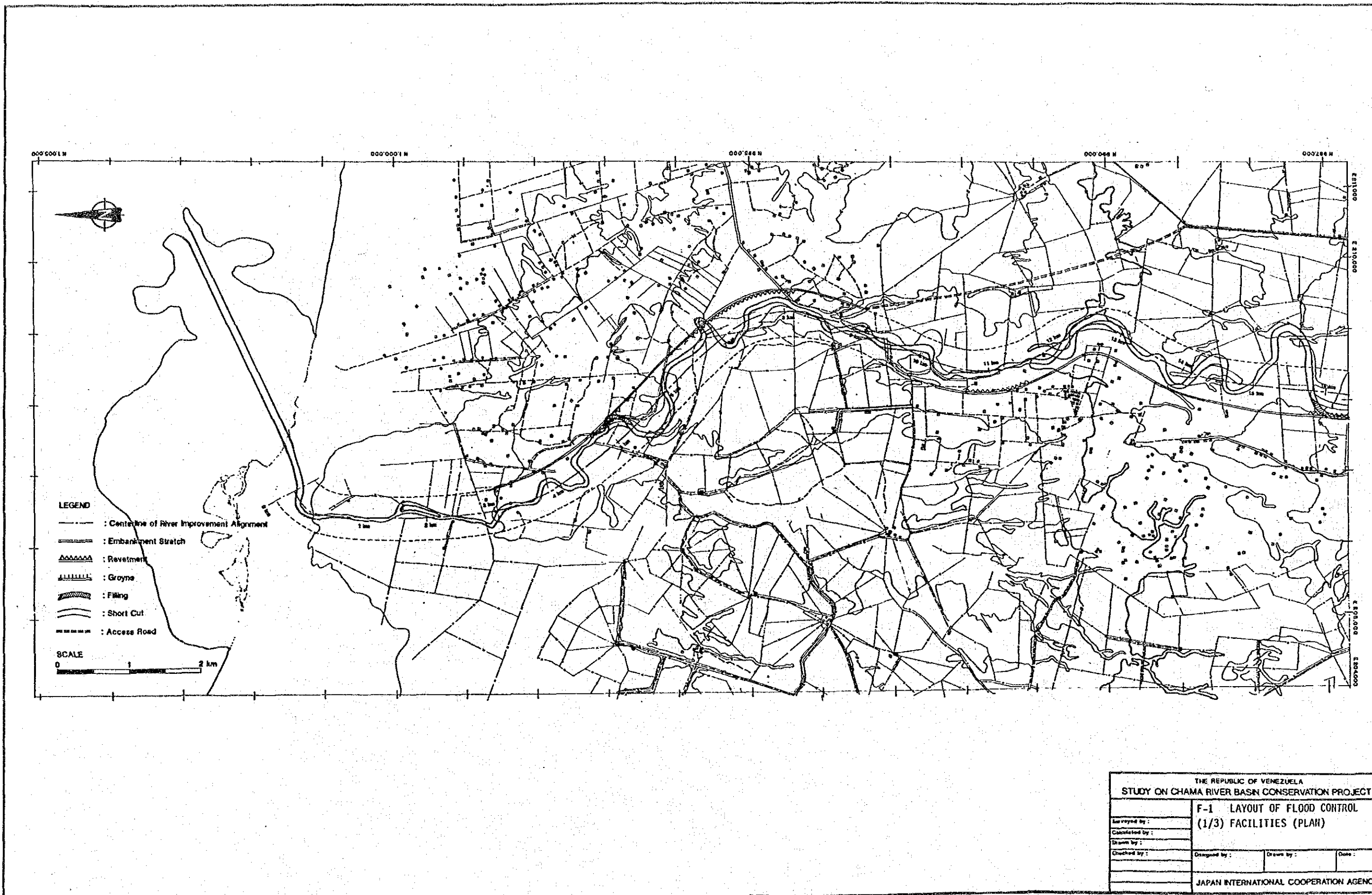
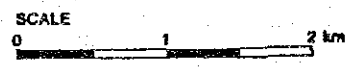
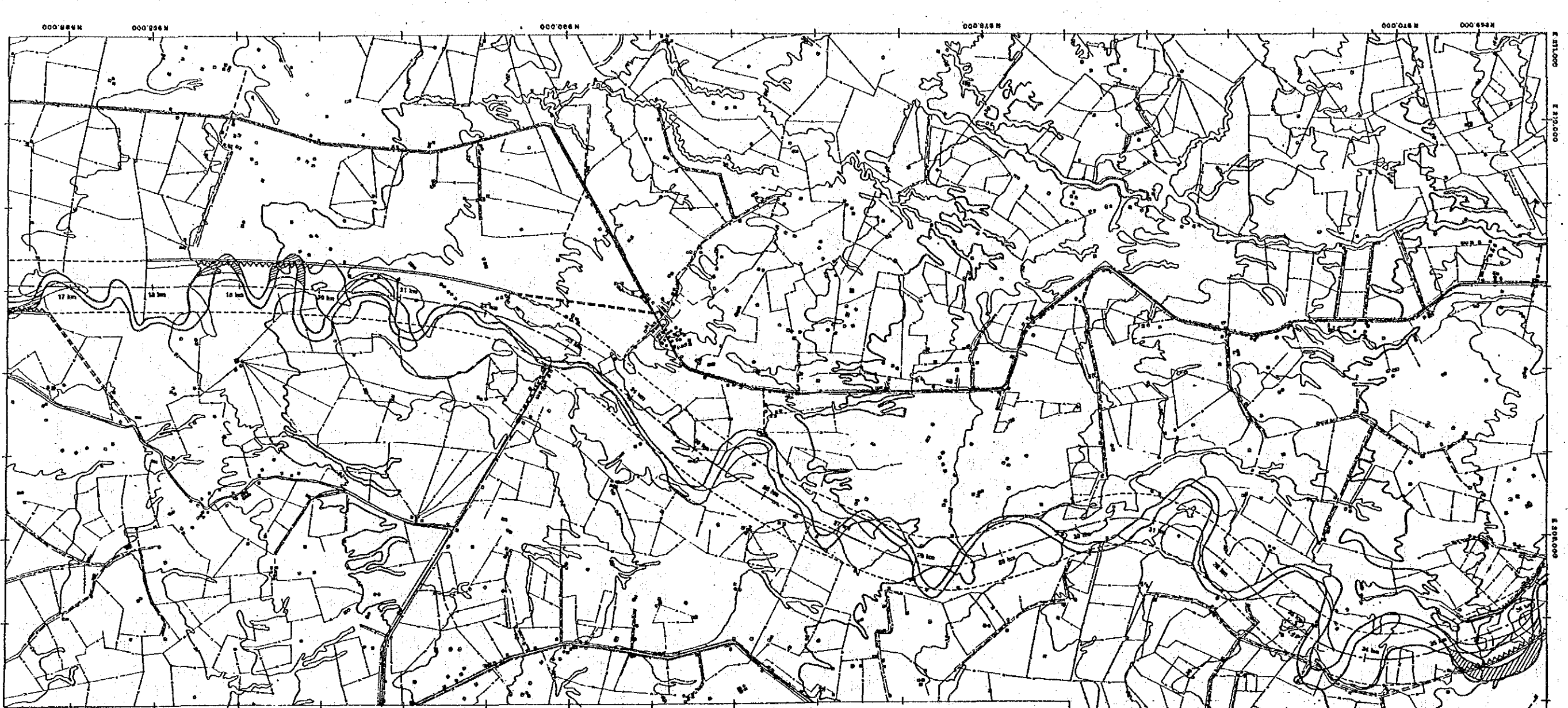


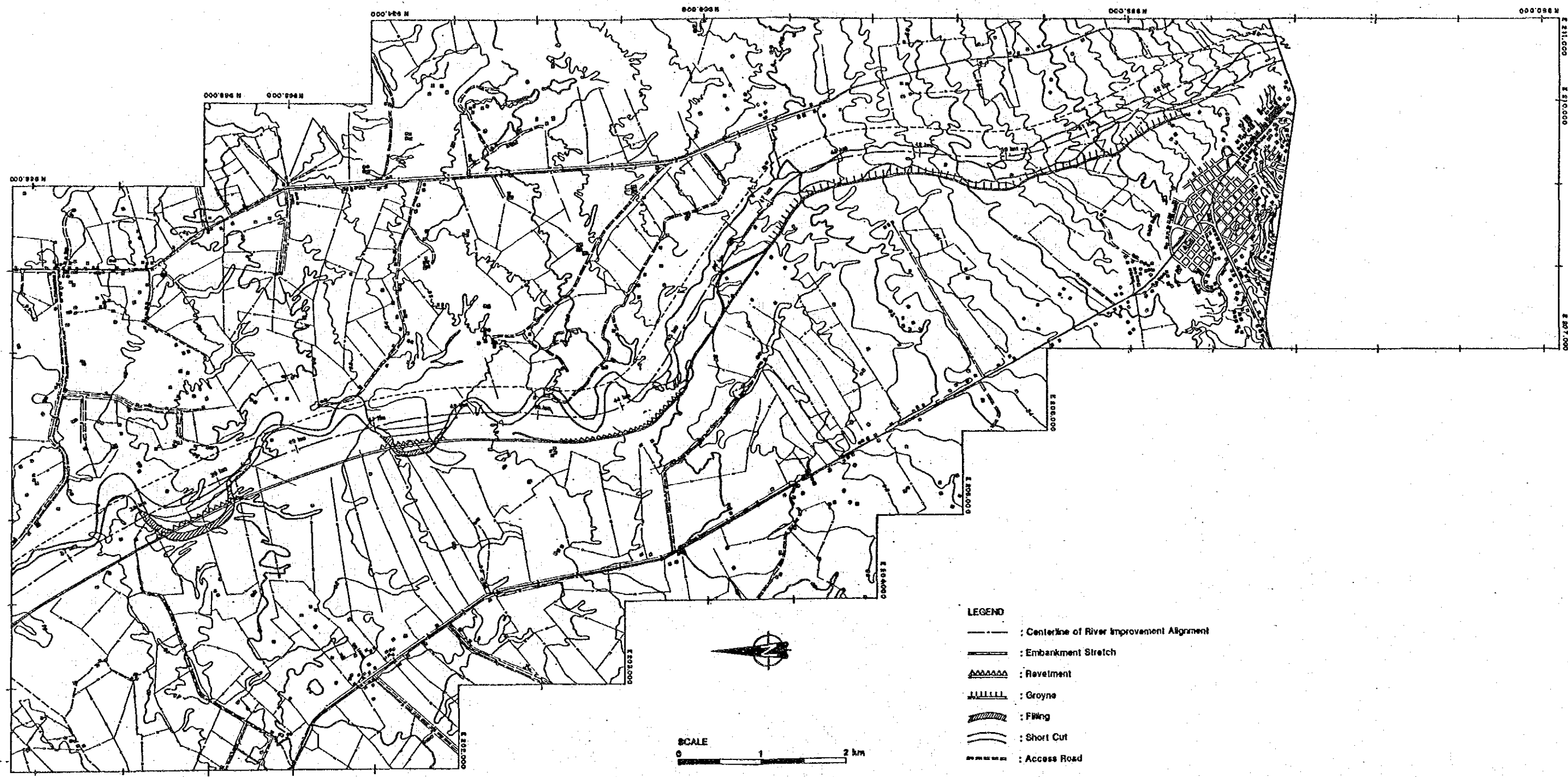
FLOOD CONTROL





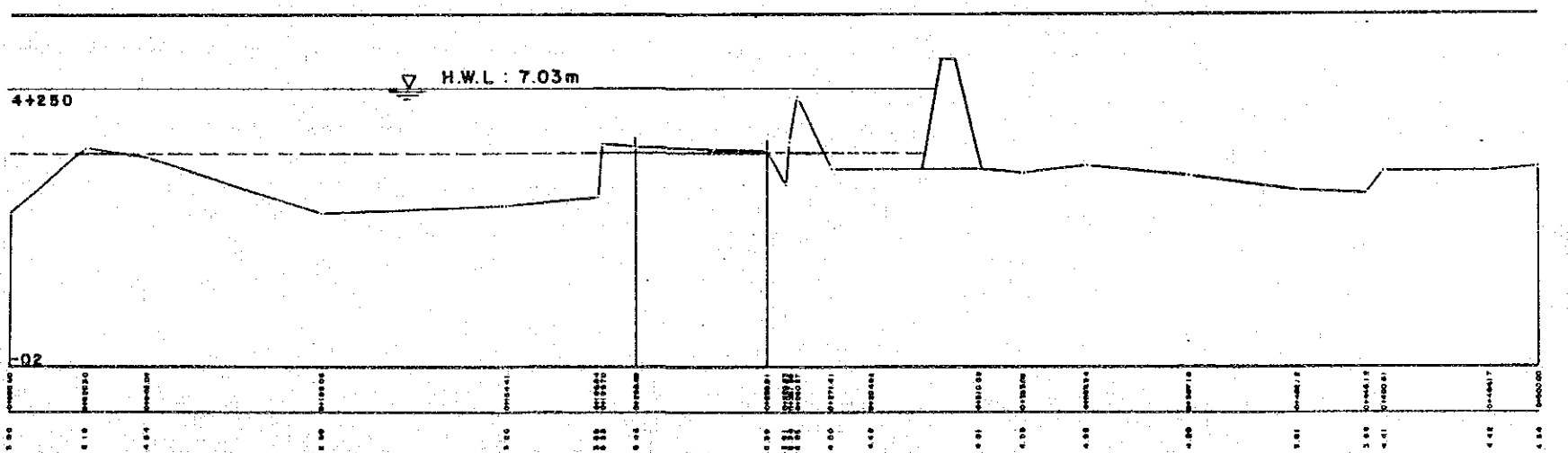
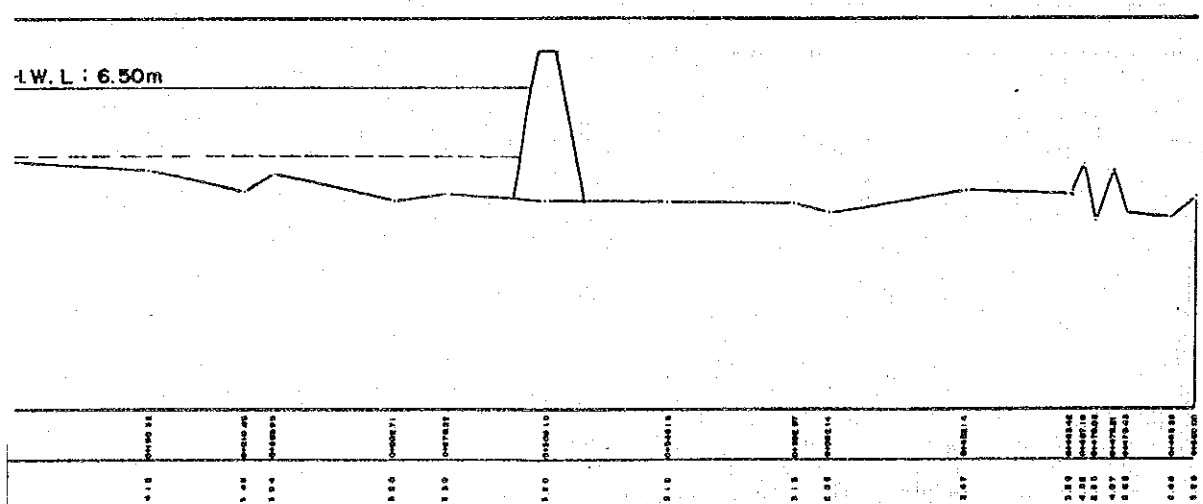
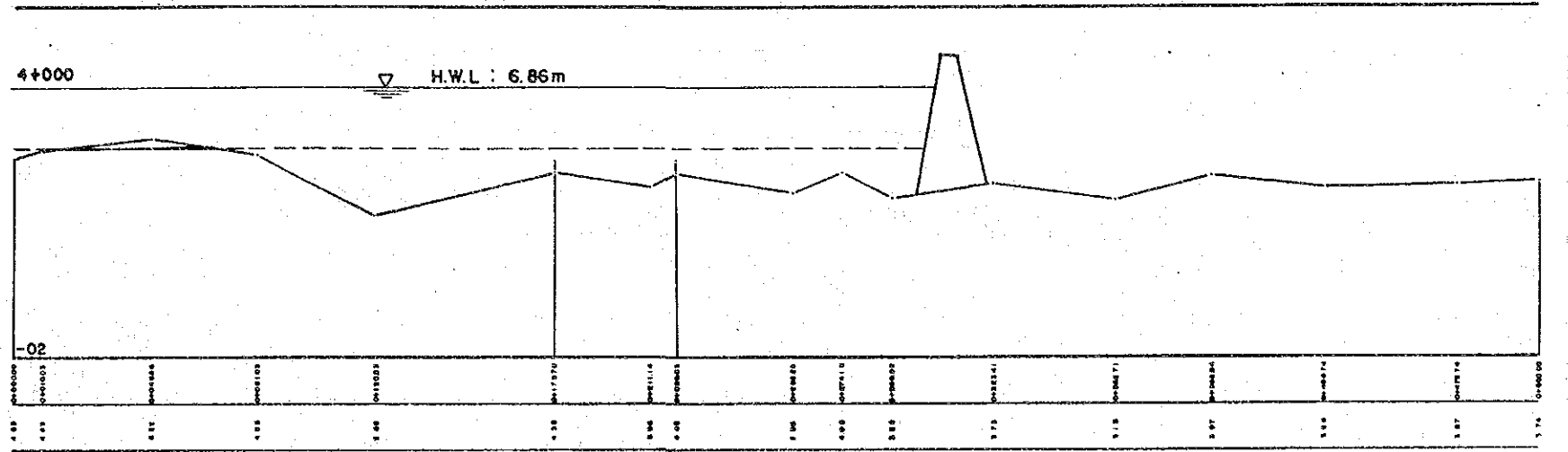
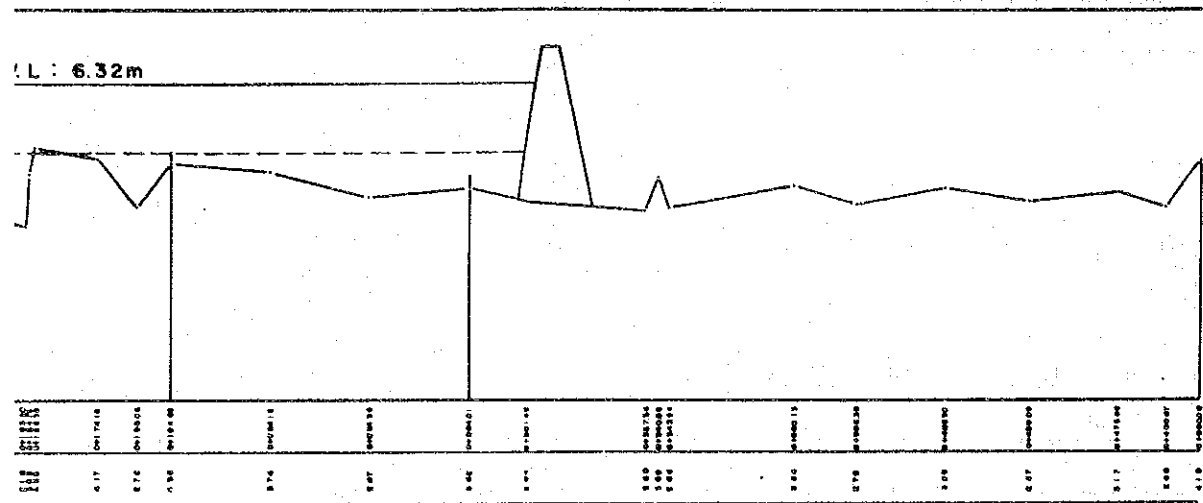
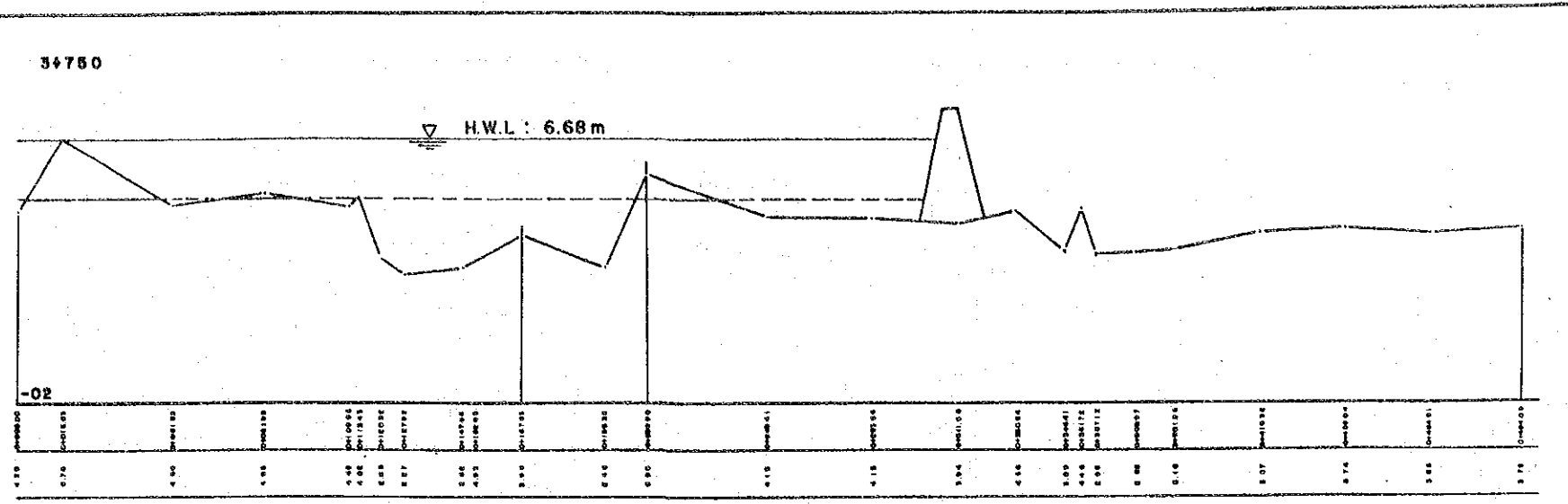
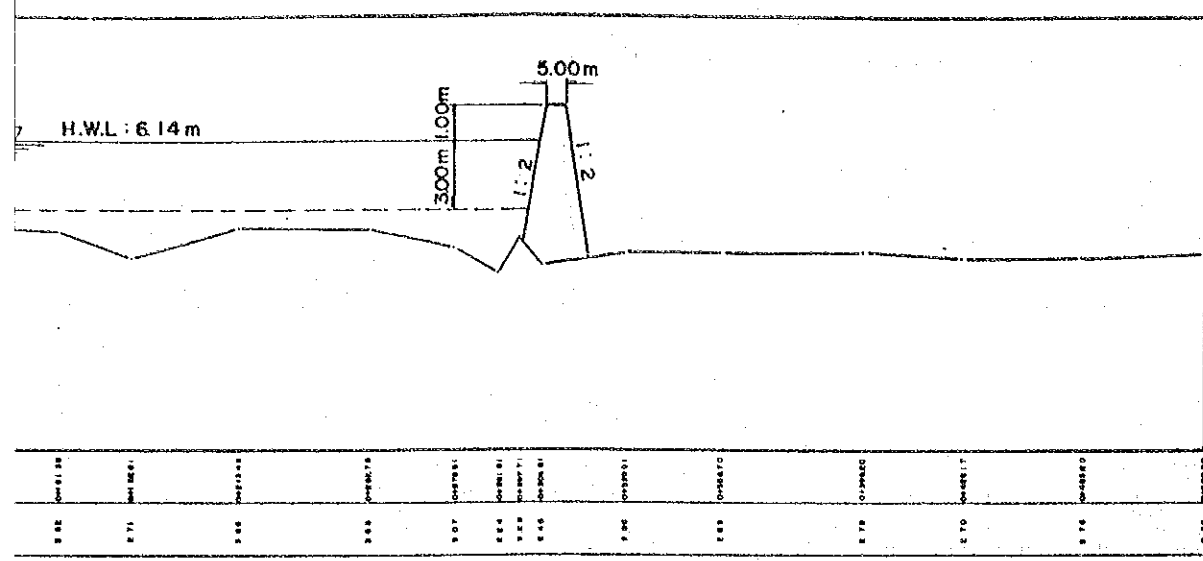
- LEGEND**
- — — — — : Centerline of River Improvement Alignment
 - : Embankment Stretch
 - - - - - : Revetment
 - | | | | | : Groyne
 - ▨▨▨▨▨ : Filling
 - ~~~~~ : Short Cut
 - - - - - : Access Road

THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
		F-1 LAYOUT OF FLOOD CONTROL (2/3) FACILITIES (PLAN)	
Surveyed by :			
Calculated by :			
Drawn by :			
Checked by :	Designed by :	Drawn by :	Date :
JAPAN INTERNATIONAL COOPERATION AGENCY			



- LEGEND**
- : Centerline of River Improvement Alignment
 - : Embankment Stretch
 - ▲▲▲▲▲ : Revetment
 - ||||| : Groyne
 - ▨ : Filling
 - : Short Cut
 - : Access Road

THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
F-1 LAYOUT OF FLOOD CONTROL			
(3/3) FACILITIES (PLAN)			
Surveyed by :	Designed by :	Drawn by :	Date :
Calculated by :			
Drawn by :			
Checked by :			
JAPAN INTERNATIONAL COOPERATION AGENCY			



THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale H 1:2,000	V-1:200		
DATE: 1971	PROJECT: PROYECTO C.A.	F-2 LAYOUT OF FLOOD CONTROL (1/20) FACILITIES (CROSS SECTION)	
DESIGN: PROYECTO C.A.	CONSTRUCTION: PROYECTO C.A.		
