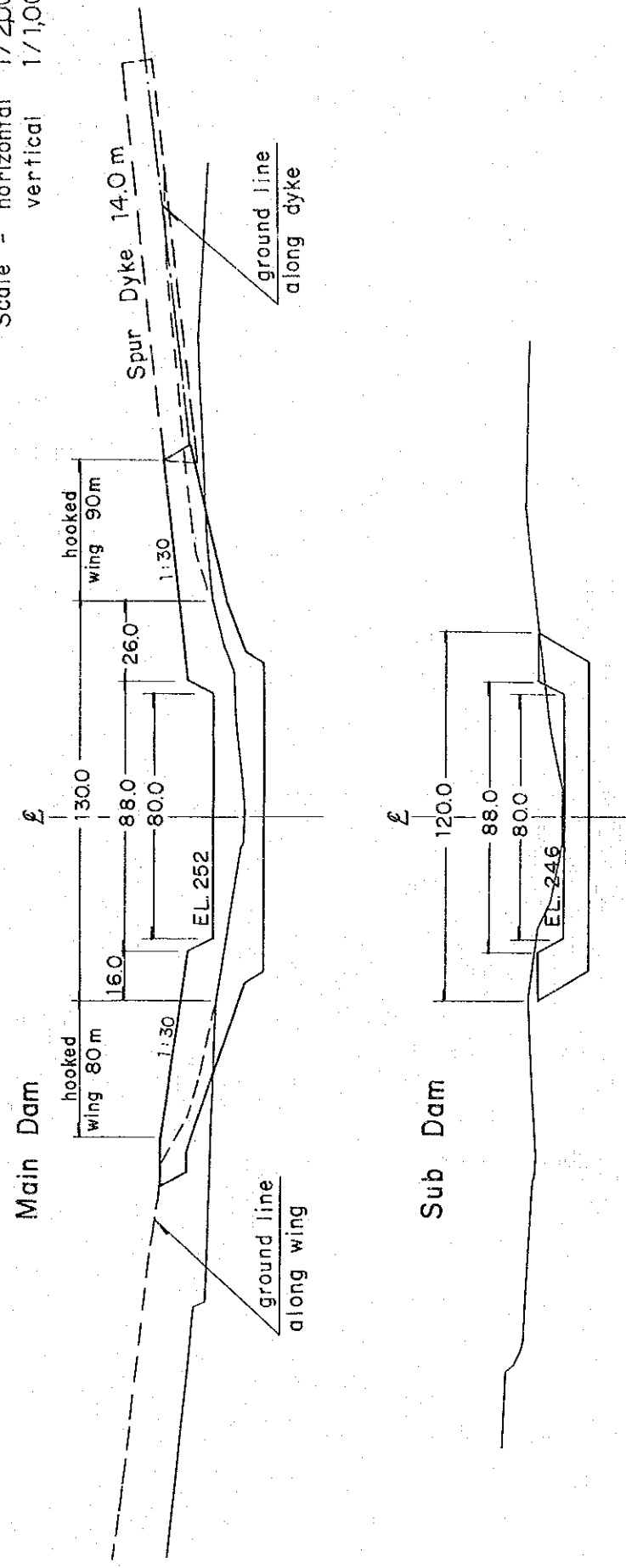


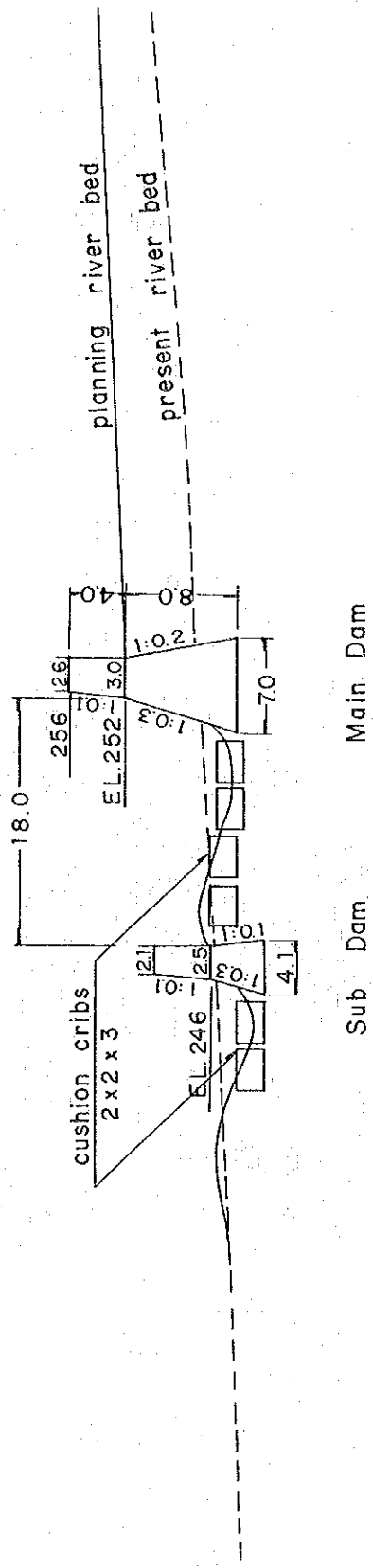
FIG.-4.3.10(b) TAMBO CONSOLIDATION DAM

No. 1 DAM

Scale = horizontal 1/2000
vertical 1/1,000

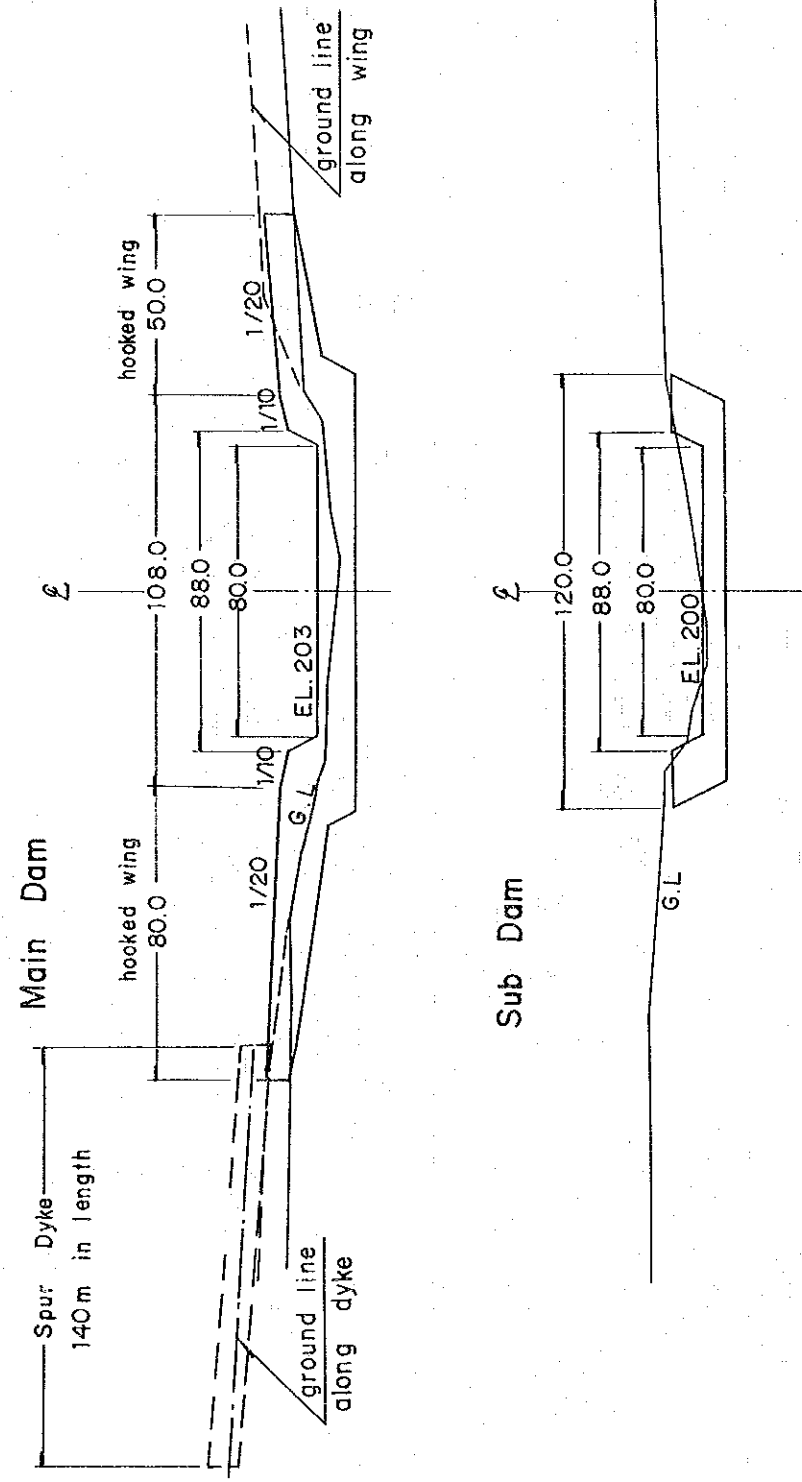


Profile

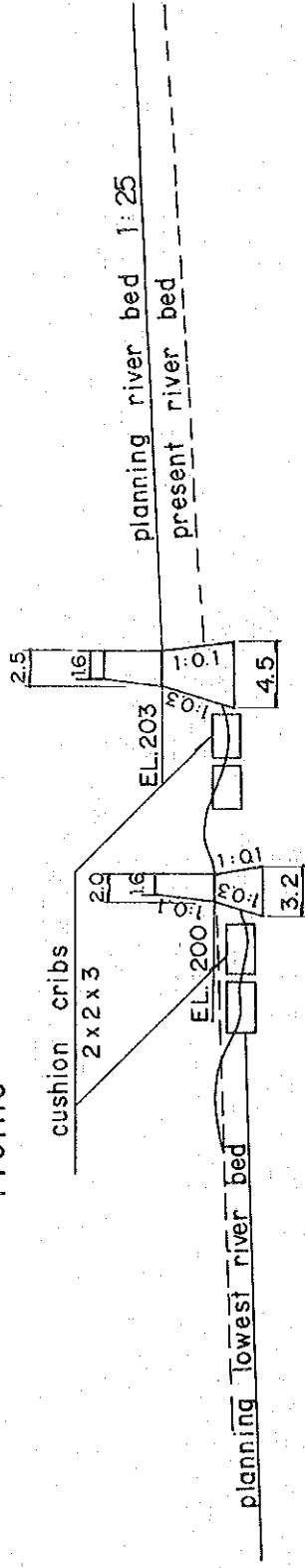


Sub Dam Main Dam

No. 2 DAM



Profile



Sub Dam Main Dam

FIG.-4.3.10(c) TYPICAL CROSS SECTION OF NASISI RETARDING BASIN

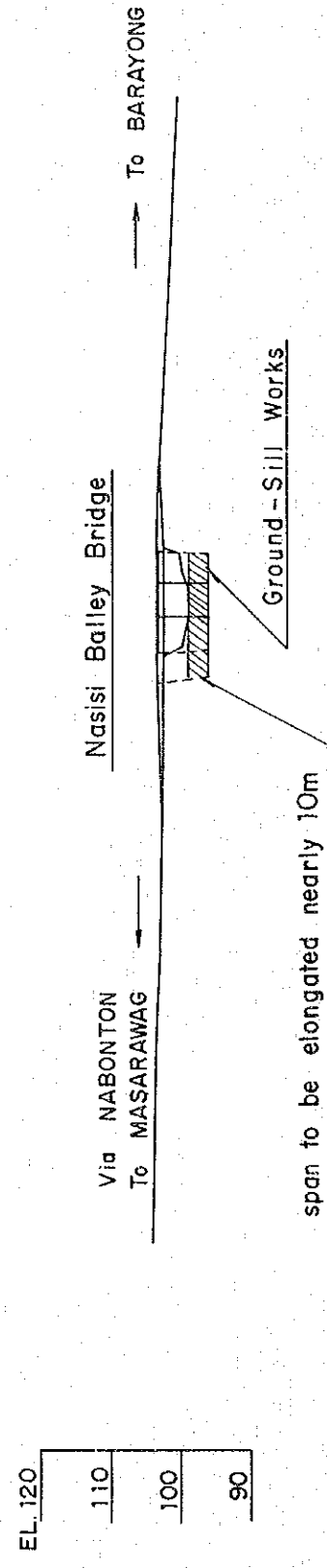
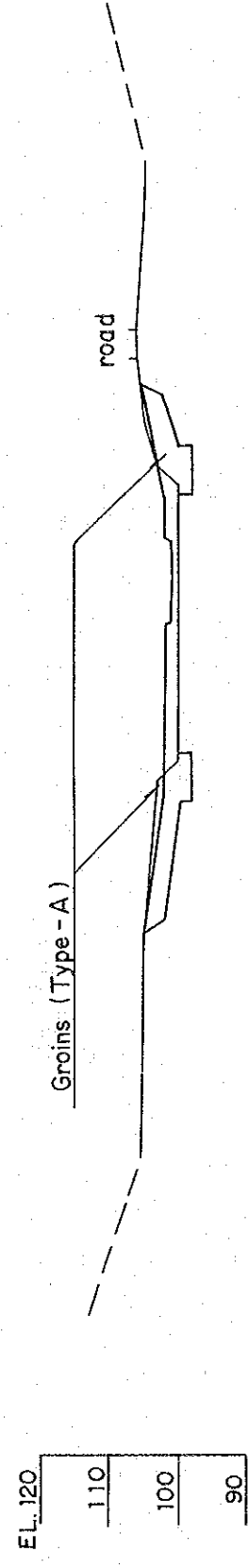
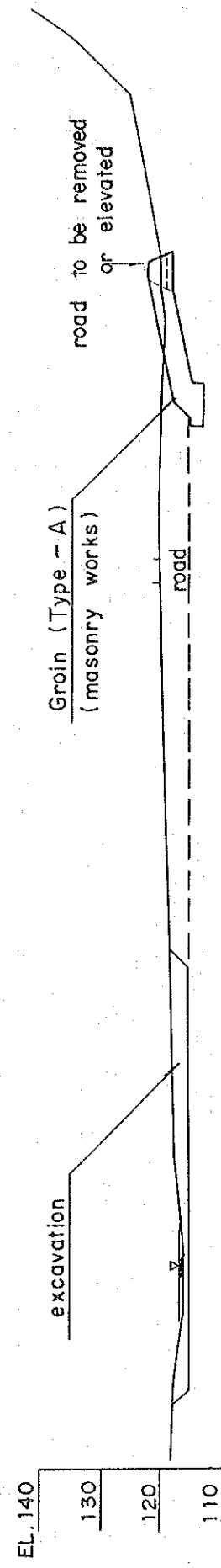
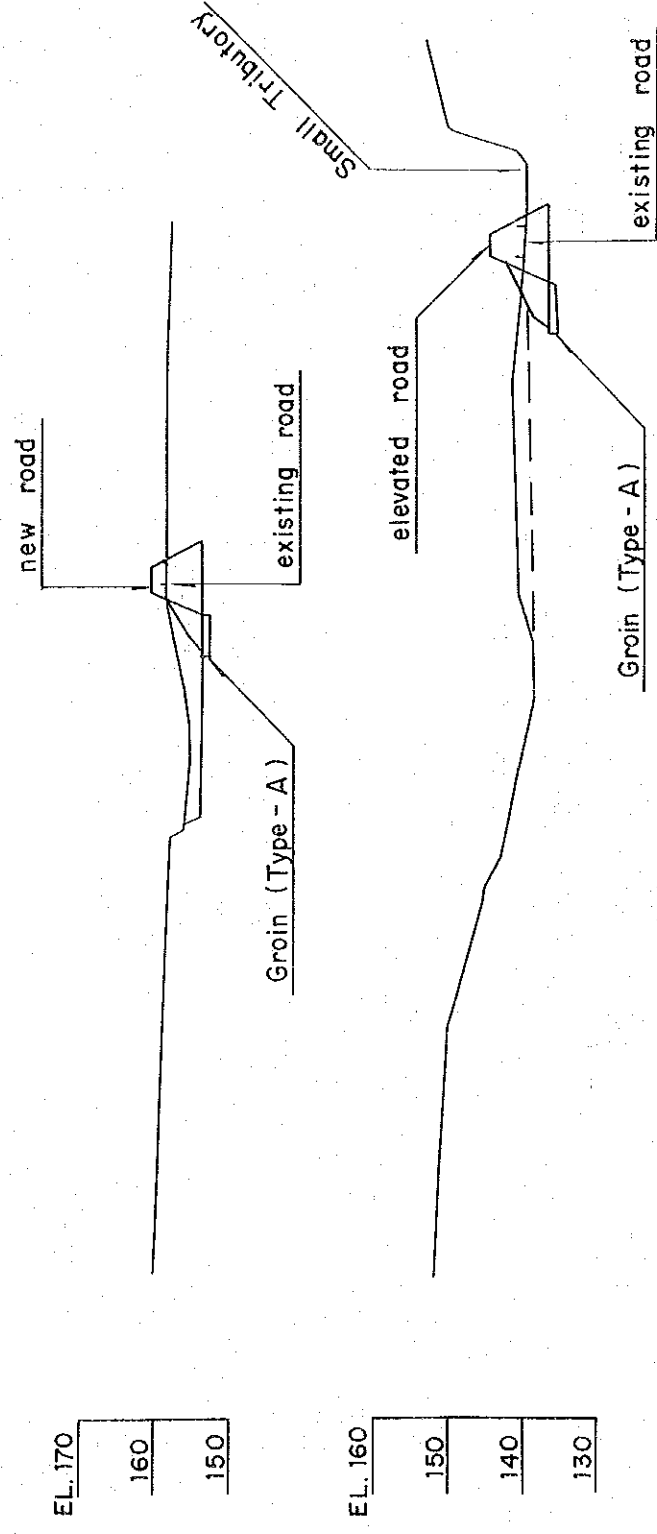
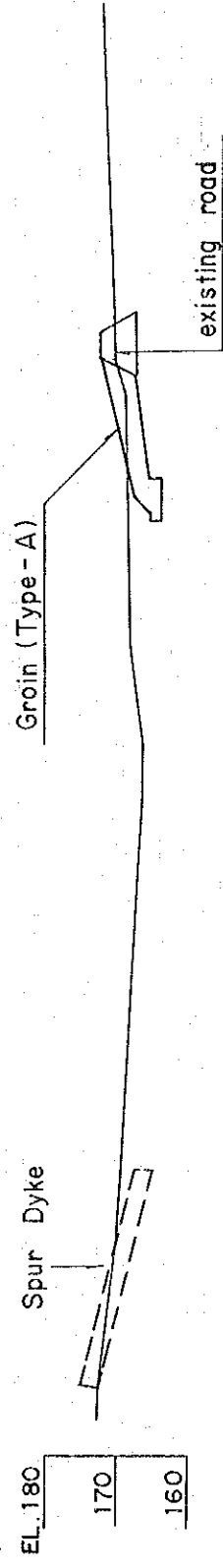
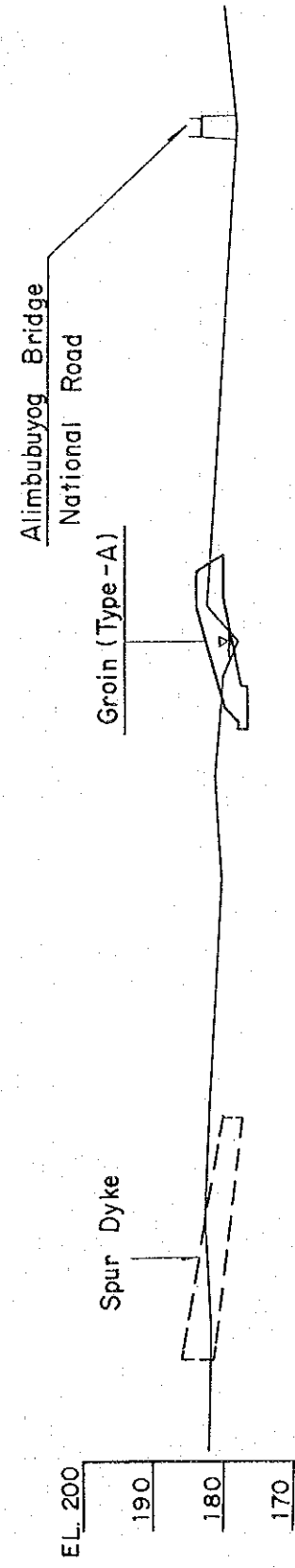
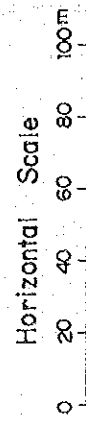
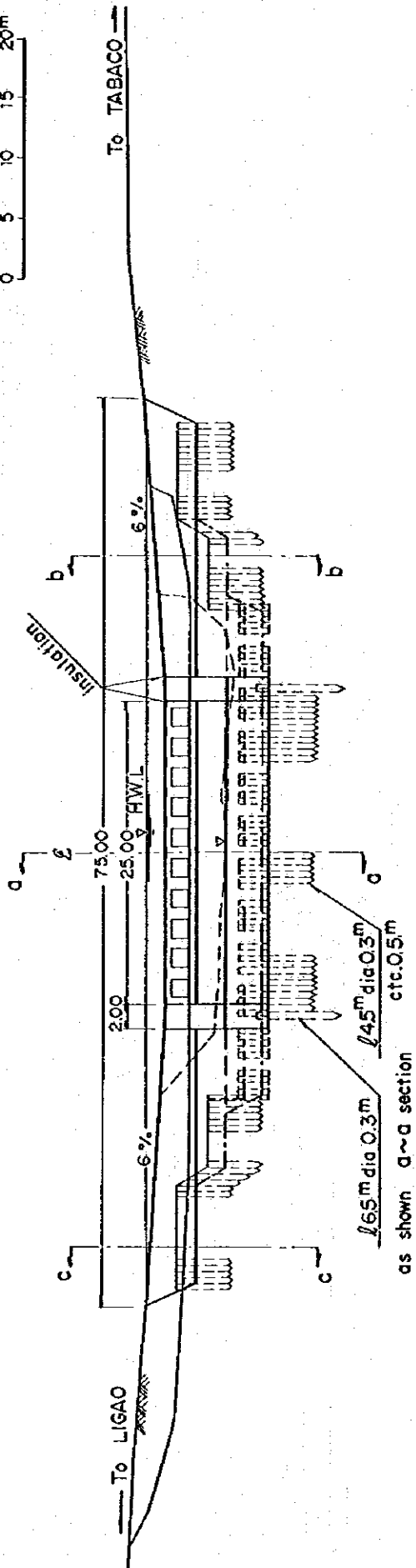
