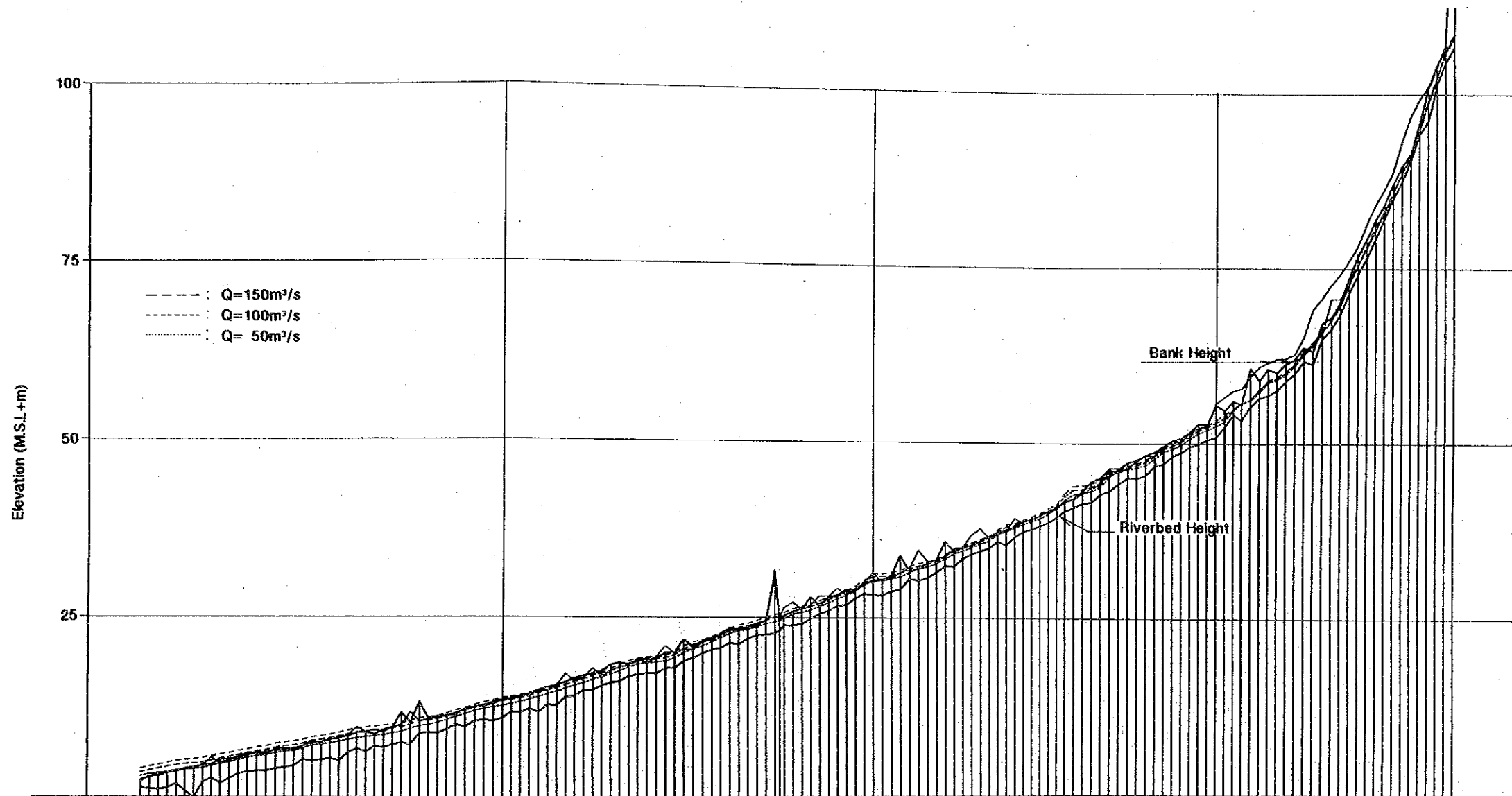


Area de Inundación de Crecida Probable

Fig. 3.3-2

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

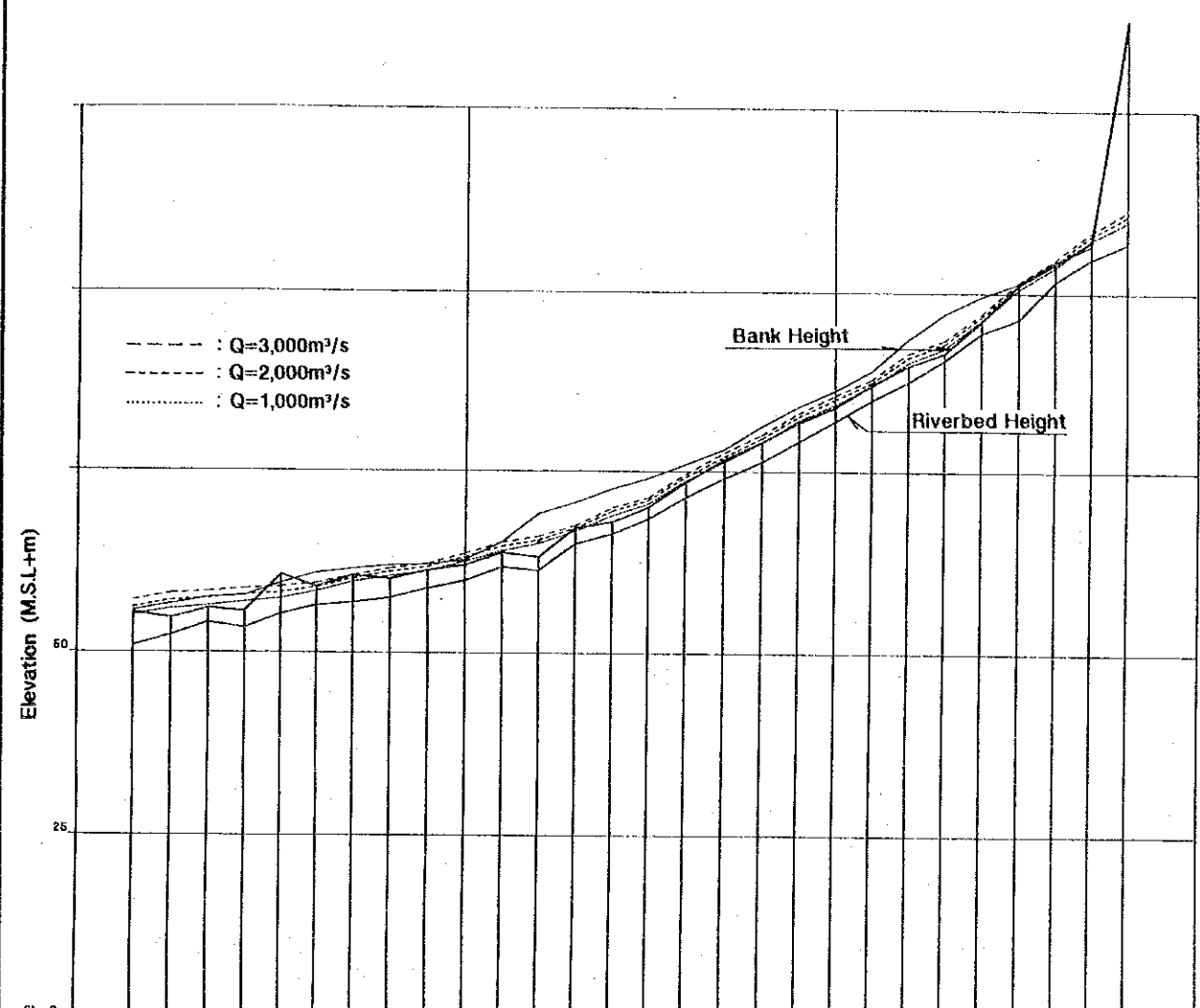
JAPAN INTERNATIONAL COOPERATION AGENCY



STATION NUMBER	UNIT DISTANCE (m)	ACCUMULATIVE DISTANCE (m)	PRESENT ELEVATION (m)	LOWEST RIVER BED	LEFT BANK	RIGHT BANK
0.000	0.00	0.00	1.40	1.40	2.40	2.40
0.500	500.0	500.0	1.15	1.15	2.80	2.80
1.000	1000.0	1000.0	1.08	1.08	3.00	3.22
1.500	1500.0	1500.0	1.00	1.00	3.40	3.60
2.000	2000.0	2500.0	0.92	0.92	3.80	4.00
2.500	2500.0	3000.0	0.84	0.84	4.20	4.40
3.000	3000.0	3500.0	0.76	0.76	4.60	4.80
3.500	3500.0	4000.0	0.68	0.68	5.00	5.20
4.000	4000.0	4500.0	0.60	0.60	5.40	5.60
4.500	4500.0	5000.0	0.52	0.52	5.80	6.00
5.000	5000.0	5500.0	0.44	0.44	6.20	6.40
5.500	5500.0	6000.0	0.36	0.36	6.60	6.80
6.000	6000.0	6500.0	0.28	0.28	7.00	7.20
6.500	6500.0	7000.0	0.20	0.20	7.40	7.60
7.000	7000.0	7500.0	0.12	0.12	7.80	8.00
7.500	7500.0	8000.0	0.04	0.04	8.20	8.40
8.000	8000.0	8500.0	0.00	0.00	8.60	8.80
8.500	8500.0	9000.0	0.00	0.00	9.00	9.20
9.000	9000.0	9500.0	0.00	0.00	9.40	9.60
9.500	9500.0	10000.0	0.00	0.00	9.80	10.00
10.000	10000.0	10500.0	0.00	0.00	10.20	10.40
10.500	10500.0	11000.0	0.00	0.00	10.60	10.80
11.000	11000.0	11500.0	0.00	0.00	11.00	11.20
11.500	11500.0	12000.0	0.00	0.00	11.40	11.60
12.000	12000.0	12500.0	0.00	0.00	11.80	12.00
12.500	12500.0	13000.0	0.00	0.00	12.20	12.40
13.000	13000.0	13500.0	0.00	0.00	12.60	12.80
13.500	13500.0	14000.0	0.00	0.00	13.00	13.20
14.000	14000.0	14500.0	0.00	0.00	13.40	13.60
14.500	14500.0	15000.0	0.00	0.00	13.80	14.00
15.000	15000.0	15500.0	0.00	0.00	14.20	14.40
15.500	15500.0	16000.0	0.00	0.00	14.60	14.80
16.000	16000.0	16500.0	0.00	0.00	15.00	15.20
16.500	16500.0	17000.0	0.00	0.00	15.40	15.60
17.000	17000.0	17500.0	0.00	0.00	15.80	16.00
17.500	17500.0	18000.0	0.00	0.00	16.20	16.40
18.000	18000.0	18500.0	0.00	0.00	16.60	16.80
18.500	18500.0	19000.0	0.00	0.00	17.00	17.20
19.000	19000.0	19500.0	0.00	0.00	17.40	17.60
19.500	19500.0	20000.0	0.00	0.00	17.80	18.00
20.000	20000.0	20500.0	0.00	0.00	18.20	18.40
20.500	20500.0	21000.0	0.00	0.00	18.60	18.80
21.000	21000.0	21500.0	0.00	0.00	19.00	19.20
21.500	21500.0	22000.0	0.00	0.00	19.40	19.60
22.000	22000.0	22500.0	0.00	0.00	19.80	20.00
22.500	22500.0	23000.0	0.00	0.00	20.20	20.40
23.000	23000.0	23500.0	0.00	0.00	20.60	20.80
23.500	23500.0	24000.0	0.00	0.00	21.00	21.20
24.000	24000.0	24500.0	0.00	0.00	21.40	21.60
24.500	24500.0	25000.0	0.00	0.00	21.80	22.00
25.000	25000.0	25500.0	0.00	0.00	22.20	22.40
25.500	25500.0	26000.0	0.00	0.00	22.60	22.80
26.000	26000.0	26500.0	0.00	0.00	23.00	23.20
26.500	26500.0	27000.0	0.00	0.00	23.40	23.60
27.000	27000.0	27500.0	0.00	0.00	23.80	24.00
27.500	27500.0	28000.0	0.00	0.00	24.20	24.40
28.000	28000.0	28500.0	0.00	0.00	24.60	24.80
28.500	28500.0	29000.0	0.00	0.00	25.00	25.20
29.000	29000.0	29500.0	0.00	0.00	25.40	25.60
29.500	29500.0	30000.0	0.00	0.00	25.80	26.00
30.000	30000.0	30500.0	0.00	0.00	26.20	26.40
30.500	30500.0	31000.0	0.00	0.00	26.60	26.80
31.000	31000.0	31500.0	0.00	0.00	27.00	27.20
31.500	31500.0	32000.0	0.00	0.00	27.40	27.60
32.000	32000.0	32500.0	0.00	0.00	27.80	28.00
32.500	32500.0	33000.0	0.00	0.00	28.20	28.40
33.000	33000.0	33500.0	0.00	0.00	28.60	28.80
33.500	33500.0	34000.0	0.00	0.00	29.00	29.20
34.000	34000.0	34500.0	0.00	0.00	29.40	29.60
34.500	34500.0	35000.0	0.00	0.00	29.80	30.00
35.000	35000.0	35500.0	0.00	0.00	30.20	30.40
35.500	35500.0	36000.0	0.00	0.00	30.60	30.80
36.000	36000.0	36500.0	0.00	0.00	31.00	31.20
36.500	36500.0	37000.0	0.00	0.00	31.40	31.60
37.000	37000.0	37500.0	0.00	0.00	31.80	32.00