APPROVED BY: S. ROMERO	DESIGNED BY:	DRAWN BY:	CHECKED BY:
JAPAN INTERNATIONAL COOPERATION AGENCY			

4+500

H.W.L : 7.21m

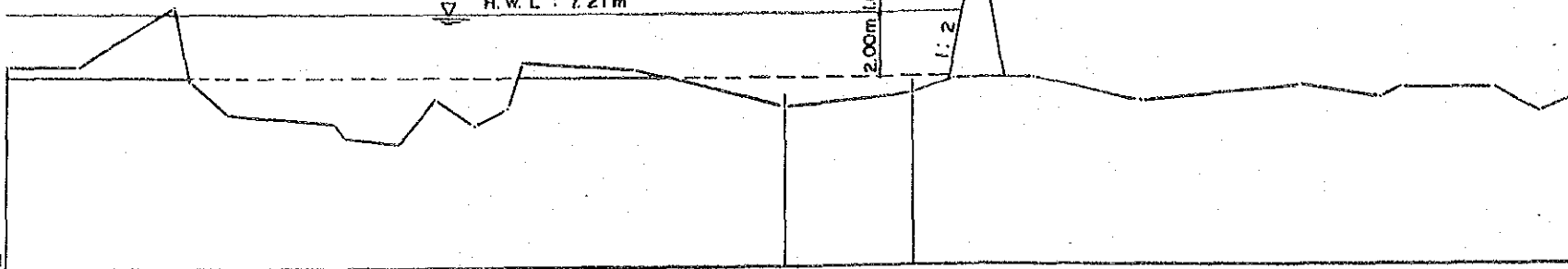
5.00m
2.00m LOG m
1:2

5+250

H.W.L : 7.75m

DATUM -01

ACCUMULATIVE
DISTANCE (m)
PRESENT
ELEVATION (m)
DESIGN
ELEVATION (m)



-01



4+750

H.W.L : 7.39m

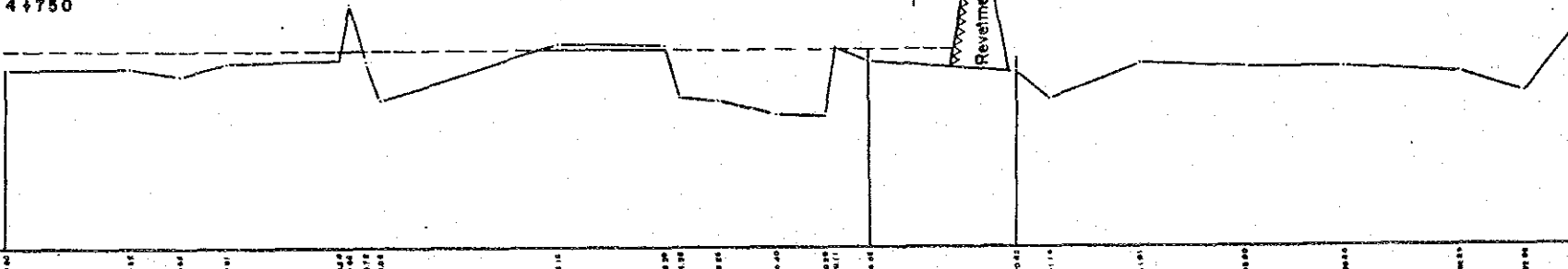
0.63m
Revetment

5+500

H.W.L : 7.93m

DATUM -01

ACCUMULATIVE
DISTANCE (m)
PRESENT
ELEVATION (m)
DESIGN
ELEVATION (m)



-01



5+000

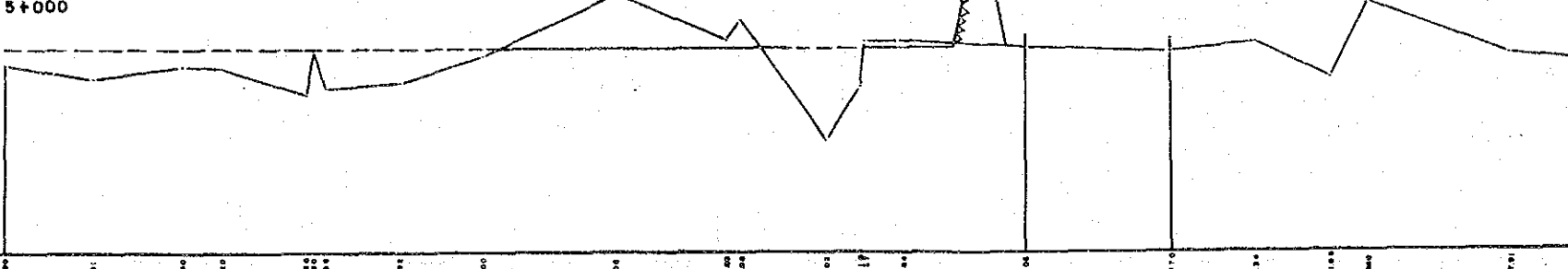
H.W.L : 7.57m

5+750

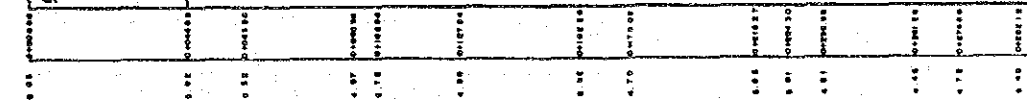
H.W.L : 8.11m

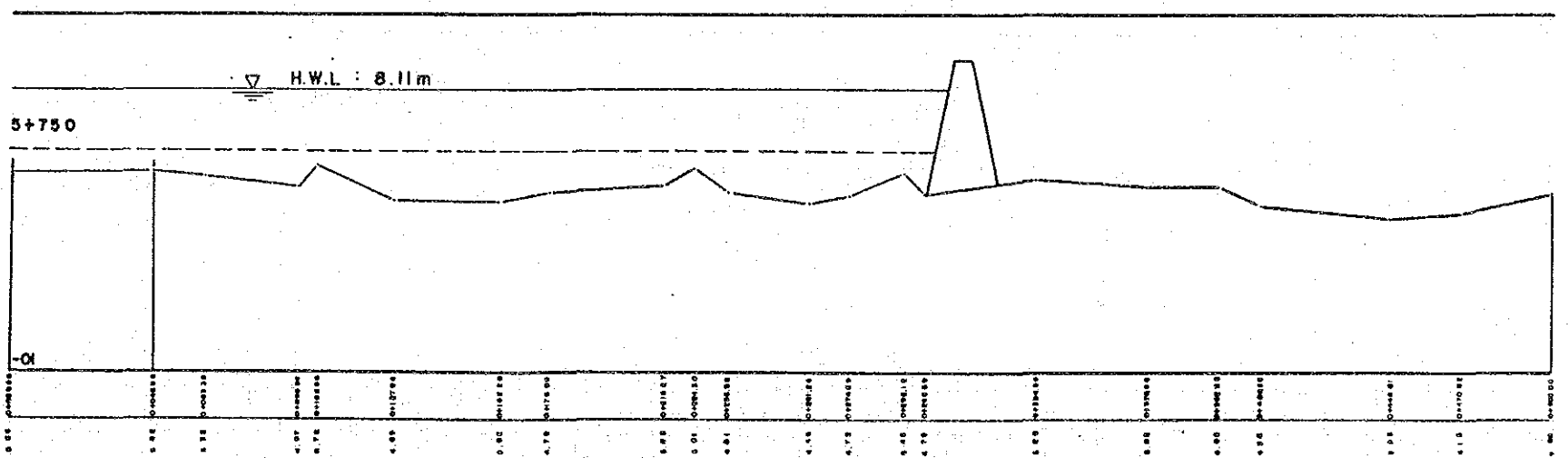
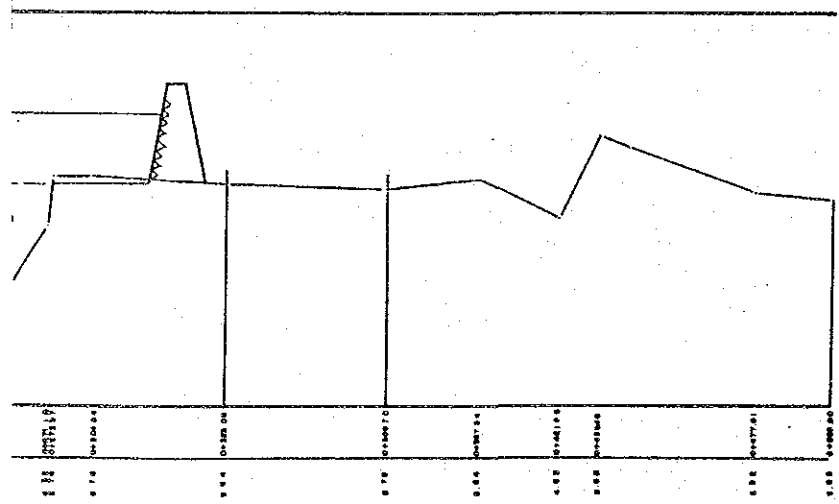
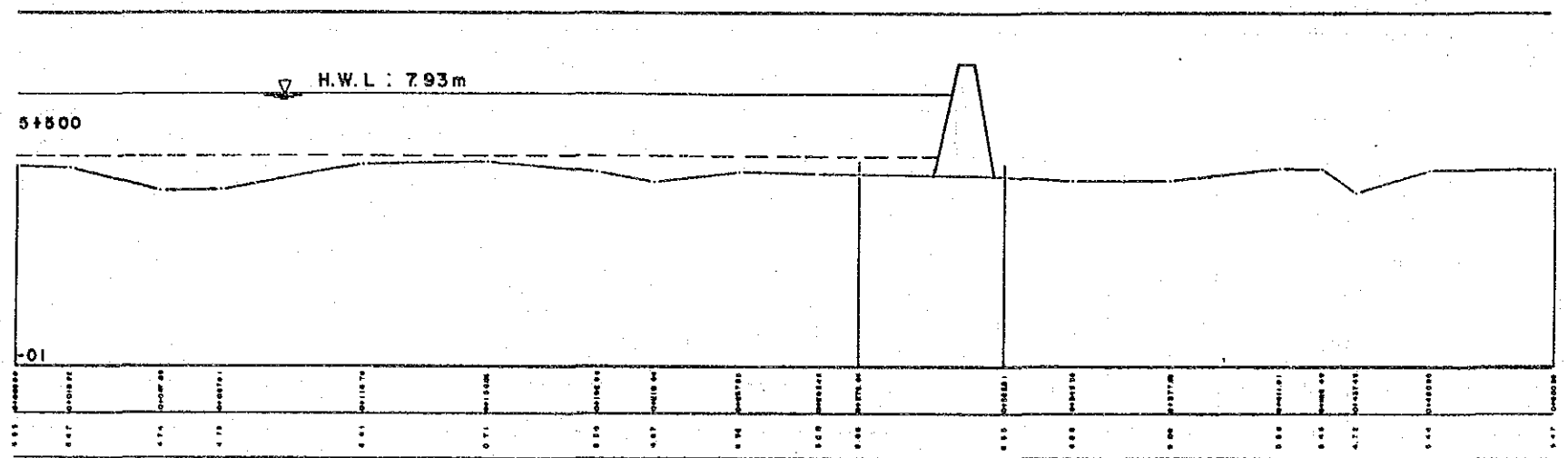
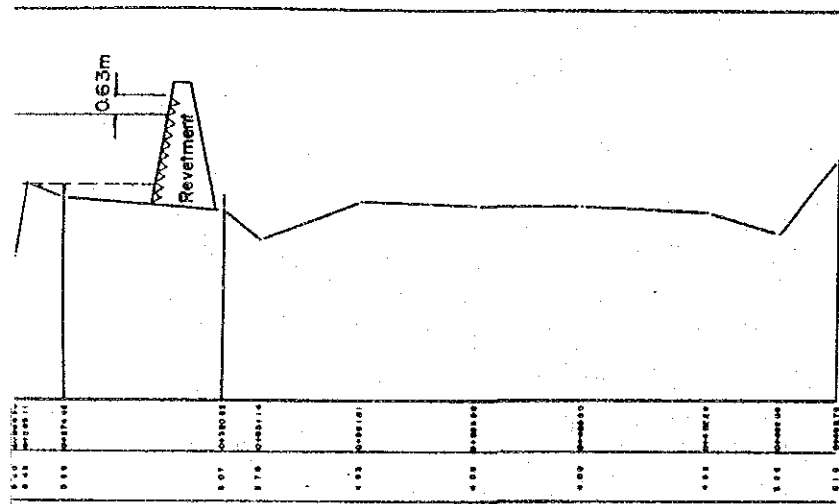
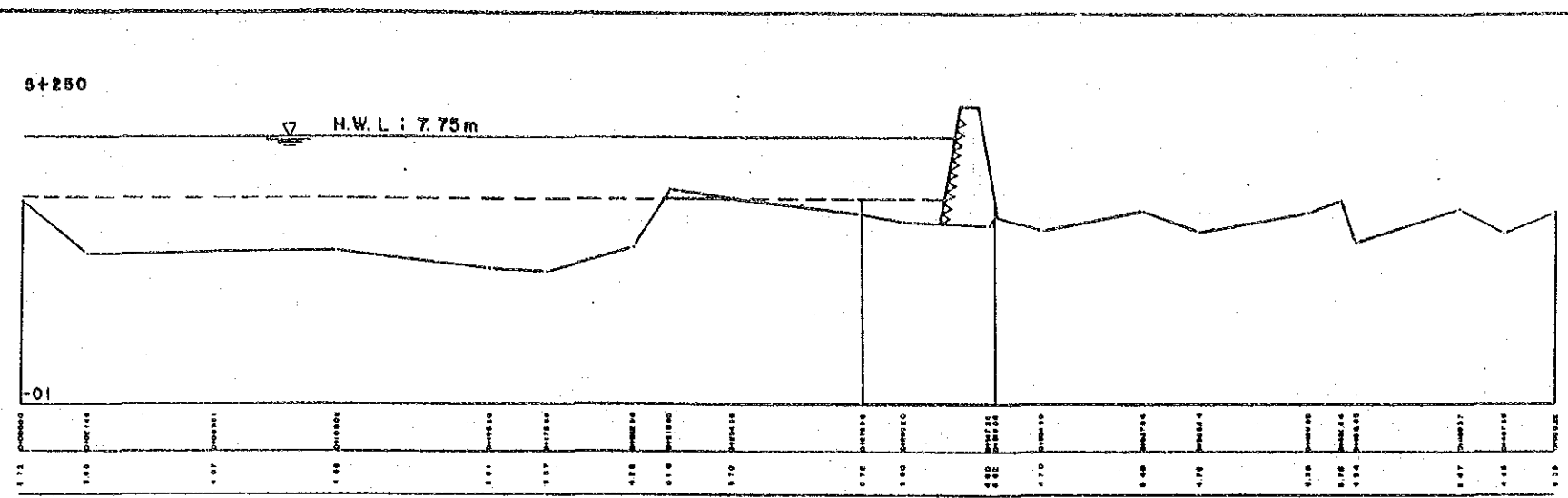
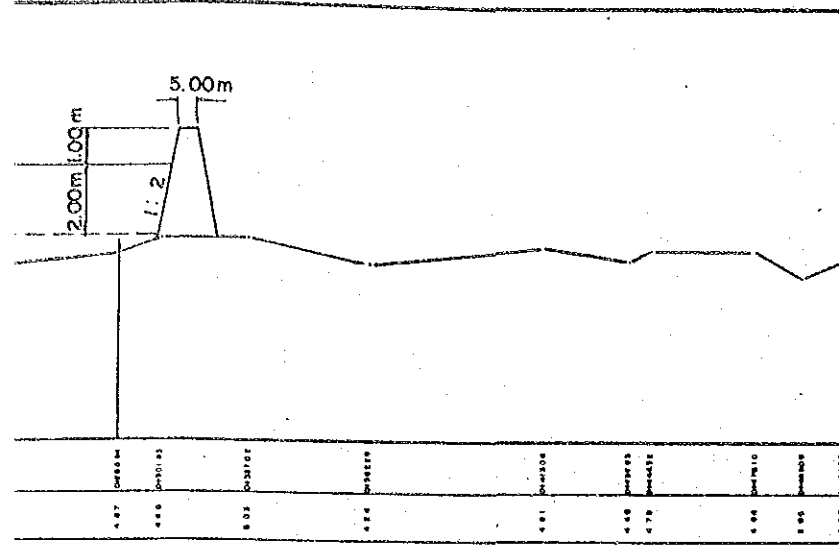
DATUM -01

ACCUMULATIVE
DISTANCE (m)
PRESENT
ELEVATION (m)
DESIGN
ELEVATION (m)



-01

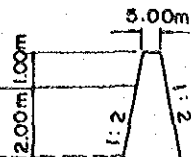




THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale 1:12,000		F-2 LAYOUT OF FLOOD CONTROL	
V-11200		(2/20) FACILITIES	
DESIGNER PROYONAL C.A.		(CROSS SECTION)	
DRAWN BY PROYONAL C.A.			
CHECKED BY PROYONAL C.A.			
APPROVED BY		DATE	
JAPAN INTERNATIONAL COOPERATION AGENCY			

6+000

H.W.L. : 8.29m



DATUM	00
ACCUMULATIVE DISTANCE (m)	0.00
PRESENT ELEVATION (m)	8.14
DESIGN ELEVATION (m)	8.14

6+750

H.W.L. : 8.82m

DATUM	00
ACCUMULATIVE DISTANCE (m)	0.00
PRESENT ELEVATION (m)	8.82
DESIGN ELEVATION (m)	8.82

6+250

H.W.L. : 8.46m

DATUM	00
ACCUMULATIVE DISTANCE (m)	0.00
PRESENT ELEVATION (m)	8.46
DESIGN ELEVATION (m)	8.46

7+000

H.W.L. : 9.00m

DATUM	00
ACCUMULATIVE DISTANCE (m)	0.00
PRESENT ELEVATION (m)	9.00
DESIGN ELEVATION (m)	9.00

6+500

H.W.L. : 8.64m

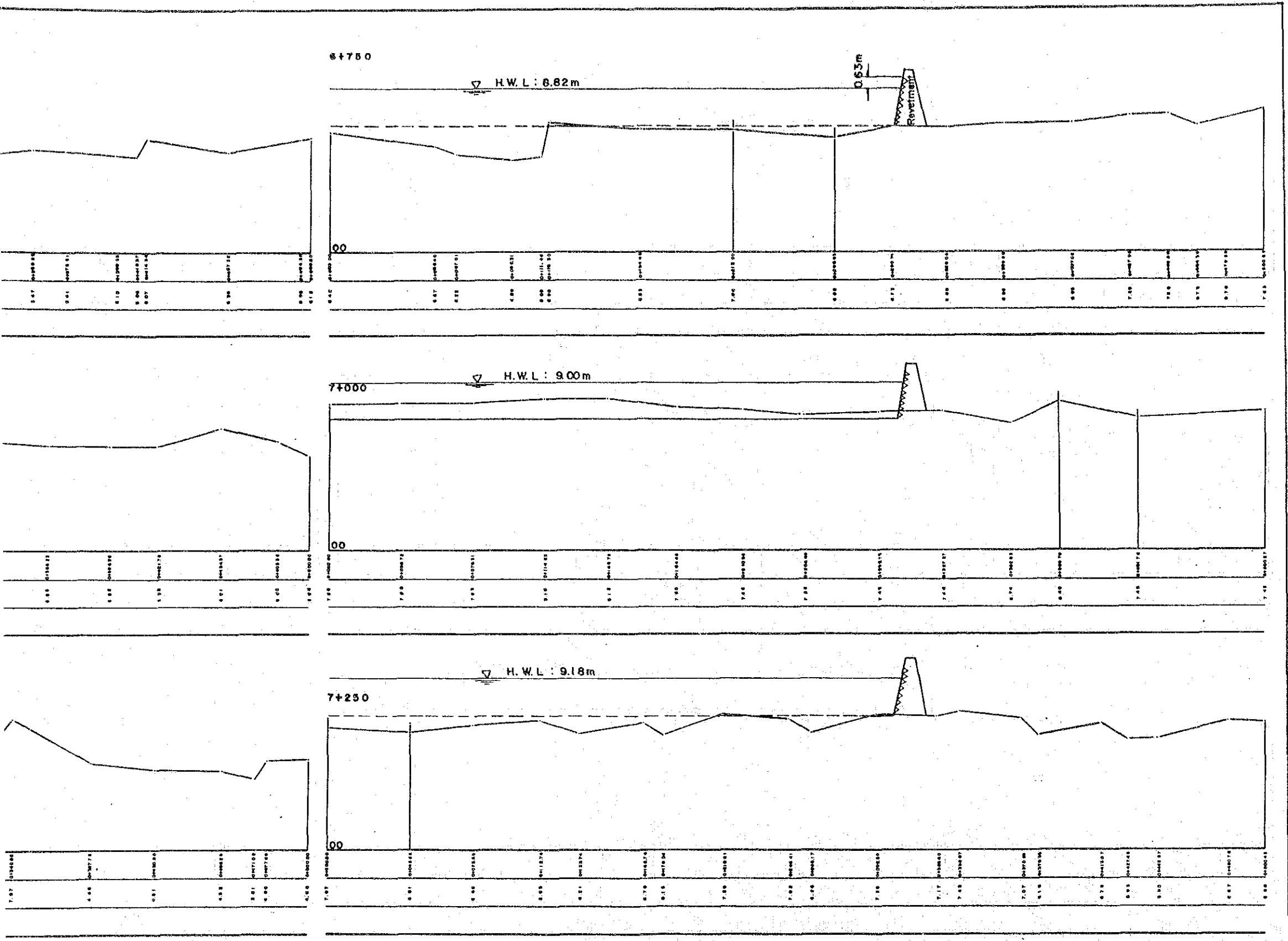
DATUM	00
ACCUMULATIVE DISTANCE (m)	0.00
PRESENT ELEVATION (m)	8.64
DESIGN ELEVATION (m)	8.64

7+250

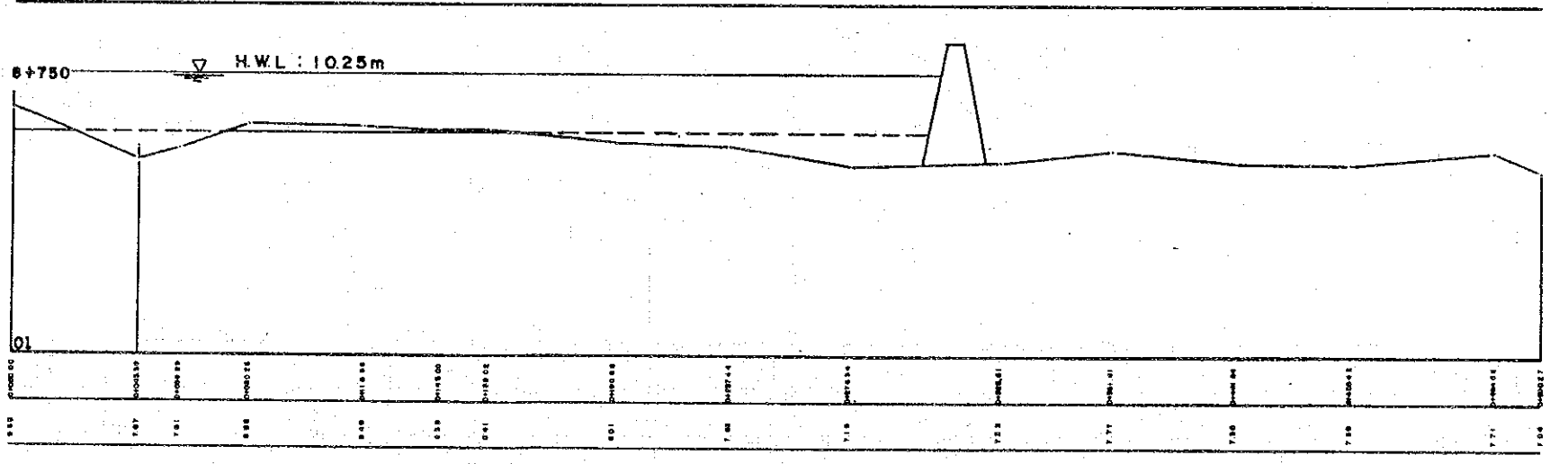
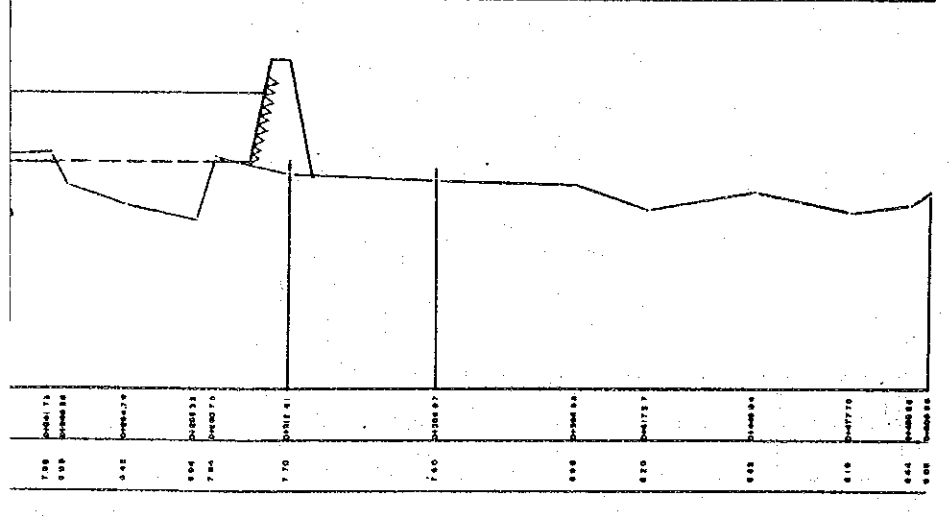
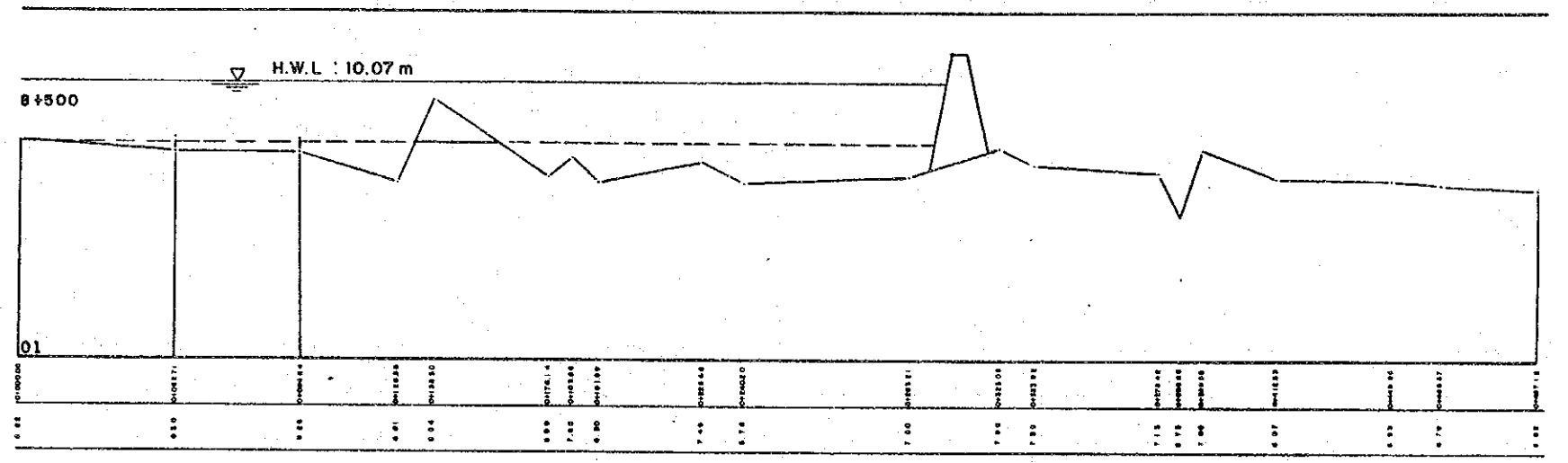
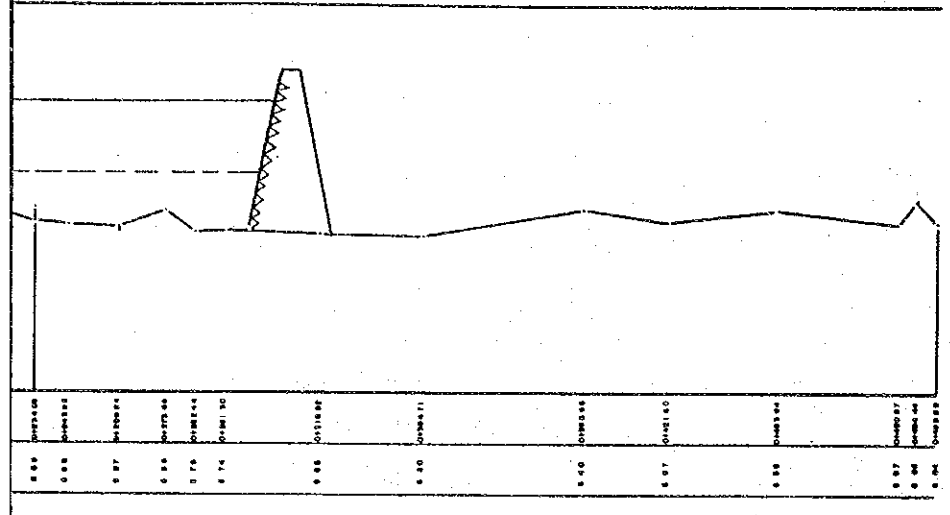
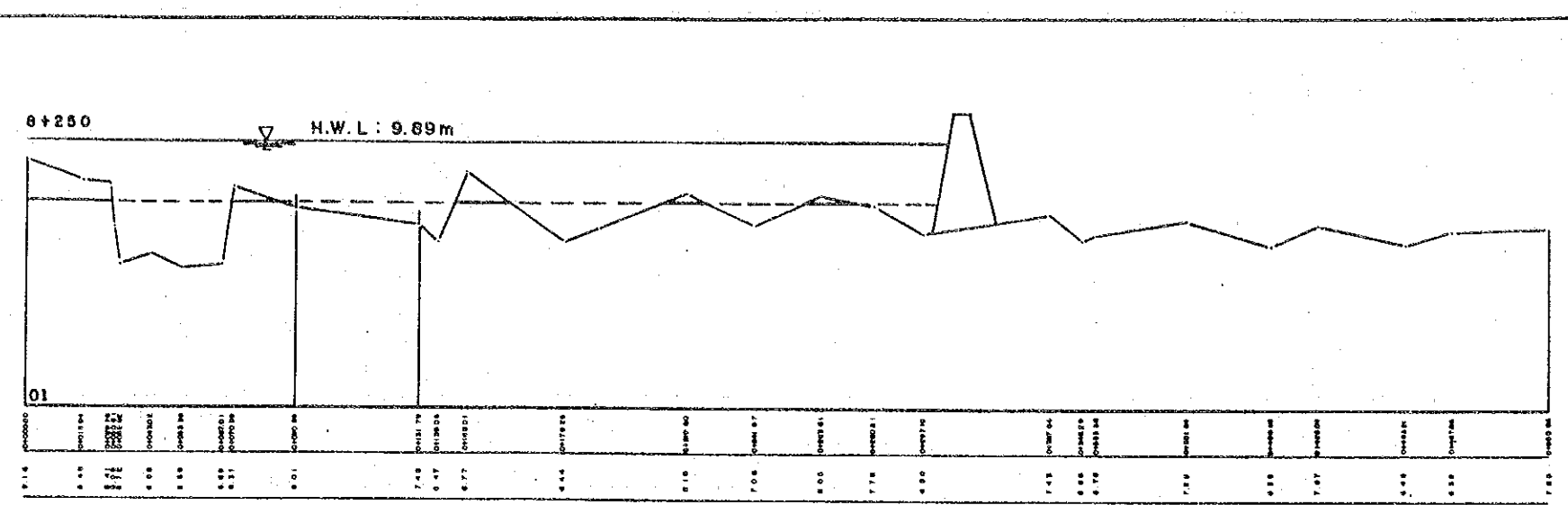
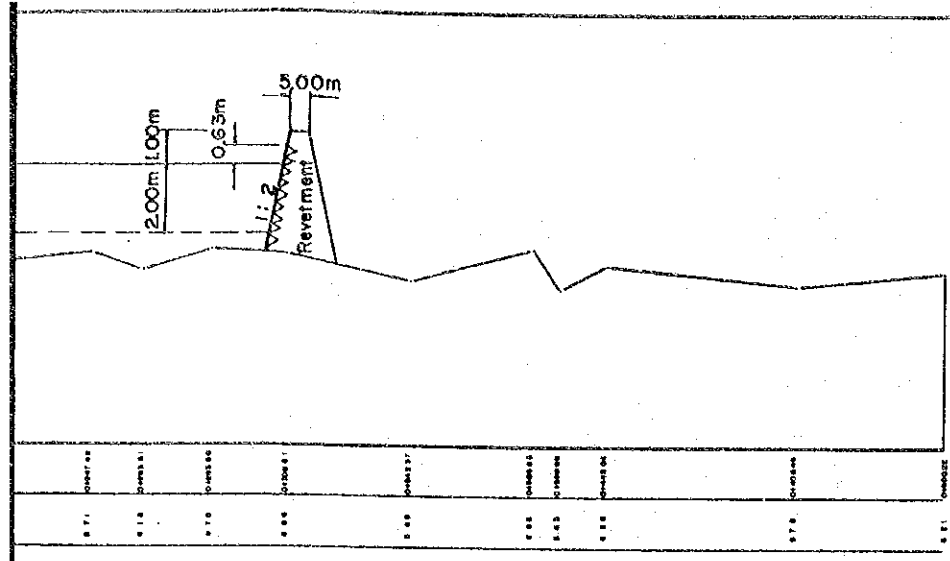
H.W.L. : 9.18m

DATUM	00
ACCUMULATIVE DISTANCE (m)	0.00
PRESENT ELEVATION (m)	9.18
DESIGN ELEVATION (m)	9.18

C.S.F

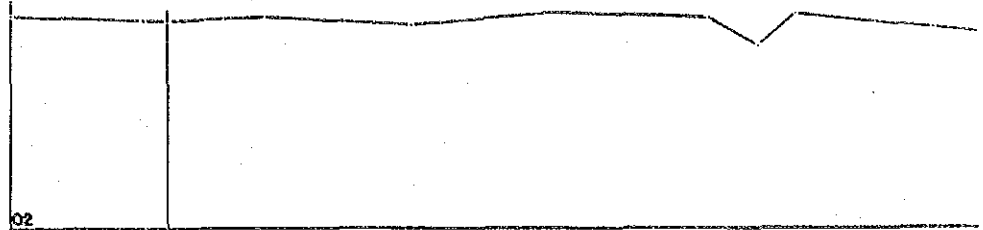
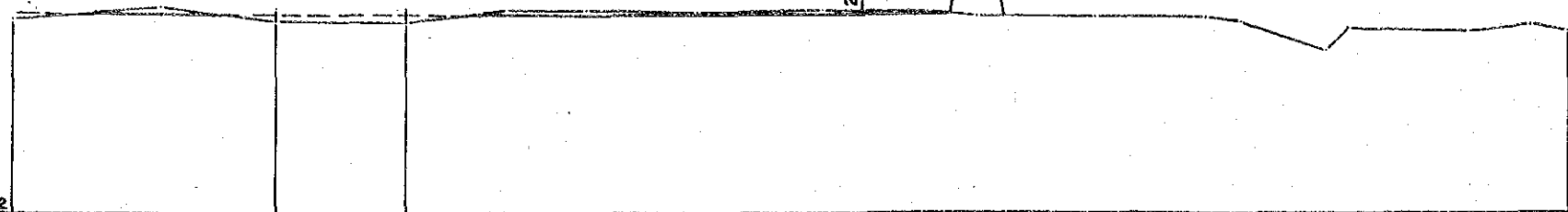


THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale 1:12,000	F-2 LAYOUT OF FLOOD CONTROL (3/20) FACILITIES (CROSS SECTION)		
DESIGNED BY	PROYECTAL, C.A.	DESIGNED BY	DATE
CHECKED BY	PROYECTAL, C.A.	DESIGNED BY	DATE
APPROVED BY	PROYECTAL, C.A.	DESIGNED BY	DATE
JAPAN INTERNATIONAL COOPERATION AGENCY			



THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale: 1:2,000	F-2 LAYOUT OF FLOOD CONTROL (4/20) FACILITIES (CROSS SECTION)		
DATE: 9-11-66			
DESIGNED BY: PROTOVAL C.A.			