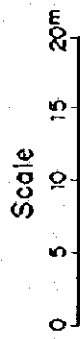
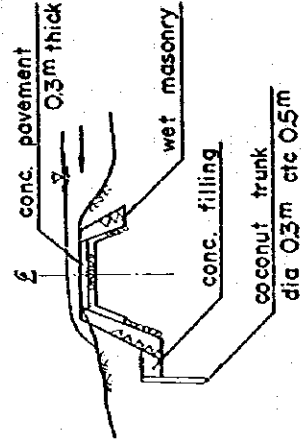


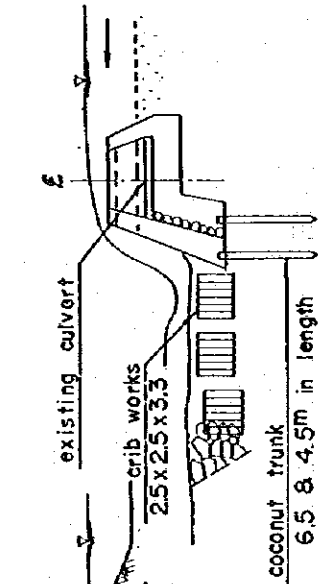
FIG. - 4.3.10(d) CONSOLIDATION DAM AT THE SITE OF OVERFLOW CULVERT



b~b section



a~a section



c~c section

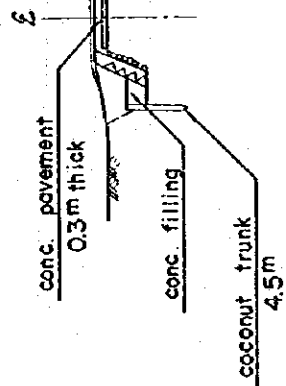
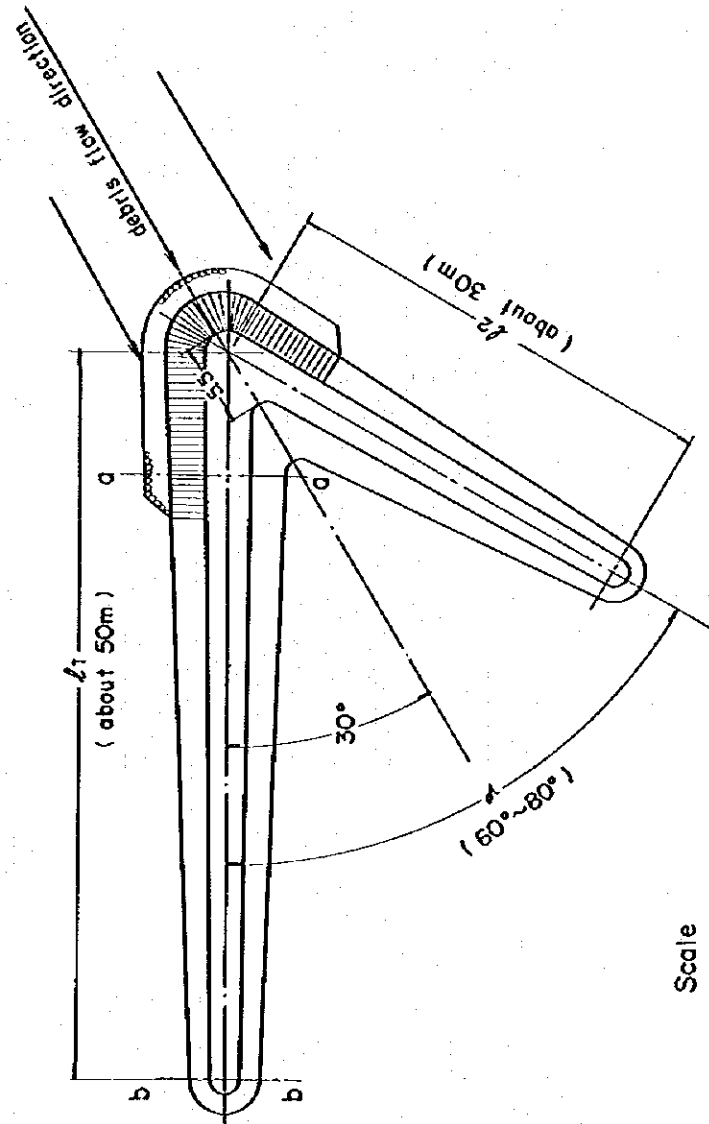
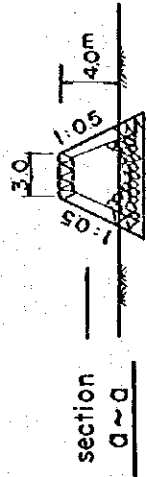
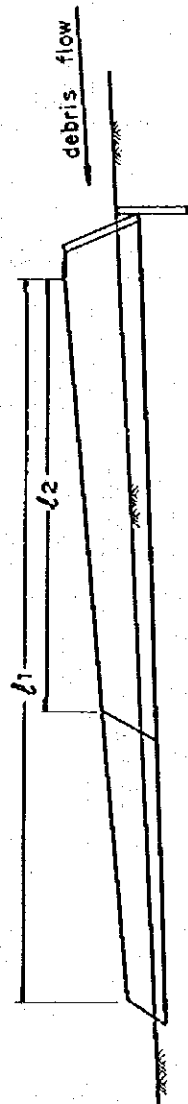


FIG. - 4.3.10(e) JETTY FOR SAND RETARDING BASIN



Protection for Debris Flow

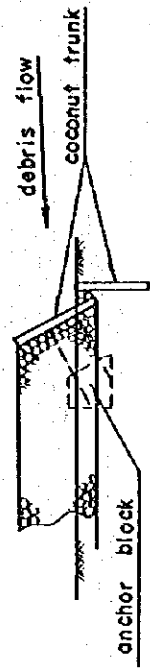


FIG.-43.II RIVER WIDTH AND DISCHARGE CAPACITY OF THE PRESENT RIVER CHANNEL, THE QUINALI (A) RIVER, MAIN COURSE

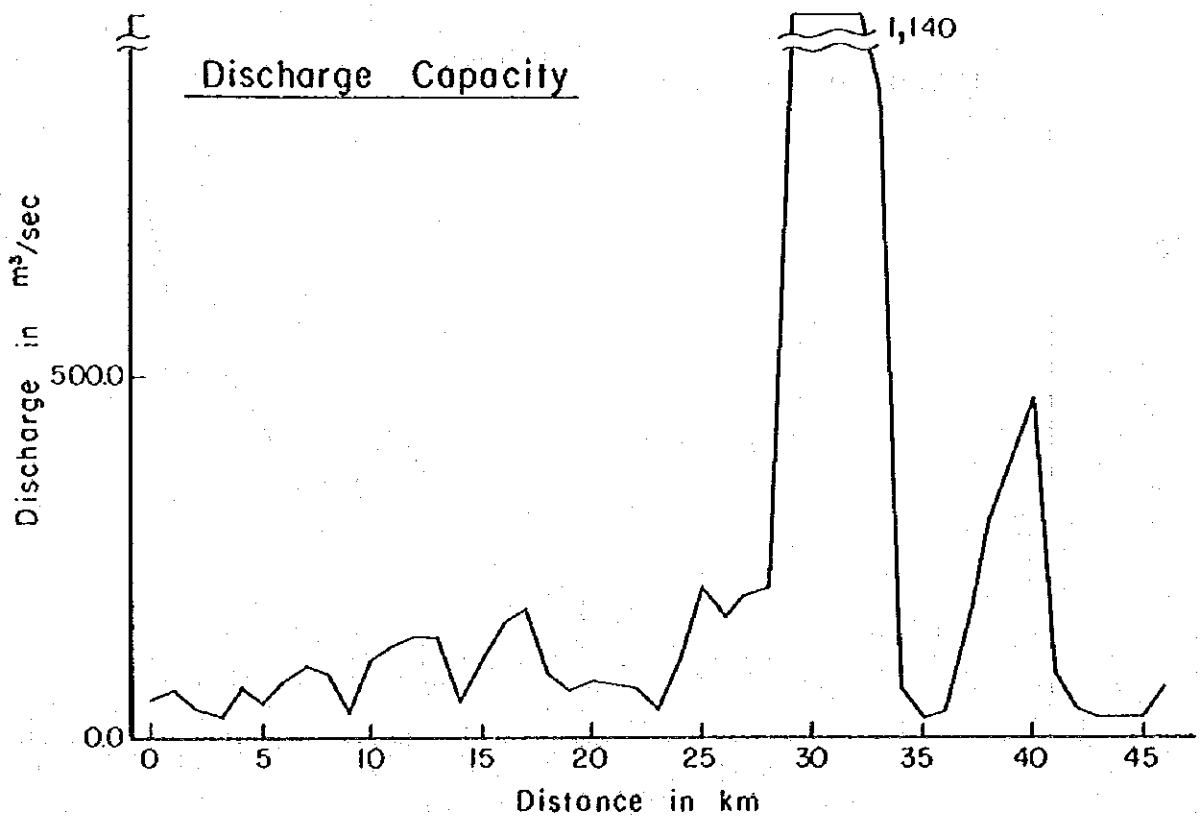
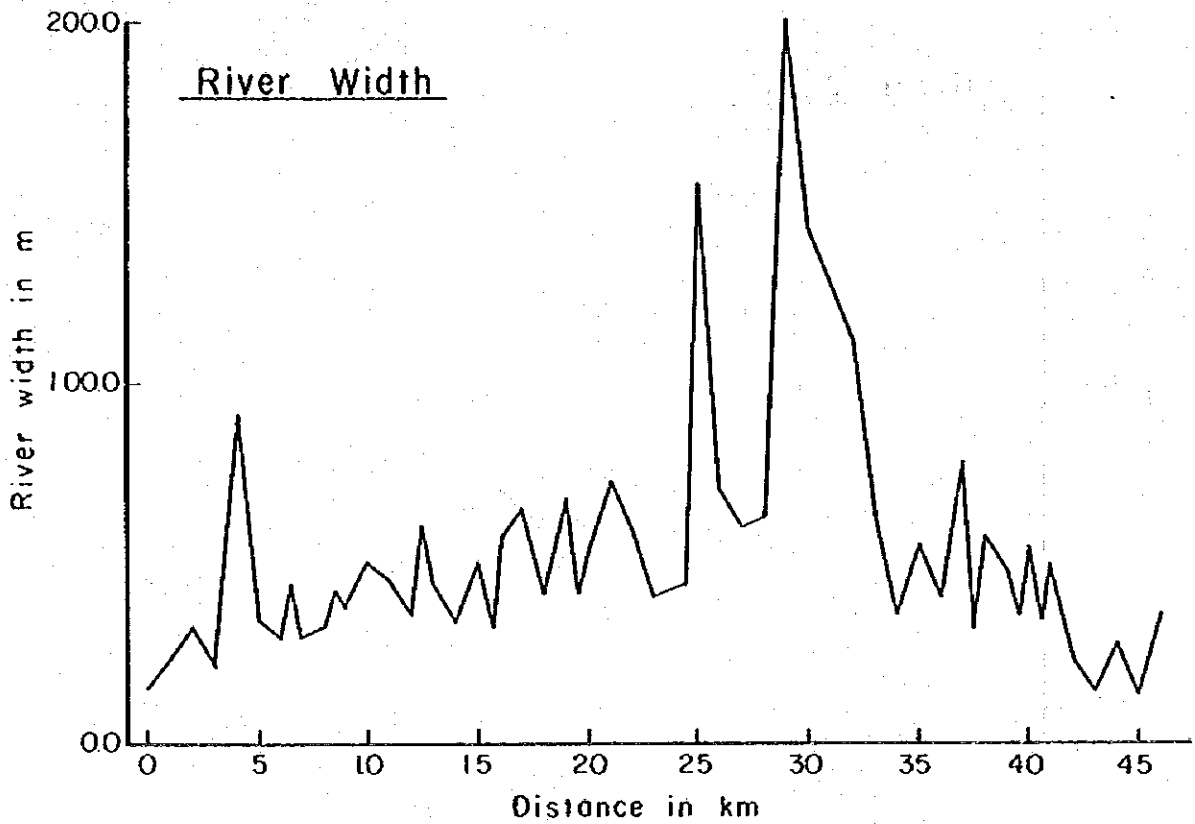