37.500	37500.0	38000.0	0.00	0.00	32.20	32.40
38.000	38000.0	38500.0	0.00	0.00	32.60	32.80
38.500	38500.0	39000.0	0.00	0.00	33.00	33.20
39.000	39000.0	39500.0	0.00	0.00	33.40	33.60
39.500	39500.0	40000.0	0.00	0.00	33.80	34.00
40.000	40000.0	40500.0	0.00	0.00	34.20	34.40
40.500	40500.0	41000.0	0.00	0.00	34.60	34.80
41.000	41000.0	41500.0	0.00	0.00	35.00	35.20
41.500	41500.0	42000.0	0.00	0.00	35.40	35.60
42.000	42000.0	42500.0	0.00	0.00	35.80	36.00
42.500	42500.0	43000.0	0.00	0.00	36.20	36.40
43.000	43000.0	43500.0	0.00	0.00	36.60	36.80
43.500	43500.0	44000.0	0.00	0.00	37.00	37.20
44.000	44000.0	44500.0	0.00	0.00	37.40	37.60
44.500	44500.0	45000.0	0.00	0.00	37.80	38.00
45.000	45000.0	45500.0	0.00	0.00	38.20	38.40
45.500	45500.0	46000.0	0.00	0.00	38.60	38.80
46.000	46000.0	46500.0	0.00	0.00	39.00	39.20
46.500	46500.0	47000.0	0.00	0.00	39.40	39.60
47.000	47000.0	47500.0	0.00	0.00	39.80	40.00
47.500	47500.0	48000.0	0.00	0.00	40.20	40.40
48.000	48000.0	48500.0	0.00	0.00	40.60	40.80
48.500	48500.0	49000.0	0.00	0.00	41.00	41.20
49.000	49000.0	49500.0	0.00	0.00	41.40	41.60
49.500	49500.0	50000.0	0.00	0.00	41.80	42.00
50.000	50000.0	50500.0	0.00	0.00	42.20	42.40
50.500	50500.0	51000.0	0.00	0.00	42.60	42.80
51.000	51000.0	51500.0	0.00	0.00	43.00	43.20
51.500	51500.0	52000.0	0.00	0.00	43.40	43.60
52.000	52000.0	52500.0	0.00	0.00	43.80	44.00
52.500	52500.0	53000.0	0.00	0.00	44.20	44.40
53.000	53000.0	53500.0	0.00	0.00	44.60	44.80
53.500	53500.0	54000.0	0.00	0.00	45.00	45.20
54.000	54000.0	54500.0	0.00	0.00	45.40	45.60
54.500	54500.0	55000.0	0.00	0.00	45.80	46.00
55.000	55000.0	55500.0	0.00	0.00	46.20	46.40
55.500	55500.0	56000.0	0.00	0.00	46.60	46.80
56.000	56000.0	56500.0	0.00	0.00	47.00	47.20
56.500	56500.0	57000.0	0.00	0.00	47.40	47.60
57.000	57000.0	57500.0	0.00	0.00	47.80	48.00
57.500	57500.0	58000.0	0.00	0.00	48.20	48.40
58.000	58000.0	58500.0	0.00	0.00	48.60	48.80
58.500	58500.0	59000.0	0.00	0.00	49.00	49.20
59.000	59000.0	59500.0	0.00	0.00	49.40	49.60
59.500	59500.0	60000.0	0.00	0.00	49.80	50.00
60.000	60000.0	60500.0	0.00	0.00	50.20	50.40
60.500	60500.0	61000.0	0.00	0.00	50.60	50.80
61.000	61000.0	61500.0	0.00	0.00	51.00	51.20
61.500	61500.0	62000.0	0.00	0.00	51.40	51.60
62.000	62000.0	62500.0	0.00	0.00	51.80	52.00
62.500	62500.0	63000.0	0.00	0.00	52.20	52.40
63.000	63000.0	63500.0	0.00	0.00	52.60	52.80
63.500	63500.0	64000.0	0.00	0.00	53.00	53.20
64.000	64000.0	64500.0	0.00	0.00	53.40	53.60
64.500	64500.0	65000.0	0.00	0.00	53.80	54.00
65.000	65000.0	65500.0	0.00	0.00	54.20	54.40
65.500	65500.0	66000.0	0.00	0.00	54.60	54.80
66.000	66000.0	66500.0	0.00	0.00	55.00	55.20
66.500	66500.0	67000.0	0.00	0.00	55.40	55.60
67.000	67000.0	67500.0	0.00	0.00	55.80	56.00
67.500	67500.0	68000.0	0.00	0.00	56.20	56.40
68.000	68000.0	68500.0	0.00	0.00	56.60	56.80
68.500	68500.0	69000.0	0.00	0.00	57.00	57.20
69.000	69000.0	69500.0	0.00	0.00	57.40	57.60
69.500	69500.0	70000.0	0.00	0.00	57.80	58.00
70.000	70000.0	70500.0	0.00	0.00	58.20	58.40
70.500	70500.0	71000.0	0.00	0.00	58.60	58.80
71.000	71000.0	71500.0	0.00	0.00	59.00	59.20
71.500	71500.0	72000.0	0.00	0.00	59.40	59.60
72.000	72000.0	72500.0	0.00	0.00	59.80	60.00
72.500	72500.0	73000.0	0.00	0.00	60.20	60.40
73.000	73000.0	73500.0	0.00	0.00	60.60	60.80
73.500	73500.0	74000.0	0.00	0.00	61.00	61.20
74.000	74000.0	74500.0	0.00	0.00	61.40	61.60
74.500	74500.0	75000.0	0.00	0.00	61.80	62.00
75.000	75000.0	75500.0	0.00	0.00	62.20	62.40

STUDY ON CHAMA RIVER BASIN
 CONSERVATION PROJECT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Resultado de Cálculo No Uniforme de
 Desembocadura a El Vigía
 Fig. 3.3-3