CHECKED BY: PROTOVAL C.A.			
APPROVED BY: PROTOVAL C.A.			
PROJECT: S.K.O.M.I.	DESIGNED BY:	DRAWN BY:	CHECKED BY:
JAPAN INTERNATIONAL COOPERATION AGENCY			

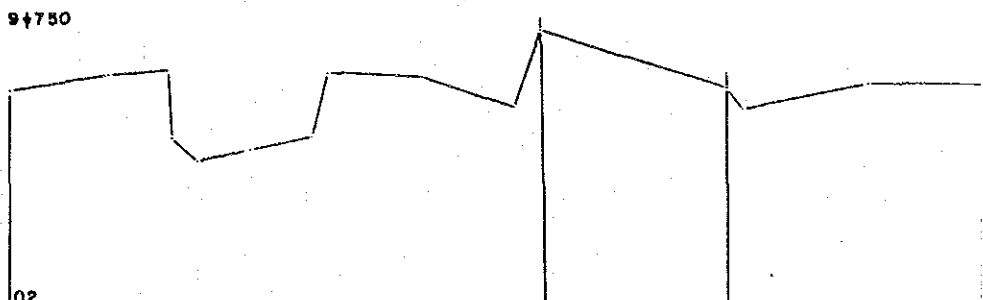
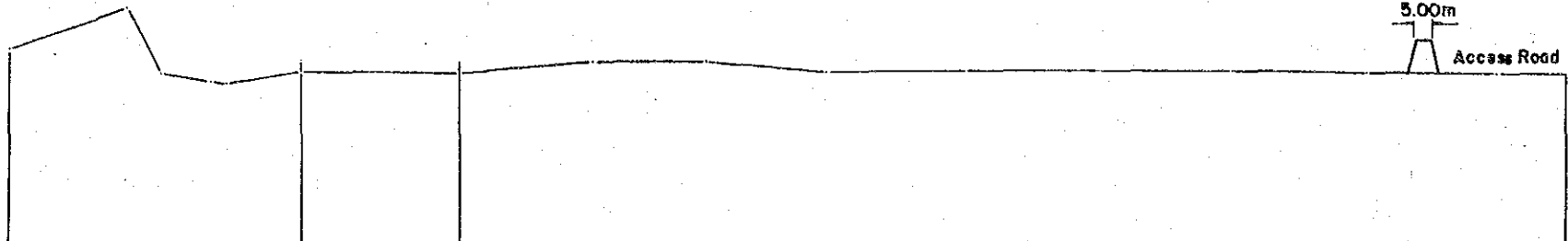
9+000 H.W.L : 10.43m 5.00m 2.00m 1:2 2:1 9+500



DATUM	02															
ACCUMULATIVE DISTANCE (m)	0+000.00	0+050.00	0+100.00	0+150.00	0+200.00	0+250.00	0+300.00	0+350.00	0+400.00	0+450.00	0+500.00	0+550.00	0+600.00	0+650.00	0+700.00	0+750.00
PRESENT ELEVATION (m)	8.10	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
DESIGN ELEVATION (m)																

DATUM	02															
ACCUMULATIVE DISTANCE (m)	0+750.00	0+800.00	0+850.00	0+900.00	0+950.00	1+000.00	1+050.00	1+100.00	1+150.00	1+200.00	1+250.00	1+300.00	1+350.00	1+400.00	1+450.00	1+500.00
PRESENT ELEVATION (m)	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10	8.10
DESIGN ELEVATION (m)																

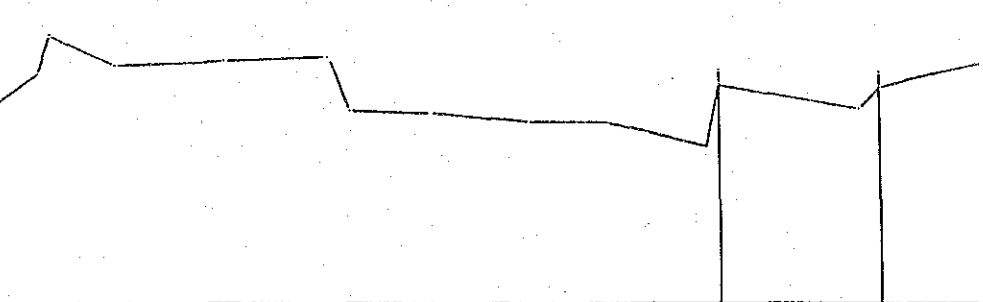
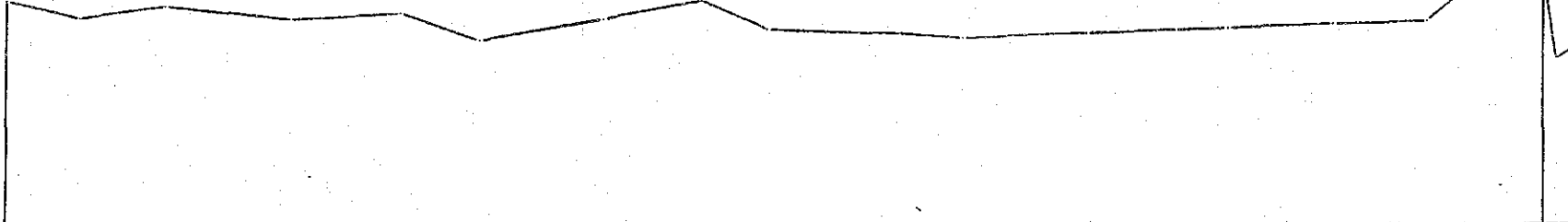
9+250 5.00m Access Road



DATUM	02															
ACCUMULATIVE DISTANCE (m)	0+250.00	0+300.00	0+350.00	0+400.00	0+450.00	0+500.00	0+550.00	0+600.00	0+650.00	0+700.00	0+750.00	0+800.00	0+850.00	0+900.00	0+950.00	1+000.00
PRESENT ELEVATION (m)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
DESIGN ELEVATION (m)																

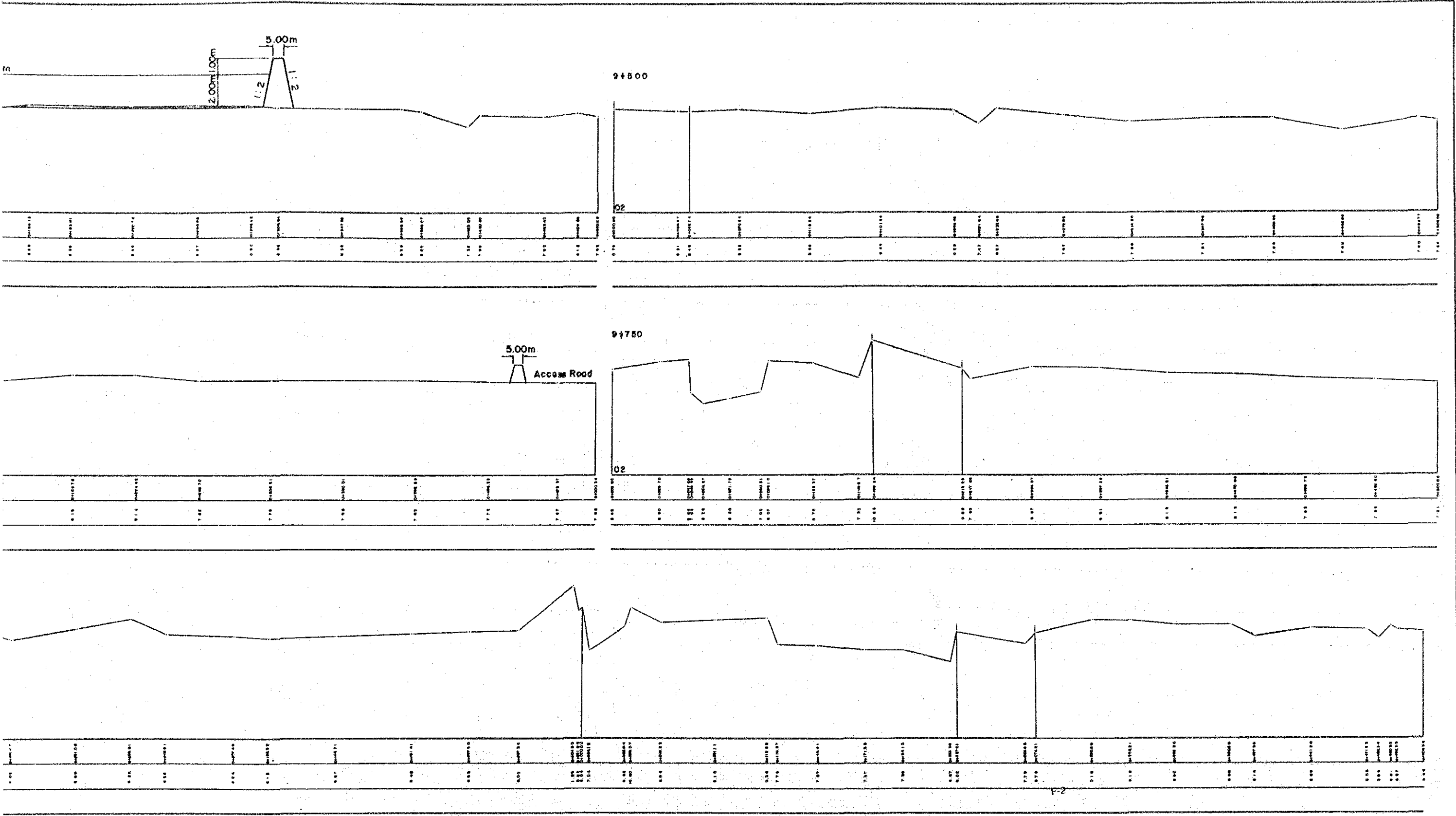
DATUM	02															
ACCUMULATIVE DISTANCE (m)	1+000.00	1+050.00	1+100.00	1+150.00	1+200.00	1+250.00	1+300.00	1+350.00	1+400.00	1+450.00	1+500.00	1+550.00	1+600.00	1+650.00	1+700.00	1+750.00
PRESENT ELEVATION (m)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
DESIGN ELEVATION (m)																

10+000

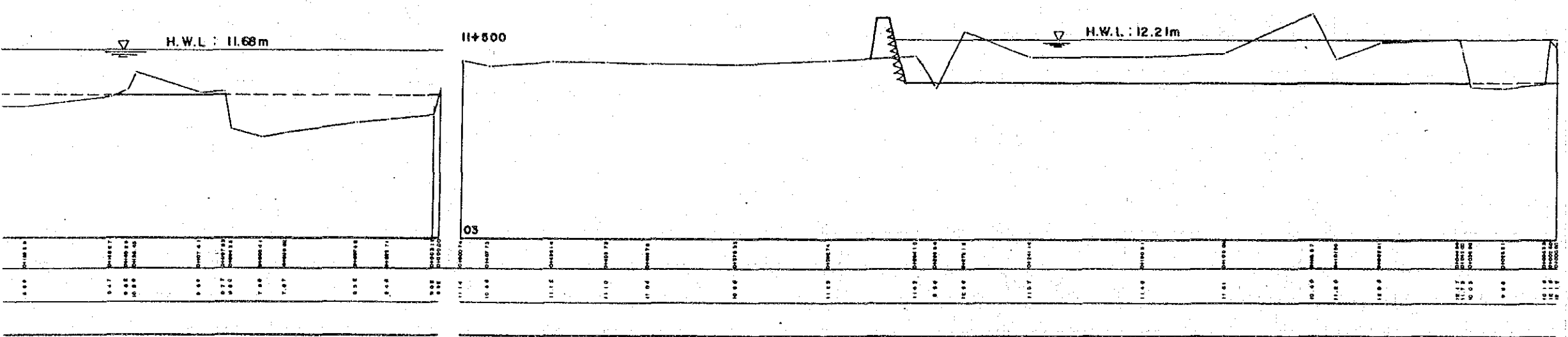
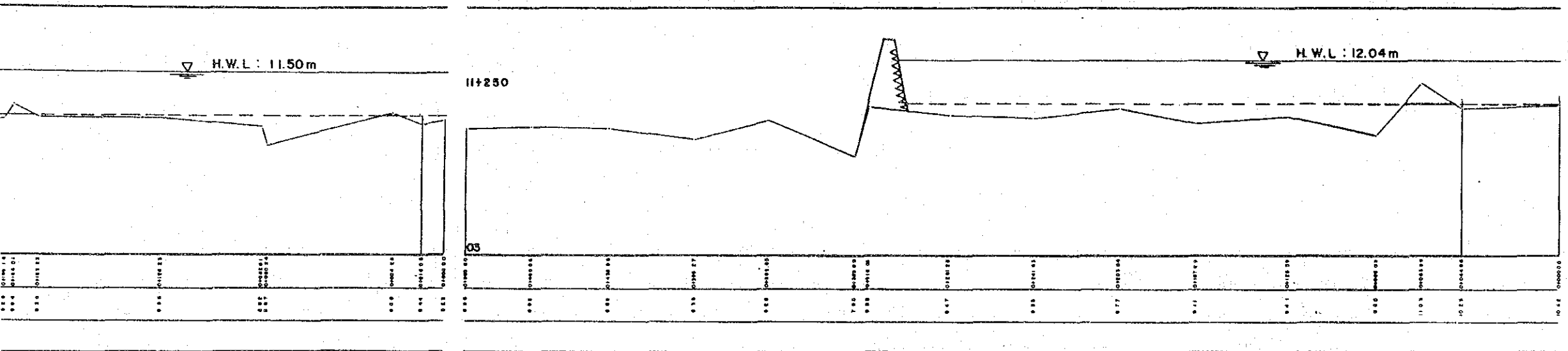
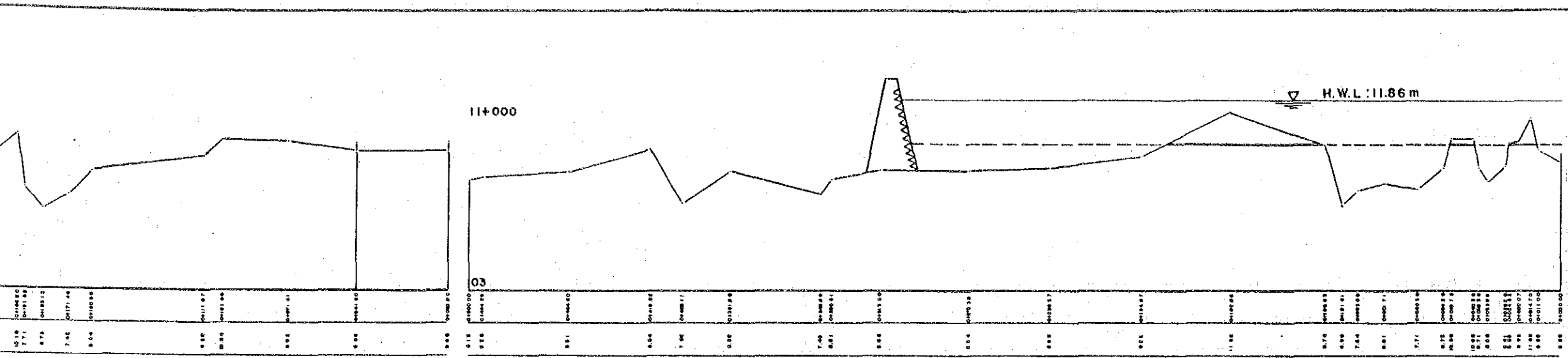


DATUM	02															
ACCUMULATIVE DISTANCE (m)	10+000.00	10+050.00	10+100.00	10+150.00	10+200.00	10+250.00	10+300.00	10+350.00	10+400.00	10+450.00	10+500.00	10+550.00	10+600.00	10+650.00	10+700.00	10+750.00
PRESENT ELEVATION (m)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
DESIGN ELEVATION (m)																

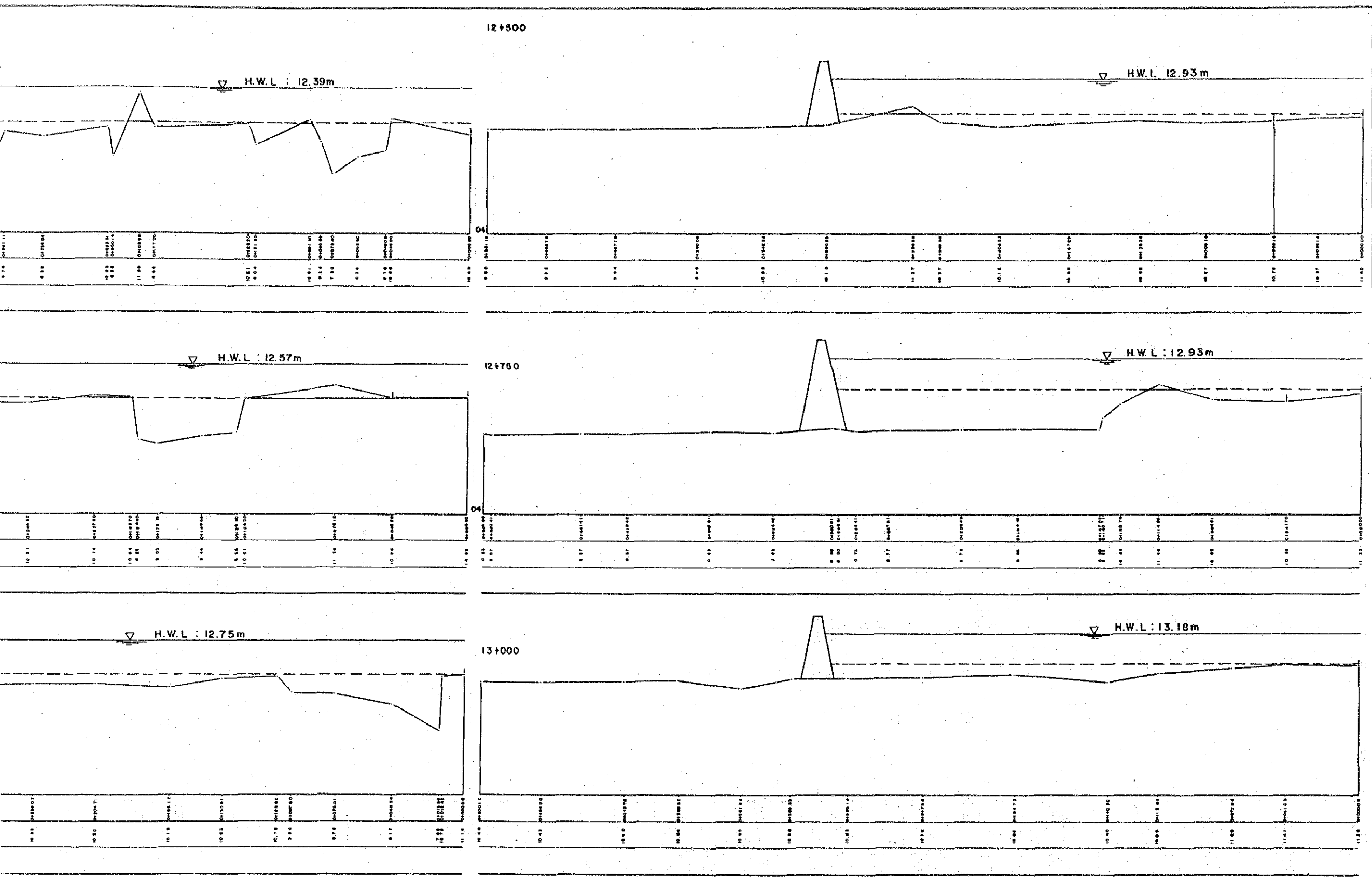
DATUM	02															
ACCUMULATIVE DISTANCE (m)	11+000.00	11+050.00	11+100.00	11+150.00	11+200.00	11+250.00	11+300.00	11+350.00	11+400.00	11+450.00	11+500.00	11+550.00	11+600.00	11+650.00	11+700.00	11+750.00
PRESENT ELEVATION (m)	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00	8.00
DESIGN ELEVATION (m)																



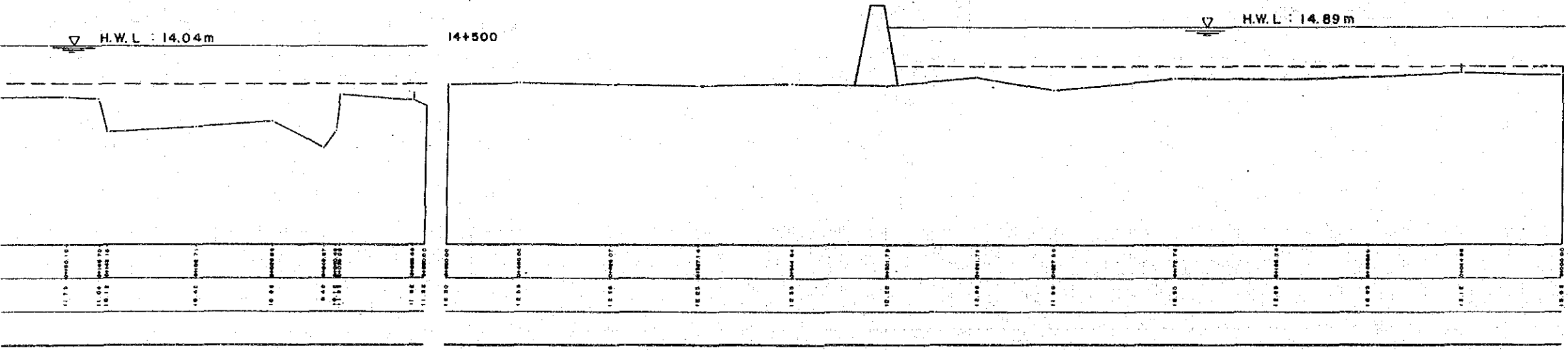
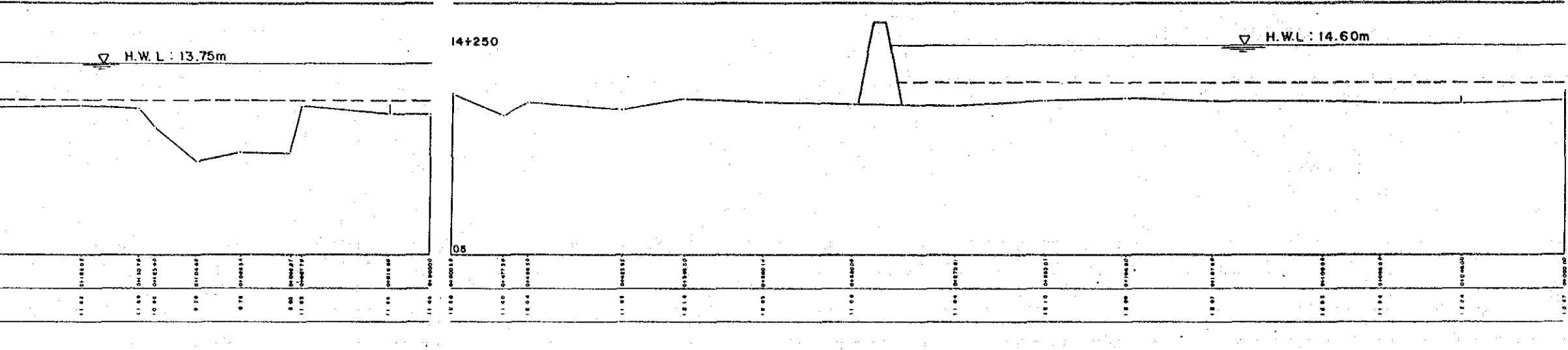
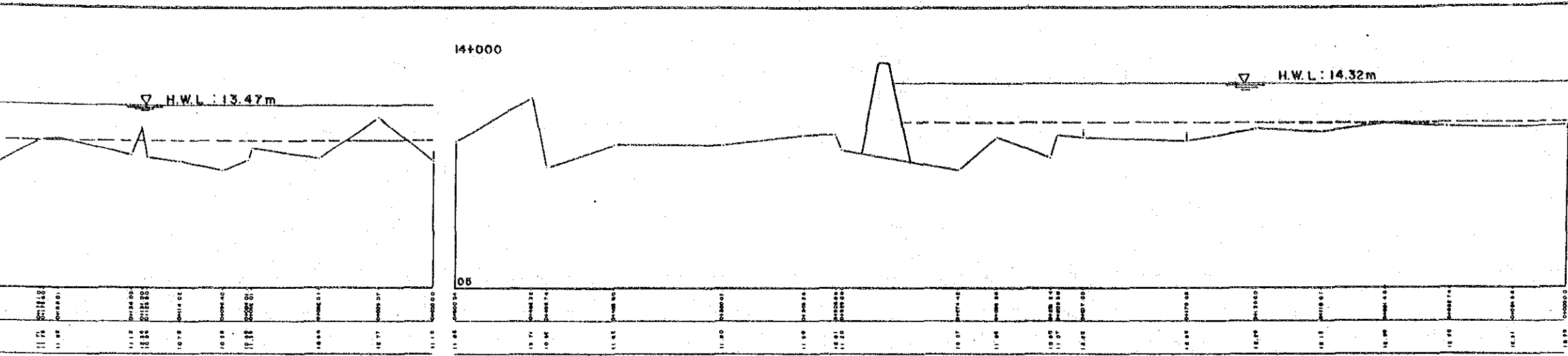
THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale 1:10,000	F-2 LAYOUT OF FLOOD CONTROL		
Scale 1:1000	(5/20) FACILITIES		
DESIGNED BY	(CROSS SECTION)		
PROF. J. A. ...			