FIG.-43.12 RIVER WIDTH AND DISCHARGE CAPACITY OF THE PRESENT RIVER CHANNEL, THE TALISAY RIVER

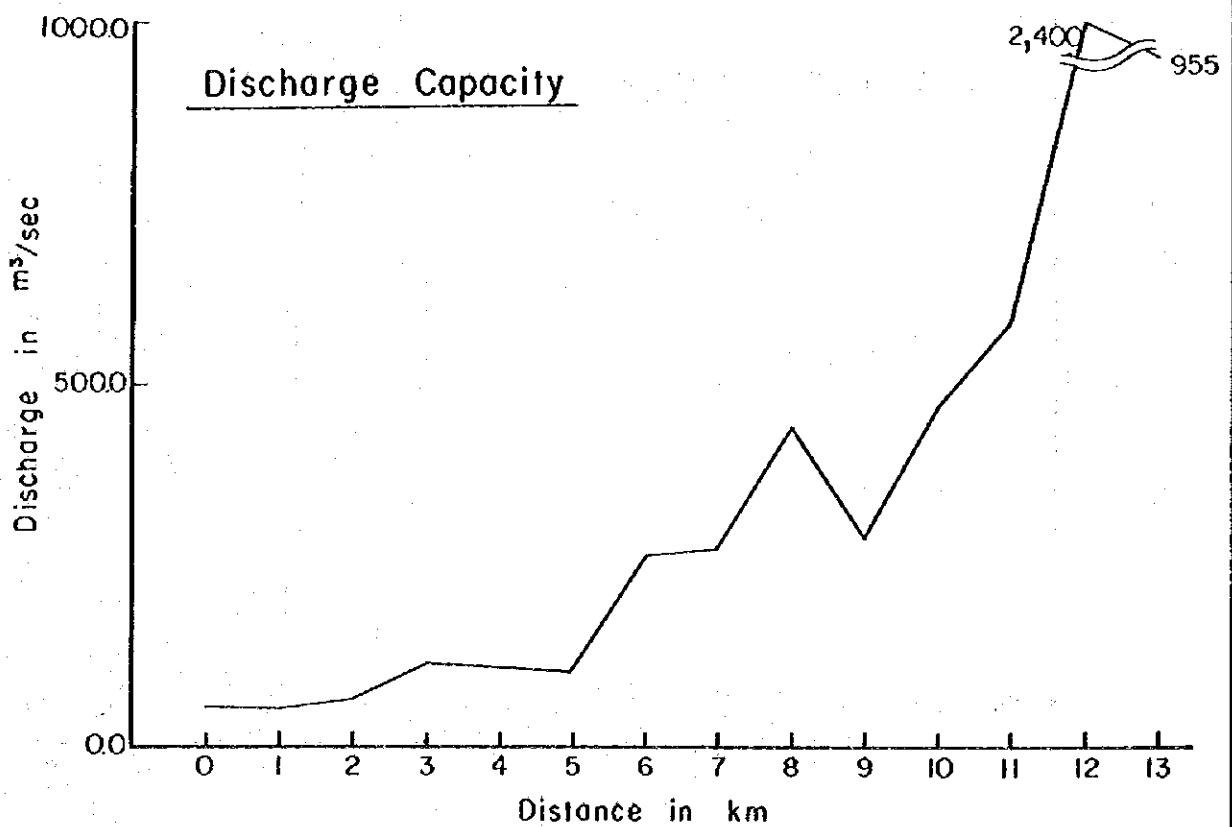
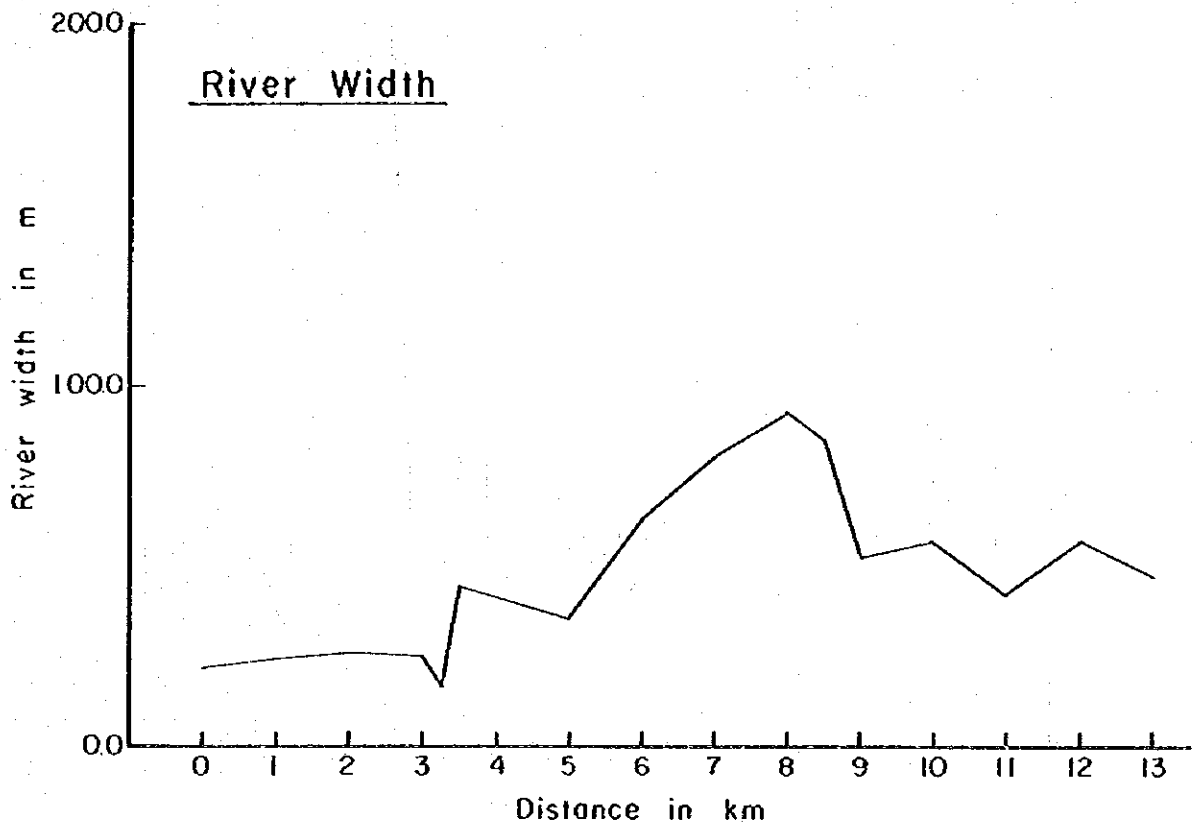


FIG.-4.3.13 RIVER WIDTH AND DISCHARGE CAPACITY OF THE PRESENT RIVER CHANNEL, THE NASISI RIVER

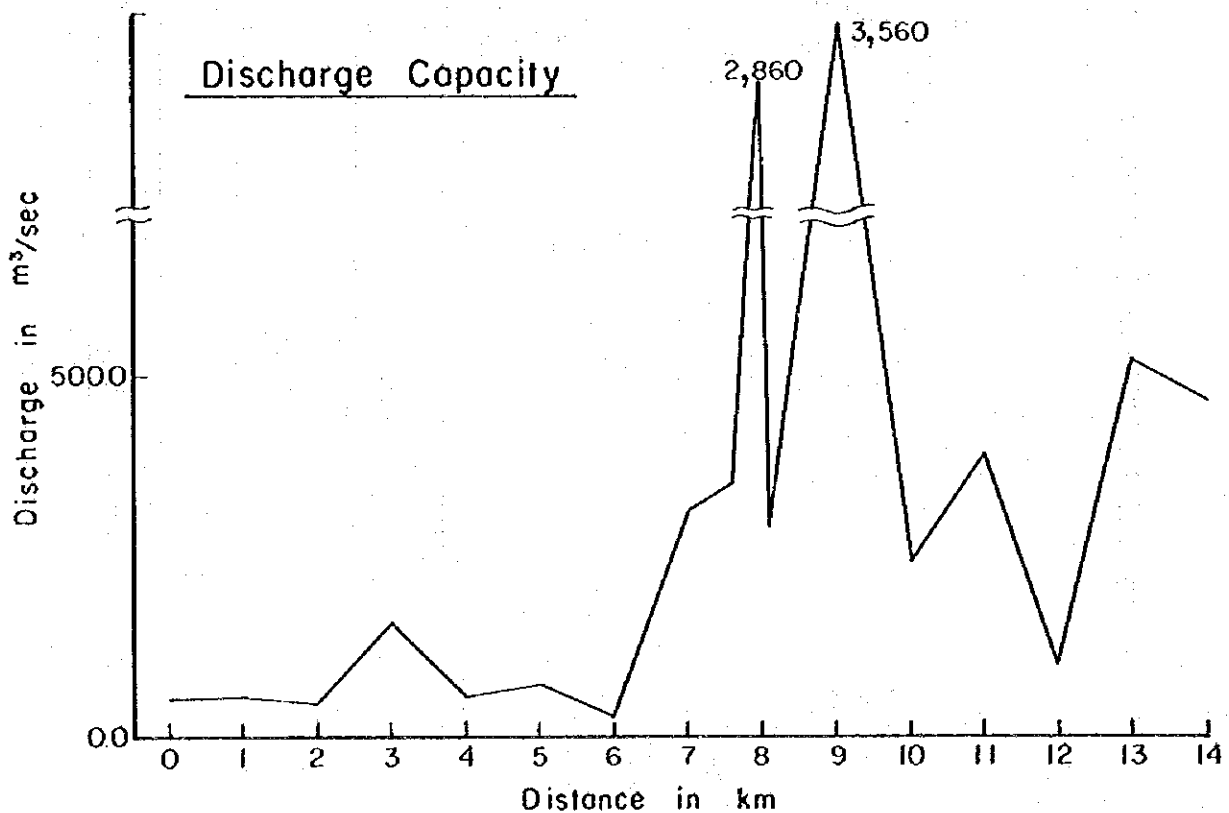
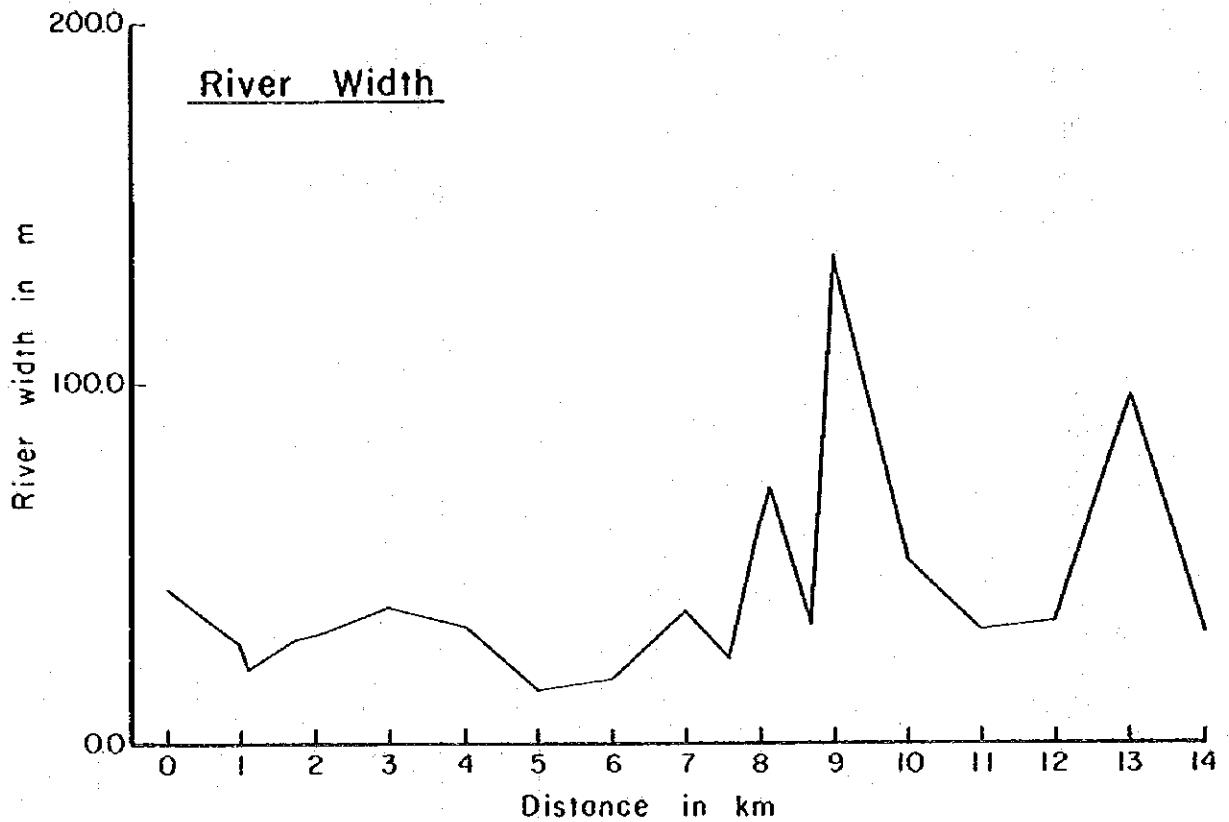


FIG.-4.3.14 DESIGN DISCHARGE DISTRIBUTION DIAGRAM, THE QUINALI (A) RIVER
 (PROPOSED SCHEME RETURN PERIOD 50-YEAR)