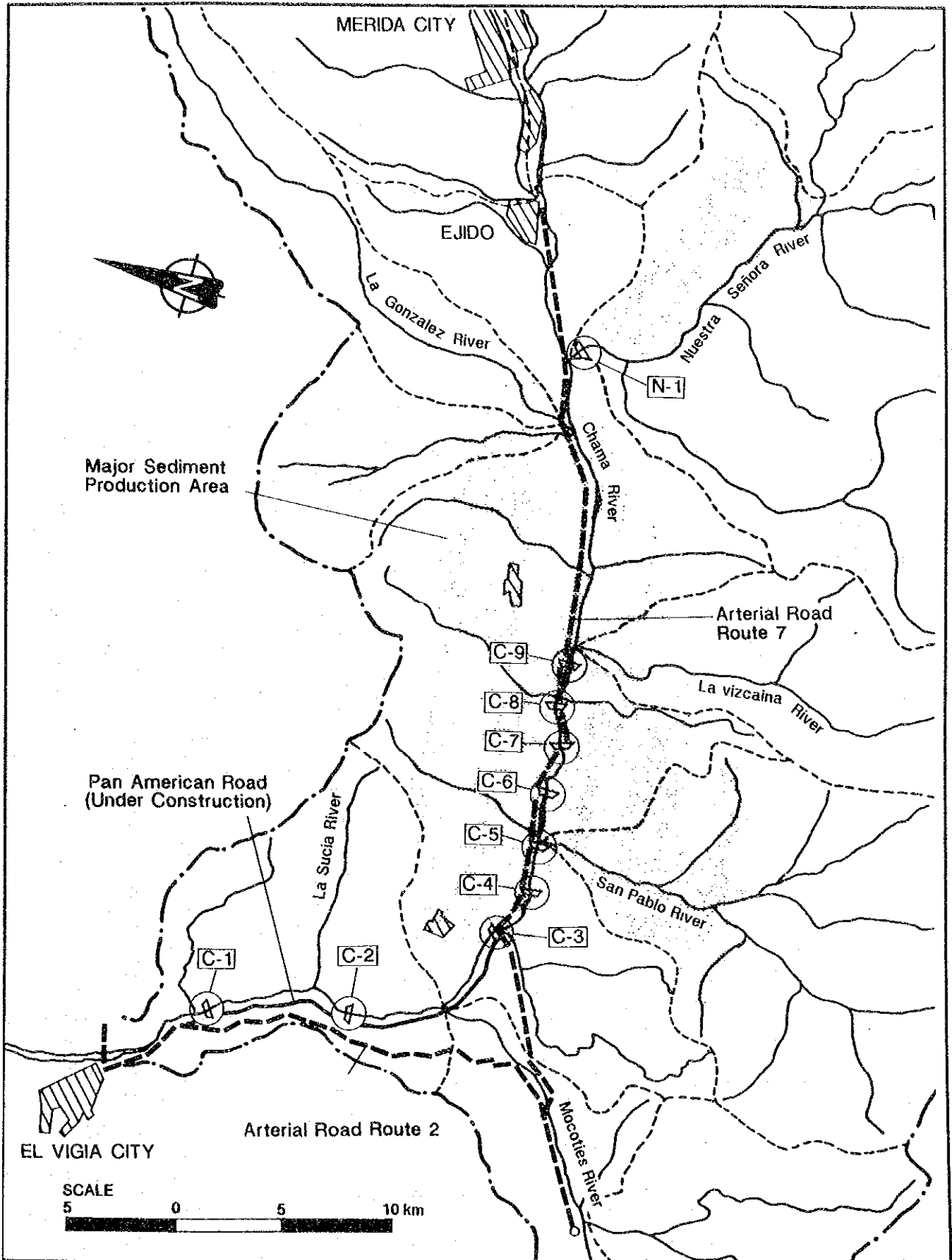
STATION NUMBER	UNIT DISTANCE (L.S.)	ACCUMULATIVE DISTANCE (L.S.)	PRESENT ELEVATION (L.S.)	LEFT BANK	RIGHT BANK
65,000	500.0	500.0	50.81	56.80	55.36
66,000	500.0	1000.0	52.35	58.20	54.80
67,000	500.0	1500.0	53.97	57.40	56.60
68,000	500.0	2000.0	55.24	57.70	58.40
69,000	500.0	2500.0	56.16	58.10	60.40
70,000	500.0	3000.0	56.36	58.40	62.00
71,000	500.0	3500.0	56.70	58.70	63.60
72,000	500.0	4000.0	57.44	59.00	65.00
73,000	500.0	4500.0	58.78	59.00	66.20
74,000	500.0	5000.0	59.00	59.50	67.00
75,000	500.0	5500.0	61.87	60.10	68.00
76,000	500.0	6000.0	61.20	60.00	69.00
77,000	500.0	6500.0	64.84	60.60	70.00
78,000	500.0	7000.0	66.25	62.00	71.00
79,000	500.0	7500.0	66.36	64.00	72.00
80,000	500.0	8000.0	71.39	65.00	73.00
81,000	500.0	8500.0	74.01	65.00	74.00
82,000	500.0	9000.0	76.22	61.20	75.00
83,000	500.0	9500.0	76.08	63.00	76.00
84,000	500.0	10000.0	81.00	66.10	78.00
85,000	500.0	10500.0	84.40	66.00	80.00
86,000	500.0	11000.0	87.33	69.00	82.00
87,000	500.0	11500.0	90.26	64.70	81.00
88,000	500.0	12000.0	94.08	66.10	82.70
89,000	500.0	12500.0	96.01	100.00	100.70
90,000	500.0	13000.0	101.10	103.00	103.00
91,000	500.0	13500.0	104.30	106.10	106.70
92,000	500.0	14000.0	108.42	108.20	107.00

Resultado de Cálculo No Uniforme en el Tramo de Dique Existente cerca de El Vigía

Fig. 3.3-4

STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY



Mapa de Ubicación para Plan Propuesto de Control de Sedimentos de Toda la Cuenca Fig. 5.1-1

STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT
 JAPAN INTERNATIONAL COOPERATION AGENCY

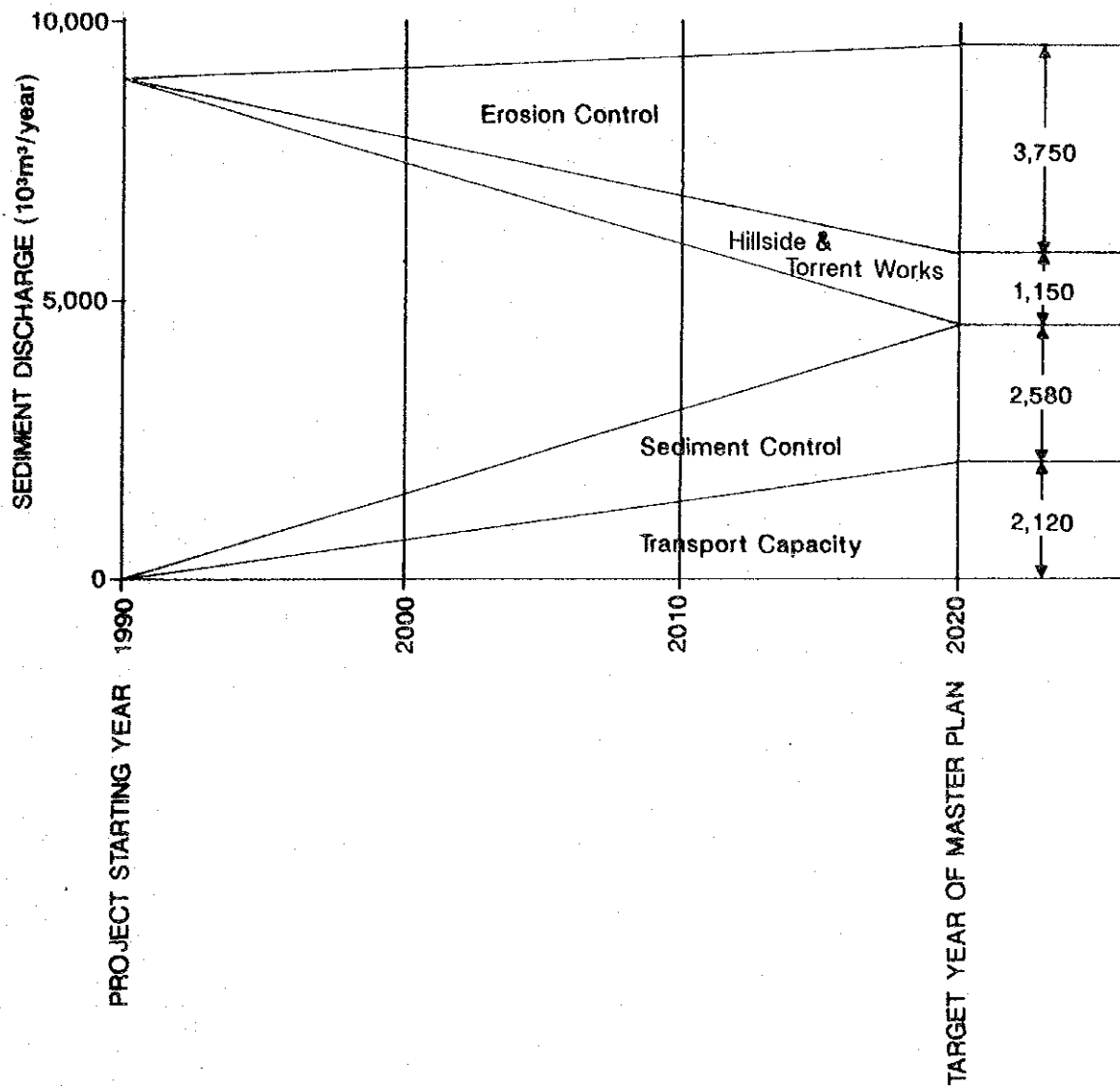


Diagrama Esquemático de Plan de Control de Sedimentos

Fig. 5.1-2

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

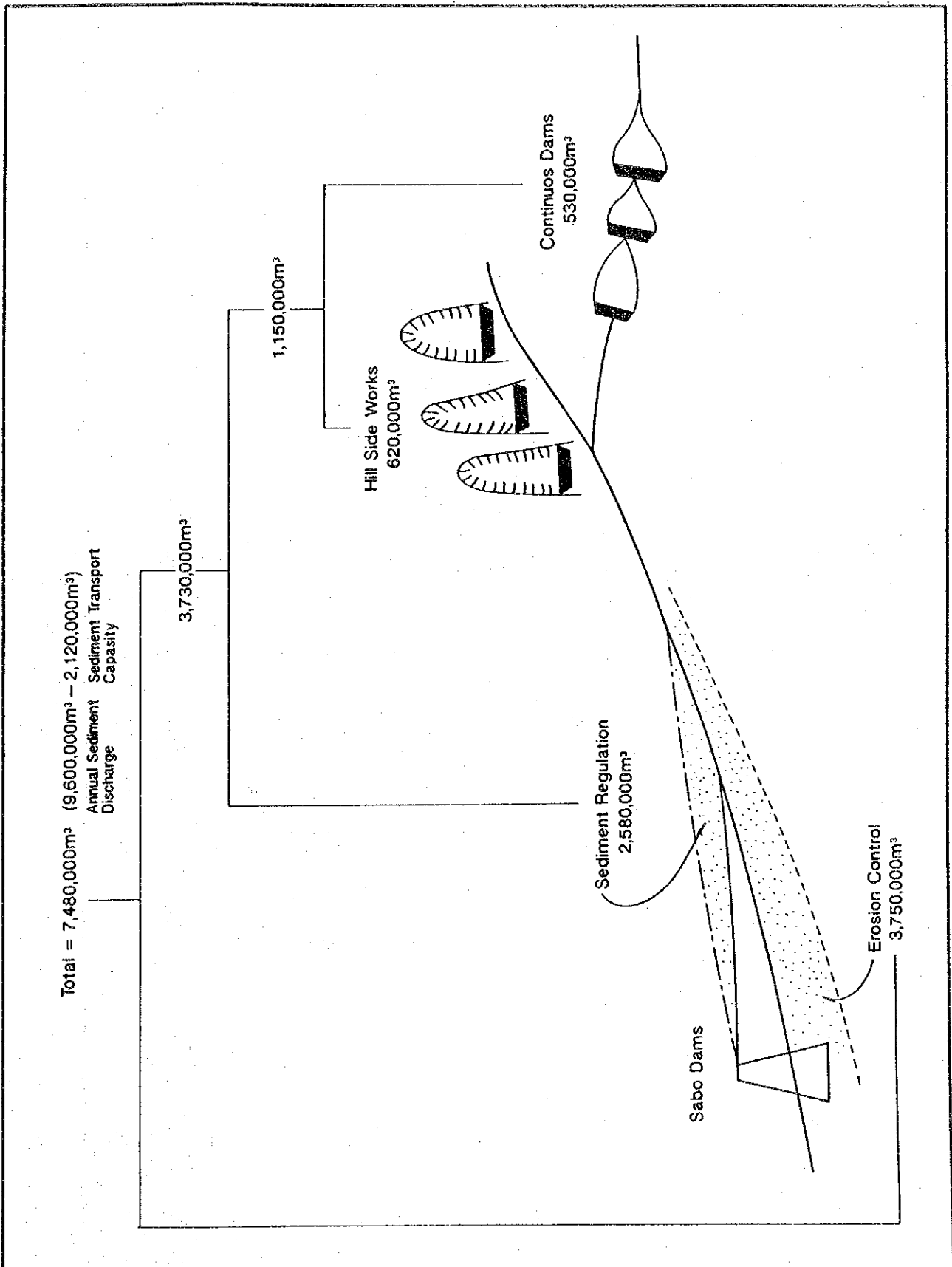
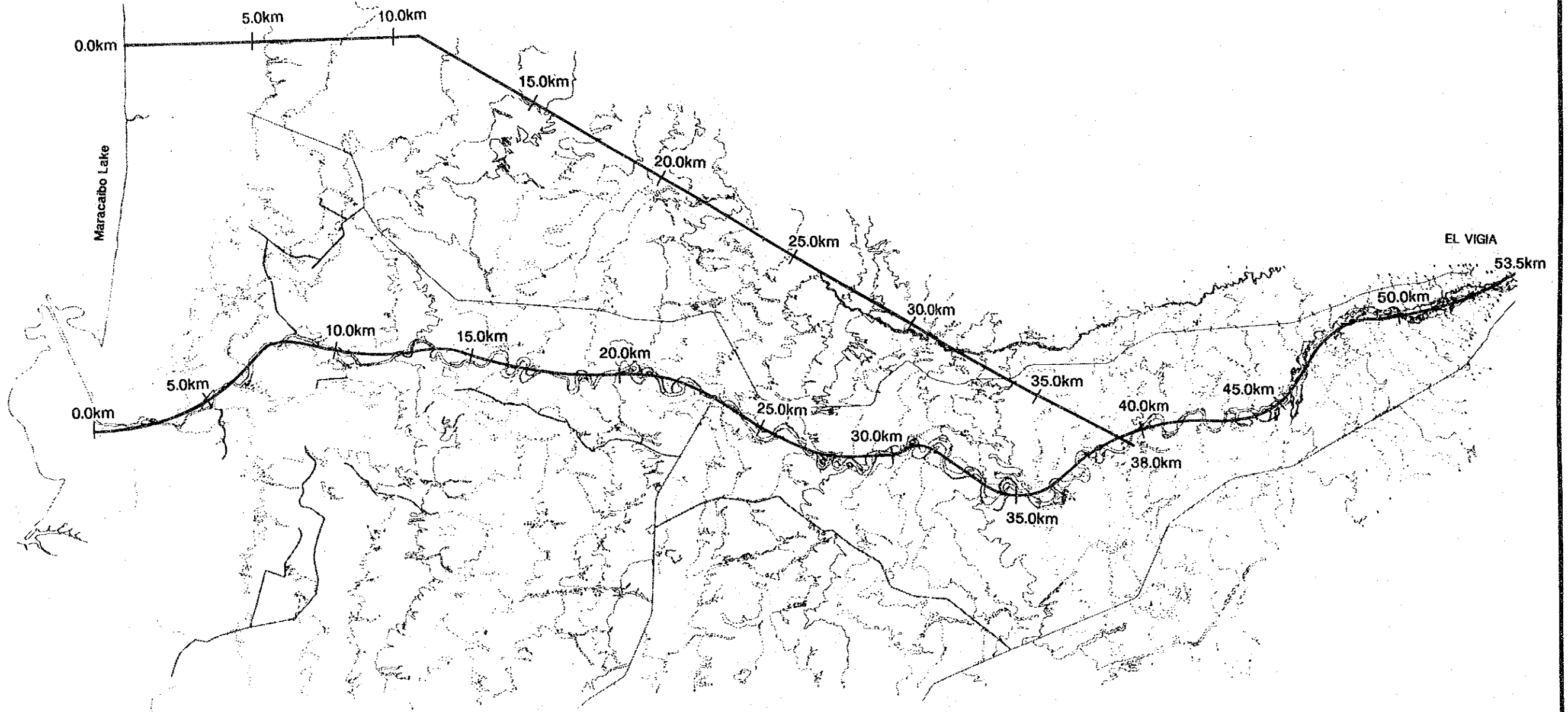