CHECKED BY			
PROF. J. A. ...			
DATE	DESIGNED BY	CHECKED BY	DATE
JAPAN INTERNATIONAL COOPERATION AGENCY			



THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale	1:12,000	F-2 LAYOUT OF FLOOD CONTROL (6/20) FACILITIES (CROSS SECTION)	
DESIGNED BY	PROYONAL S.A.	DATE	
CHECKED BY	PROYONAL S.A.	DATE	
APPROVED BY	PROYONAL S.A.	DATE	
DATE	1/19/70	SCALE	1:12,000
JAPAN INTERNATIONAL COOPERATION AGENCY			

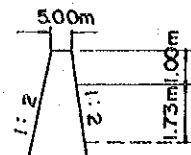


THE REPUBLIC OF VENEZUELA	
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT	
Scale 1:10,000	F-2 LAYOUT OF FLOOD CONTROL (7/20) FACILITIES (CROSS SECTION)
DESIGNED BY: PROYAMA, C.A.	
CHECKED BY: PROYAMA, C.A.	
APPROVED BY: PROYAMA, C.A.	
DATE: 3/20/80	DESIGNED BY: [] DRAWN BY: []
JAPAN INTERNATIONAL COOPERATION AGENCY	



THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale: 1:2,000	F-2 LAYOUT OF FLOOD CONTROL		
Sheet: 1/200	(8/20) FACILITIES		
DESIGNED BY: PROTONAL, S.A.	(CROSS SECTION)		
DRAWN BY: PROTONAL, S.A.	REVISION BY:	DATE:	BY:
CHECKED BY: PROTONAL, S.A.	REVISION BY:	DATE:	BY:
APPROVED BY: S. GONZALEZ	REVISION BY:	DATE:	BY:
JAPAN INTERNATIONAL COOPERATION AGENCY			

14+750



H.W.L : 15.17 m

15+500

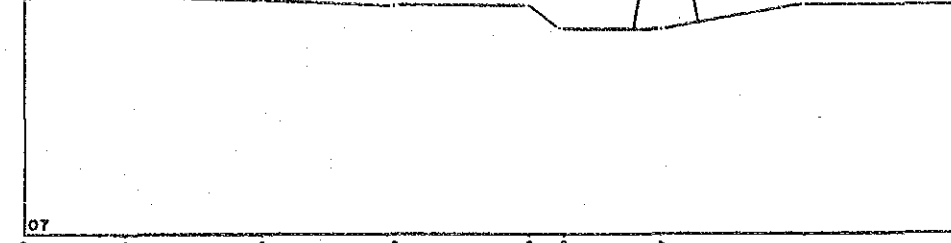
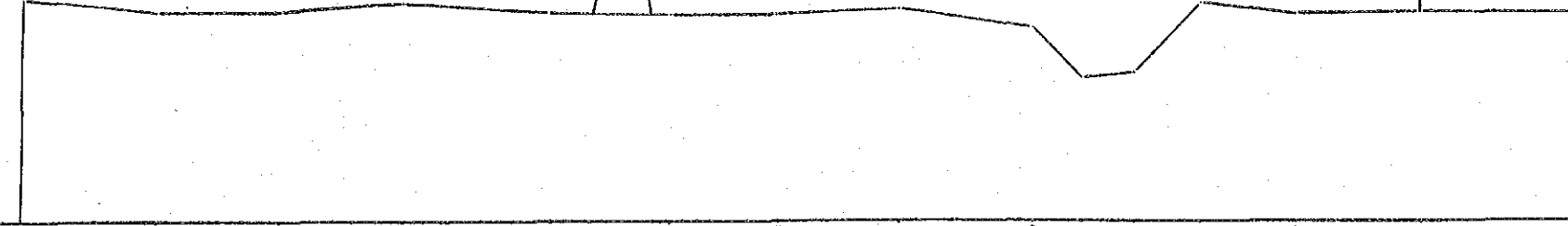
DATUM 06

ACCUMULATIVE DISTANCE (m)

PRESENT ELEVATION (m)

DESIGN ELEVATION (m)

07



15+000

H.W.L : 15.46 m

15+750

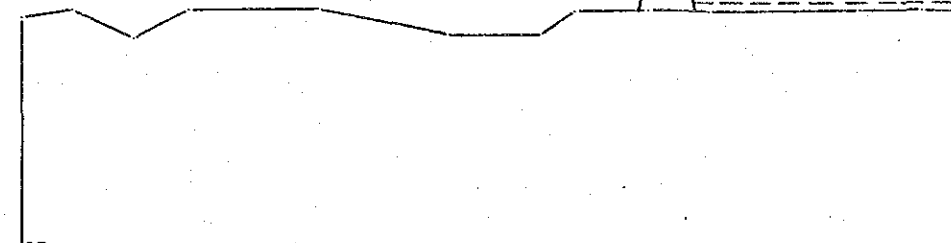
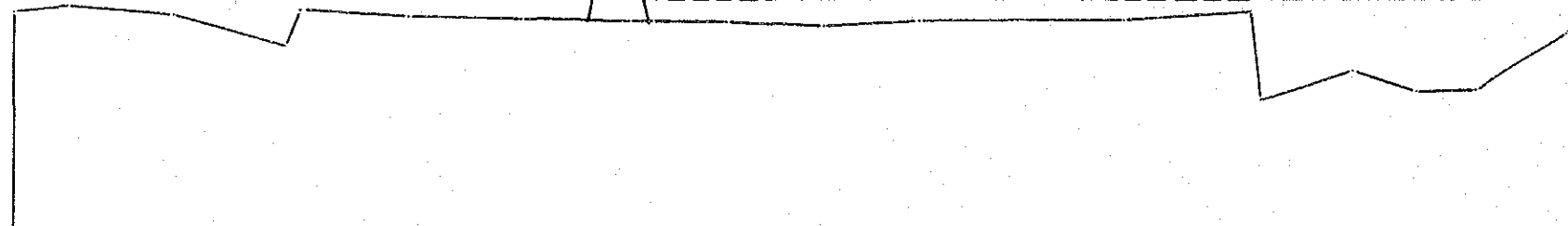
DATUM 06

ACCUMULATIVE DISTANCE (m)

PRESENT ELEVATION (m)

DESIGN ELEVATION (m)

07



15+250

H.W.L : 15.74 m

16+000

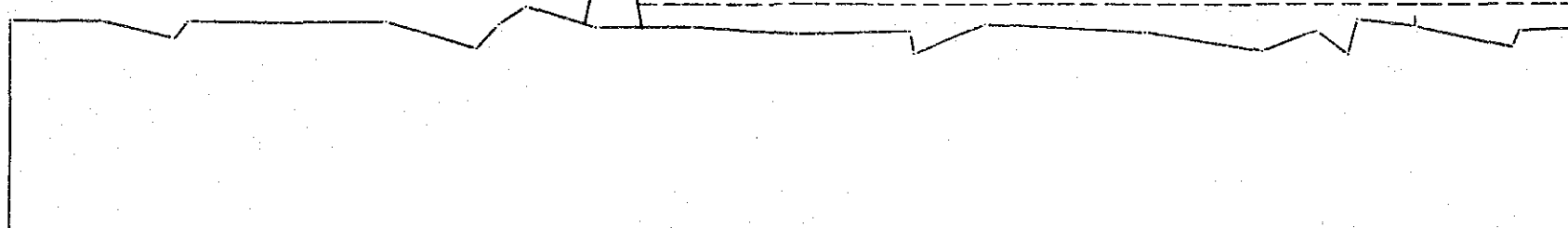
DATUM 06

ACCUMULATIVE DISTANCE (m)

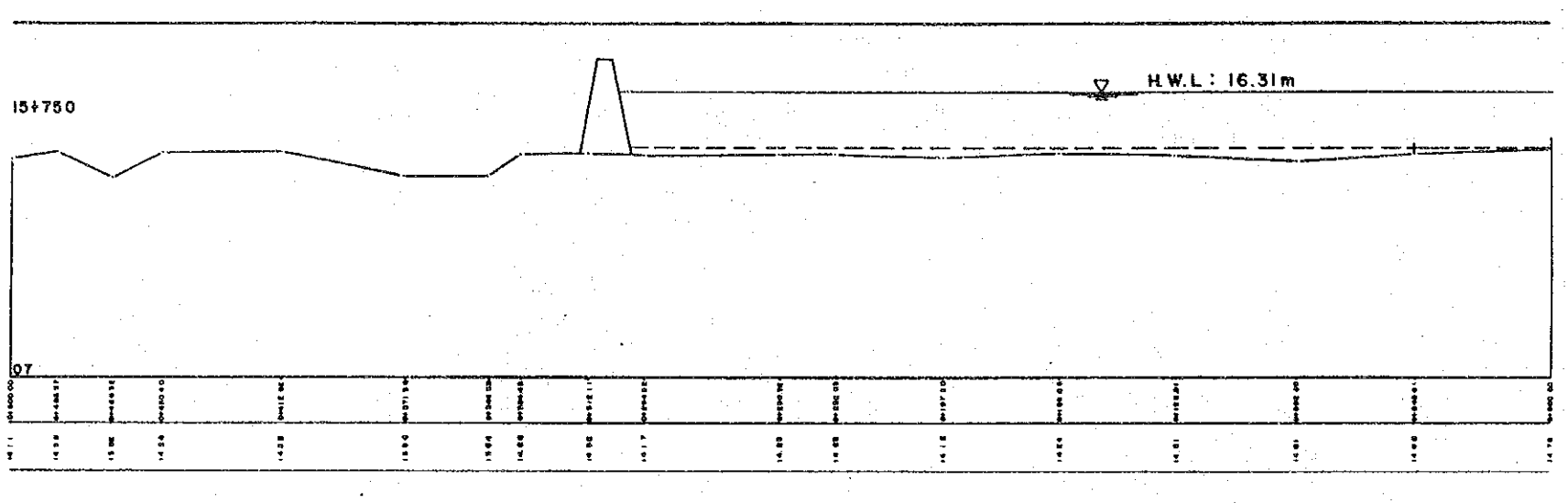
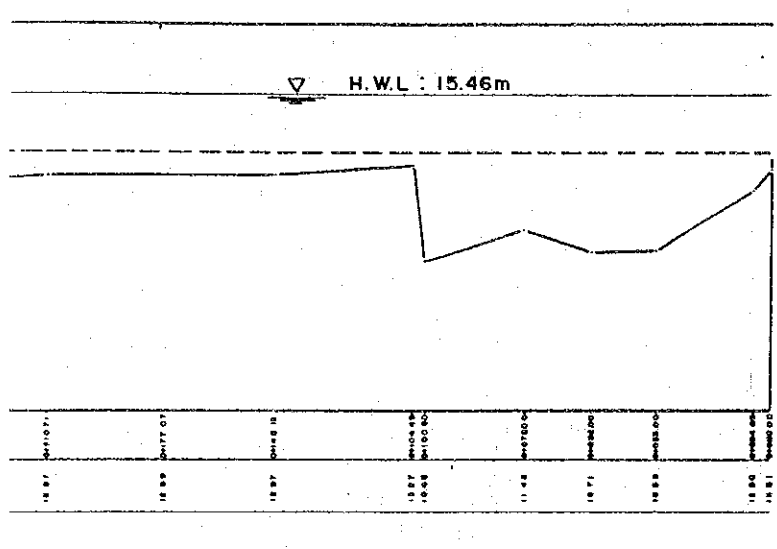
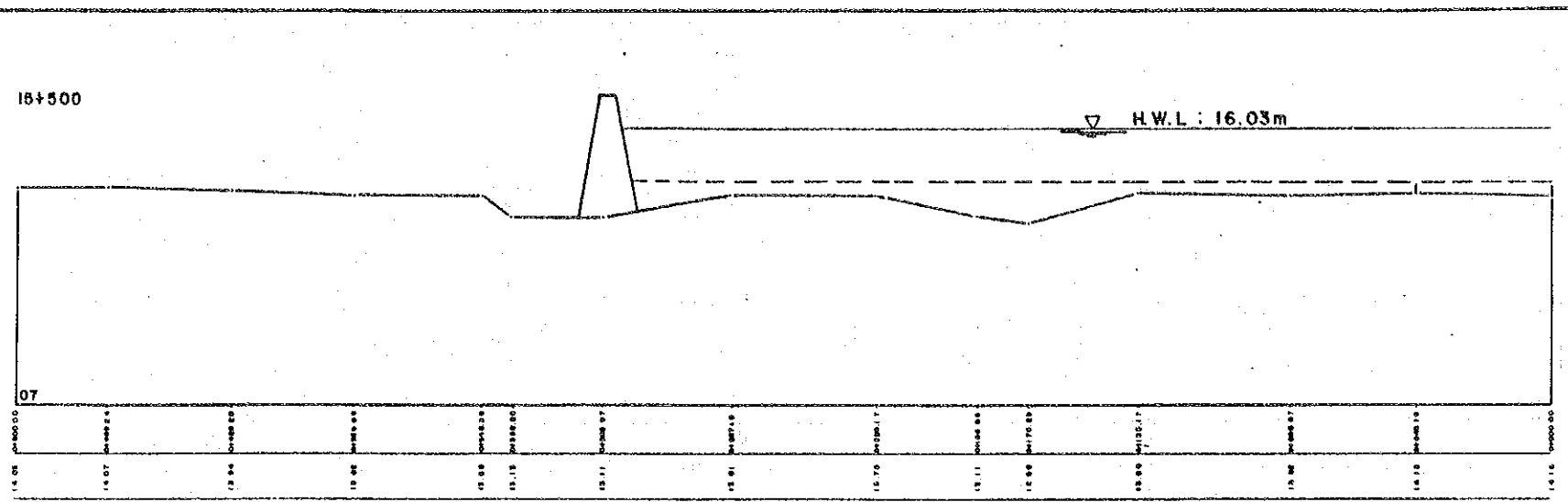
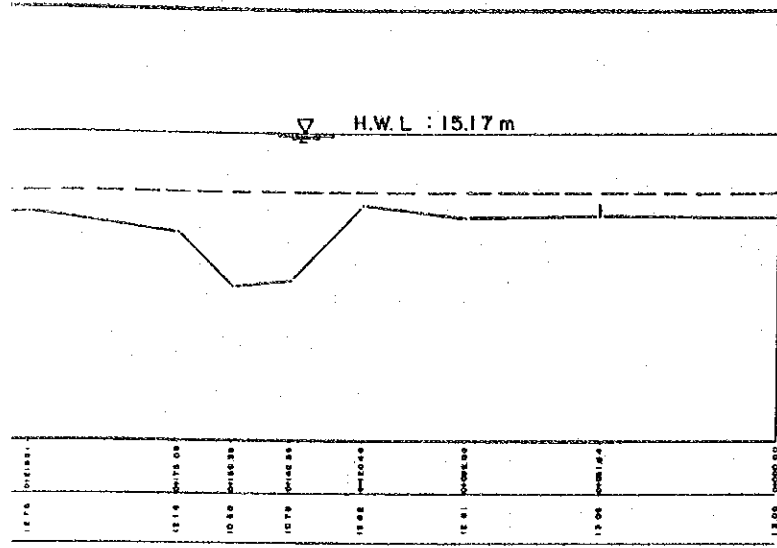
PRESENT ELEVATION (m)

DESIGN ELEVATION (m)

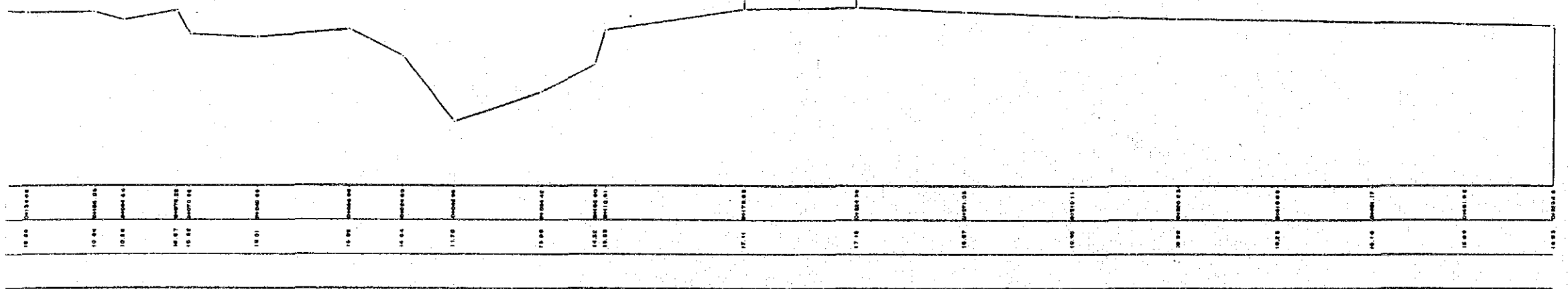
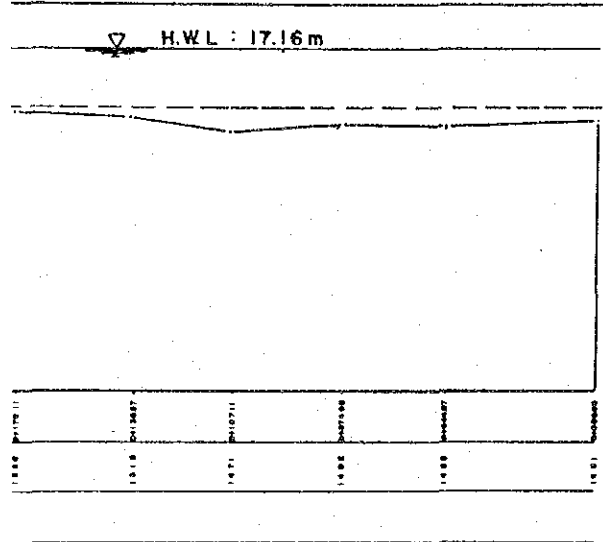
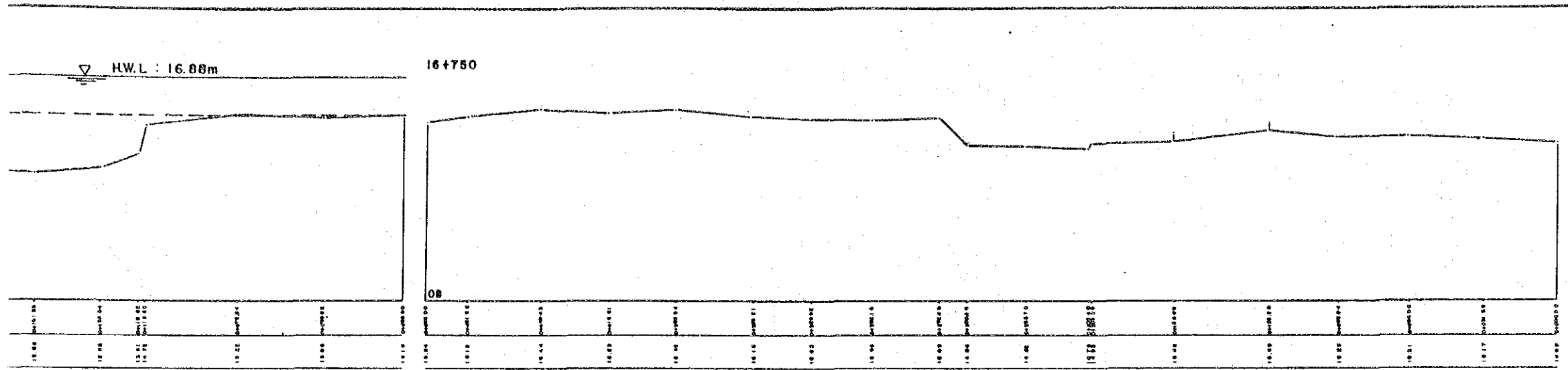
07



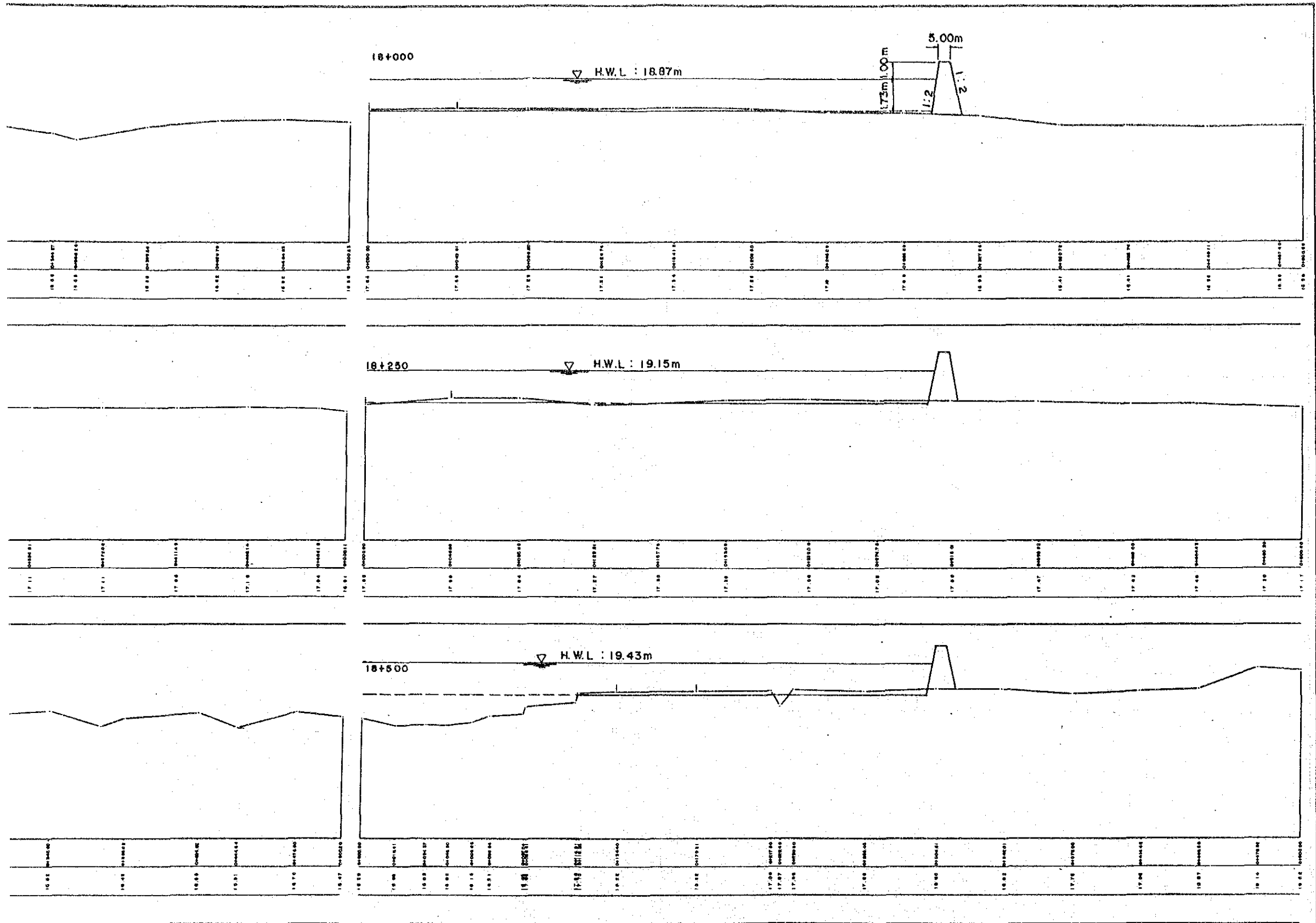
0.55m



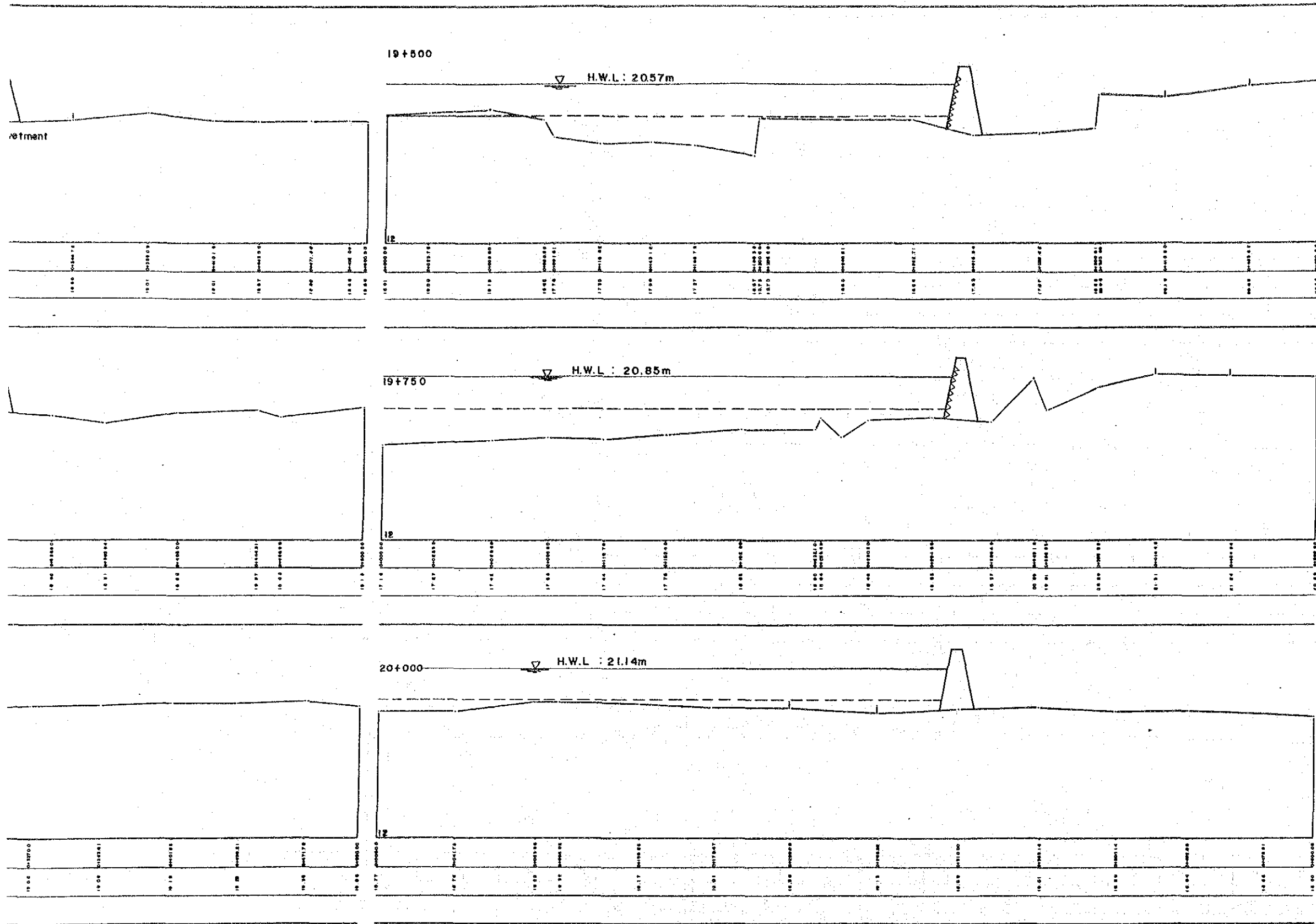
THE REPUBLIC OF VENEZUELA	
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT	
Scale 1:100,000	F-2 LAYOUT OF FLOOD CONTROL (9/20) FACILITIES (CROSS SECTION)
DESIGNED BY: PROYONAL S.A.	