Unit : m³/sec

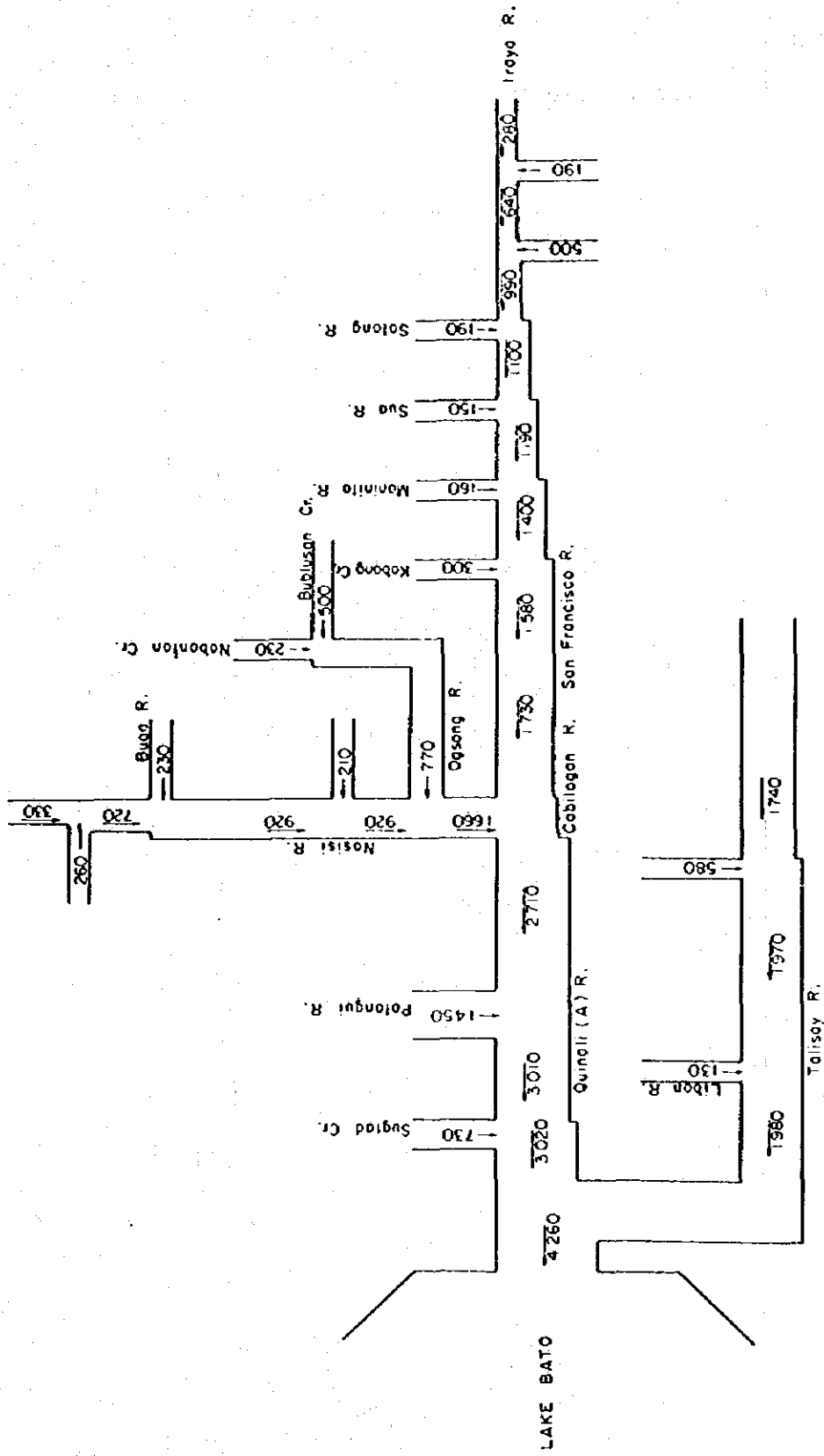


FIG.-4.3.15 ALTERNATIVES FOR ROUTE SELECTION

- Alternative I (Oas Diversion Scheme)
- - - - - Alternative II Bobonsuran Diversion Scheme

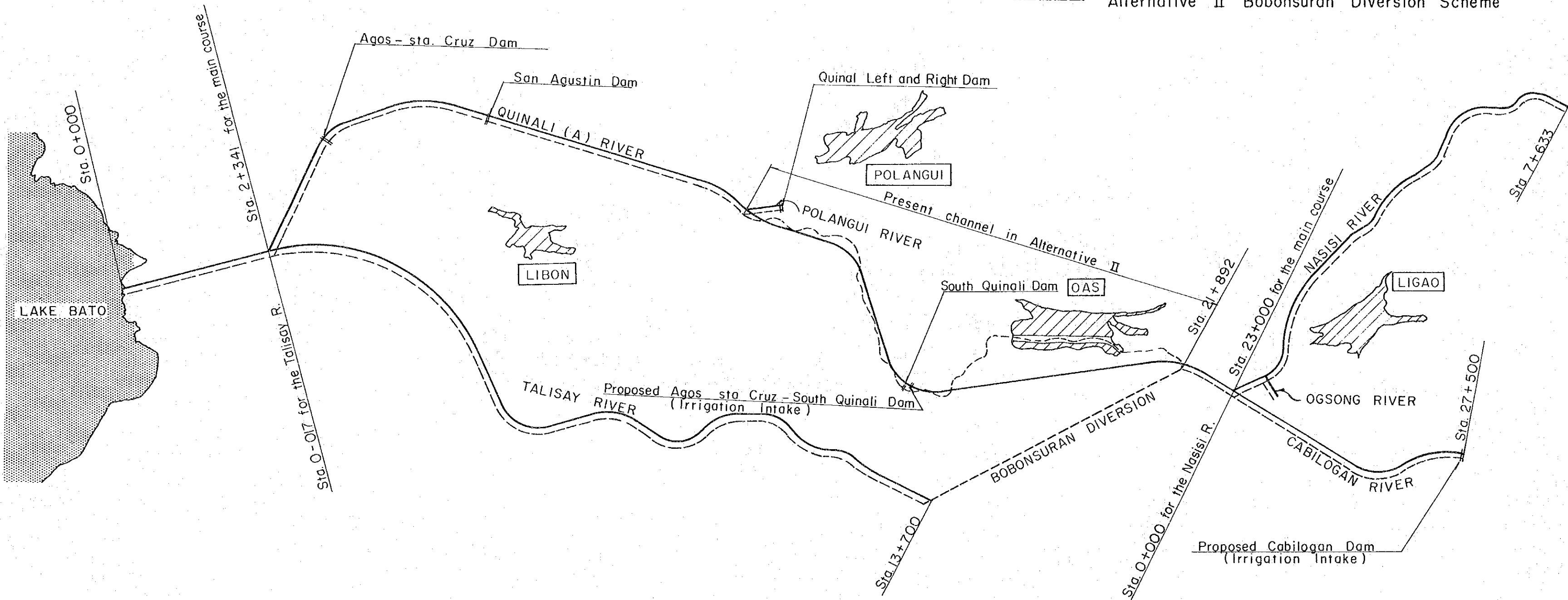
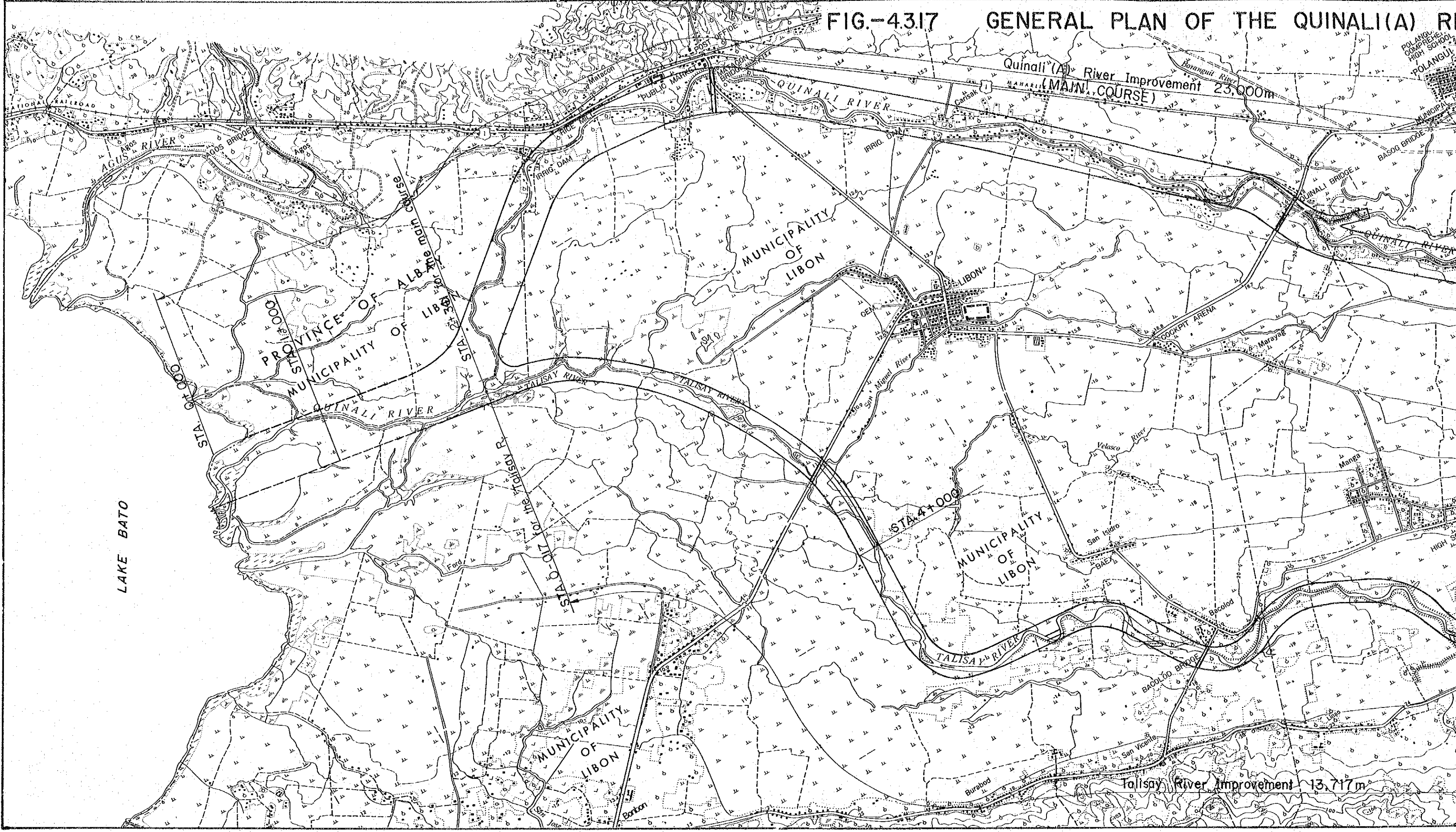


FIG.-43.17

GENERAL PLAN OF THE QUINALI(A) RIVER



LAKE BATO

PROVINCE OF ALBAY
MUNICIPALITY OF LIBON

MUNICIPALITY OF LIBON

MUNICIPALITY OF LIBON

MUNICIPALITY OF LIBON

Quinali(A) River Improvement 23,000m
(MAIN COURSE)