Ilustración Esquemática de Plan de Control de Sedimentos

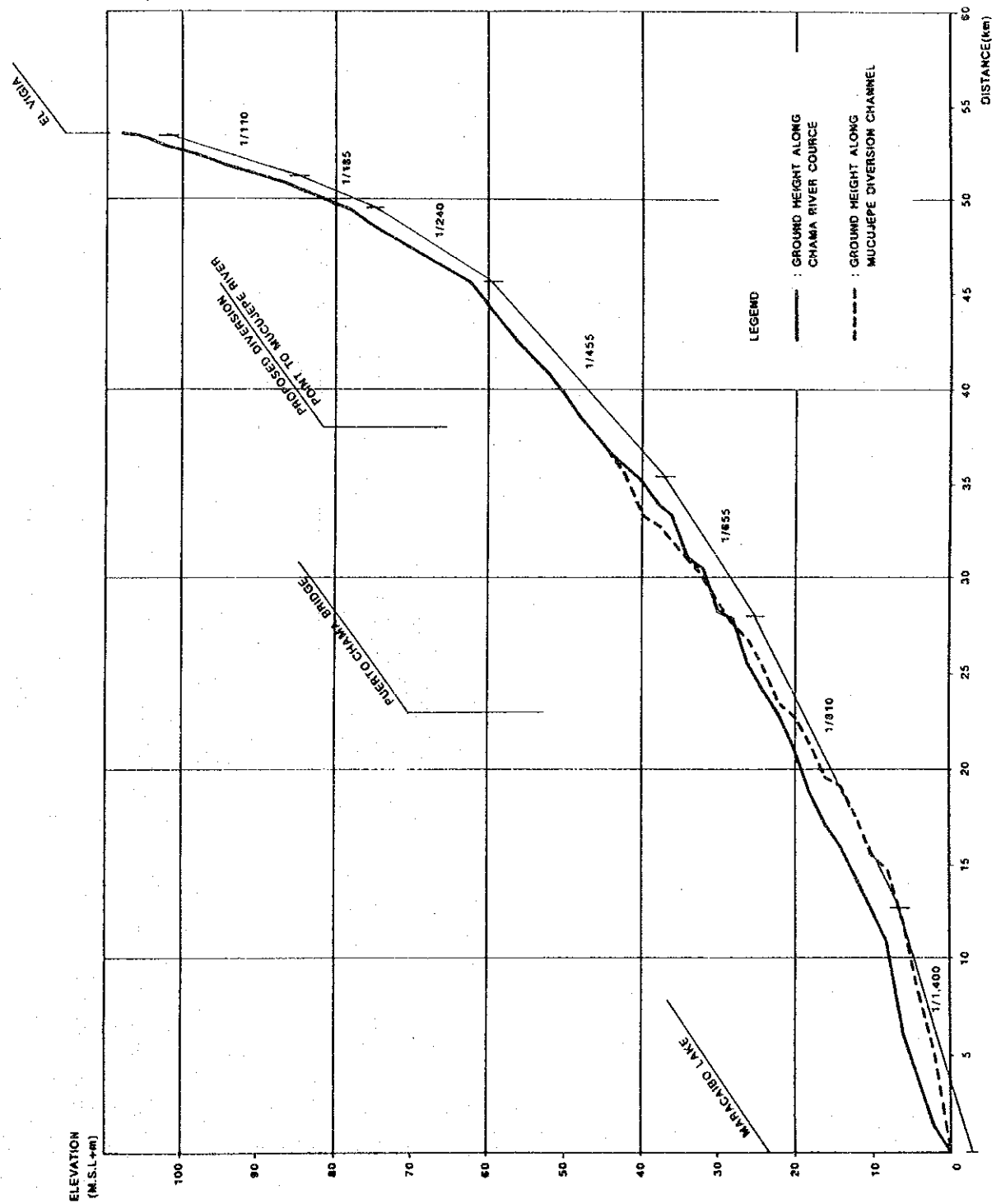
Fig. 5.1-3

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY



STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	Línea Central de Meandro del Río Chama y Alineamiento Propuesto de Canal de Derivación Mucujepe Fig. 5.1-4
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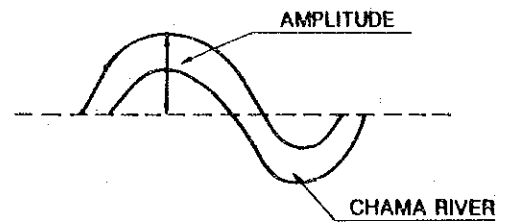
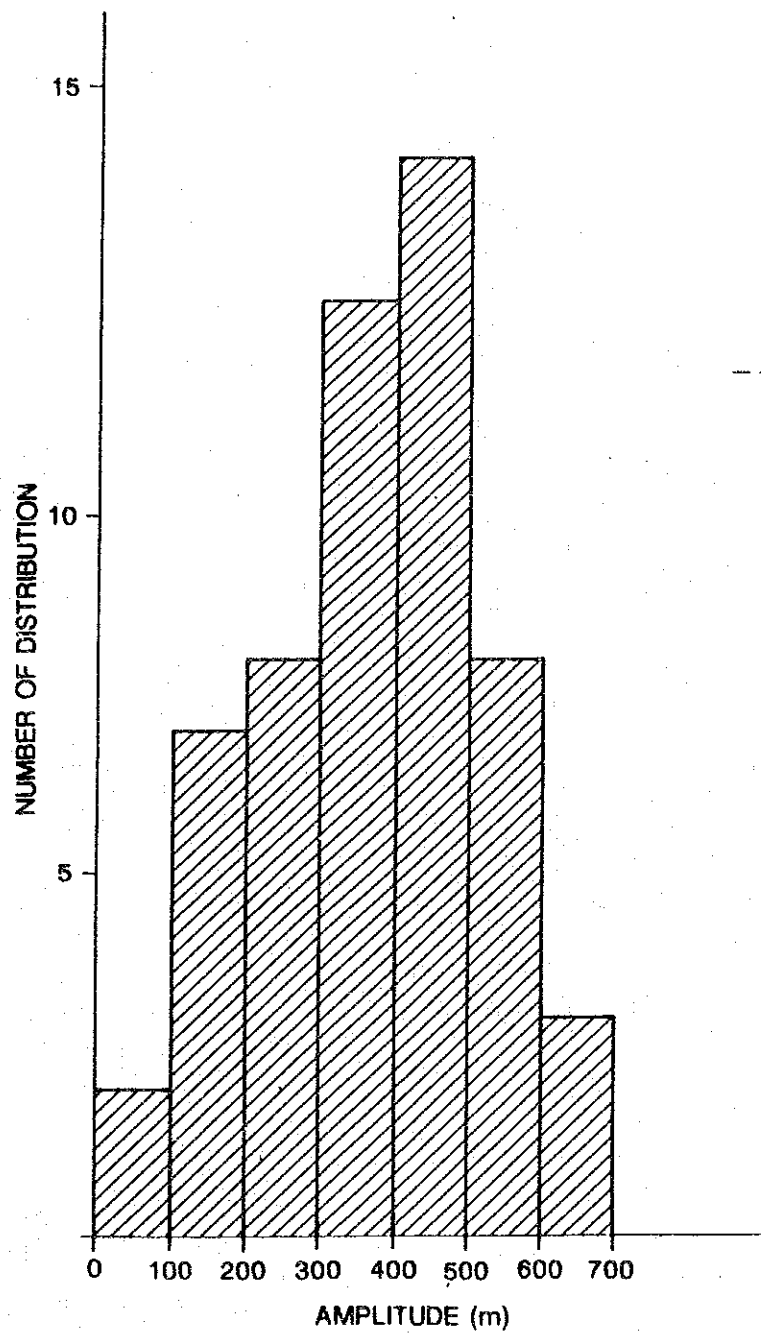