ENGINEERED BY: PROYONAL S.A.	
DRAWN BY: PROYONAL S.A.	
DATE: 8/20/80	
JAPAN INTERNATIONAL COOPERATION AGENCY	



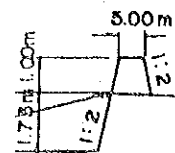
THE REPUBLIC OF VENEZUELA		STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT	
Scale 1:12,000 N-1:200	F-2 LAYOUT OF FLOOD CONTROL (10/20) FACILITIES (CROSS SECTION)	DESIGNED BY	PROYUNAL C.A.
DRAWN BY		PROYUNAL C.A.	
DATE		PROYUNAL C.A.	
PROJECT	8 NOV/80	DESIGNED BY	DATE
JAPAN INTERNATIONAL COOPERATION AGENCY			



THE REPUBLIC OF VENEZUELA		
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT		
Scale 1:12,000 N 12200	F-2 LAYOUT OF FLOOD CONTROL (11/20) FACILITIES (CROSS SECTION)	
DESIGNED BY PROYOMA, C.A.	REPORT BY	
CHECKED BY PROYOMA, C.A.	DRAWN BY	
APPROVED BY PROYOMA, C.A.	DATE	
PROJECT LEADER ELCHORD	JAPAN INTERNATIONAL COOPERATION AGENCY	

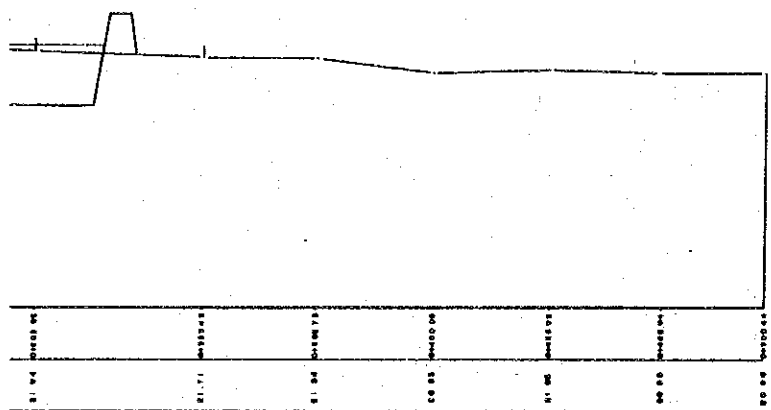
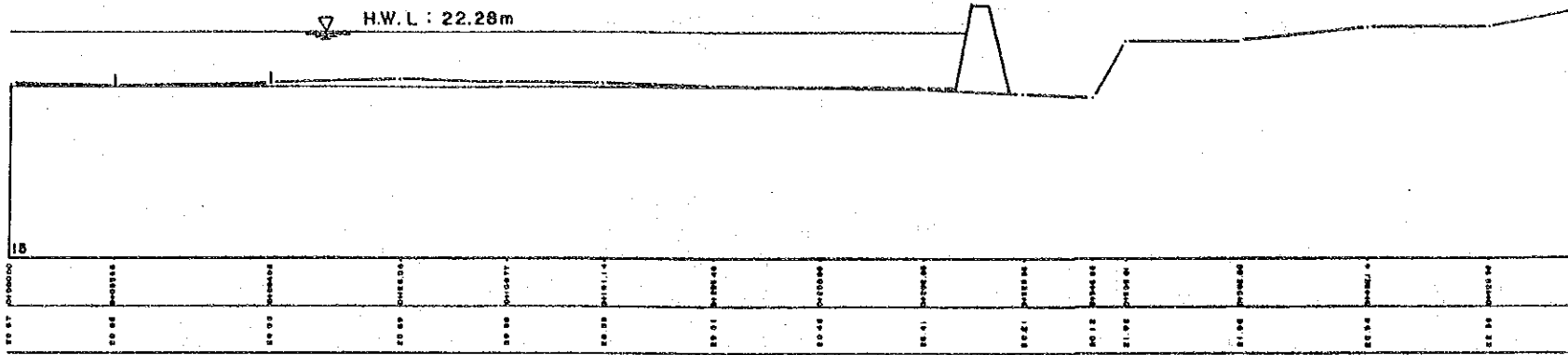
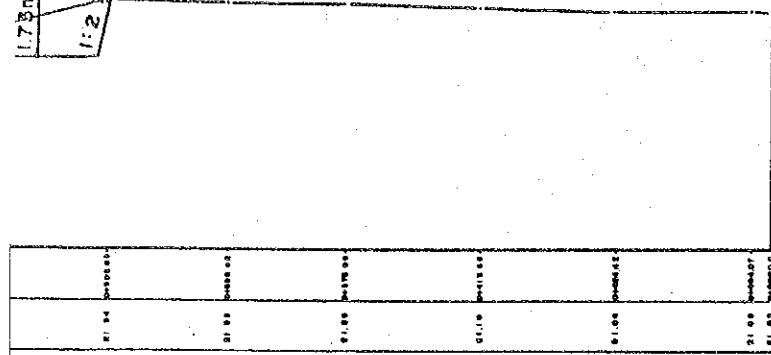


THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale 1:2,000	F-2 LAYOUT OF FLOOD CONTROL		
Sheet 12/20	(12/20) FACILITIES		
DESIGNED BY PRODOMAL S.A.	(CROSS SECTION)		
DRAWN BY PRODOMAL S.A.	DESIGNED BY	PROJECT NO.	DATE
CHECKED BY S. KONO			
JAPAN INTERNATIONAL COOPERATION AGENCY			



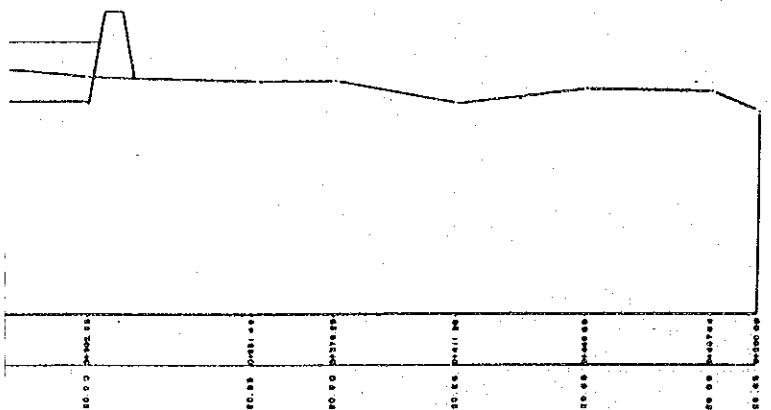
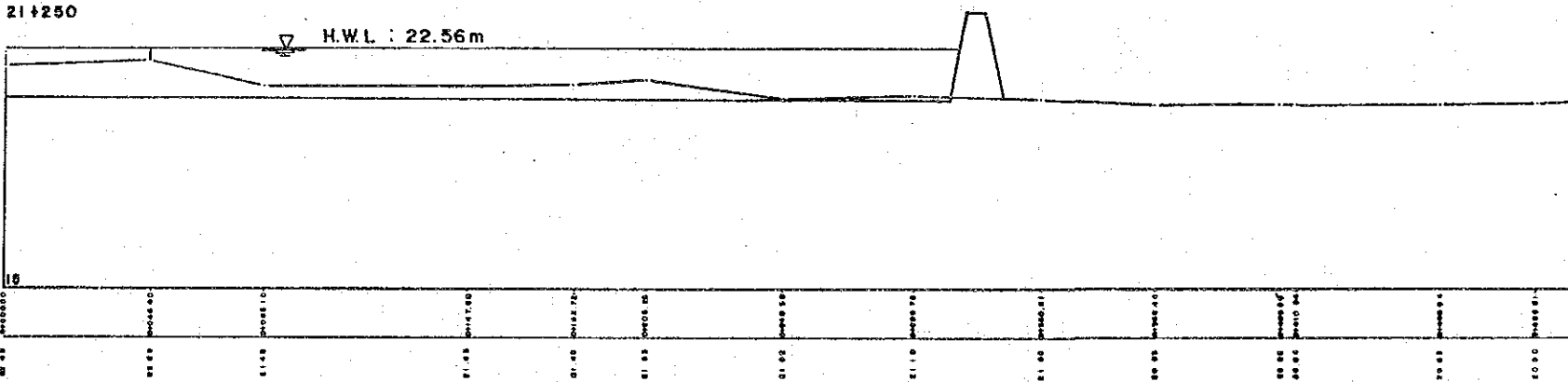
21+000

H.W.L : 22.28m



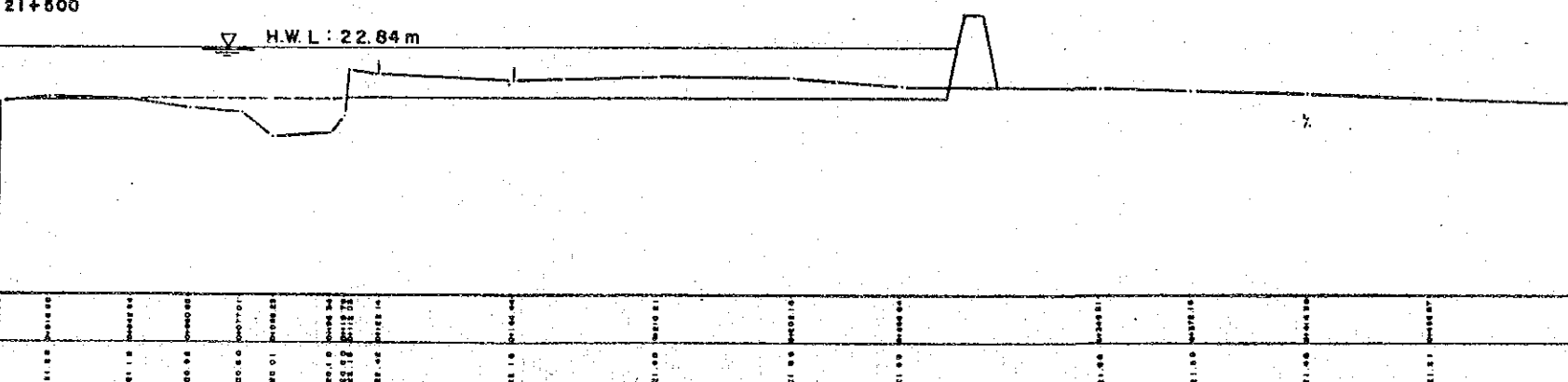
21+250

H.W.L : 22.56m



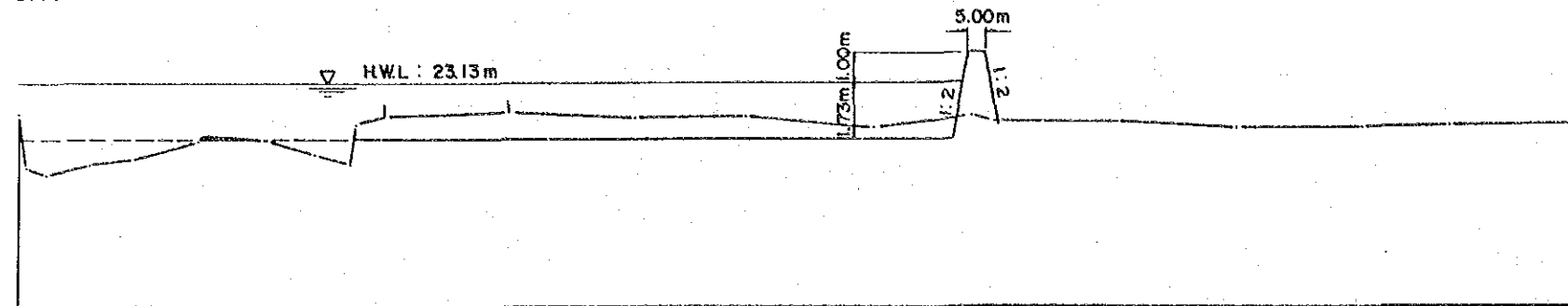
21+500

H.W.L : 22.84m



THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale H 1:12,500	F-2 LAYOUT OF FLOOD CONTROL (13/20) FACILITIES (CROSS SECTION)		
Y-11200			
DESIGNER	PROYECTO, S.A.		
ENGINEER	PROYECTO, S.A.		
CLIENT	PROYECTO, S.A.		
DATE	15/08/80	SCALE	1:12,500
JAPAN INTERNATIONAL COOPERATION AGENCY			

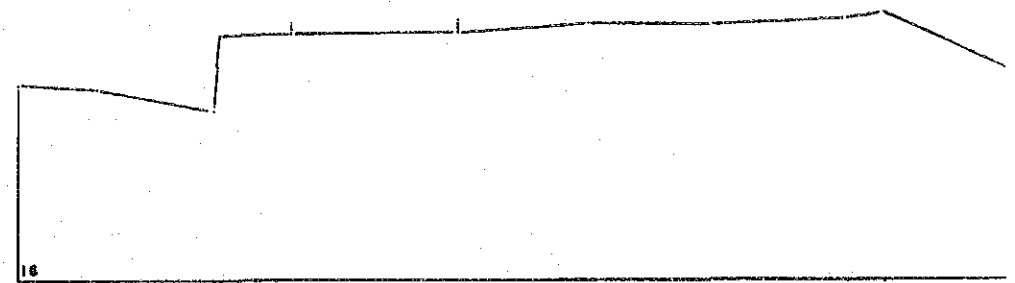
21+750



DATUM 19

ACCUMULATIVE DISTANCE (m)	PRESENT ELEVATION (m)	DESIGN ELEVATION (m)
0+00	22.15	22.15
0+10	22.25	22.25
0+20	22.35	22.35
0+30	22.45	22.45
0+40	22.55	22.55
0+50	22.65	22.65
0+60	22.75	22.75
0+70	22.85	22.85
0+80	22.95	22.95
0+90	23.05	23.05
1+00	23.13	23.13
1+10	23.13	23.13
1+20	23.13	23.13
1+30	23.13	23.13
1+40	23.13	23.13
1+50	23.13	23.13
1+60	23.13	23.13
1+70	23.13	23.13
1+80	23.13	23.13
1+90	23.13	23.13
2+00	23.13	23.13

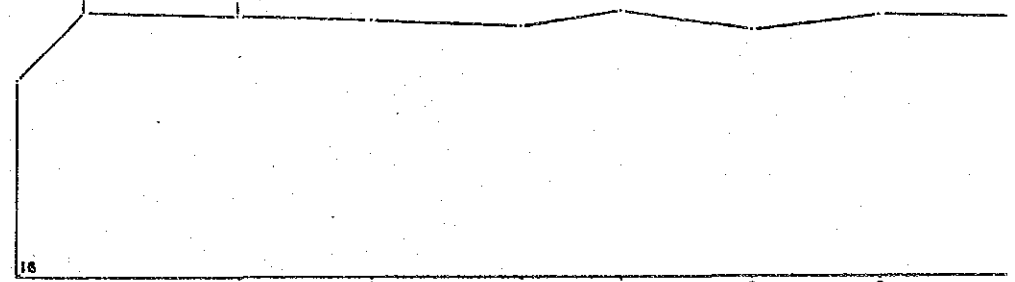
22+500



DATUM 16

ACCUMULATIVE DISTANCE (m)	PRESENT ELEVATION (m)	DESIGN ELEVATION (m)
0+00	22.50	22.50
0+10	22.60	22.60
0+20	22.70	22.70
0+30	22.80	22.80
0+40	22.90	22.90
0+50	23.00	23.00
0+60	23.10	23.10
0+70	23.20	23.20
0+80	23.30	23.30
0+90	23.40	23.40
1+00	23.41	23.41
1+10	23.41	23.41
1+20	23.41	23.41
1+30	23.41	23.41
1+40	23.41	23.41
1+50	23.41	23.41
1+60	23.41	23.41
1+70	23.41	23.41
1+80	23.41	23.41
1+90	23.41	23.41
2+00	23.41	23.41

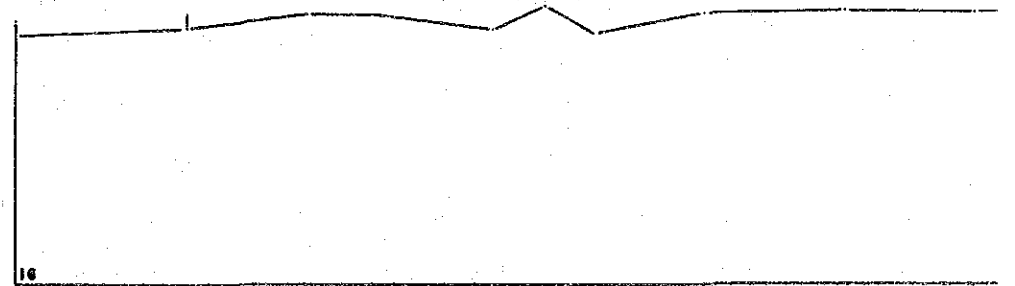
22+750



DATUM 16

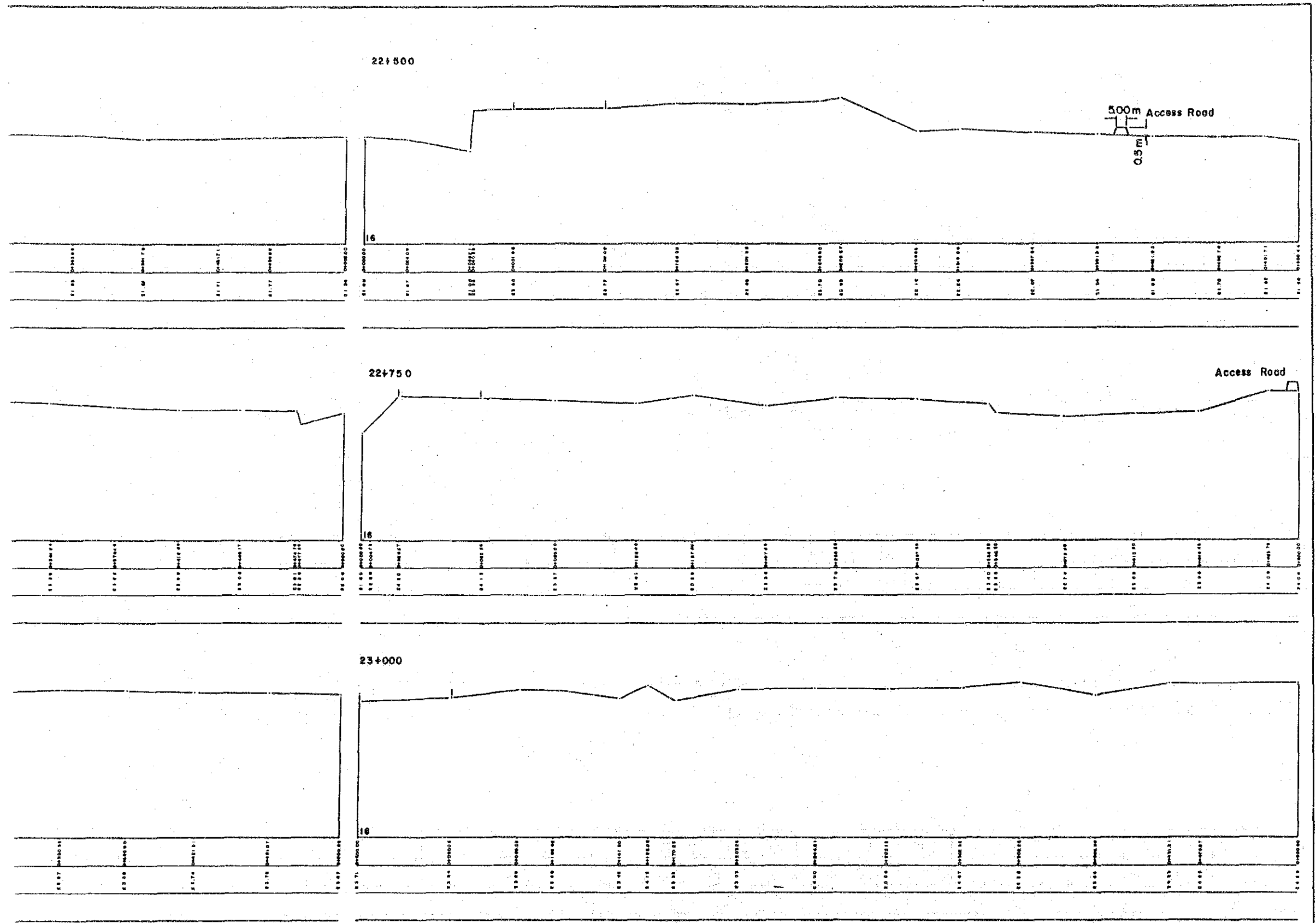
ACCUMULATIVE DISTANCE (m)	PRESENT ELEVATION (m)	DESIGN ELEVATION (m)
0+00	22.75	22.75
0+10	22.85	22.85
0+20	22.95	22.95
0+30	23.05	23.05
0+40	23.15	23.15
0+50	23.25	23.25
0+60	23.35	23.35
0+70	23.45	23.45
0+80	23.55	23.55
0+90	23.65	23.65
1+00	23.70	23.70
1+10	23.70	23.70
1+20	23.70	23.70
1+30	23.70	23.70
1+40	23.70	23.70
1+50	23.70	23.70
1+60	23.70	23.70
1+70	23.70	23.70
1+80	23.70	23.70
1+90	23.70	23.70
2+00	23.70	23.70

23+000

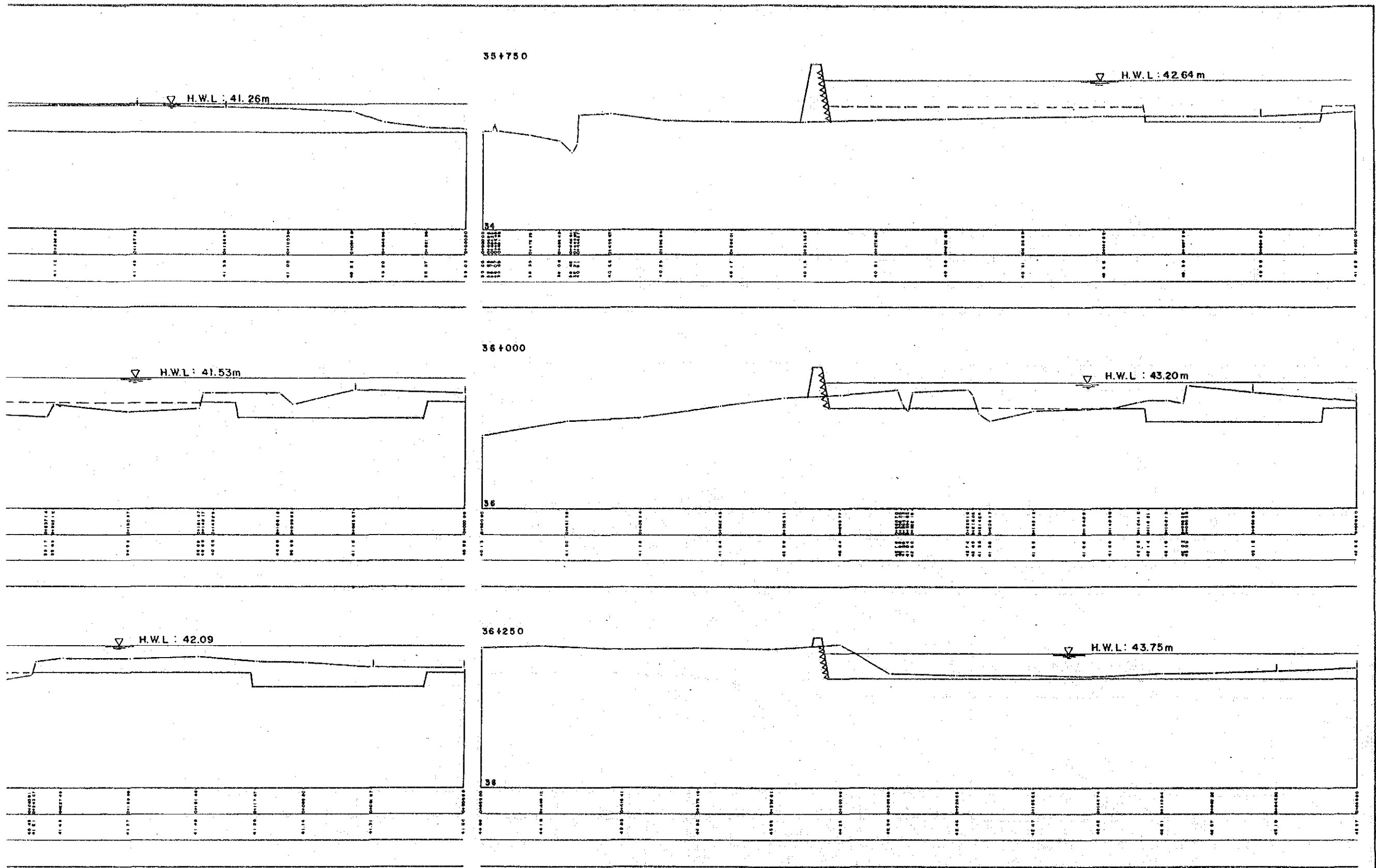


DATUM 16

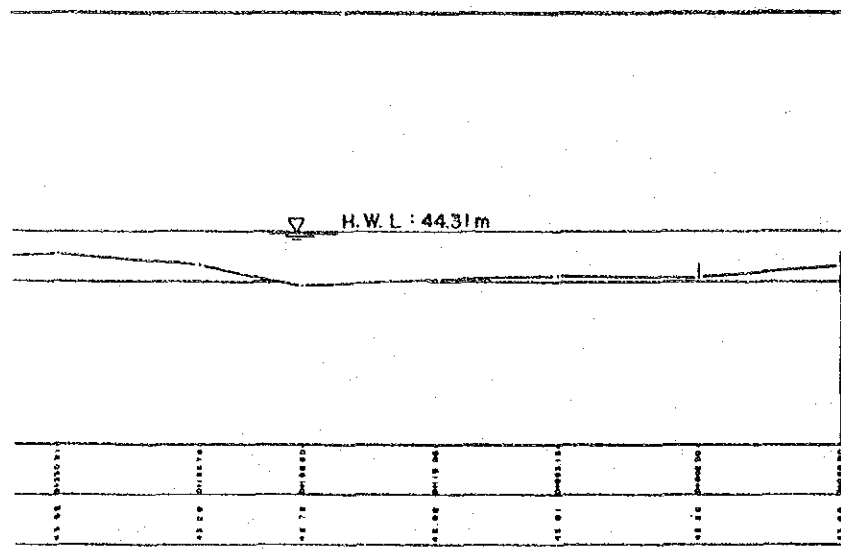
ACCUMULATIVE DISTANCE (m)	PRESENT ELEVATION (m)	DESIGN ELEVATION (m)
0+00	23.13	23.13
0+10	23.13	23.13
0+20	23.13	23.13
0+30	23.13	23.13
0+40	23.13	23.13
0+50	23.13	23.13
0+60	23.13	23.13
0+70	23.13	23.13
0+80	23.13	23.13
0+90	23.13	23.13
1+00	23.13	23.13
1+10	23.13	23.13
1+20	23.13	23.13
1+30	23.13	23.13
1+40	23.13	23.13
1+50	23.13	23.13
1+60	23.13	23.13
1+70	23.13	23.13
1+80	23.13	23.13
1+90	23.13	23.13
2+00	23.13	23.13



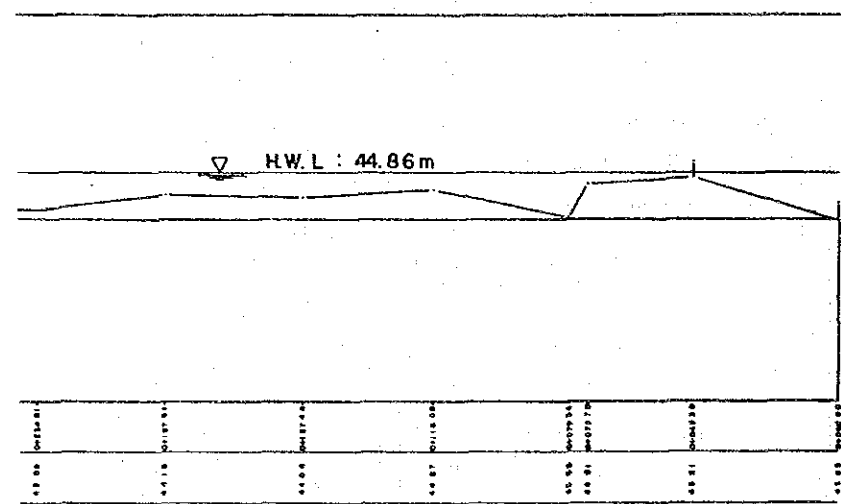
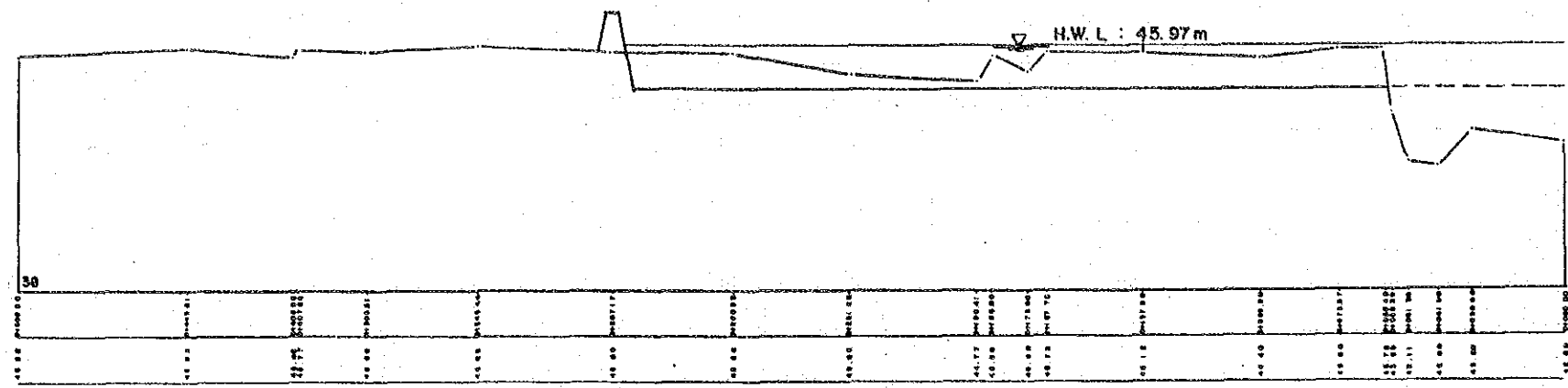
THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
SCALE: 1:10,000	F-2 LAYOUT OF FLOOD CONTROL (14/20) FACILITIES (CROSS SECTION)		
SURVEYED BY: PROTONAL, C.A.	DESIGNED BY: PROTONAL, C.A.		