Talisay River Improvement 13,717m

STA. 4+000

STA. 0+000

POLANGUI COMPREHENSIVE HIGH SCHOOL

MANGA HIGH SCHOOL

FIG.-4.318 GENERAL PLAN OF THE NASISI RIVER

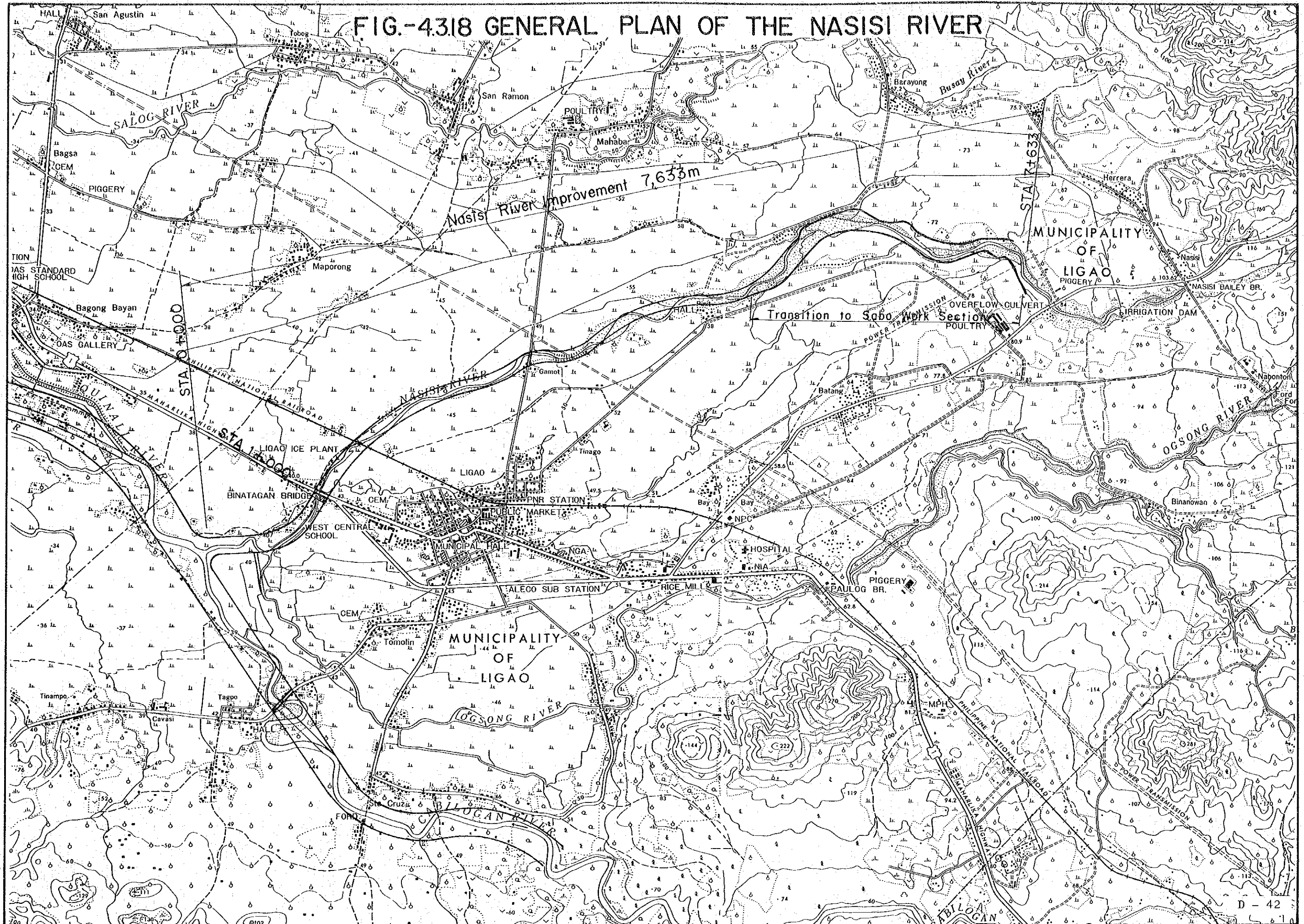
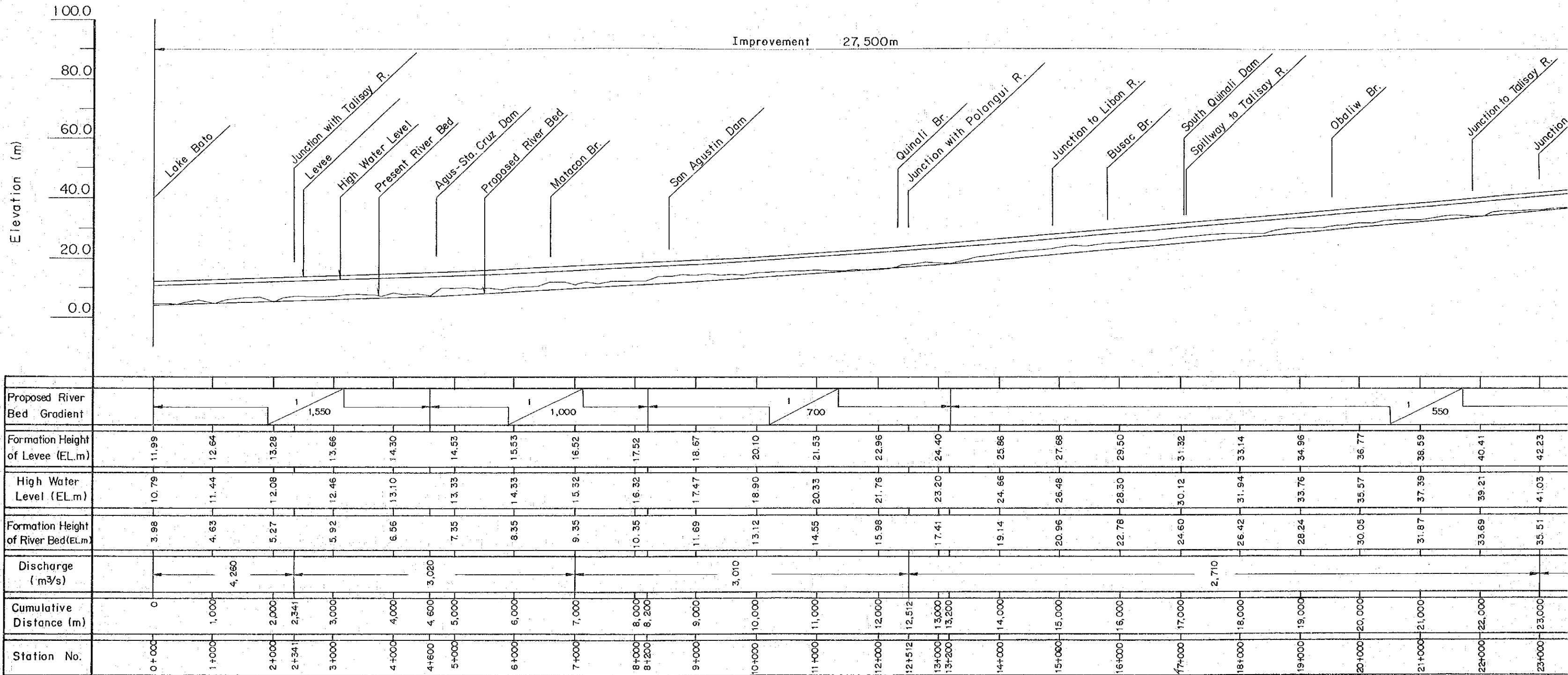
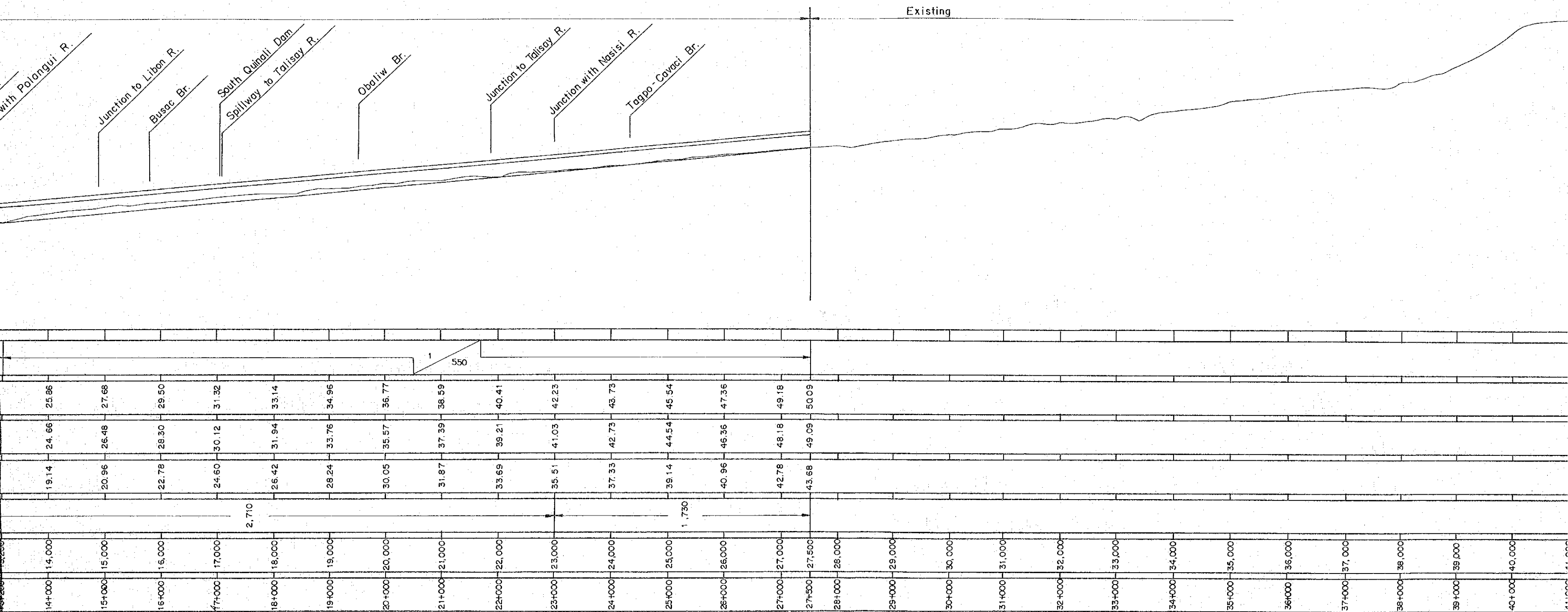
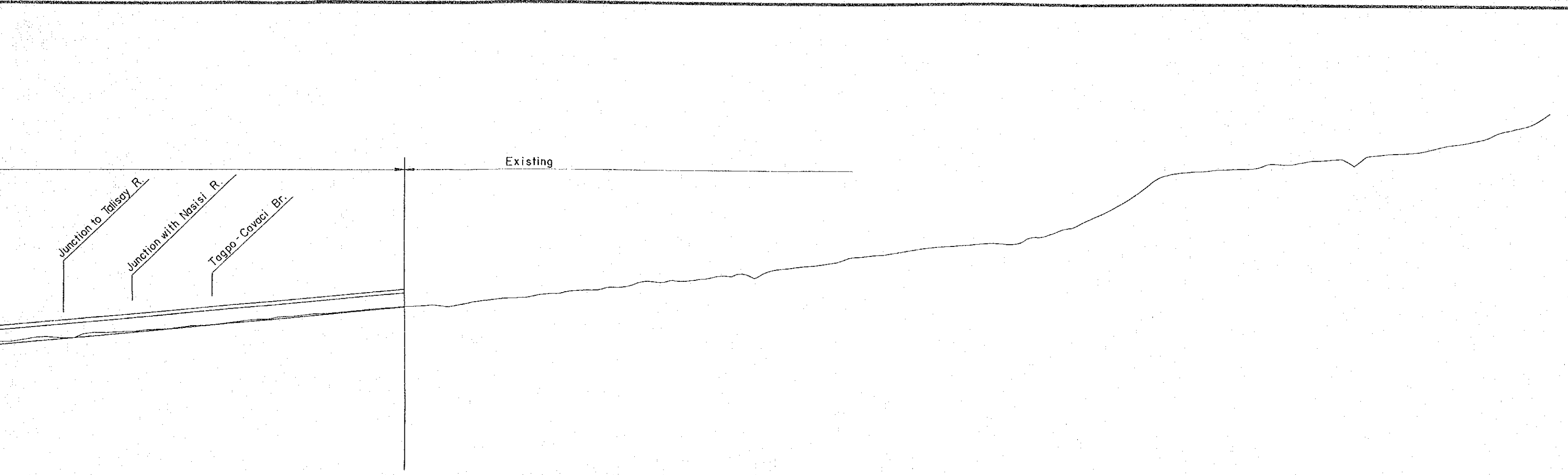


FIG.-4.3.19 PROFILE OF QUINALI-(A) RIVER, MAIN COURSE



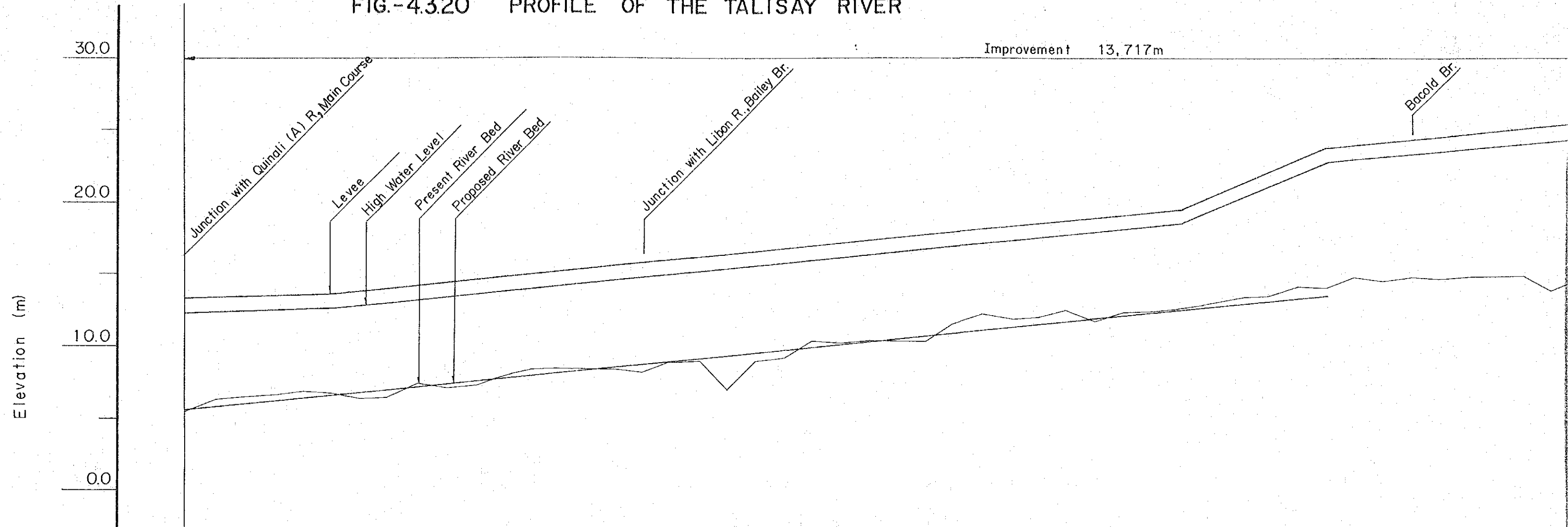
PROFILE OF QUINALI-(A) RIVER, MAIN COURSE





21+000	21,000	31.87	37.39	38.59
22+000	22,000	33.69	39.21	40.41
23+000	23,000	35.51	41.03	42.23
24+000	24,000	37.33	42.73	43.73
25+000	25,000	39.14	44.54	45.54
26+000	26,000	40.96	46.36	47.36
27+000	27,000	42.78	48.18	49.18
27+500	27,500	43.68	49.09	50.09
28+000	28,000			
29+000	29,000			
30+000	30,000			
31+000	31,000			
32+000	32,000			
33+000	33,000			
34+000	34,000			
35+000	35,000			
36+000	36,000			
37+000	37,000			
38+000	38,000			
39+000	39,000			
40+000	40,000			
41+000	41,000			
42+000	42,000			
43+000	43,000			
44+000	44,000			
45+000	45,000			
46+000	46,000			
46+672	46,672			

FIG.-4.320 PROFILE OF THE TALISAY RIVER



Proposed River Bed Gradient											Existing River	
Formation Height of Levee (EL.m)	13.30	13.32	13.64	14.64	15.64	16.63	17.63	18.63	19.63	23.77	24.77	
High Water Level (EL.m)	12.30	12.32	12.64	13.64	14.64	15.63	16.63	17.63	18.63	22.77	23.77	
Formation Height of River Bed (EL.m)	5.49	5.51	6.51	7.51	8.51	9.51	10.51	11.51	12.51	13.51	13.51	
Discharge (m ³ /s)	1,980										1,970	
Cumulative Distance (m)	0	1,000	2,000	3,000	3,266	4,000	5,000	6,000	7,000	8,000	9,000	
Station No.	0+017	0+000	1+000	2+000	3+000	3+266	4+000	5+000	6+000	7+000	8+000	9+000

OF THE TALISAY RIVER

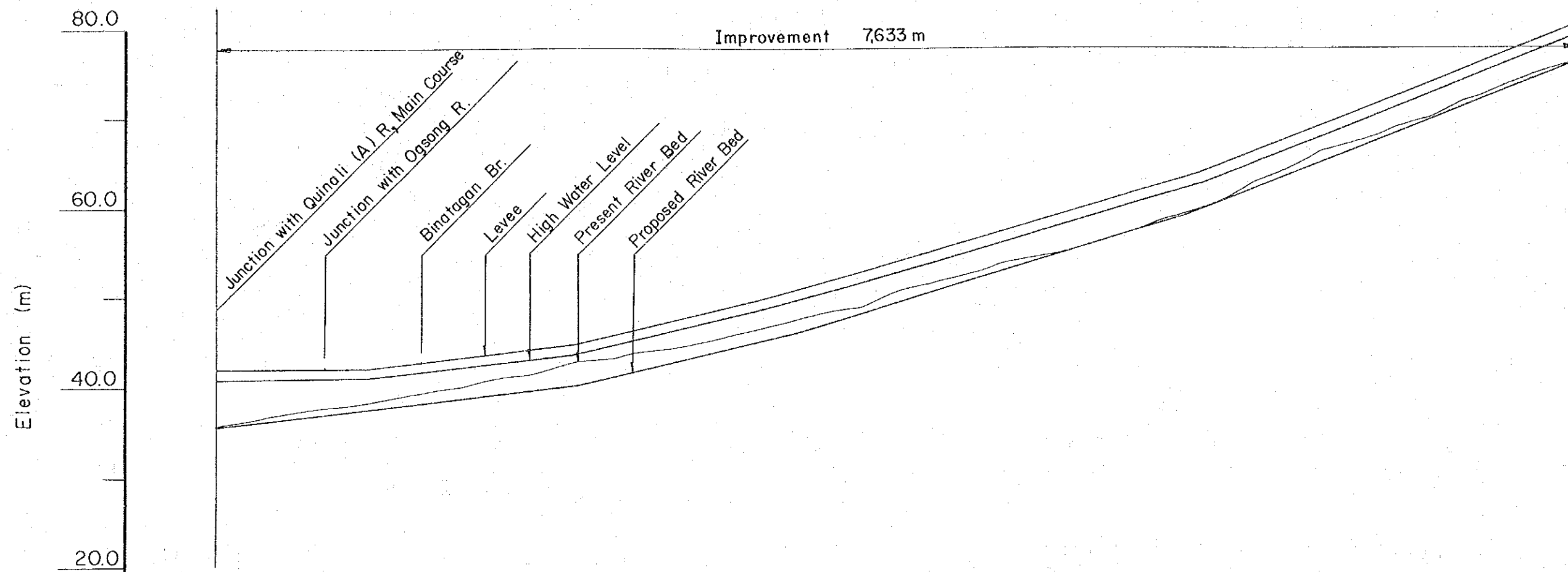
Improvement 13,717m

Junction with Libon R. Bailey Br.

Boold Br.

		Existing River Bed Slope $I = 1/1,000$						Existing River Bed Slope $I = 1/800$					
3+000	3,000	15.64	16.63	17.63	18.63	19.63	23.77	24.77	25.77	27.86	28.86	31.71	32.59
3+266	3,266	14.64	15.63	16.63	17.63	18.63	22.77	23.77	24.77	26.86	27.86	30.71	31.59
4+000	4,000	8.51	9.51	10.51	11.51	12.51	13.51						
5+000	5,000												
6+000	6,000												
7+000	7,000												
8+000	8,000						1,970						
9+000	9,000												
10+000	10,000												
11+000	11,000												
12+000	12,000												
13+000	13,000												
13+700	13,700												

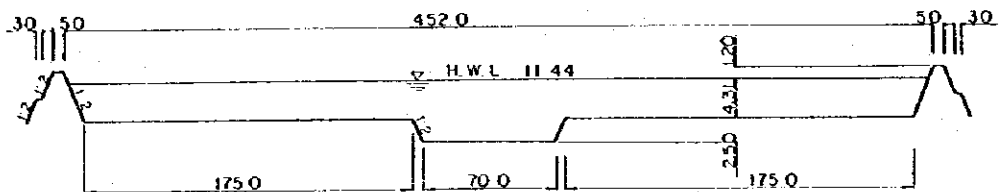
FIG.-4.3.21 PROFILE OF THE NASISI RIVER



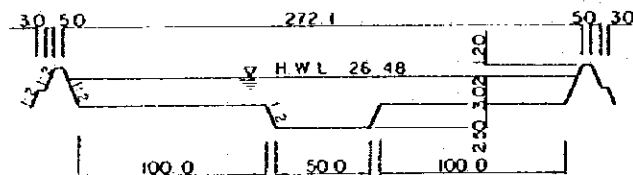
Proposed River Bed Gradient												
Formation Height of Levee (EL.m)	42.03	42.03	42.46	44.05	44.96	49.83	55.38	61.26	67.99	75.68	80.55	
High Water Level (EL.m)	41.03	41.03	41.46	43.09	43.96	48.83	54.38	60.26	66.99	74.68	79.55	
Formation Height of River Bed (EL.m)	35.51	37.01	38.01	39.60	40.51	45.51	51.22	57.10	64.07	71.76	76.63	
Discharge (m ³ /s)												
Cumulative Distance (m)	0	600	1,000	1,636	2,000	3,000	4,000	5,000	6,000	7,000	7,633	8,000
Station No.	0+000	0+600	1+000	1+636	2+000	3+000	4+000	5+000	6+000	7+000	7+633	8+000

FIG.-4322 TYPICAL CROSS SECTION OF THE QUINALI (A) RIVER

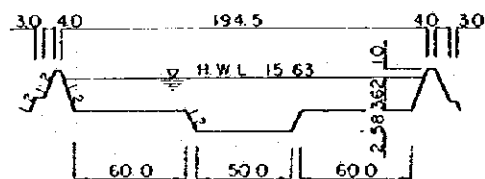
STA. 1 + 000 (Main Course)



STA. 15 + 000 (Main Course)



STA. 4 + 000 (Talisay R.)