Perfiles Longitudinales del Río Chama y del Canal de Derivación de Mucujeje

Fig. 5.1-5

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

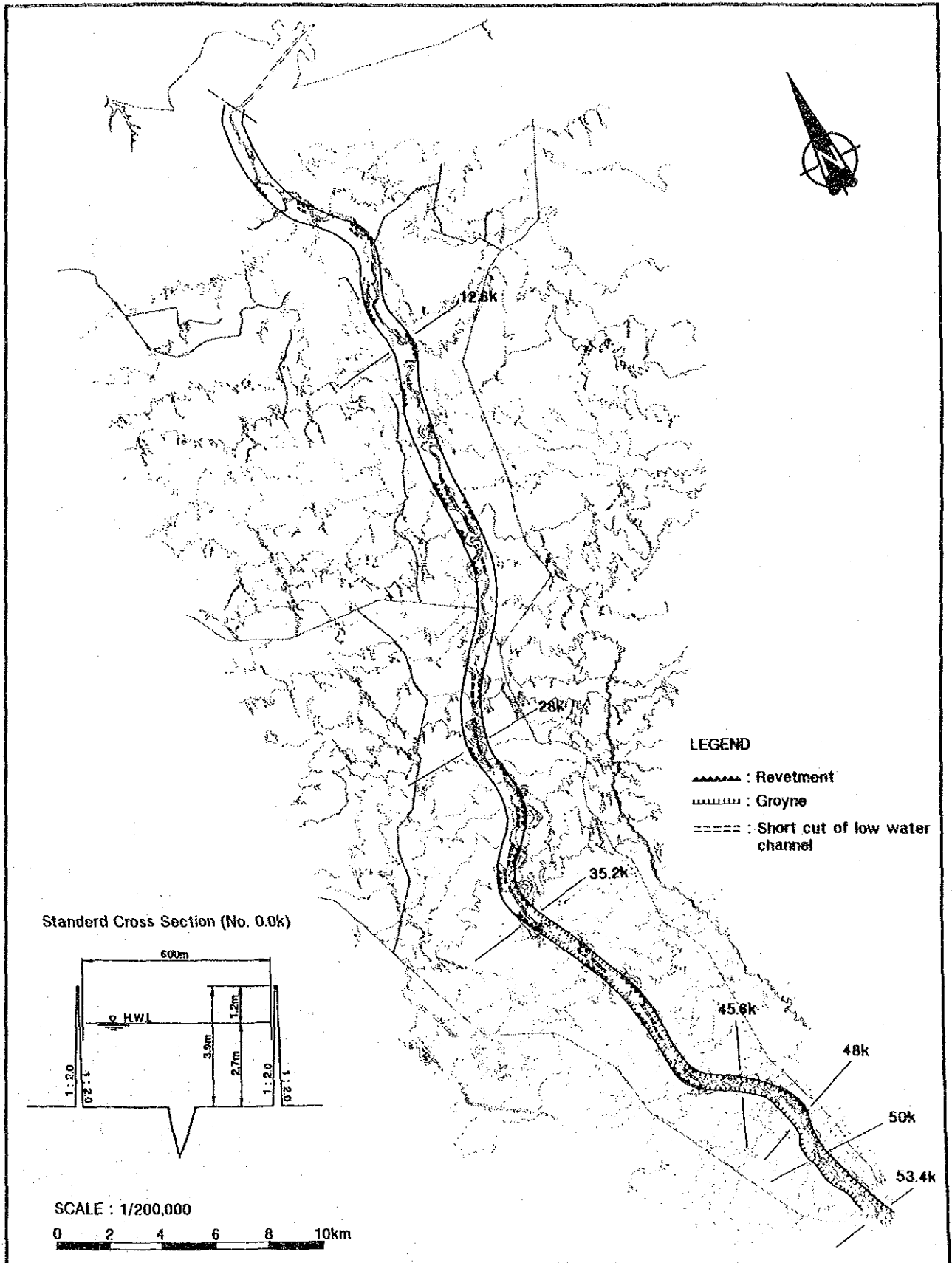


Distribución de Amplitudes de Meandro en Tramos Inferiores del Río Chama

Fig. 5.1-6

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

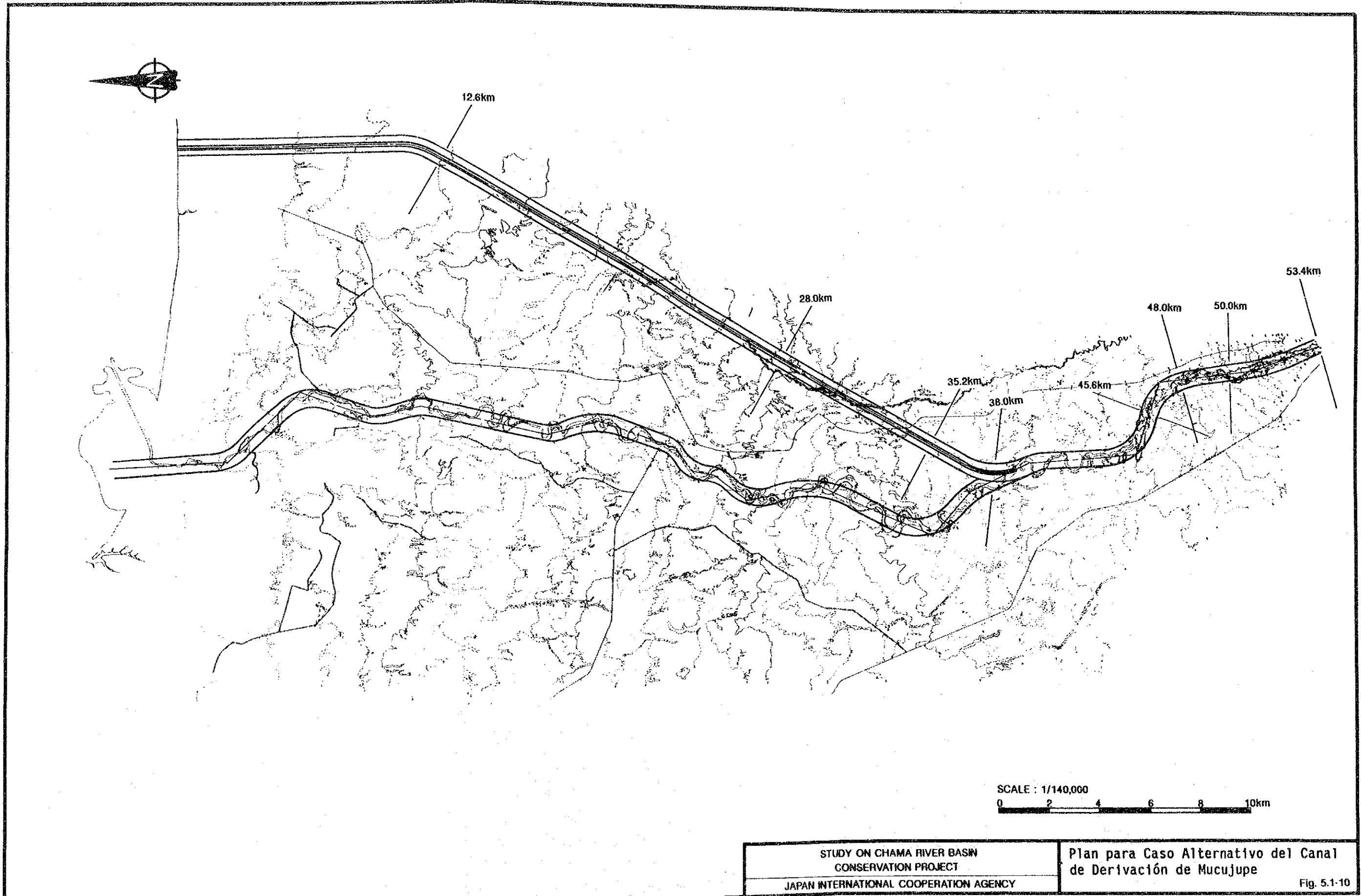


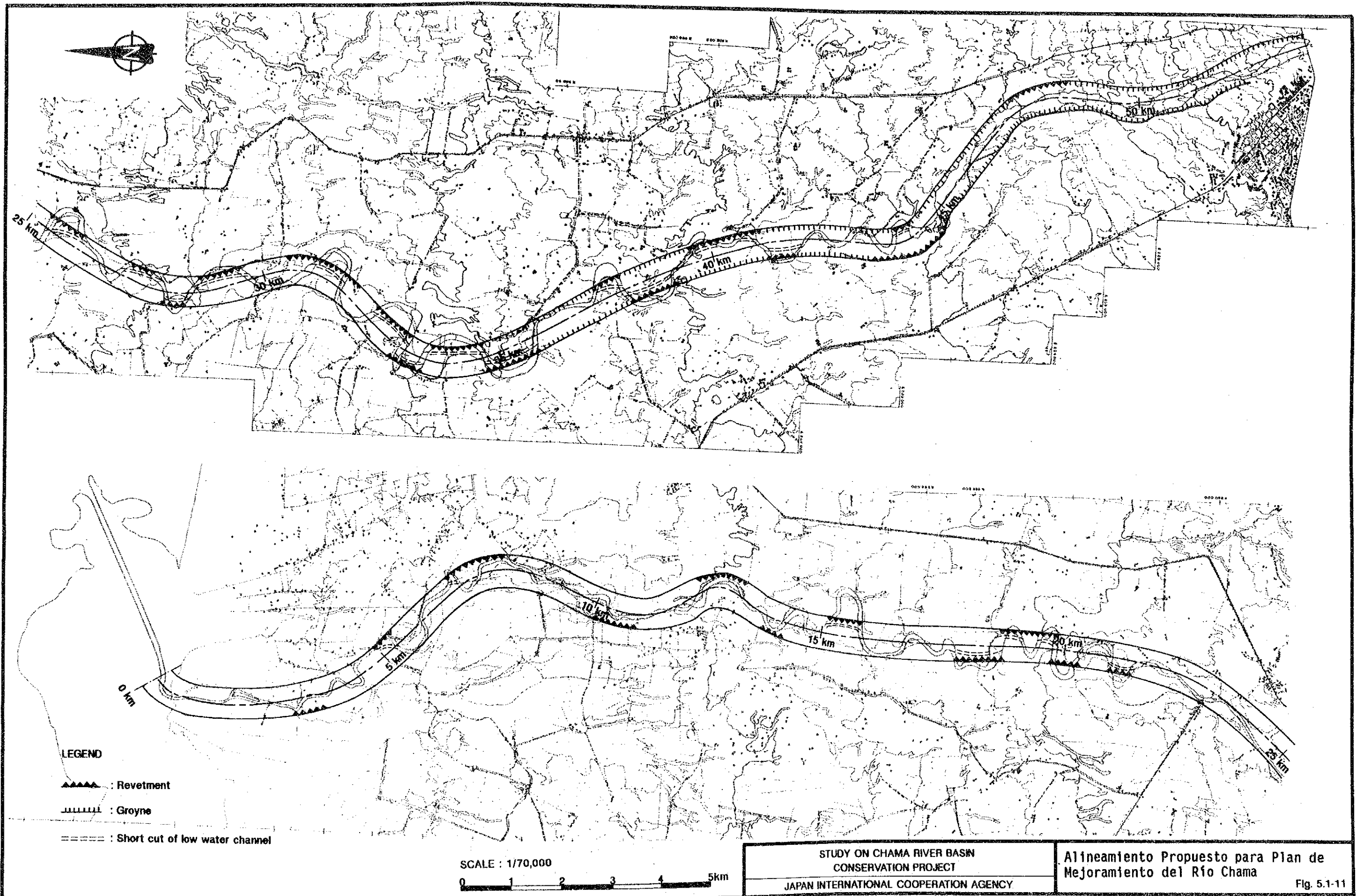
Caso Alternativo No. 2 para Plan de
Mejoramiento del Río Chama