DRAWN BY: PROTONAL, C.A.	CHECKED BY: S. KOPPE		
DATE:	REVISED BY:	DATE:	DATE:
JAPAN INTERNATIONAL COOPERATION AGENCY			



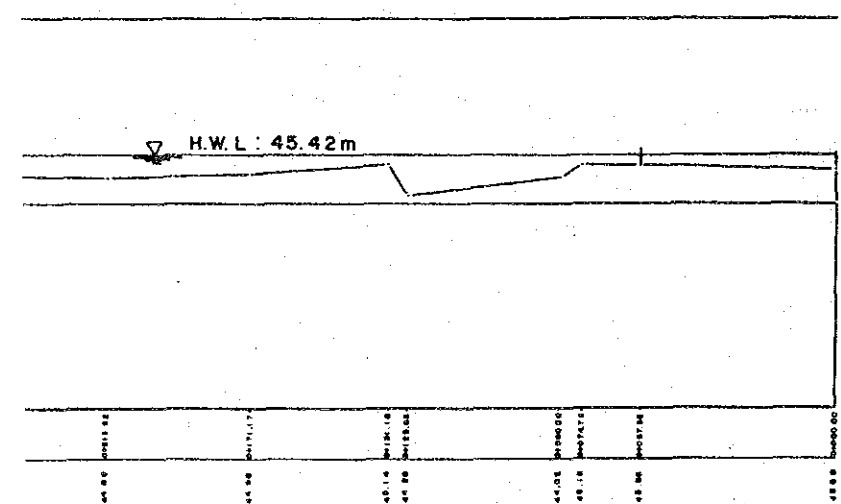
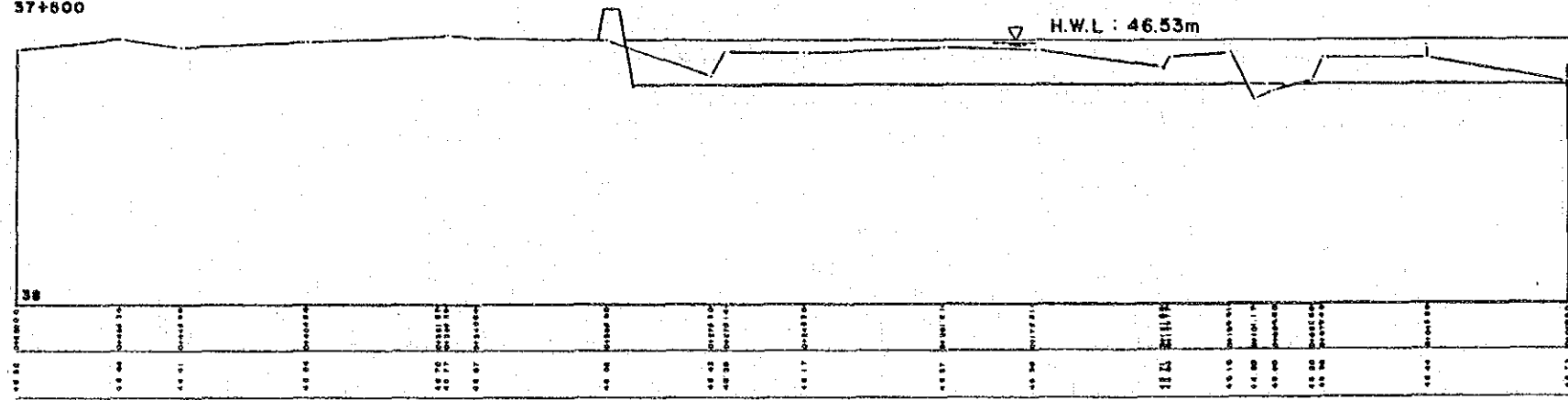
THE REPUBLIC OF VENEZUELA		
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT		
Scale H 1:2,000	V-1:200	
DESIGNED BY: PROTONAL, S.A.	F-2 LAYOUT OF FLOOD CONTROL (15/20) FACILITIES (CROSS SECTION)	
DRAWN BY: PROTONAL, S.A.	REVISIONS BY:	DATE:
CHECKED BY: S. ROMERO	DATE:	DATE:
JAPAN INTERNATIONAL COOPERATION AGENCY		



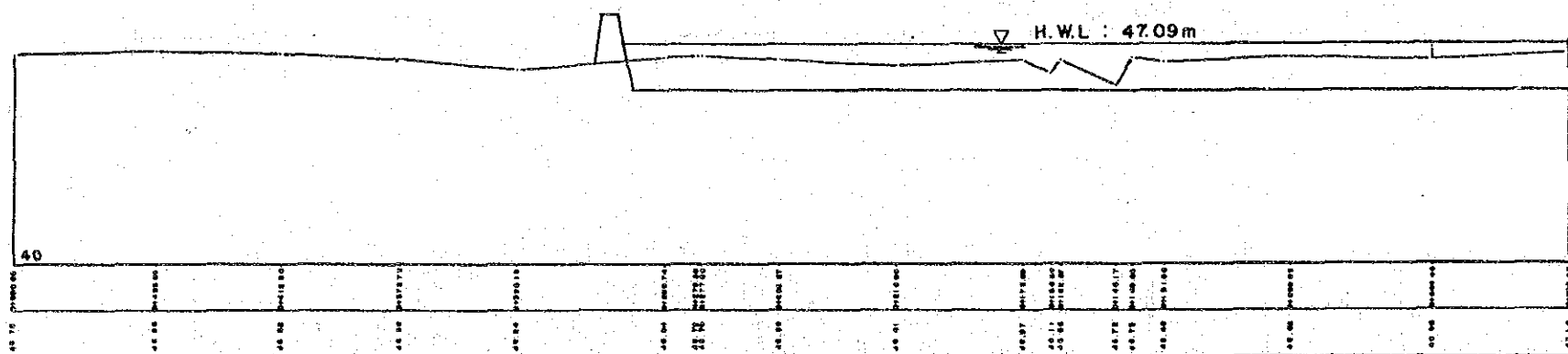
37+250



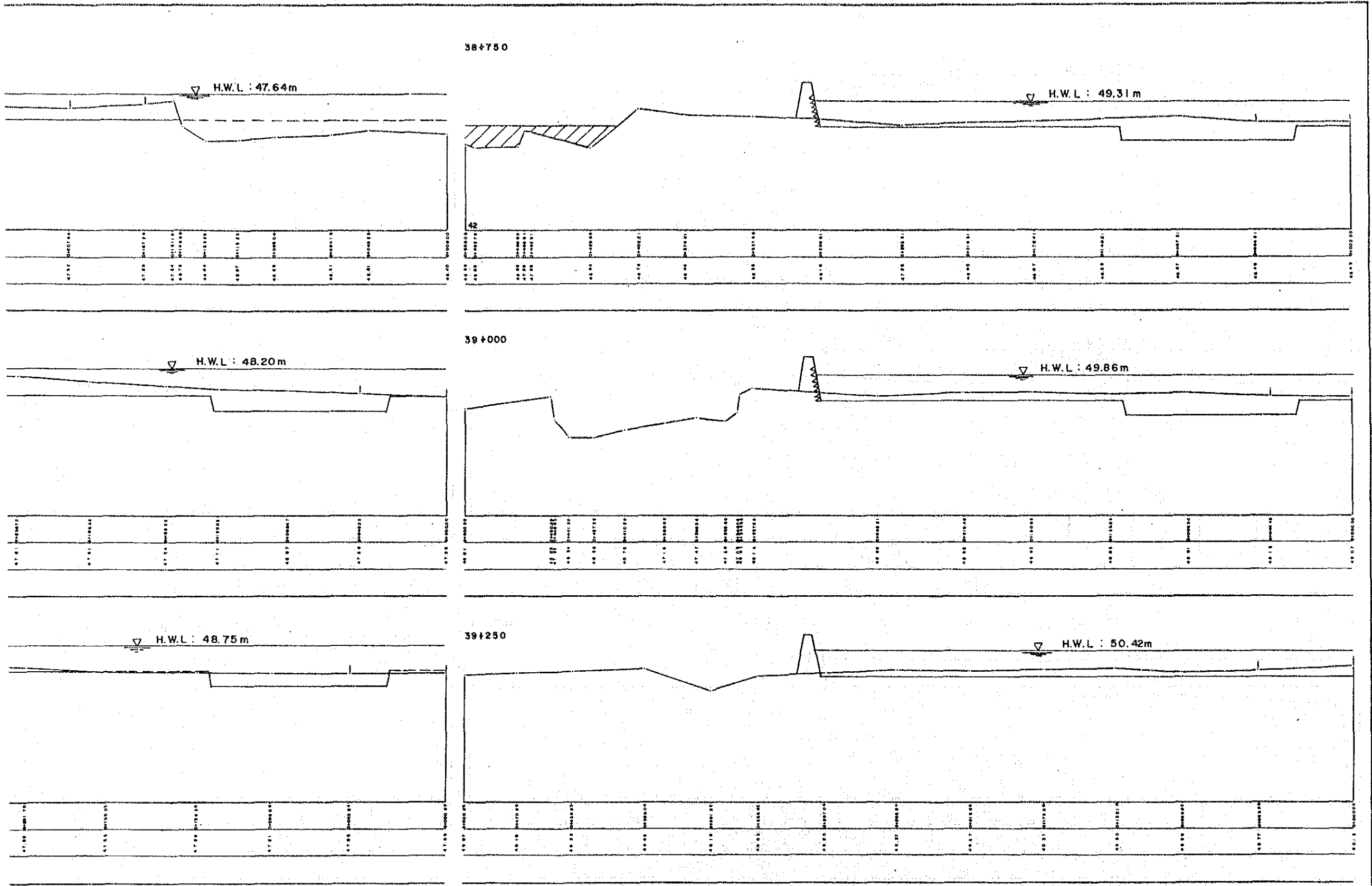
37+600



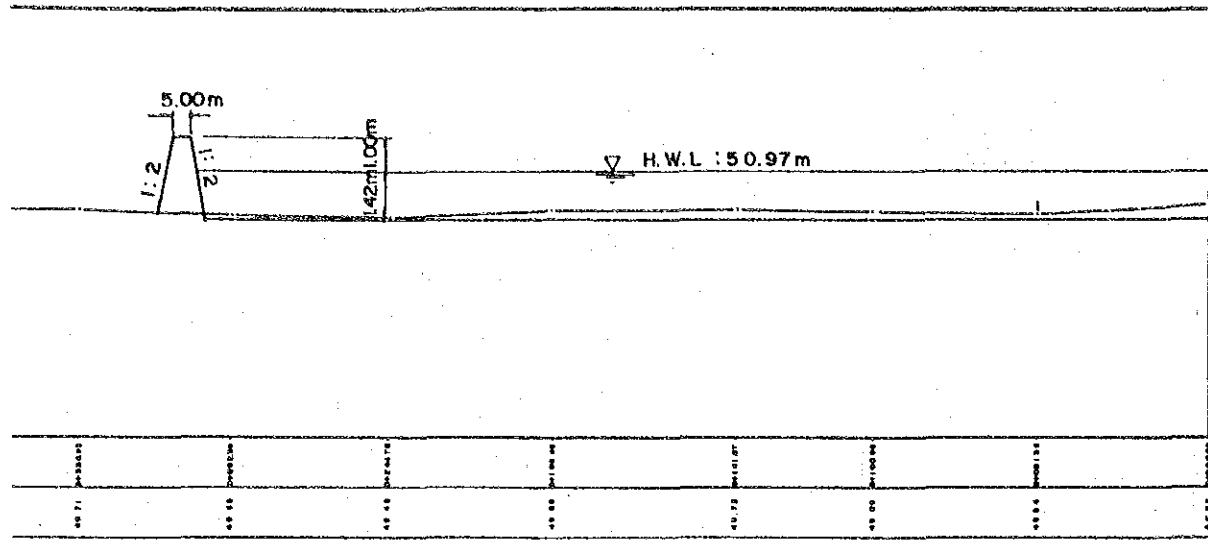
37+750



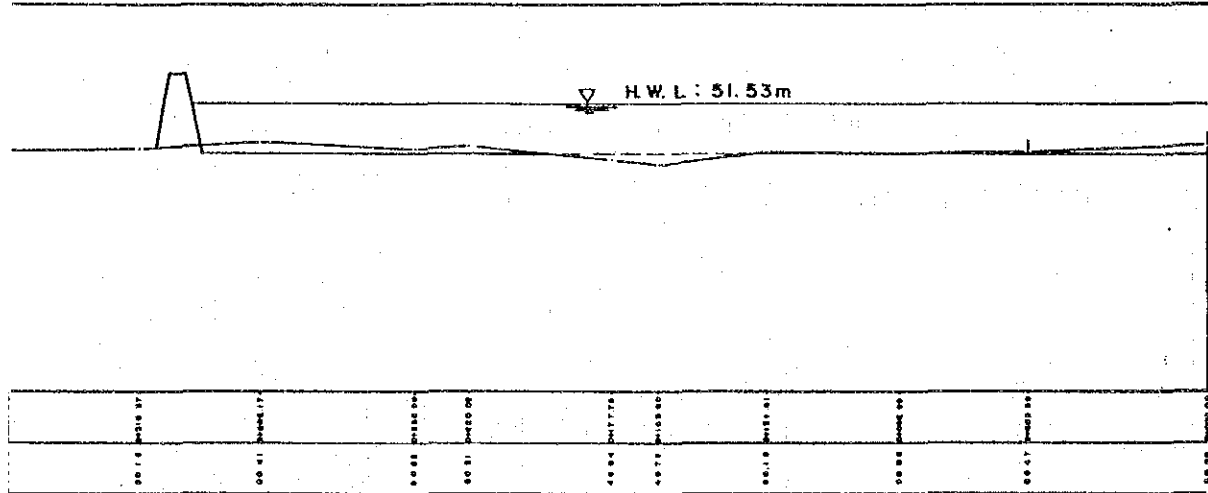
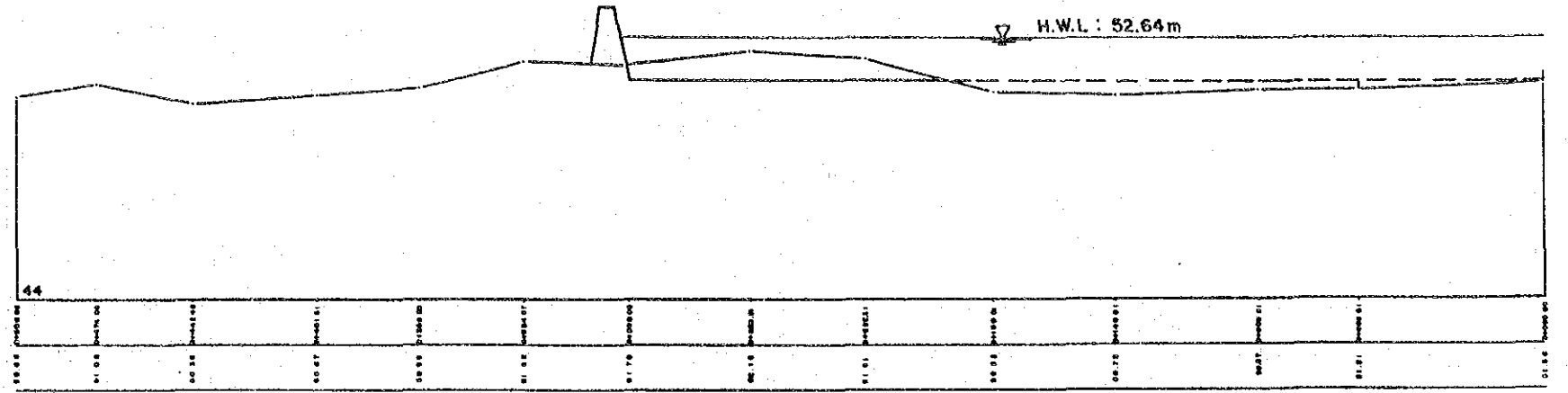
THE REPUBLIC OF VENEZUELA	
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT	
Scale 1:2,000	F-2 LAYOUT OF FLOOD CONTROL
NO. 11220	(16/20) FACILITIES
DESIGNED BY PROTONAL, C.A.	(CROSS SECTION)
DRAWN BY PROTONAL, C.A.	
CHECKED BY PROTONAL, C.A.	
DATE	
JAPAN INTERNATIONAL COOPERATION AGENCY	



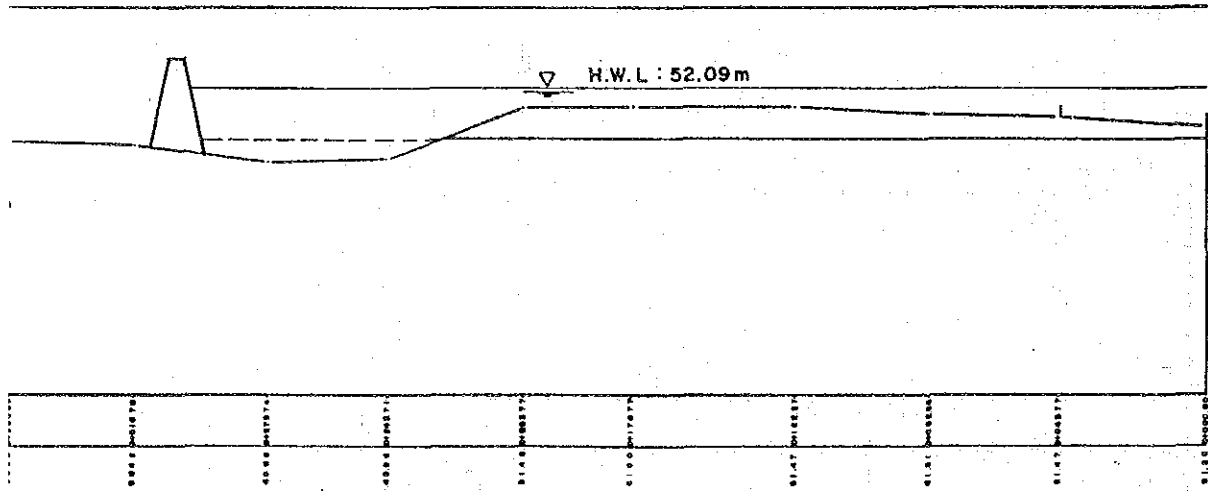
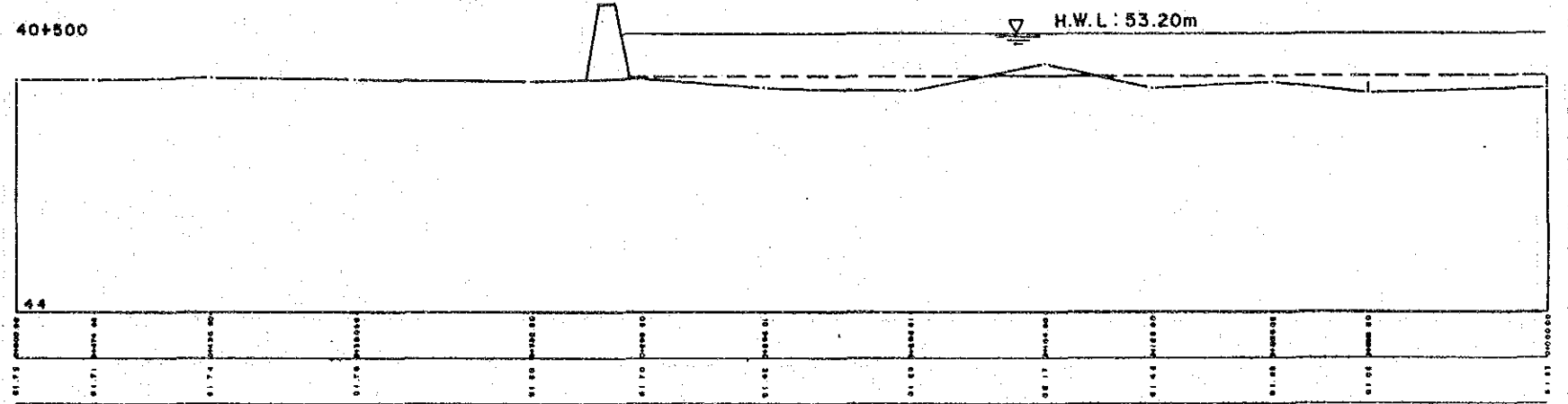
THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale H 1:2,000		V-1:200	
DESIGNED BY	PROYONAL C.A.	F-2 LAYOUT OF FLOOD CONTROL (17/20) FACILITIES (CROSS SECTION)	
DRAWN BY	PROYONAL C.A.		
CHECKED BY	PROYONAL C.A.		