STA. 1 + 000 (Nosisi R.)

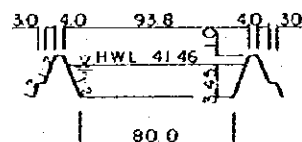
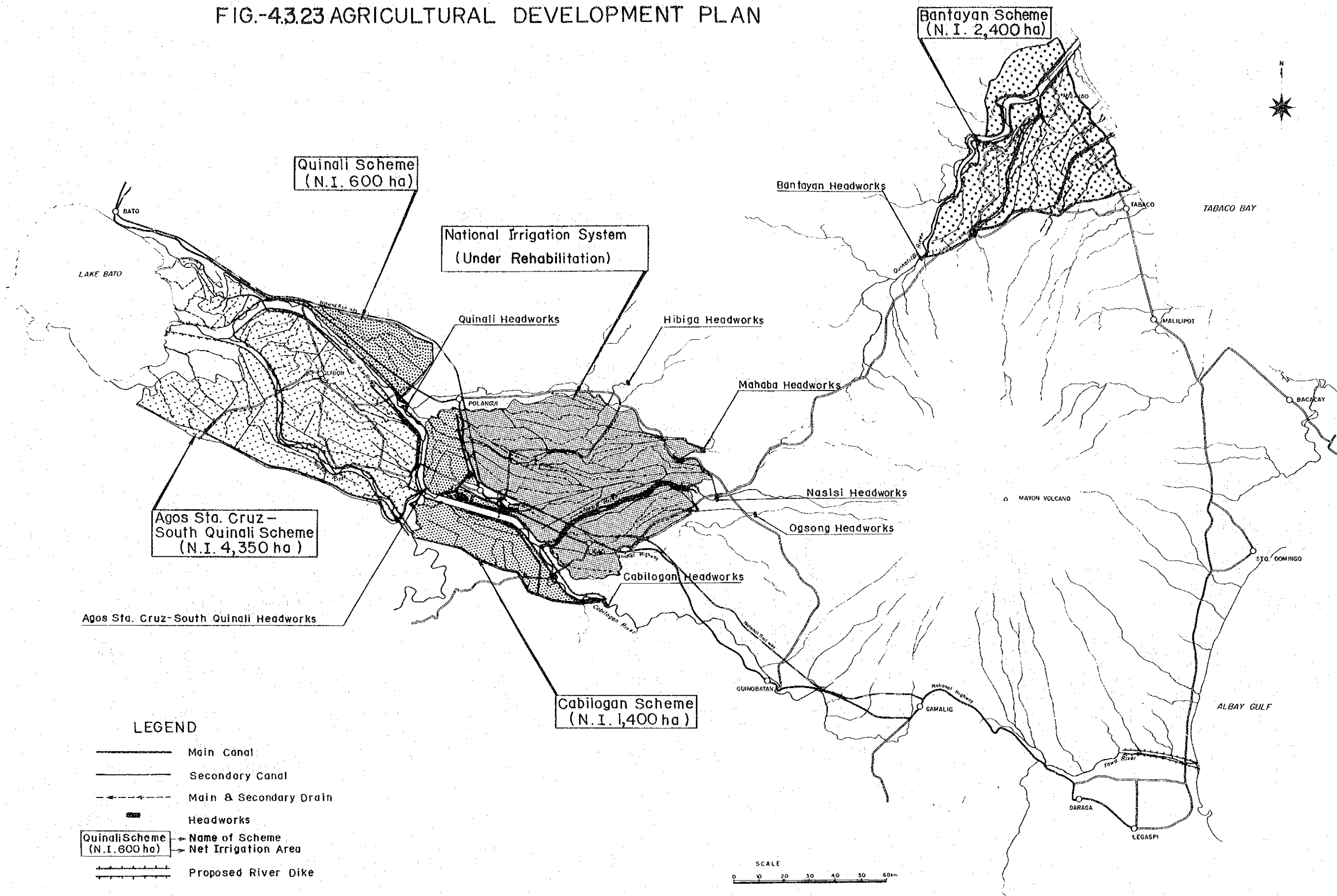
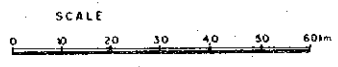


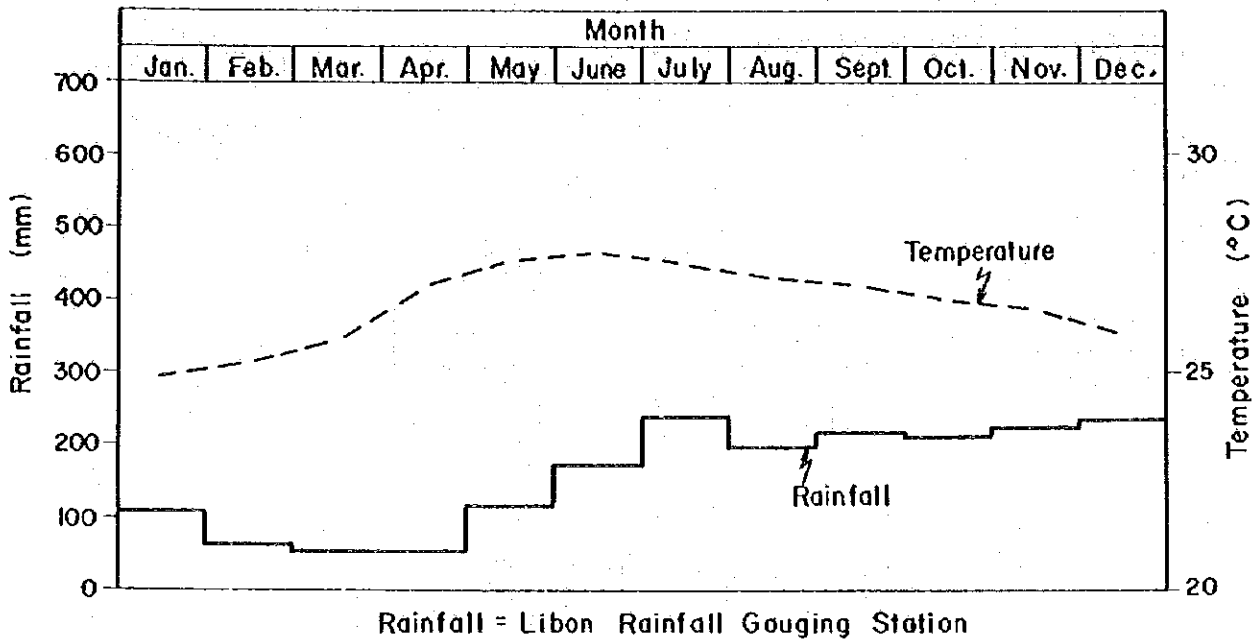
FIG.-4.3.23 AGRICULTURAL DEVELOPMENT PLAN



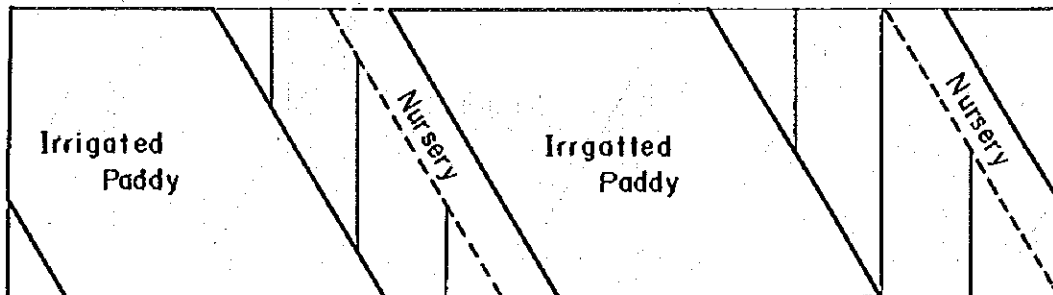
- LEGEND**
- Main Canal
 - Secondary Canal
 - Main & Secondary Drain
 - Headworks
 - Quinali Scheme (N.I. 600 ha) → Name of Scheme
 - Quinali Scheme (N.I. 600 ha) → Net Irrigation Area
 - Proposed River Dike