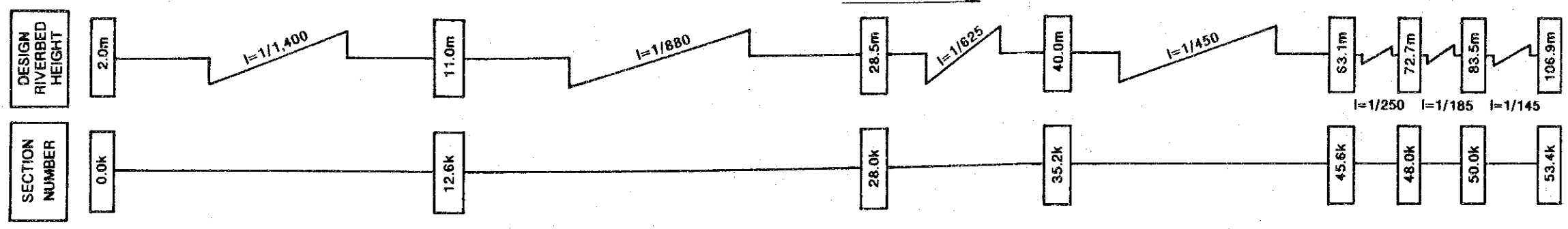
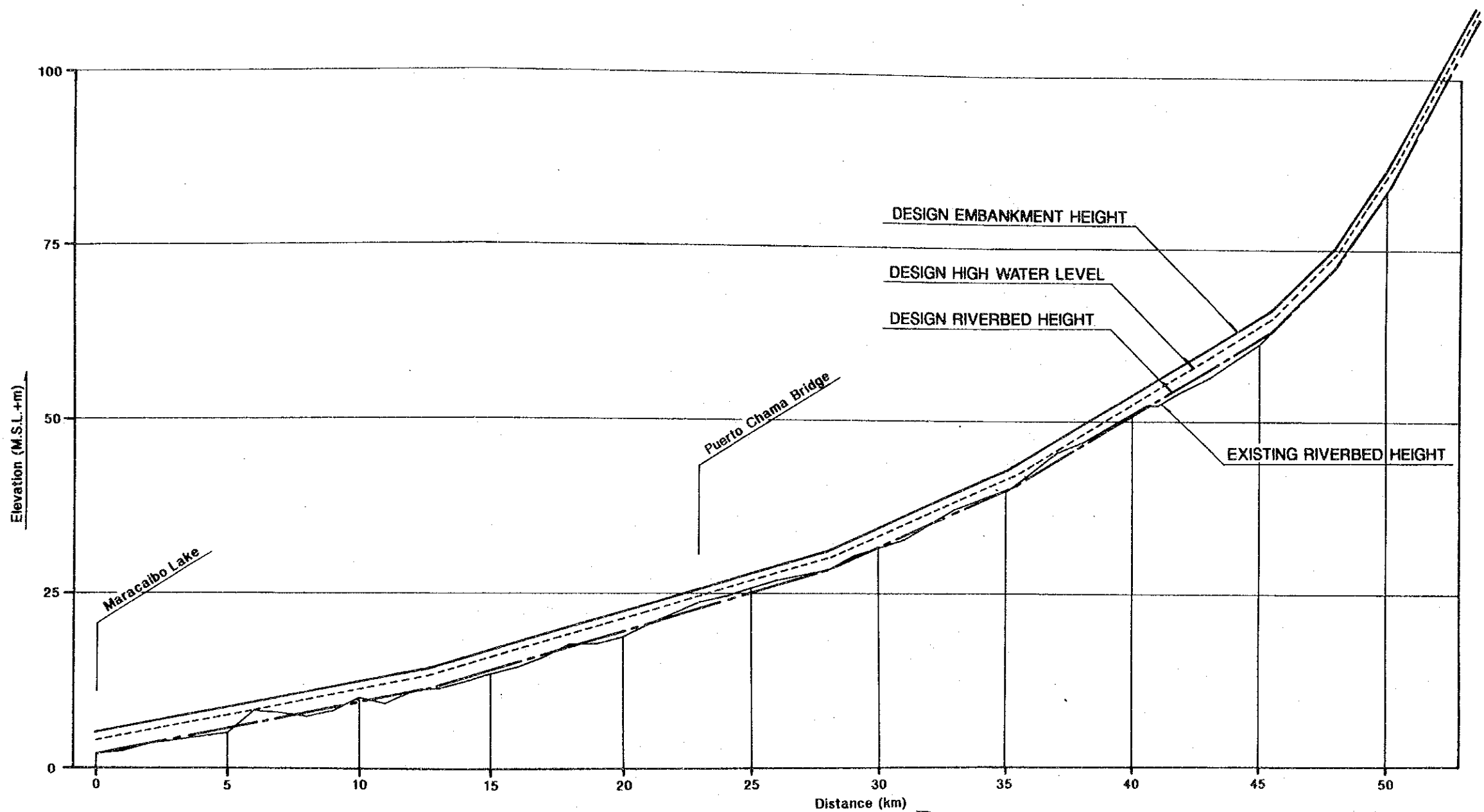
Fig.5.1-8

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

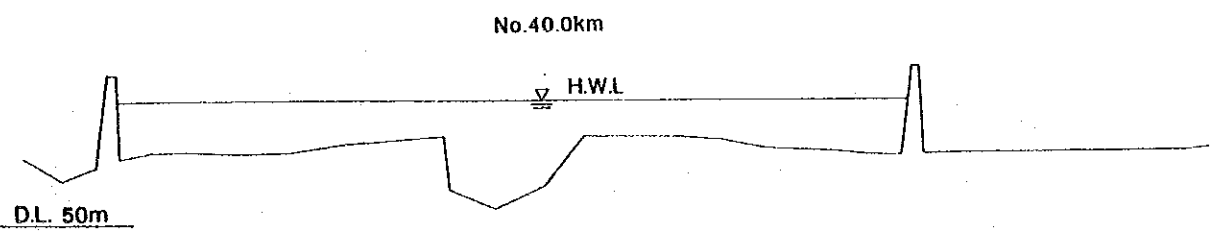
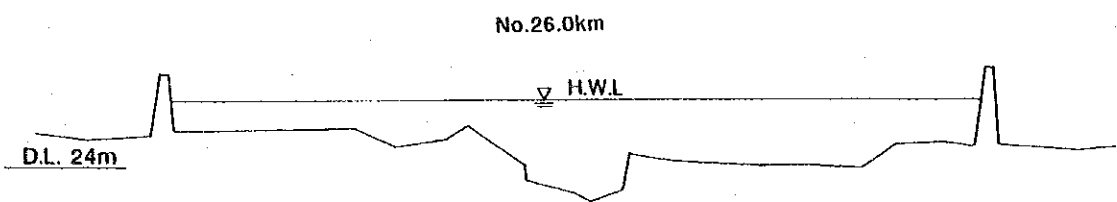
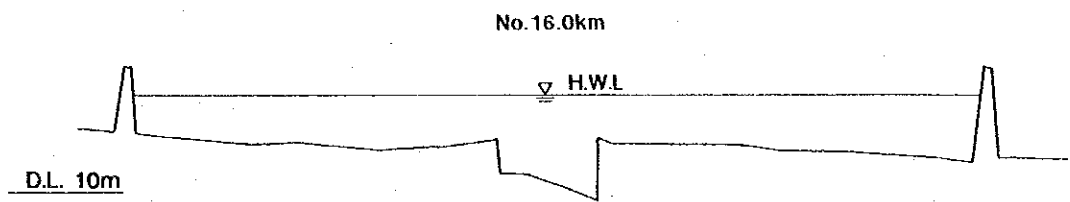
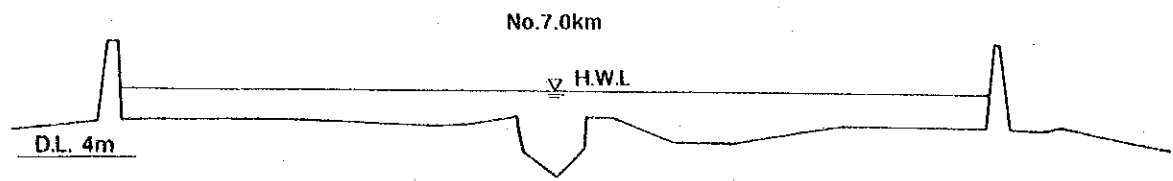






STUDY ON CHAMA RIVER BASIN
 CONSERVATION PROJECT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Perfil Longitudinal Propuesto para
 Plan de Mejoramiento del Río Chama
 Fig. 5.1-12



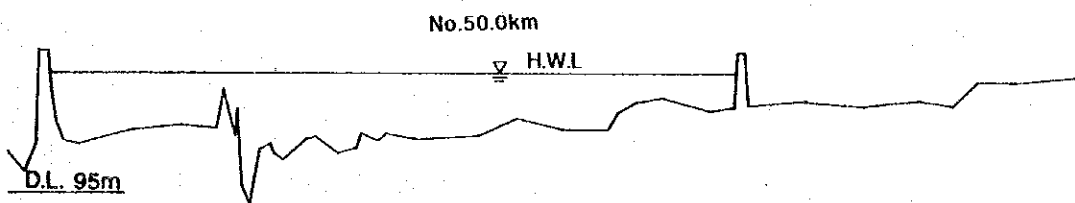
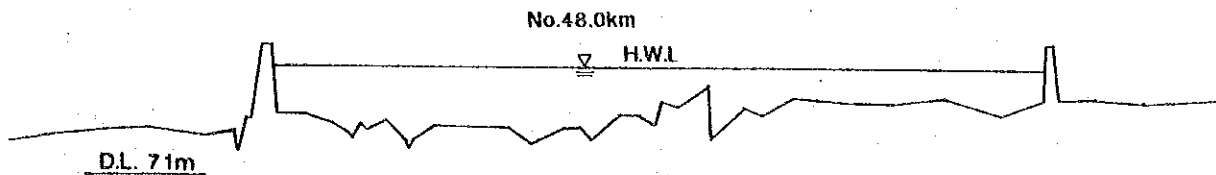
Note :
H.W.L. : Design High Water Level