DESIGNED BY	ERIANO	REVIEWED BY	DATE
JAPAN INTERNATIONAL COOPERATION AGENCY			



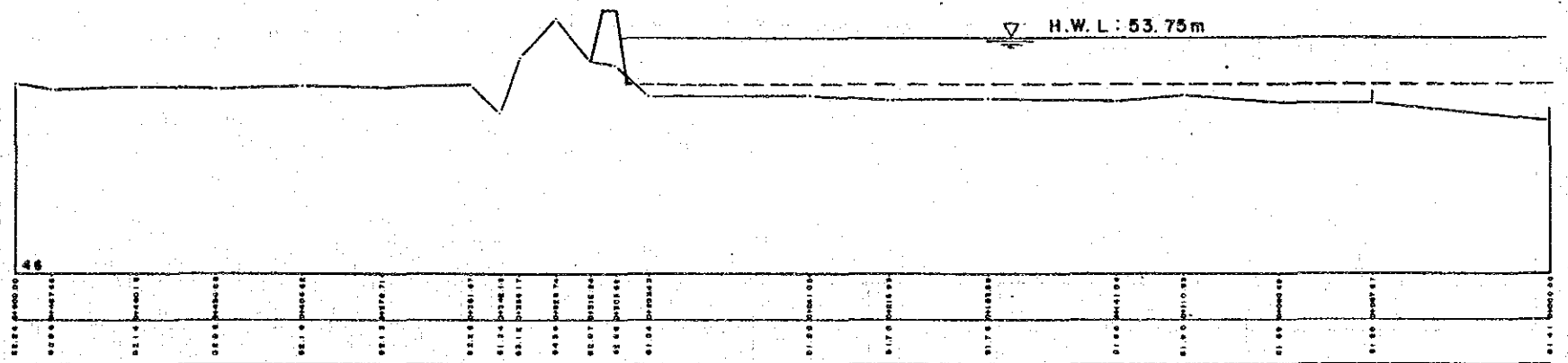
40+250



40+500

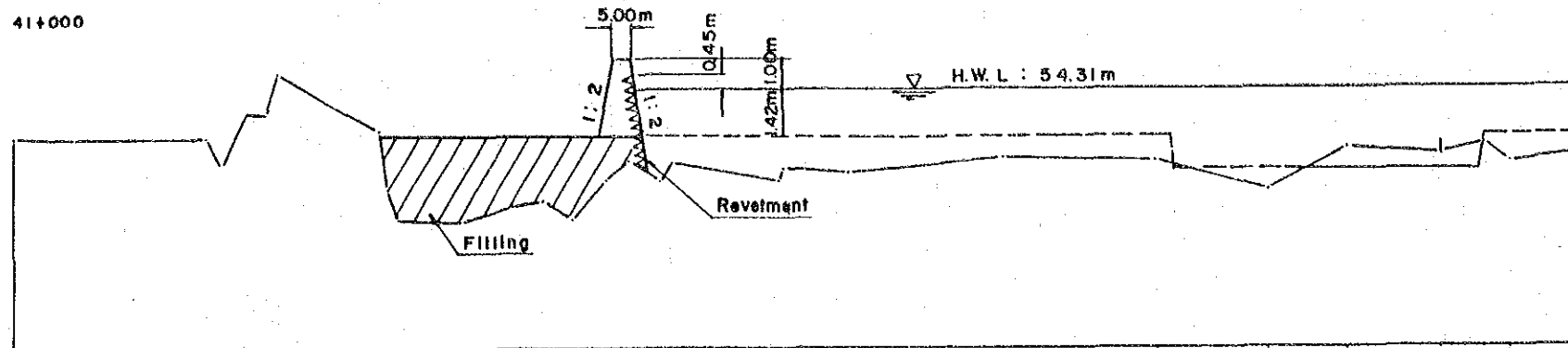


40+750

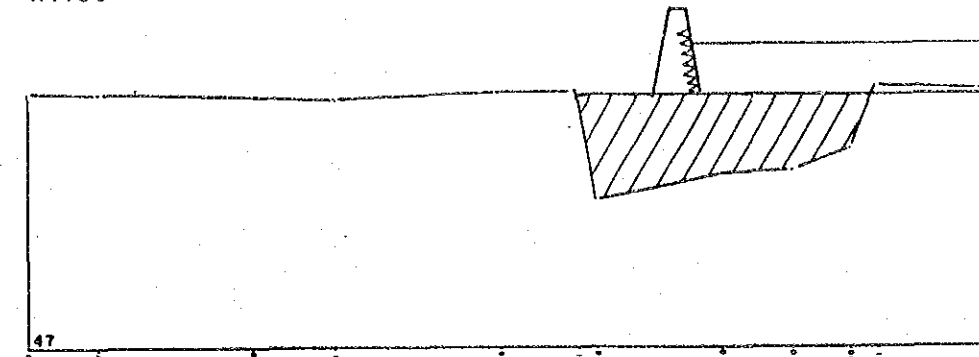


THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale 1:12,000	F-2 LAYOUT OF FLOOD CONTROL (18/20) FACILITIES (CROSS SECTION)		
DATE	PROJECT	DESIGNED BY	DATE
PROYECTO	PROYECTO	PROYECTO	PROYECTO
PROYECTO	PROYECTO	PROYECTO	PROYECTO
PROYECTO	PROYECTO	PROYECTO	PROYECTO
JAPAN INTERNATIONAL COOPERATION AGENCY			

41+000



41+750



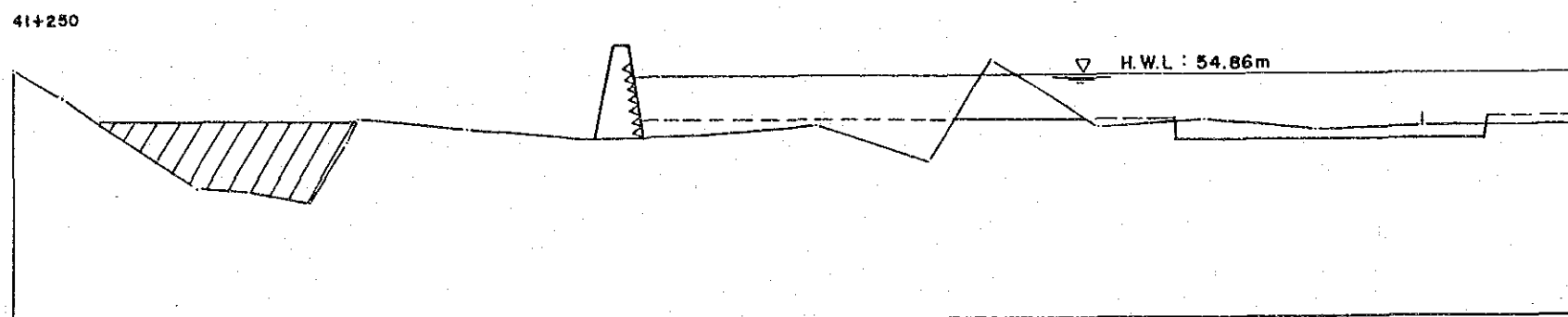
DATUM 46

ACCUMULATIVE DISTANCE (m)	0+00	0+10	0+20	0+30	0+40	0+50	0+60	0+70	0+80	0+90	1+00	1+10	1+20	1+30	1+40	1+50	1+60	1+70	1+80	1+90	2+00	
PRESENT ELEVATION (m)	54.71	54.64	54.58	54.51	54.44	54.37	54.30	54.23	54.16	54.09	54.02	53.95	53.88	53.81	53.74	53.67	53.60	53.53	53.46	53.39	53.32	53.25
DESIGN ELEVATION (m)	54.71	54.64	54.58	54.51	54.44	54.37	54.30	54.23	54.16	54.09	54.02	53.95	53.88	53.81	53.74	53.67	53.60	53.53	53.46	53.39	53.32	53.25

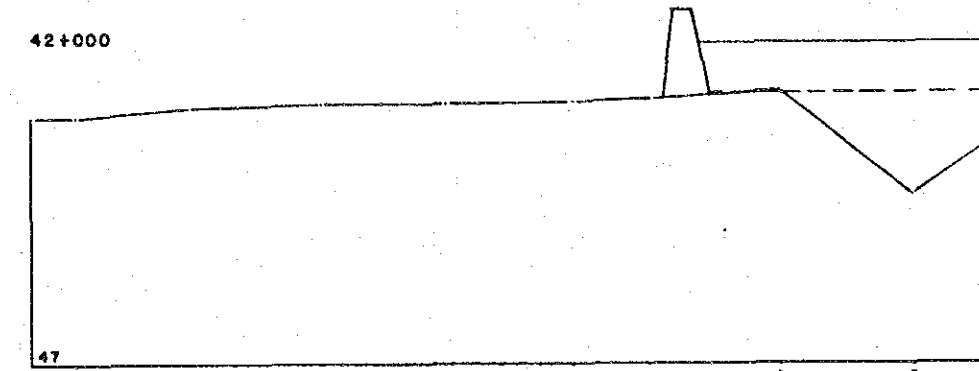
47

ACCUMULATIVE DISTANCE (m)	2+10	2+20	2+30	2+40	2+50	2+60	2+70	2+80	2+90	3+00	3+10	3+20	3+30	3+40	3+50	3+60	3+70	3+80	3+90	4+00		
PRESENT ELEVATION (m)	53.18	53.11	53.04	52.97	52.90	52.83	52.76	52.69	52.62	52.55	52.48	52.41	52.34	52.27	52.20	52.13	52.06	51.99	51.92	51.85	51.78	51.71
DESIGN ELEVATION (m)	53.18	53.11	53.04	52.97	52.90	52.83	52.76	52.69	52.62	52.55	52.48	52.41	52.34	52.27	52.20	52.13	52.06	51.99	51.92	51.85	51.78	51.71

41+250



42+000



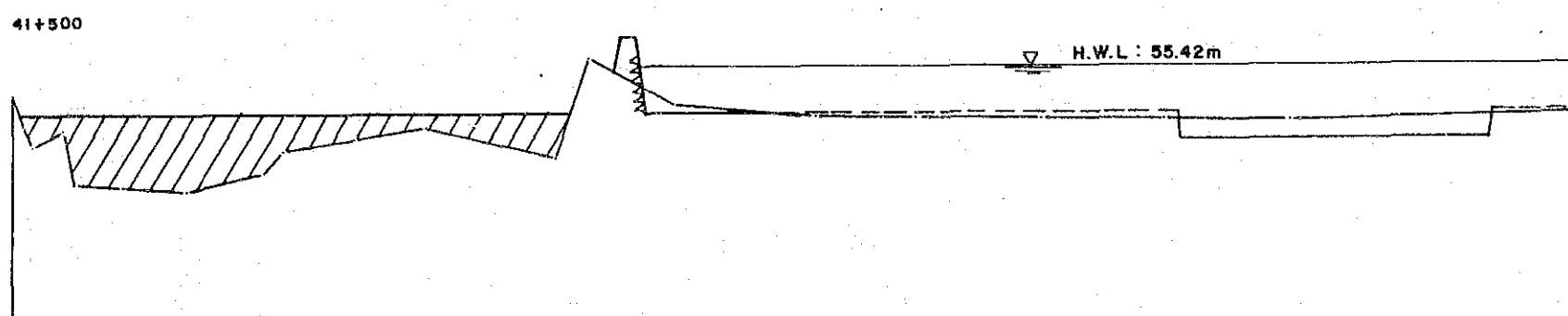
DATUM 47

ACCUMULATIVE DISTANCE (m)	0+00	0+10	0+20	0+30	0+40	0+50	0+60	0+70	0+80	0+90	1+00	1+10	1+20	1+30	1+40	1+50	1+60	1+70	1+80	1+90	2+00	
PRESENT ELEVATION (m)	54.11	54.04	53.97	53.90	53.83	53.76	53.69	53.62	53.55	53.48	53.41	53.34	53.27	53.20	53.13	53.06	52.99	52.92	52.85	52.78	52.71	52.64
DESIGN ELEVATION (m)	54.11	54.04	53.97	53.90	53.83	53.76	53.69	53.62	53.55	53.48	53.41	53.34	53.27	53.20	53.13	53.06	52.99	52.92	52.85	52.78	52.71	52.64

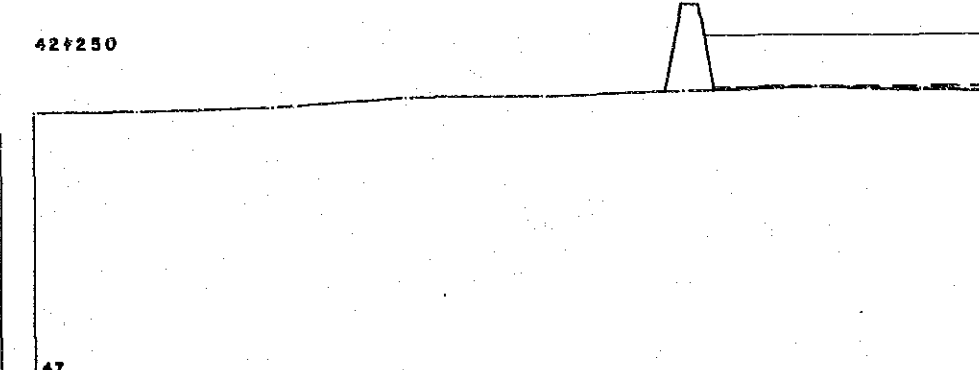
47

ACCUMULATIVE DISTANCE (m)	2+10	2+20	2+30	2+40	2+50	2+60	2+70	2+80	2+90	3+00	3+10	3+20	3+30	3+40	3+50	3+60	3+70	3+80	3+90	4+00		
PRESENT ELEVATION (m)	53.07	53.00	52.93	52.86	52.79	52.72	52.65	52.58	52.51	52.44	52.37	52.30	52.23	52.16	52.09	52.02	51.95	51.88	51.81	51.74	51.67	51.60
DESIGN ELEVATION (m)	53.07	53.00	52.93	52.86	52.79	52.72	52.65	52.58	52.51	52.44	52.37	52.30	52.23	52.16	52.09	52.02	51.95	51.88	51.81	51.74	51.67	51.60

41+500



42+250

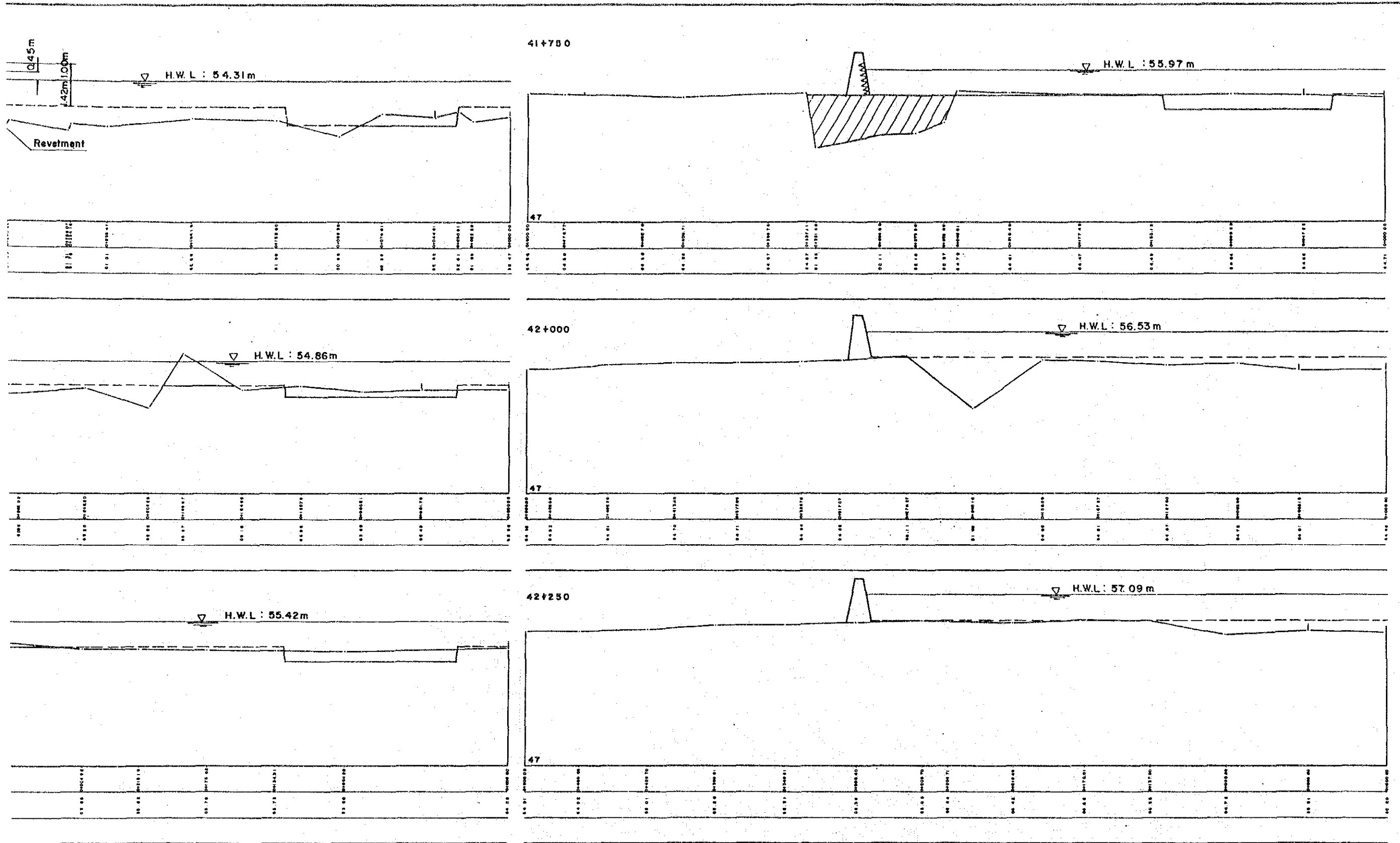


DATUM 47

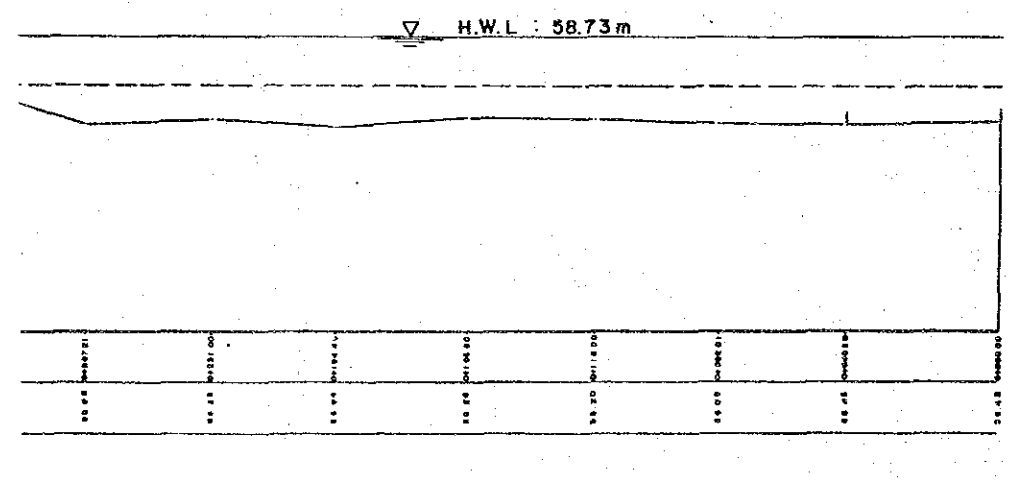
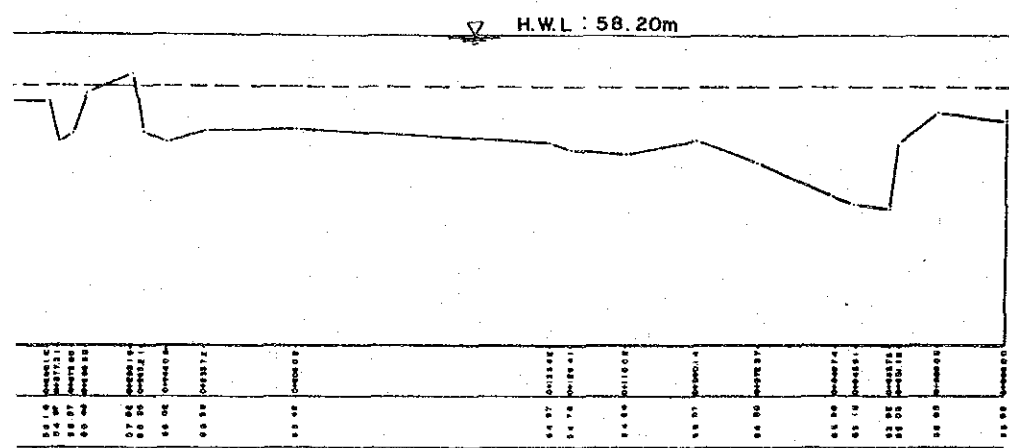
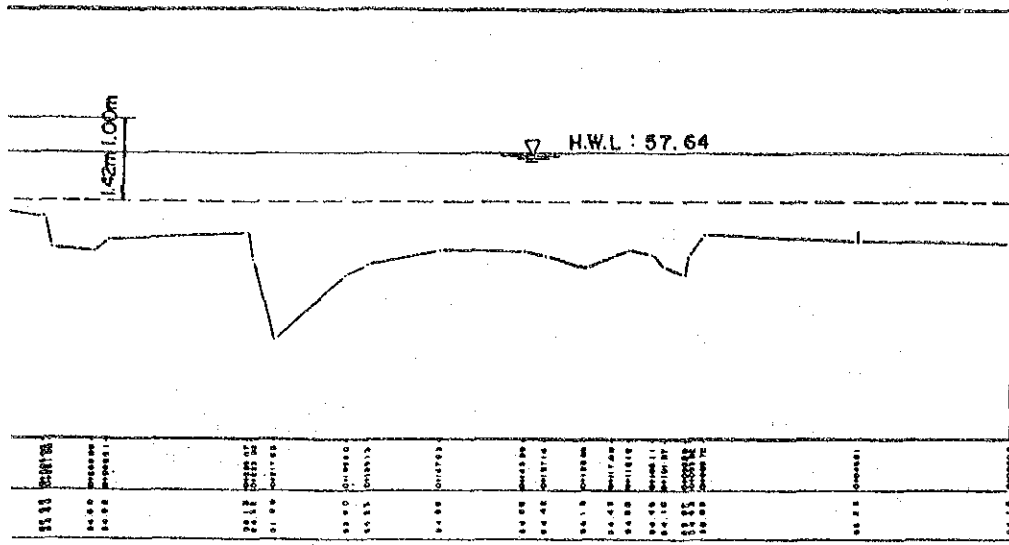
ACCUMULATIVE DISTANCE (m)	0+00	0+10	0+20	0+30	0+40	0+50	0+60	0+70	0+80	0+90	1+00	1+10	1+20	1+30	1+40	1+50	1+60	1+70	1+80	1+90	2+00	
PRESENT ELEVATION (m)	54.01	53.94	53.87	53.80	53.73	53.66	53.59	53.52	53.45	53.38	53.31	53.24	53.17	53.10	53.03	52.96	52.89	52.82	52.75	52.68	52.61	52.54
DESIGN ELEVATION (m)	54.01	53.94	53.87	53.80	53.73	53.66	53.59	53.52	53.45	53.38	53.31	53.24	53.17	53.10	53.03	52.96	52.89	52.82	52.75	52.68	52.61	52.54

47

ACCUMULATIVE DISTANCE (m)	2+10	2+20	2+30	2+40	2+50	2+60	2+70	2+80	2+90	3+00	3+10	3+20	3+30	3+40	3+50	3+60	3+70	3+80	3+90	4+00		
PRESENT ELEVATION (m)	52.50	52.43	52.36	52.29	52.22	52.15	52.08	52.01	51.94	51.87	51.80	51.73	51.66	51.59	51.52	51.45	51.38	51.31	51.24	51.17	51.10	51.03
DESIGN ELEVATION (m)	52.50	52.43	52.36	52.29	52.22	52.15	52.08	52.01	51.94	51.87	51.80	51.73	51.66	51.59	51.52	51.45	51.38	51.31	51.24	51.17	51.10	51.03



THE REPUBLIC OF VENEZUELA	
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT	
SCALE 1:10,000 V-11200	F-2 LAYOUT OF FLOOD CONTROL (19/20) FACILITIES (CROSS SECTION)
DESIGNED BY PROYECTO C.A.	DRAWN BY PROYECTO C.A.
CHECKED BY PROYECTO C.A.	DATE
JAPAN INTERNATIONAL COOPERATION AGENCY	



THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Scale 1:12,000	F-2 LAYOUT OF FLOOD CONTROL		
Sheet 1/1200	(20/20) FACILITIES		
Author: PROTONAL S.A.	(CROSS SECTION)		
Designer: PROTONAL S.A.	Project No.	Scale	City
Client: PROTONAL S.A.			
JAPAN INTERNATIONAL COOPERATION AGENCY			

RIVER IMPROVEMENT STRETCH OF RIGHT BANK (3.0-9.0 K.)

RIVER IMPROVEMENT STRETCH OF LEFT BANK (10.4-16.7 K.)