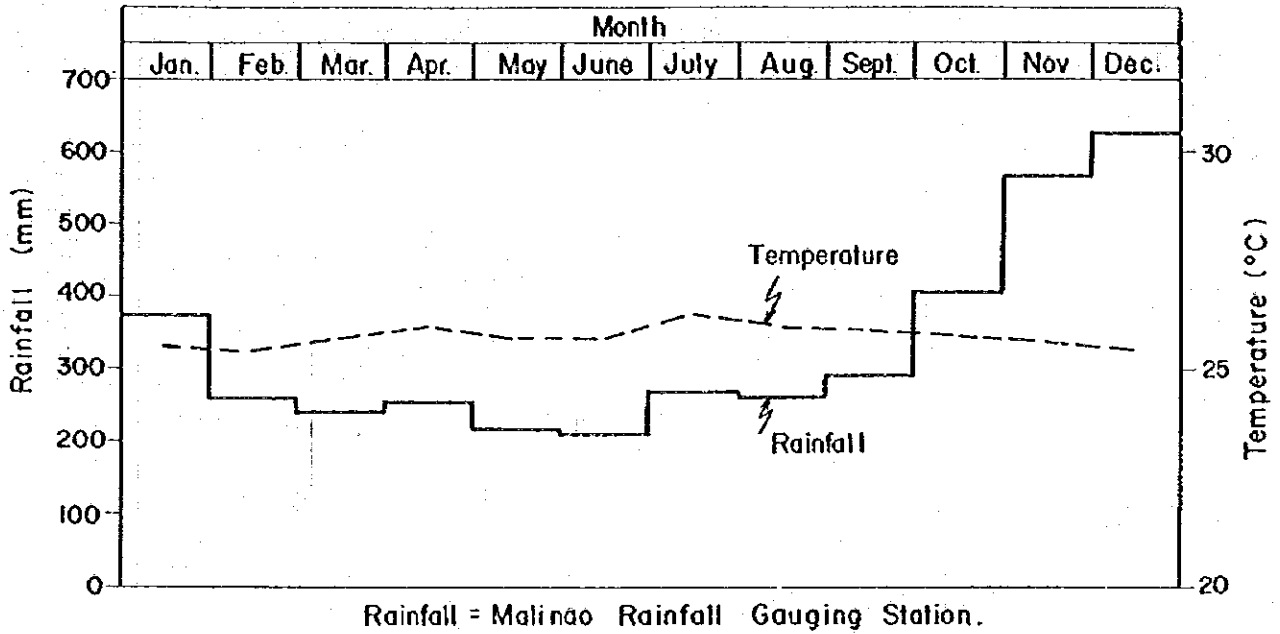
**FIG.- 4.3.24 PROPOSED CROPPING PATTERN,
THE QUINALI (A) RIVER BASIN**



PROPOSED CROPPING PATTERN



**FIG.- 4.3.25 PROPOSED CROPPING PATTERN,
THE QUINALI (B) RIVER BASIN**



PROPOSED CROPPING PATTERN

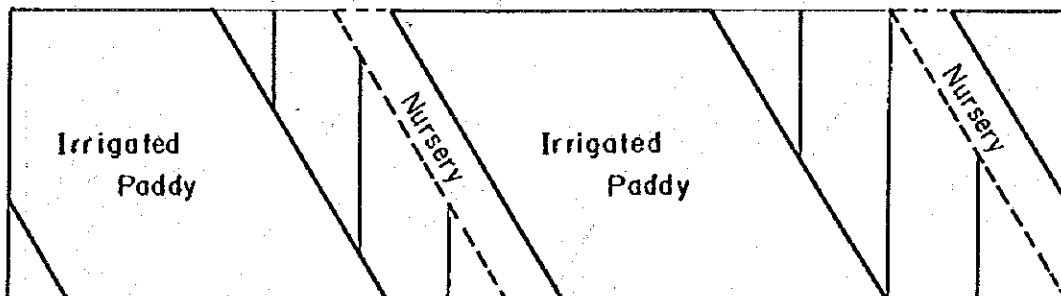


FIG.-4.4I LOCATION MAP OF SABO WORKS IN THE QUNALI (S) RIVER BASIN

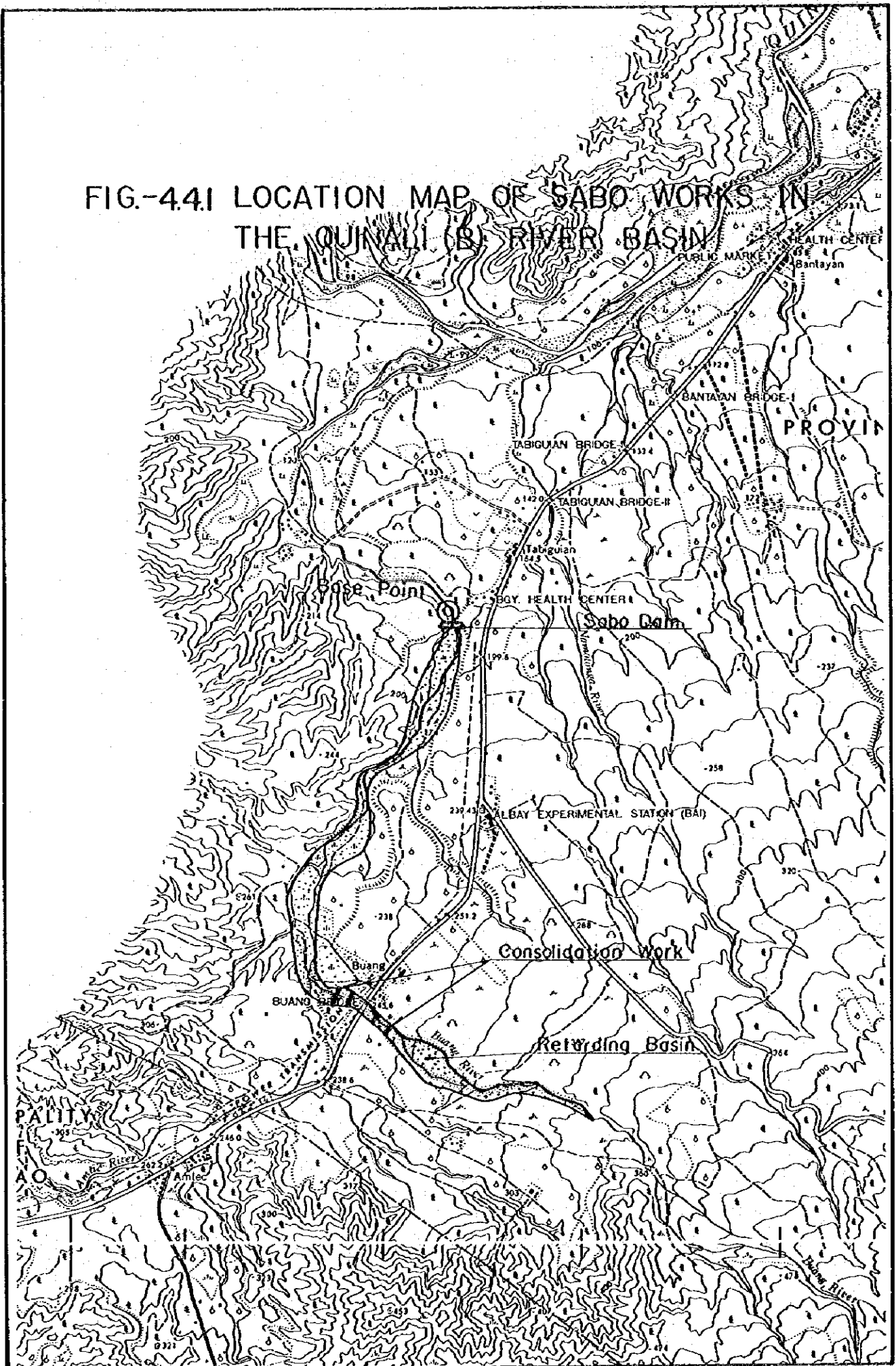


FIG.-4.4.2

PROFILE OF THE QUINALI (B) RIVER

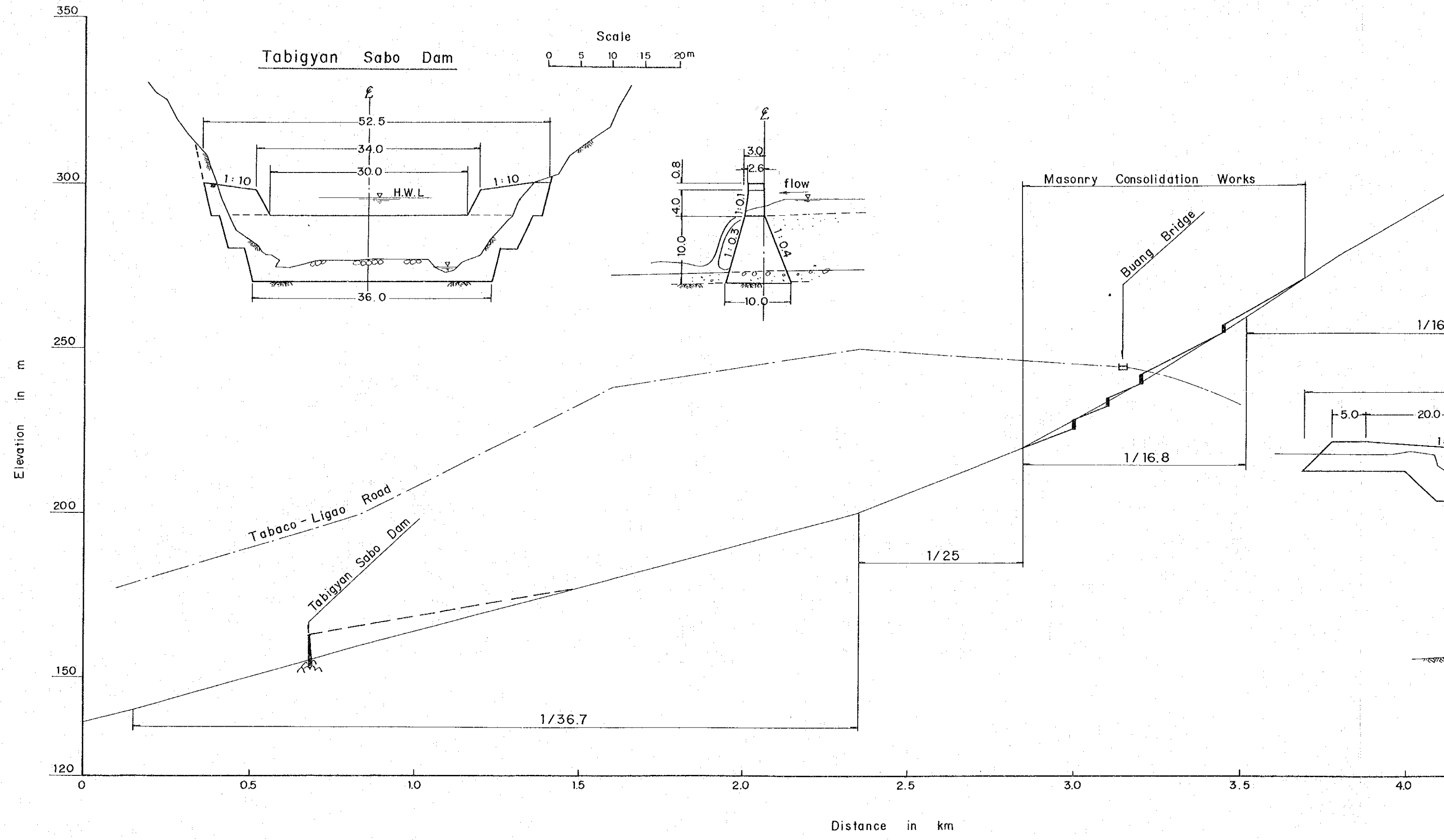


FIG.-4.4.2 PROFILE OF THE QUINALI (B) RIVER

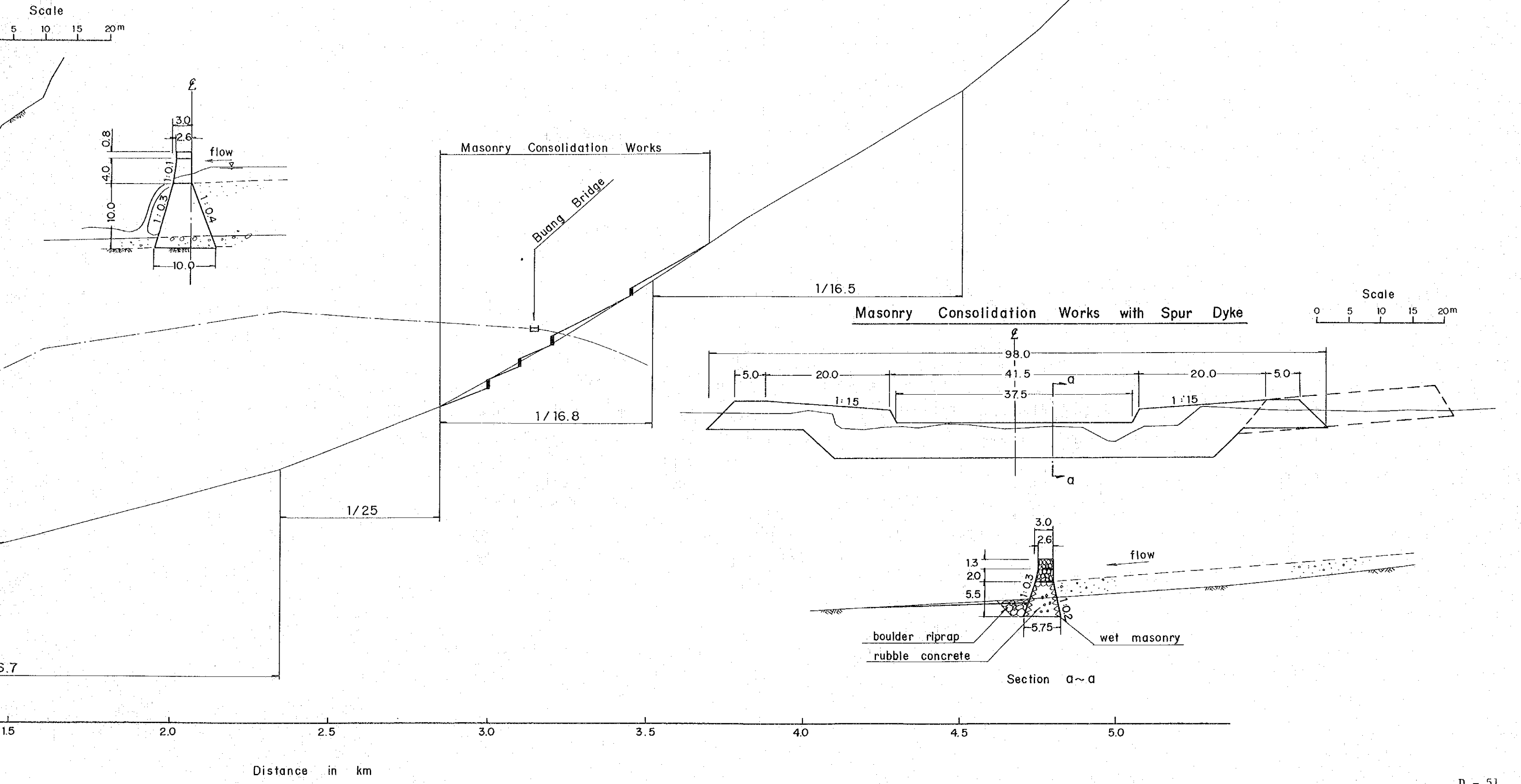
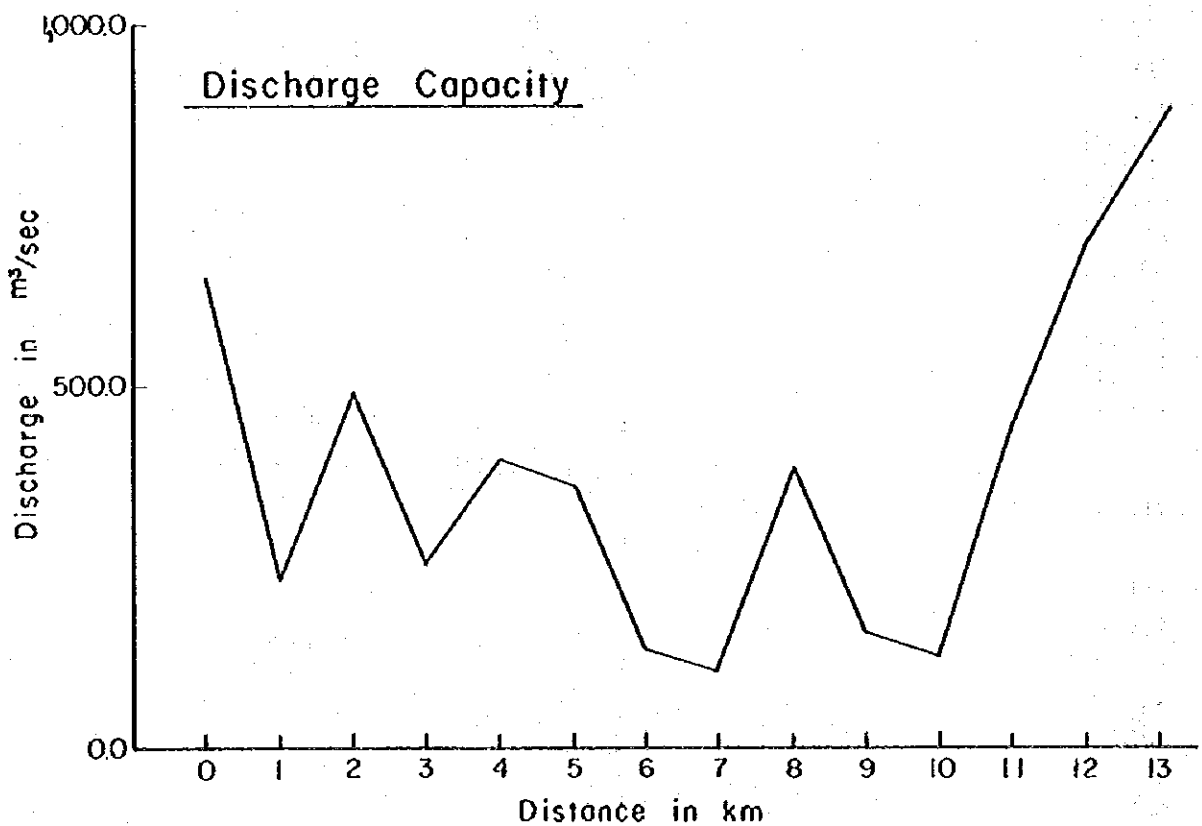
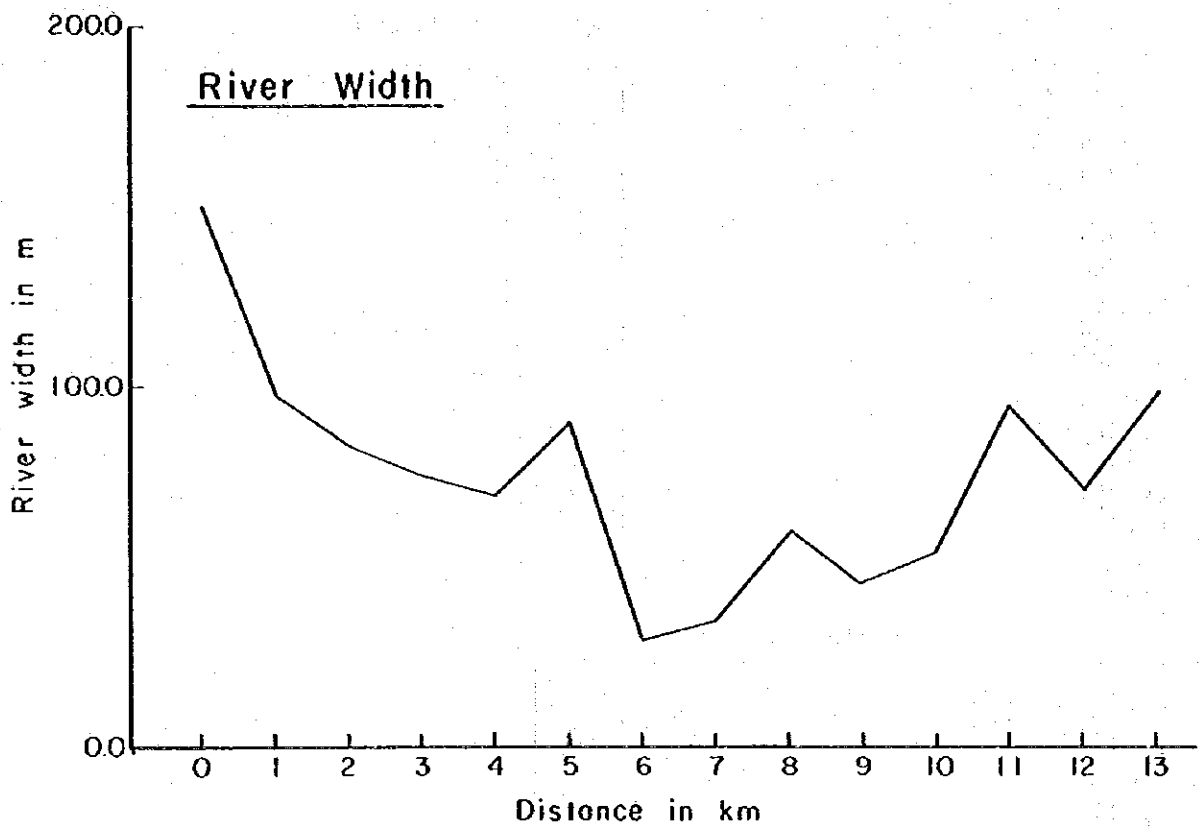