Secciones Transversales Típicas para Plan de Mejoramiento del Río Chama

Fig. 5.1-13 (1/2)

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY



Note :
H.W.L : Design High Water Level

Secciones Transversales Típicas para Plan de
Mejoramiento del Río Chama

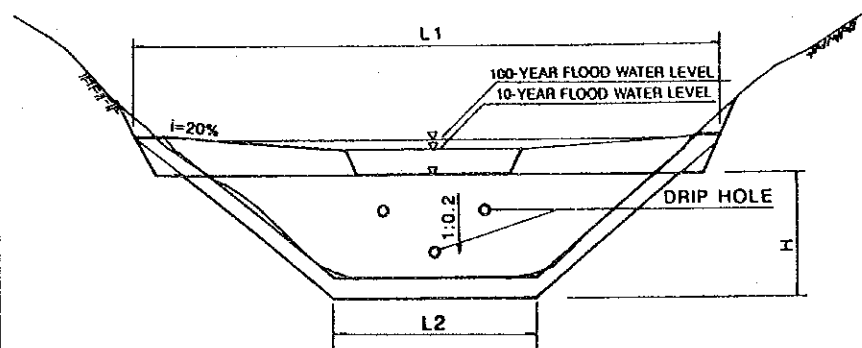
Fig. 5-1-13 (2/2)

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

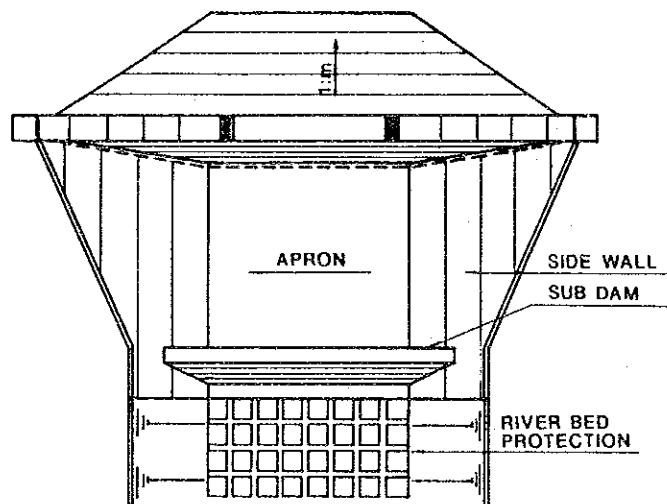
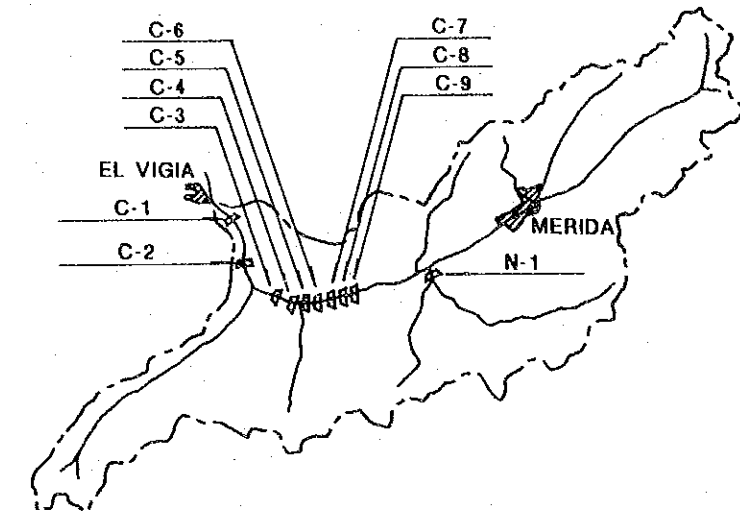
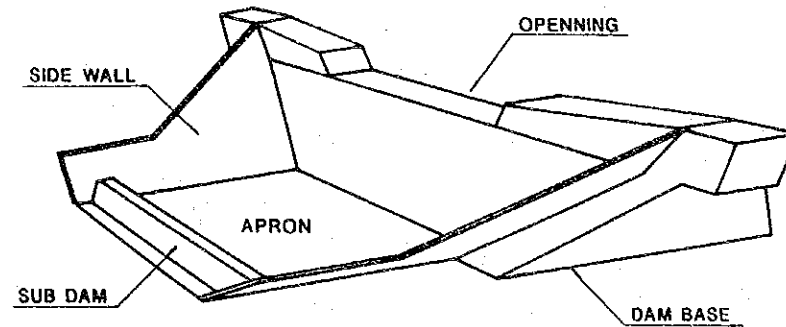
JAPAN INTERNATIONAL COOPERATION AGENCY

TYPICAL SABO DAM

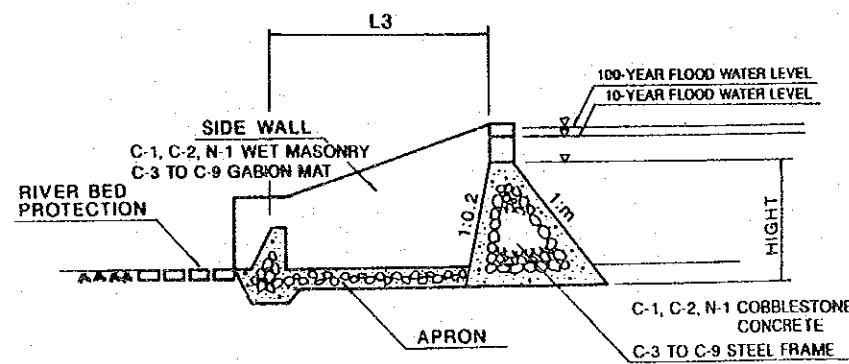
LOCATION OF PROPOSED SABO DAMS



FRONT VIEW



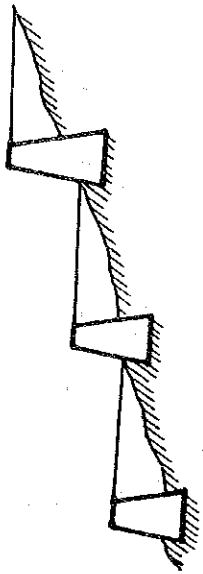
PLAN



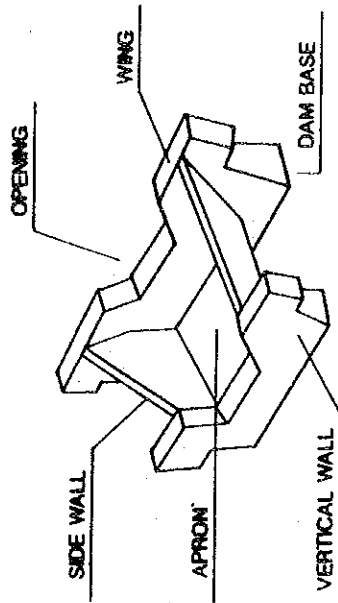
LONGITUDINAL PROFILE

Major Dimensions of Sabo Dam

Dam Name	Name of River	Height (m)	m	L1 (m)	L2 (m)	L3 (m)	Dam Volume (m ³)
C-1	Chama River	22	1.10	170	100	50	62,500
C-2	Chama River	22	1.10	120	60	50	40,500
C-3	Chama River	11	0.75	150	80	45	17,100
C-4	Chama River	11	0.75	200	150	45	27,000
C-5	Chama River	9	0.70	230	70	45	14,600
C-6	Chama River	11	0.75	200	130	45	25,100
C-7	Chama River	11	0.75	200	100	45	22,000
C-8	Chama River	11	0.75	150	80	45	17,100
C-9	Chama River	11	0.75	250	120	45	27,200
N-1	Nuestra Senora	22	1.10	180	120	30	65,000