DESIGN BANK CROWN
DESIGN HIGH WATER LEVEL
DESIGN RIVER BED
PRESENT RIVER BED

DATUM: 00																																			
DESIGN ELEVATION (m)	BANK CROWN	1.1	1.55	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	
	HIGH WATER LEVEL	1.1	1.55	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	
RIVER BED	1.1	1.55	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0		
PRESENT ELEVATION (m)	LEFT BANK CROWN																																		
	RIGHT BANK CROWN																																		
	RIVER BED																																		
	GROUND	1.1	1.55	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5	14.0	14.5	15.0	15.5	16.0	16.5	17.0	
ACCUMULATIVE DISTANCE (m)	0.00	100.00	200.00	300.00	400.00	500.00	600.00	700.00	800.00	900.00	1000.00	1100.00	1200.00	1300.00	1400.00	1500.00	1600.00	1700.00	1800.00	1900.00	2000.00	2100.00	2200.00	2300.00	2400.00	2500.00	2600.00	2700.00	2800.00	2900.00	3000.00	3100.00	3200.00	3300.00	3400.00
DISTANCE (m)	100.00	200.00	300.00	400.00	500.00	600.00	700.00	800.00	900.00	1000.00	1100.00	1200.00	1300.00	1400.00	1500.00	1600.00	1700.00	1800.00	1900.00	2000.00	2100.00	2200.00	2300.00	2400.00	2500.00	2600.00	2700.00	2800.00	2900.00	3000.00	3100.00	3200.00	3300.00	3400.00	
STATION No	0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+900	1+000	1+100	1+200	1+300	1+400	1+500	1+600	1+700	1+800	1+900	2+000	2+100	2+200	2+300	2+400	2+500	2+600	2+700	2+800	2+900	3+000	3+100	3+200	3+300	3+400

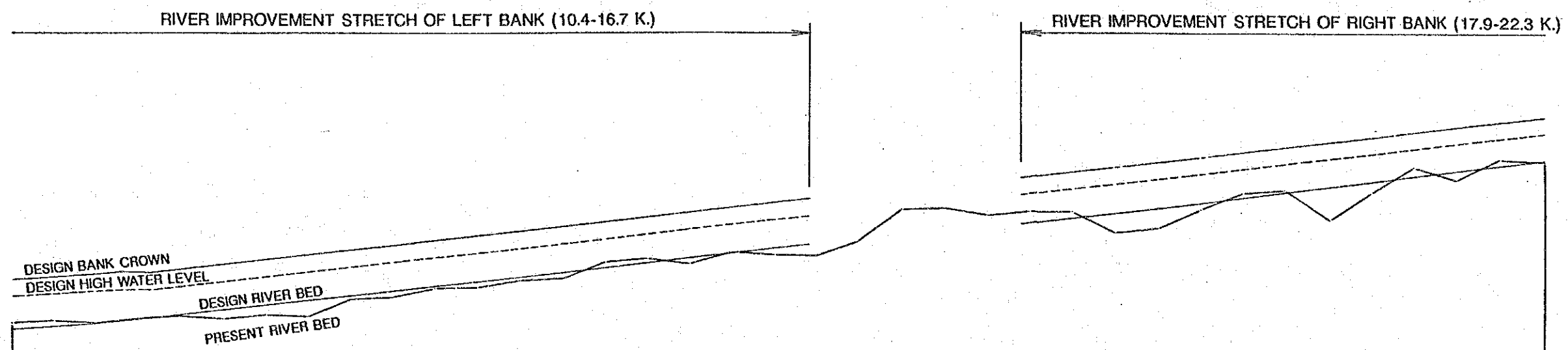
THE REPUBLIC OF VENEZUELA
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT

F-3 LAYOUT OF FLOOD CONTROL
(1/4) FACILITIES
(LONGITUDINAL PROFILE)

Employed by: _____
 Calculated by: _____
 Drawn by: _____
 Checked by: _____

Designed by: _____ Drawn by: _____ Date: _____

JAPAN INTERNATIONAL COOPERATION AGENCY



DATUM: 05

STATION	DESIGN ELEVATION (m)				PRESENT ELEVATION (m)			
	BANK CROWN	HIGH WATER LEVEL	RIVER BED		LEFT BANK CROWN	RIGHT BANK CROWN	RIVER BED	GROUND
0+00	15.27	15.17	15.07				14.97	14.97
0+10	15.75	15.65	15.55				15.45	15.45
0+20	16.23	16.13	16.03				15.93	15.93
0+30	16.71	16.61	16.51				16.41	16.41
0+40	17.19	17.09	16.99				16.89	16.89
0+50	17.67	17.57	17.47				17.37	17.37
0+60	18.15	18.05	17.95				17.85	17.85
0+70	18.63	18.53	18.43				18.33	18.33
0+80	19.11	19.01	18.91				18.81	18.81
0+90	19.59	19.49	19.39				19.29	19.29
1+00	20.07	19.97	19.87				19.77	19.77
1+10	20.55	20.45	20.35				20.25	20.25
1+20	21.03	20.93	20.83				20.73	20.73
1+30	21.51	21.41	21.31				21.21	21.21
1+40	21.99	21.89	21.79				21.69	21.69
1+50	22.47	22.37	22.27				22.17	22.17
1+60	22.95	22.85	22.75				22.65	22.65
1+70	23.43	23.33	23.23				23.13	23.13
1+80	23.91	23.81	23.71				23.61	23.61
1+90	24.39	24.29	24.19				24.09	24.09
2+00	24.87	24.77	24.67				24.57	24.57
2+10	25.35	25.25	25.15				25.05	25.05
2+20	25.83	25.73	25.63				25.53	25.53
2+30	26.31	26.21	26.11				26.01	26.01
2+40	26.79	26.69	26.59				26.49	26.49
2+50	27.27	27.17	27.07				26.97	26.97
2+60	27.75	27.65	27.55				27.45	27.45
2+70	28.23	28.13	28.03				27.93	27.93
2+80	28.71	28.61	28.51				28.41	28.41
2+90	29.19	29.09	28.99				28.89	28.89
3+00	29.67	29.57	29.47				29.37	29.37
3+10	30.15	30.05	29.95				29.85	29.85
3+20	30.63	30.53	30.43				30.33	30.33
3+30	31.11	31.01	30.91				30.81	30.81
3+40	31.59	31.49	31.39				31.29	31.29
3+50	32.07	31.97	31.87				31.77	31.77
3+60	32.55	32.45	32.35				32.25	32.25
3+70	33.03	32.93	32.83				32.73	32.73
3+80	33.51	33.41	33.31				33.21	33.21
3+90	33.99	33.89	33.79				33.69	33.69
4+00	34.47	34.37	34.27				34.17	34.17
4+10	34.95	34.85	34.75				34.65	34.65
4+20	35.43	35.33	35.23				35.13	35.13
4+30	35.91	35.81	35.71				35.61	35.61
4+40	36.39	36.29	36.19				36.09	36.09
4+50	36.87	36.77	36.67				36.57	36.57
4+60	37.35	37.25	37.15				37.05	37.05
4+70	37.83	37.73	37.63				37.53	37.53
4+80	38.31	38.21	38.11				38.01	38.01
4+90	38.79	38.69	38.59				38.49	38.49
5+00	39.27	39.17	39.07				38.97	38.97
5+10	39.75	39.65	39.55				39.45	39.45
5+20	40.23	40.13	40.03				39.93	39.93
5+30	40.71	40.61	40.51				40.41	40.41
5+40	41.19	41.09	40.99				40.89	40.89
5+50	41.67	41.57	41.47				41.37	41.37
5+60	42.15	42.05	41.95				41.85	41.85
5+70	42.63	42.53	42.43				42.33	42.33
5+80	43.11	43.01	42.91				42.81	42.81
5+90	43.59	43.49	43.39				43.29	43.29
6+00	44.07	43.97	43.87				43.77	43.77
6+10	44.55	44.45	44.35				44.25	44.25
6+20	45.03	44.93	44.83				44.73	44.73
6+30	45.51	45.41	45.31				45.21	45.21
6+40	45.99	45.89	45.79				45.69	45.69
6+50	46.47	46.37	46.27				46.17	46.17
6+60	46.95	46.85	46.75				46.65	46.65
6+70	47.43	47.33	47.23				47.13	47.13
6+80	47.91	47.81	47.71				47.61	47.61
6+90	48.39	48.29	48.19				48.09	48.09
7+00	48.87	48.77	48.67				48.57	48.57
7+10	49.35	49.25	49.15				49.05	49.05
7+20	49.83	49.73	49.63				49.53	49.53
7+30	50.31	50.21	50.11				50.01	50.01
7+40	50.79	50.69	50.59				50.49	50.49
7+50	51.27	51.17	51.07				50.97	50.97
7+60	51.75	51.65	51.55				51.45	51.45
7+70	52.23	52.13	52.03				51.93	51.93
7+80	52.71	52.61	52.51				52.41	52.41
7+90	53.19	53.09	52.99				52.89	52.89
8+00	53.67	53.57	53.47				53.37	53.37
8+10	54.15	54.05	53.95				53.85	53.85
8+20	54.63	54.53	54.43				54.33	54.33
8+30	55.11	55.01	54.91				54.81	54.81
8+40	55.59	55.49	55.39				55.29	55.29
8+50	56.07	55.97	55.87				55.77	55.77
8+60	56.55	56.45	56.35				56.25	56.25
8+70	57.03	56.93	56.83				56.73	56.73
8+80	57.51	57.41	57.31				57.21	57.21
8+90	57.99	57.89	57.79				57.69	57.69
9+00	58.47	58.37	58.27				58.17	58.17
9+10	58.95	58.85	58.75				58.65	58.65
9+20	59.43	59.33	59.23				59.13	59.13
9+30	59.91	59.81	59.71				59.61	59.61
9+40	60.39	60.29	60.19				60.09	60.09
9+50	60.87	60.77	60.67				60.57	60.57
9+60	61.35	61.25	61.15				61.05	61.05
9+70	61.83	61.73	61.63				61.53	61.53
9+80	62.31	62.21	62.11				62.01	62.01
9+90	62.79	62.69	62.59				62.49	62.49
10+00	63.27	63.17	63.07				62.97	62.97

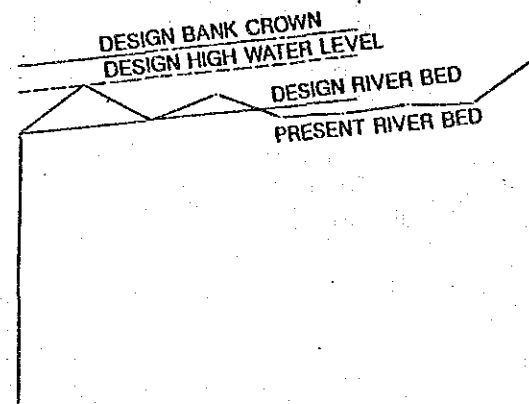
THE REPUBLIC OF VENEZUELA
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT

F-3 LAYOUT OF FLOOD CONTROL
(2/4) FACILITIES
(LONGITUDINAL PROFILE)

Surveyed by:	
Calculated by:	
Drawn by:	
Checked by:	
Designed by:	
Drawn by:	
Date:	

JAPAN INTERNATIONAL COOPERATION AGENCY

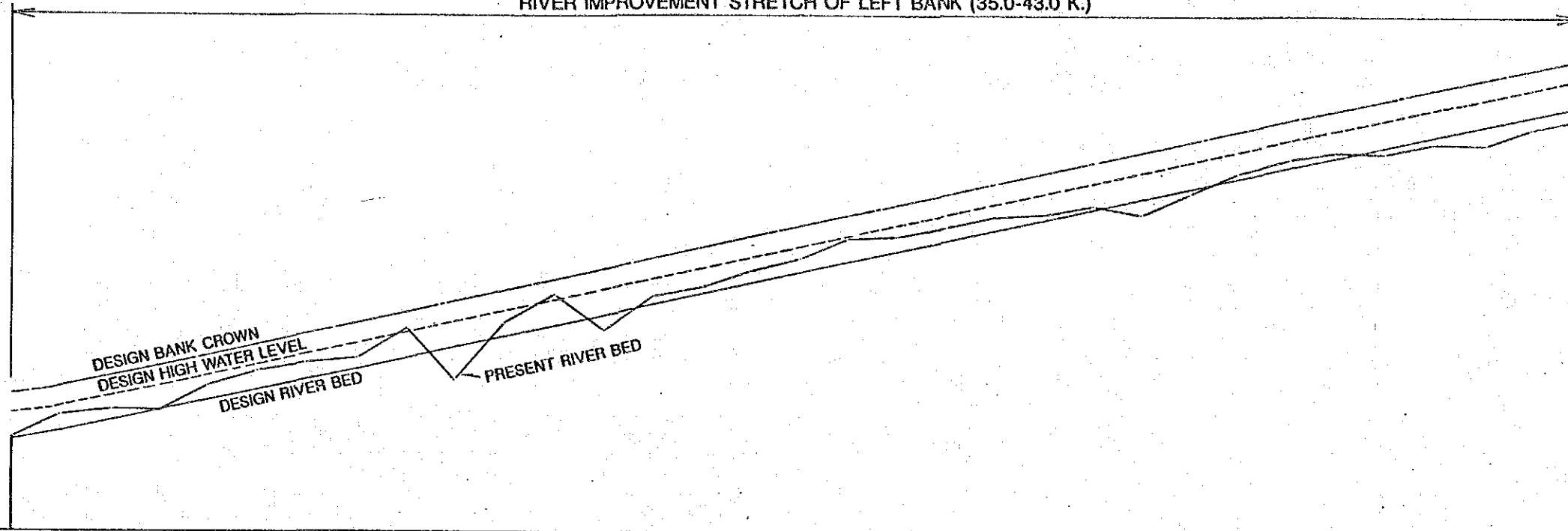
RIVER IMPROVEMENT STRETCH
OF RIGHT BANK (17.9-22.3 K.)



DATUM 1.0									
DESIGN ELEVATION (m)	BANK CROWN	21.00	21.04	21.04	21.10	21.21	21.21	21.26	21.26
	HIGH WATER LEVEL	21.10	21.08	21.00	21.10	21.21	21.21	21.26	21.26
	RIVER BED	20.00	20.05	21.11	21.04	21.00	21.07	21.07	21.07
PRESENT ELEVATION (m)	LEFT BANK CROWN								
	RIGHT BANK CROWN								
	RIVER BED					21.00	21.00	21.00	21.00
	GROUND	21.07	21.03	21.13	21.10				21.11
ACCUMULATIVE DISTANCE (m)	0+000	0+050	0+100	0+170	0+200	0+250	0+300	0+350	
DISTANCE (m)	0+000	0+050	0+100	0+170	0+200	0+250	0+300	0+350	
STATION No	17.9	18.0	18.1	18.2	18.3	18.4	18.5	18.6	

THE REPUBLIC OF VENEZUELA STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Designed by:	F-3 LAYOUT OF FLOOD CONTROL (3/4) FACILITIES (LONGITUDINAL PROFILE)		
Checked by:	Designed by:	Drawn by:	Date:
JAPAN INTERNATIONAL COOPERATION AGENCY			

RIVER IMPROVEMENT STRETCH OF LEFT BANK (35.0-43.0 K.)



DATUM: SB									
STATION NO	DISTANCE (M)	DESIGN ELEVATION (M)			PRESENT ELEVATION (M)				ACCUMULATIVE DISTANCE (M)
		BANK CROWN	HIGH WATER LEVEL	RIVER BED	LEFT BANK CROWN	RIGHT BANK CROWN	RIVER BED	GROUND	
0+000	0.00	42.92	41.80	40.70				42.92	0.00
0+050	50.00	43.20	42.10	41.00				43.20	50.00
0+100	100.00	43.50	42.40	41.30				43.50	100.00
0+150	150.00	43.80	42.70	41.60				43.80	150.00
0+200	200.00	44.10	43.00	41.90				44.10	200.00
0+250	250.00	44.40	43.30	42.20				44.40	250.00
0+300	300.00	44.70	43.60	42.50				44.70	300.00
0+350	350.00	45.00	43.90	42.80				45.00	350.00
0+400	400.00	45.30	44.20	43.10				45.30	400.00
0+450	450.00	45.60	44.50	43.40				45.60	450.00
0+500	500.00	45.90	44.80	43.70				45.90	500.00
0+550	550.00	46.20	45.10	44.00				46.20	550.00
0+600	600.00	46.50	45.40	44.30				46.50	600.00
0+650	650.00	46.80	45.70	44.60				46.80	650.00
0+700	700.00	47.10	46.00	44.90				47.10	700.00
0+750	750.00	47.40	46.30	45.20				47.40	750.00
0+800	800.00	47.70	46.60	45.50				47.70	800.00
0+850	850.00	48.00	46.90	45.80				48.00	850.00
0+900	900.00	48.30	47.20	46.10				48.30	900.00
0+950	950.00	48.60	47.50	46.40				48.60	950.00
1+000	1000.00	48.90	47.80	46.70				48.90	1000.00
1+050	1050.00	49.20	48.10	47.00				49.20	1050.00
1+100	1100.00	49.50	48.40	47.30				49.50	1100.00
1+150	1150.00	49.80	48.70	47.60				49.80	1150.00
1+200	1200.00	50.10	49.00	47.90				50.10	1200.00
1+250	1250.00	50.40	49.30	48.20				50.40	1250.00
1+300	1300.00	50.70	49.60	48.50				50.70	1300.00
1+350	1350.00	51.00	49.90	48.80				51.00	1350.00
1+400	1400.00	51.30	50.20	49.10				51.30	1400.00
1+450	1450.00	51.60	50.50	49.40				51.60	1450.00
1+500	1500.00	51.90	50.80	49.70				51.90	1500.00
1+550	1550.00	52.20	51.10	50.00				52.20	1550.00
1+600	1600.00	52.50	51.40	50.30				52.50	1600.00
1+650	1650.00	52.80	51.70	50.60				52.80	1650.00
1+700	1700.00	53.10	52.00	50.90				53.10	1700.00
1+750	1750.00	53.40	52.30	51.20				53.40	1750.00
1+800	1800.00	53.70	52.60	51.50				53.70	1800.00
1+850	1850.00	54.00	52.90	51.80				54.00	1850.00
1+900	1900.00	54.30	53.20	52.10				54.30	1900.00
1+950	1950.00	54.60	53.50	52.40				54.60	1950.00
2+000	2000.00	54.90	53.80	52.70				54.90	2000.00

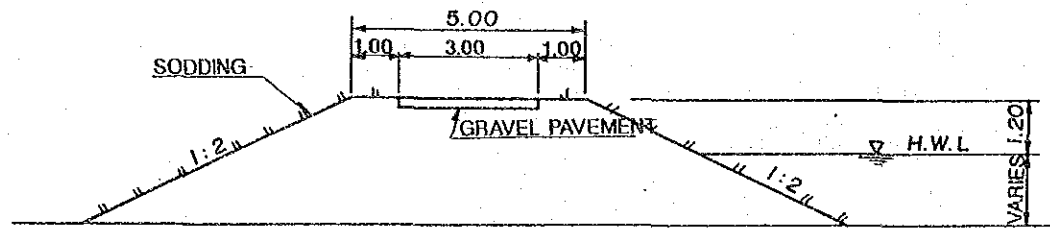
THE REPUBLIC OF VENEZUELA
 STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT

F-3 LAYOUT OF FLOOD CONTROL
 (4/4) FACILITIES
 (LONGITUDINAL PROFILE)

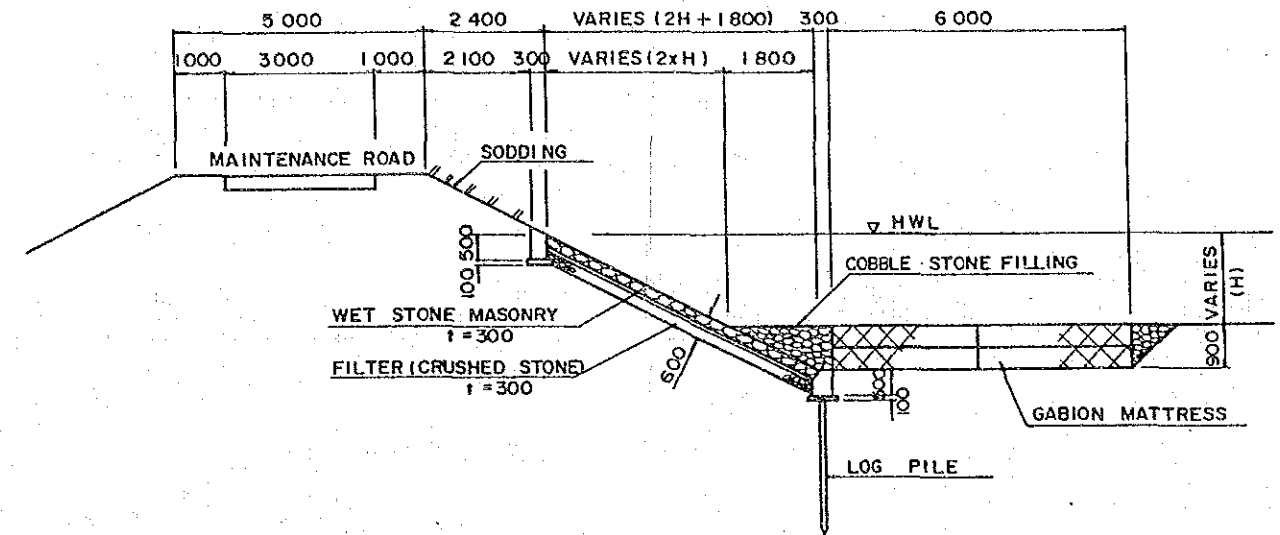
Designed by: _____ Date: _____
 Drawn by: _____
 Checked by: _____

JAPAN INTERNATIONAL COOPERATION AGENCY

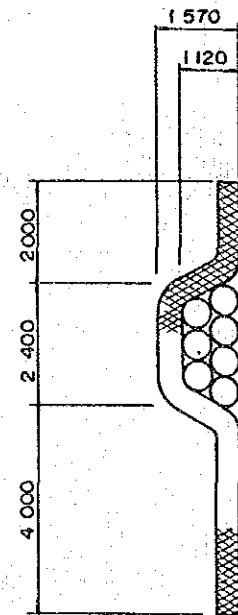
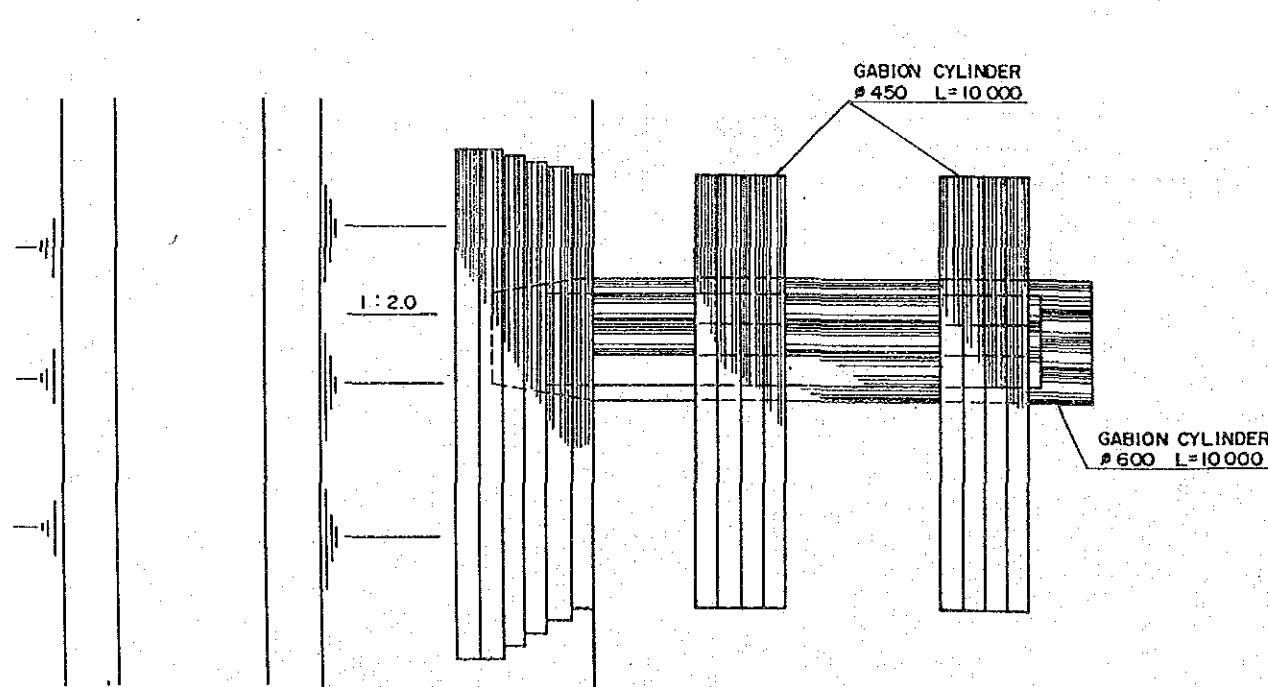
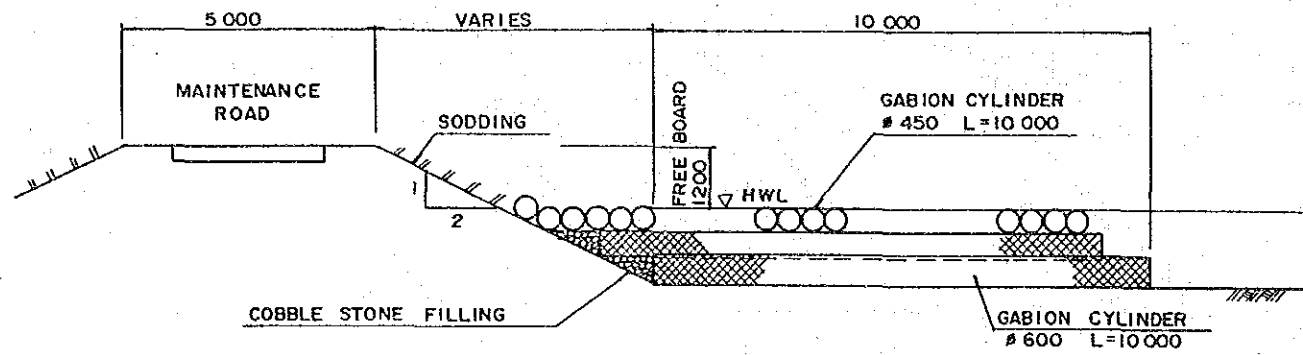
TYPICAL CROSS SECTION OF DIKE



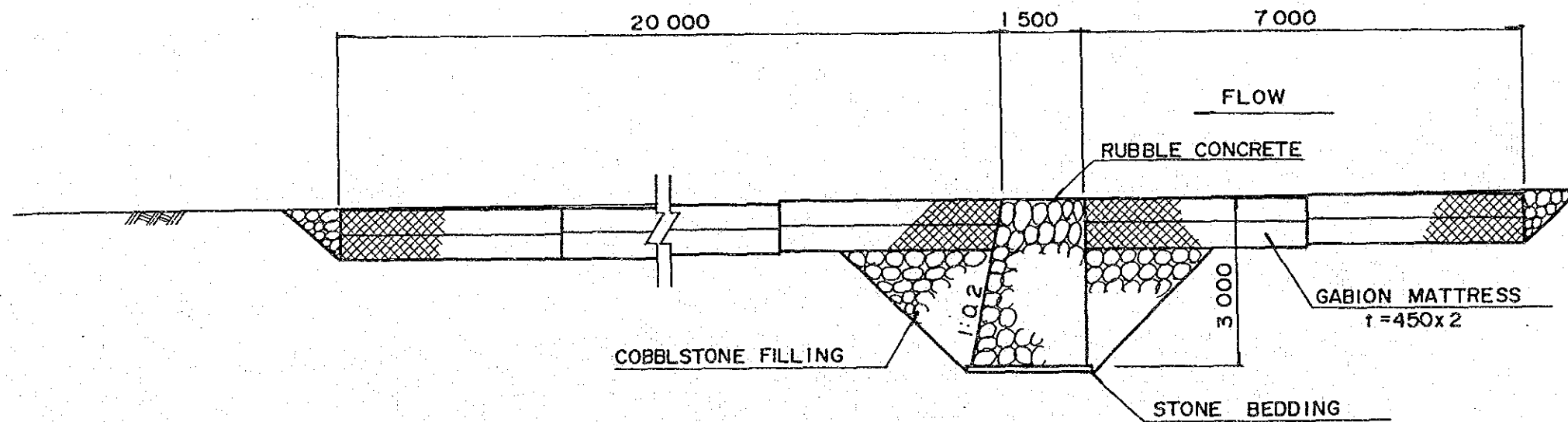
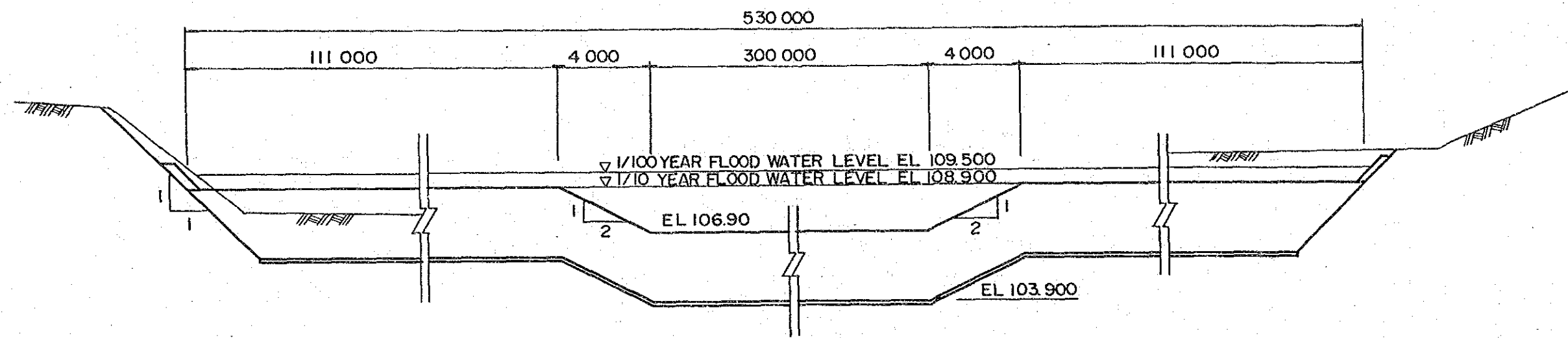
REVETMENT



GROIN



THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
F-4		STRUCTURAL DRAWINGS OF FLOOD CONTROL FACILITIES (DIKE, REVETMENT, GROIN)	
Designed by:	Drawn by:	Date:	
Checked by:	Designed by:	Drawn by:	Date:
JAPAN INTERNATIONAL COOPERATION AGENCY			



THE REPUBLIC OF VENEZUELA			
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT			
Surveyed by:	F-5 GROUND SILL		
Calculated by:			
Drawn by:			
Checked by:	Designed by:	Drawn by:	Date:
JAPAN INTERNATIONAL COOPERATION AGENCY			

JICA