FIG.-4.43 RIVER WIDTH AND DISCHARGE CAPACITY OF THE PRESENT RIVER CHANNEL, THE QUINALI (B) RIVER



**FIG-4.4.4 DESIGN DISCHARGE DISTRIBUTION DIAGRAM,
THE QINALI (B) RIVER (RETURN PERIOD 50 - YEAR)**
Unit : m^3/sec

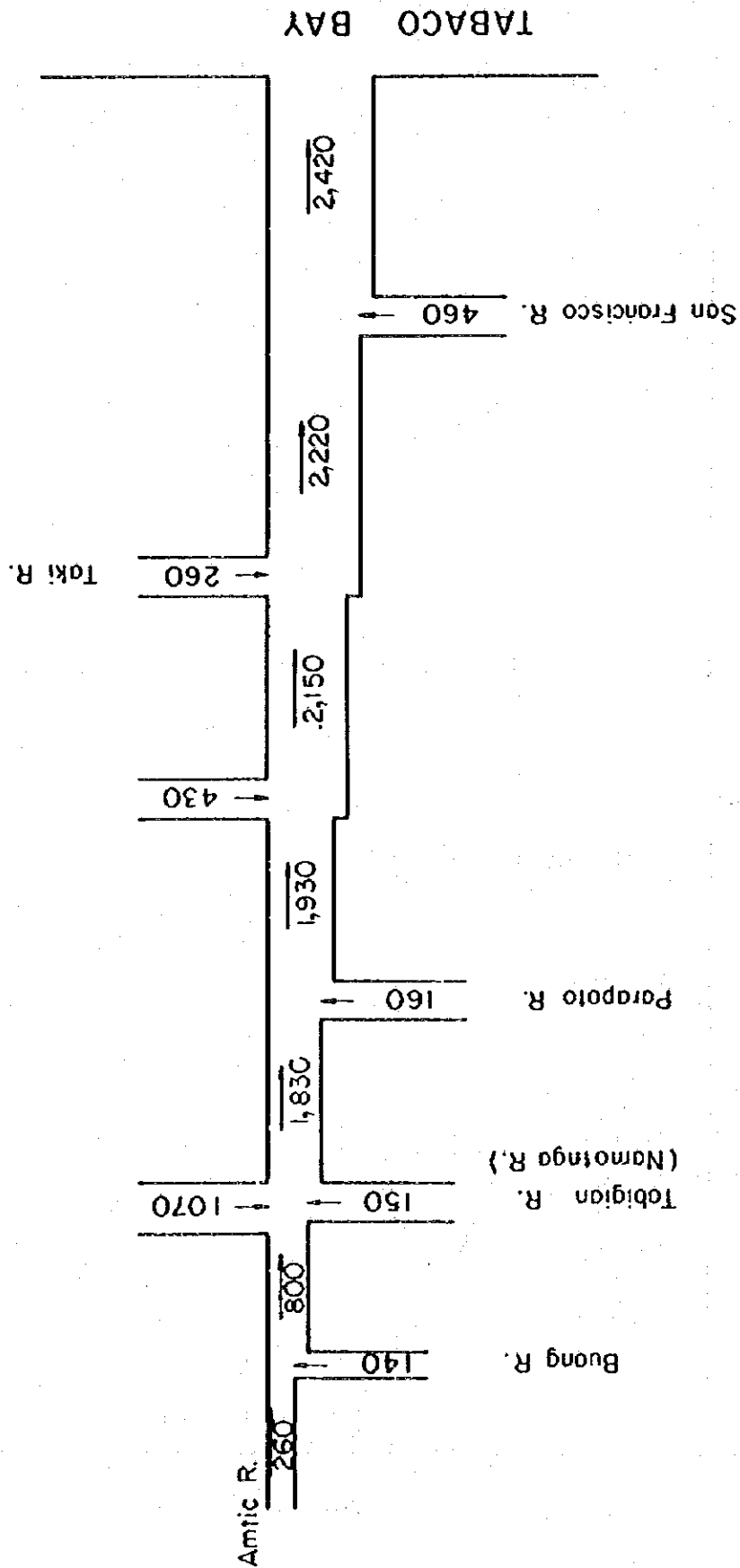


FIG.-4.45 GENERAL PLAN OF THE QUINALI (B) RIVER

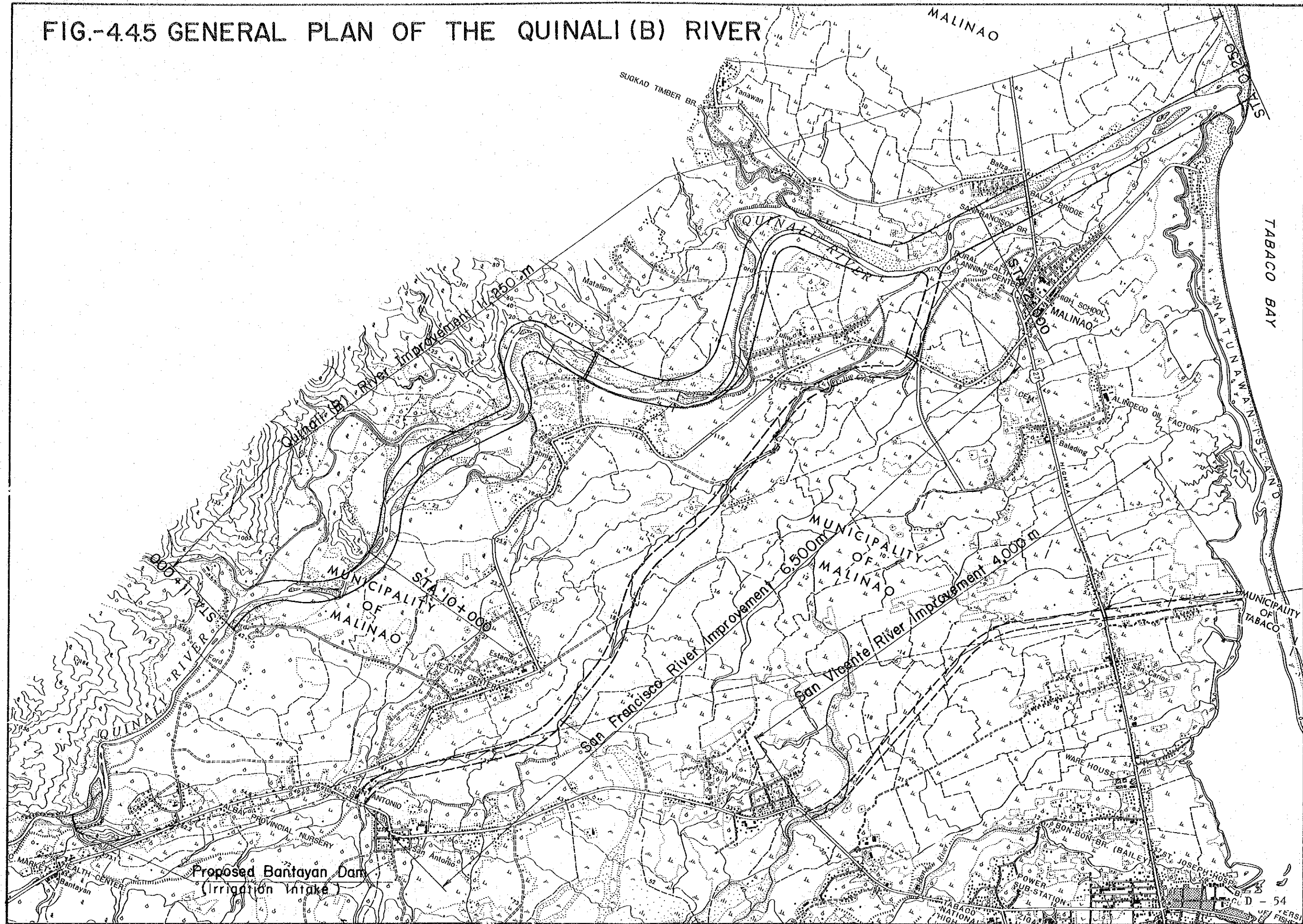
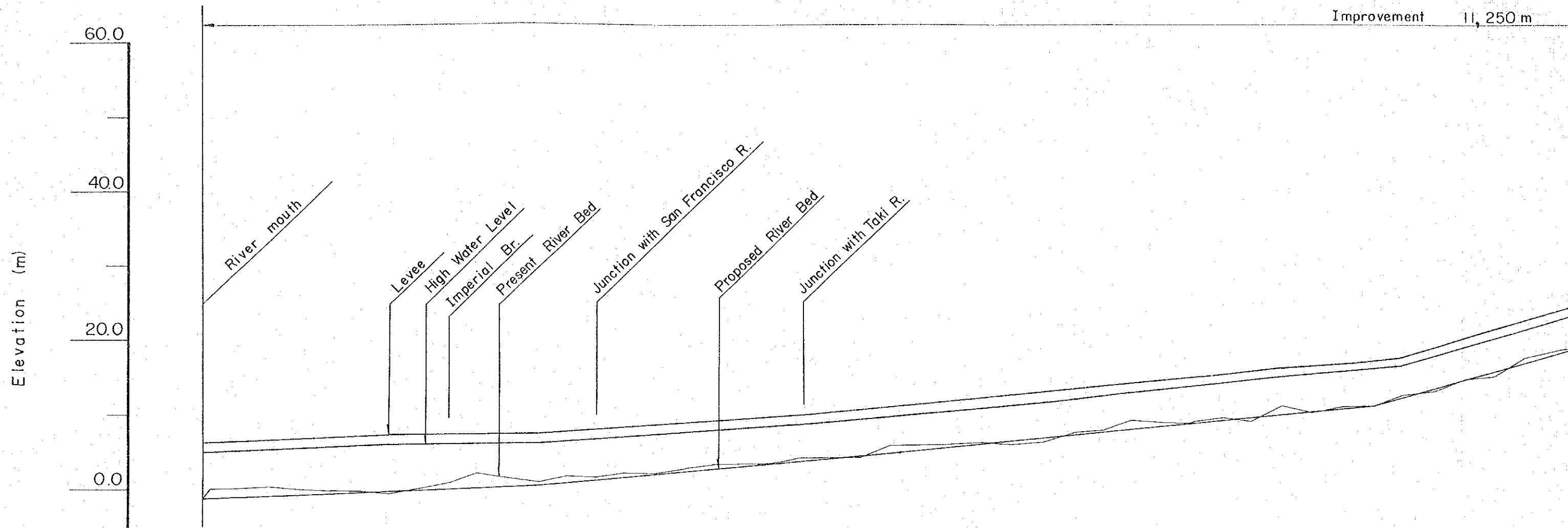


FIG.-4.4.6 PROFILE OF THE QUINALI (B) RIVER

Improvement 11, 250 m



Proposed River Bed Gradient			1		1		1		1					
Formation Height of Levee (EL.m)	6.33	6.54	7.38	7.60	8.91	10.36	12.33	14.45	16.58	19.43				
High Water Level (EL.m)	5.13	5.34	6.18	6.40	7.71	9.16	11.13	13.25	15.38	18.23				
Formation Height of River Bed (EL.m)	-1.02	-0.81	0.03	0.85	2.36	3.88	5.89	8.01	10.14	13.77				
Discharge (m ³ /s)			2,420		2,220					2,150				
Cumulative Distance (m)	-250	0	1,000	2,000	2,400	3,000	3,800	4,000	4,200	5,000	6,000	7,000	7,600	8,000
Station No.	0+250	0+000	1+000	2+000	2+400	3+000	3+800	4+000	4+200	5+000	6+000	7+000	7+600	8+000

PROFILE OF THE QUINALI (B) RIVER

Improvement 11,250 m

Existing

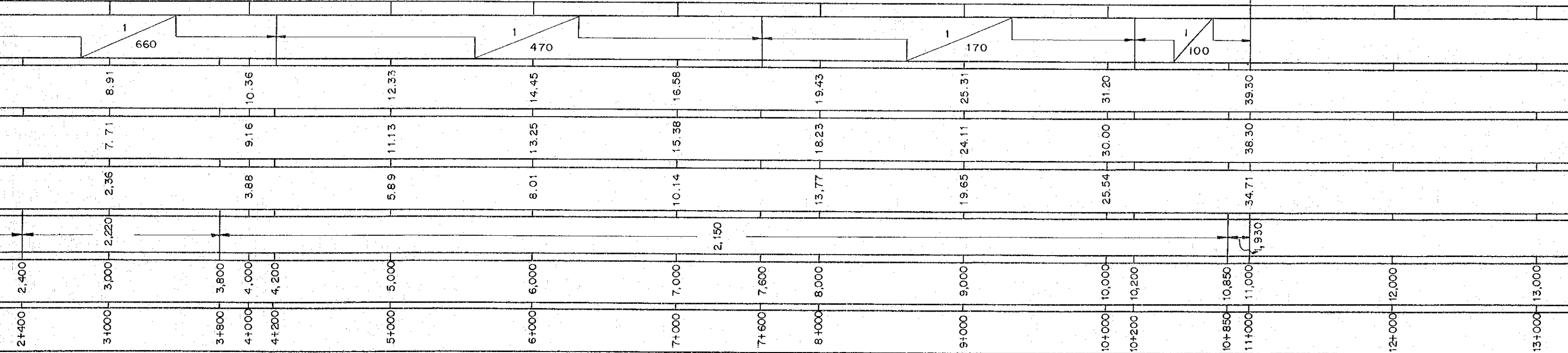
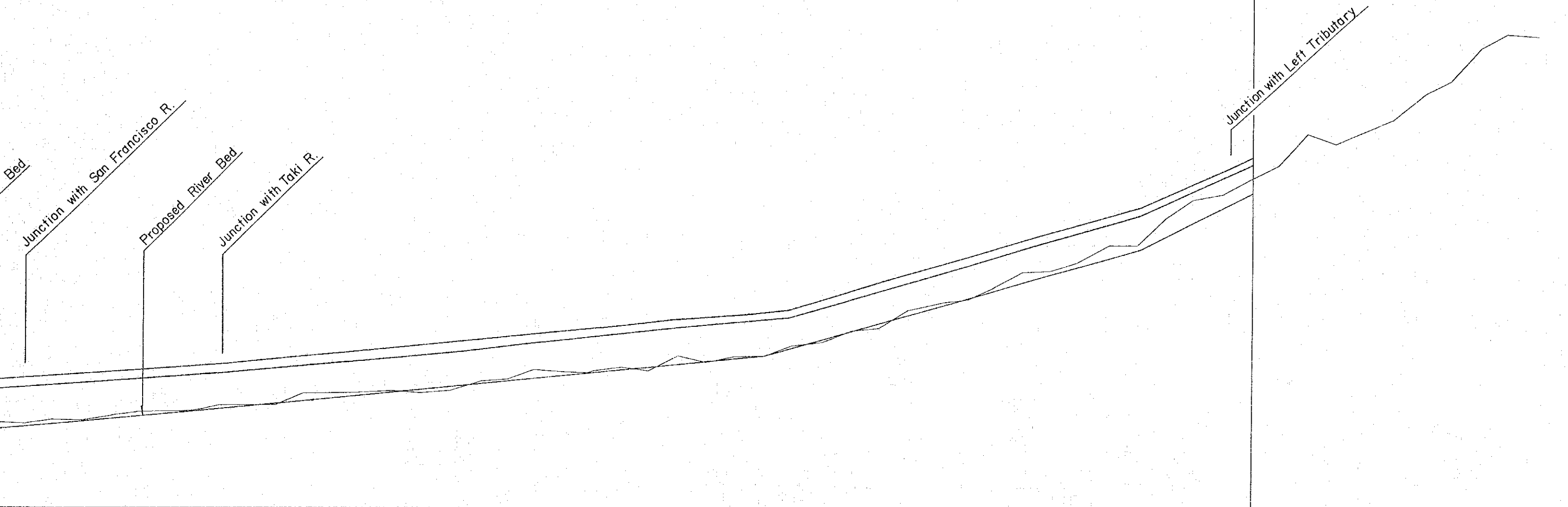
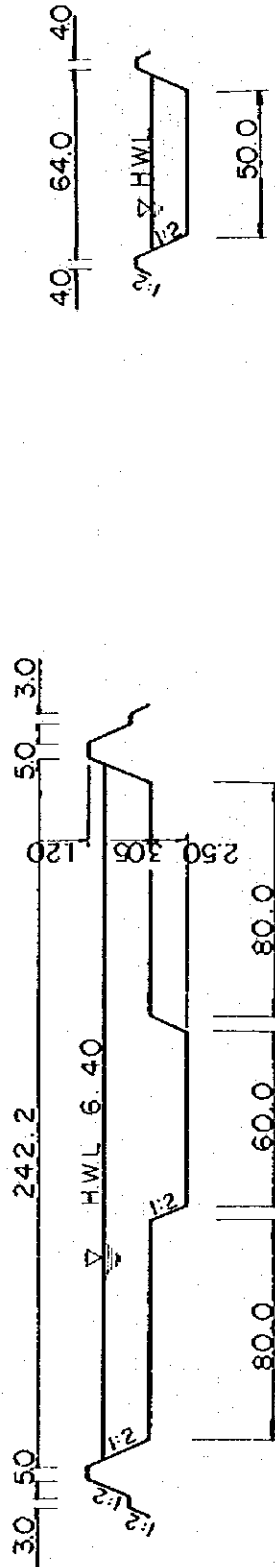


FIG.-4.4.7 TYPICAL CROSS SECTION OF THE QUINALI (B) RIVER

THE SAN FRANCISCO RIVER

STA. 2 + 000 (Main Course)



THE SAN VICENTE RIVER

STA. 10 + 000 (Main Course)

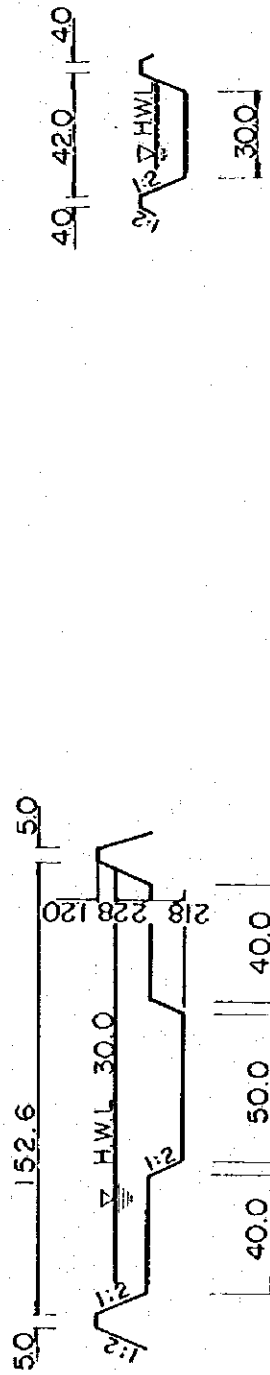


FIG. 451 LOCATION MAP OF SABO WORKS IN THE YAWA RIVER (ANULING RIVER, BUDIAO RIVER AND PAWA-BURABO RIVER)