CONTINUOUS DAM



OPENING

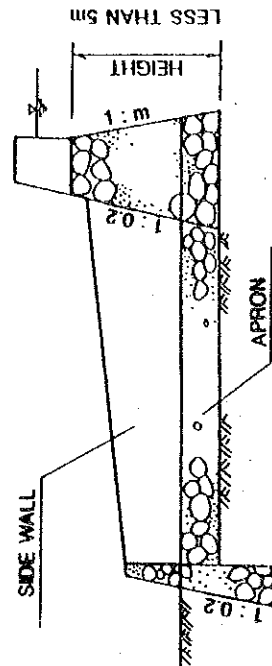
WING

DAM BASE

SIDE WALL

APRON

VERTICAL WALL



HEIGHT

1 : m

1 : 0.2

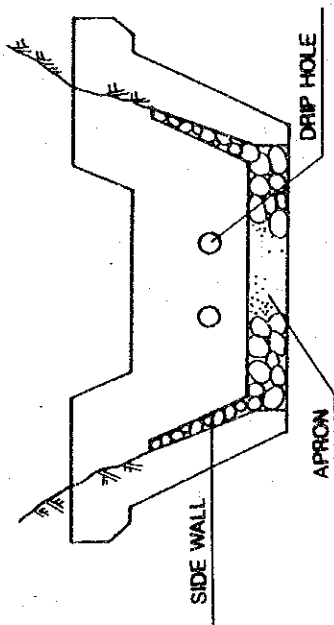
1 : 0.2

1 : 0.2

SIDE WALL

APRON

LONGITUDINAL PROFILE

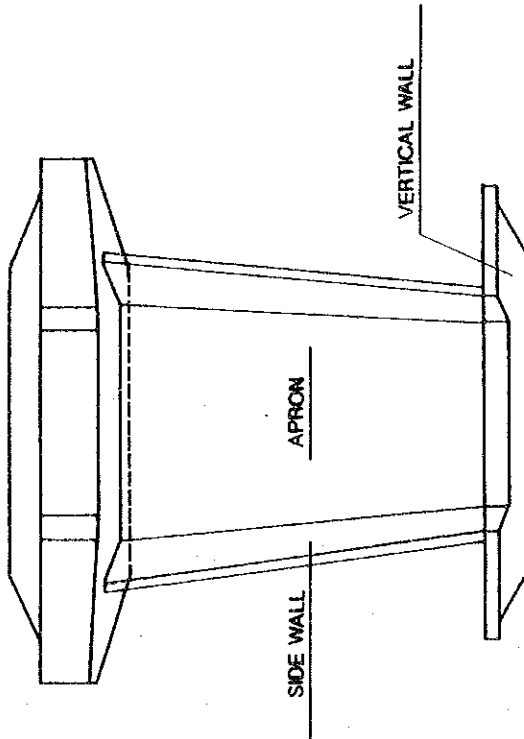


FRONT VIEW

DRIP HOLE

APRON

SIDE WALL



VERTICAL WALL

APRON

SIDE WALL

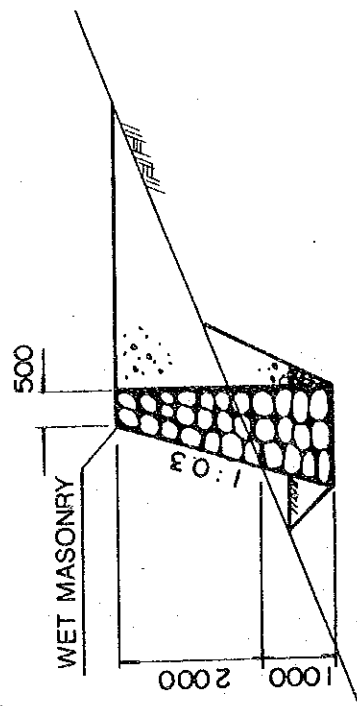
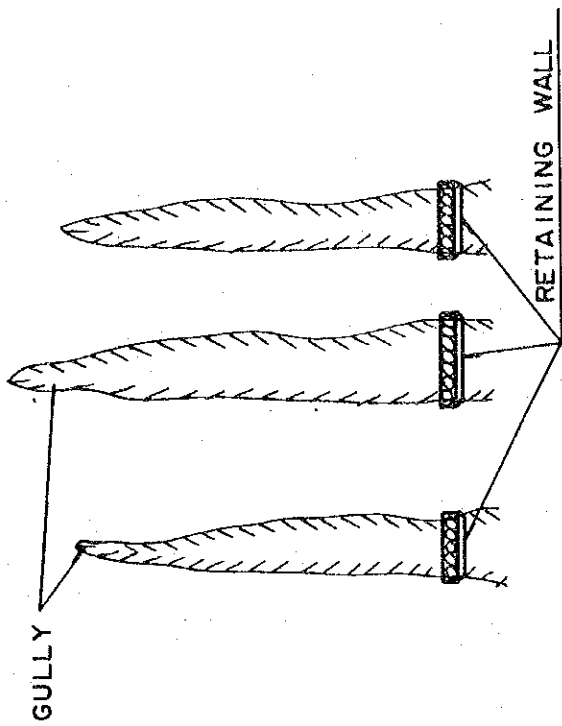
PLAN

Estructura Típica de Presa Continua

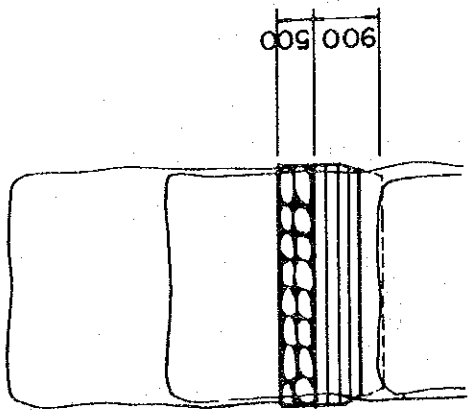
Fig. 5.1-15

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

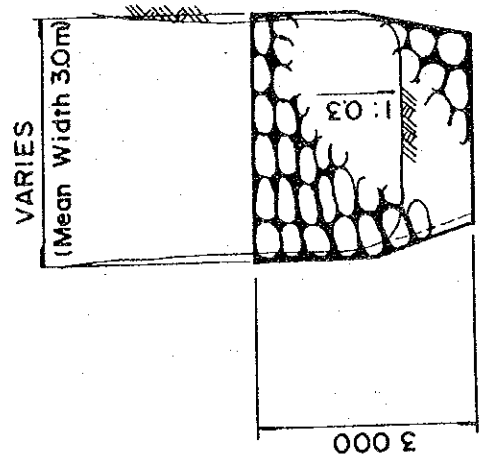
JAPAN INTERNATIONAL COOPERATION AGENCY



TYPICAL CROSS SECTION



PLAN



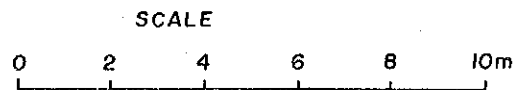
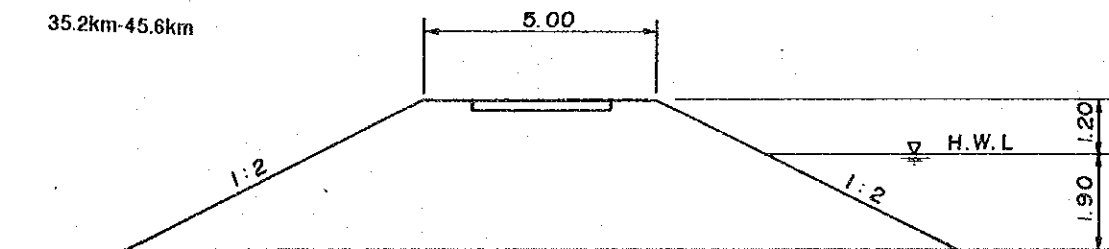
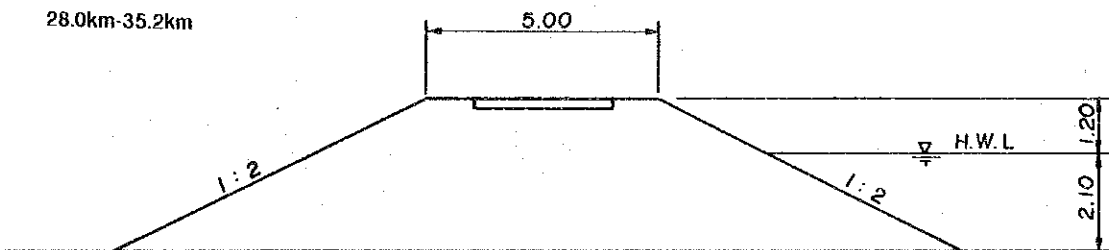
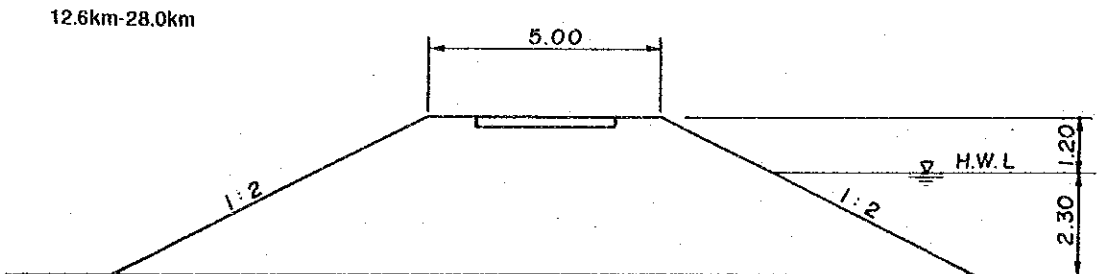
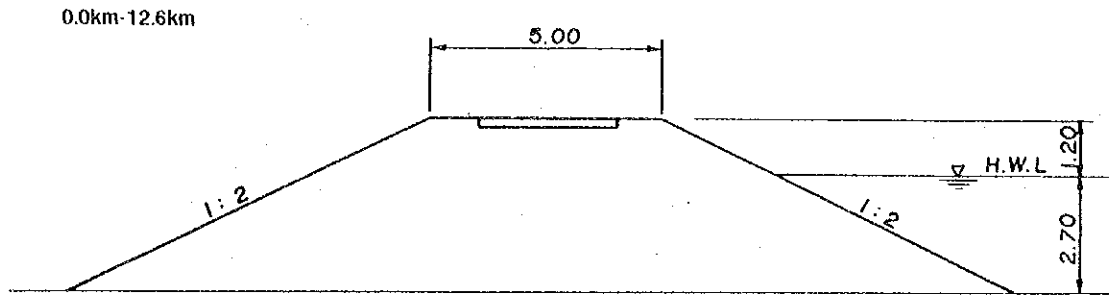
FRONT VIEW

Características de Muro de Retención para
Prevenición de Cárcava

Fig. 5.1-16

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

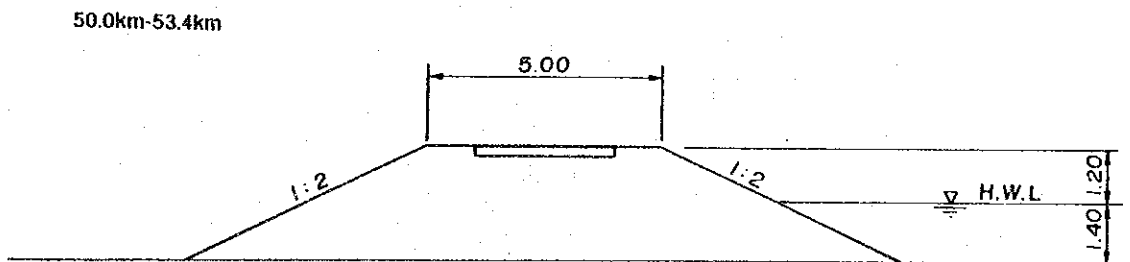
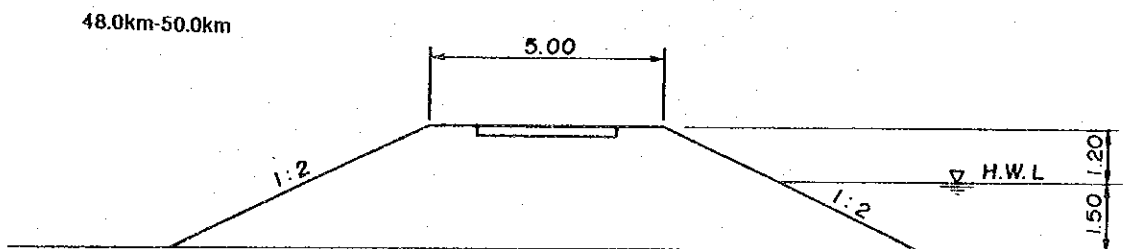
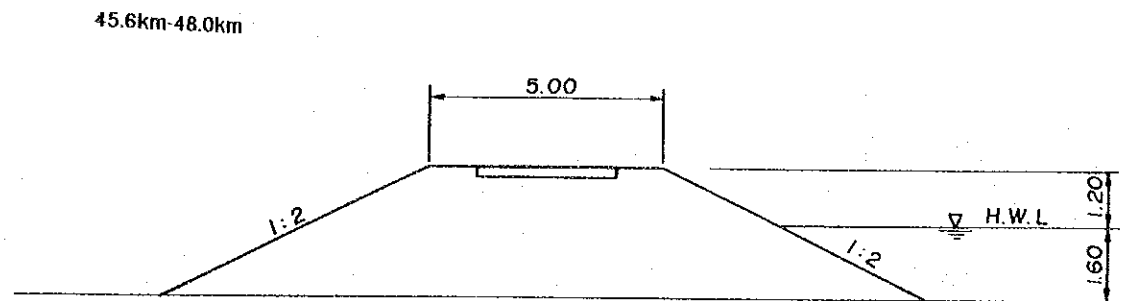


Secciones Transversales Típicas de Dique

Fig. 5.1-17 (1/2)

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

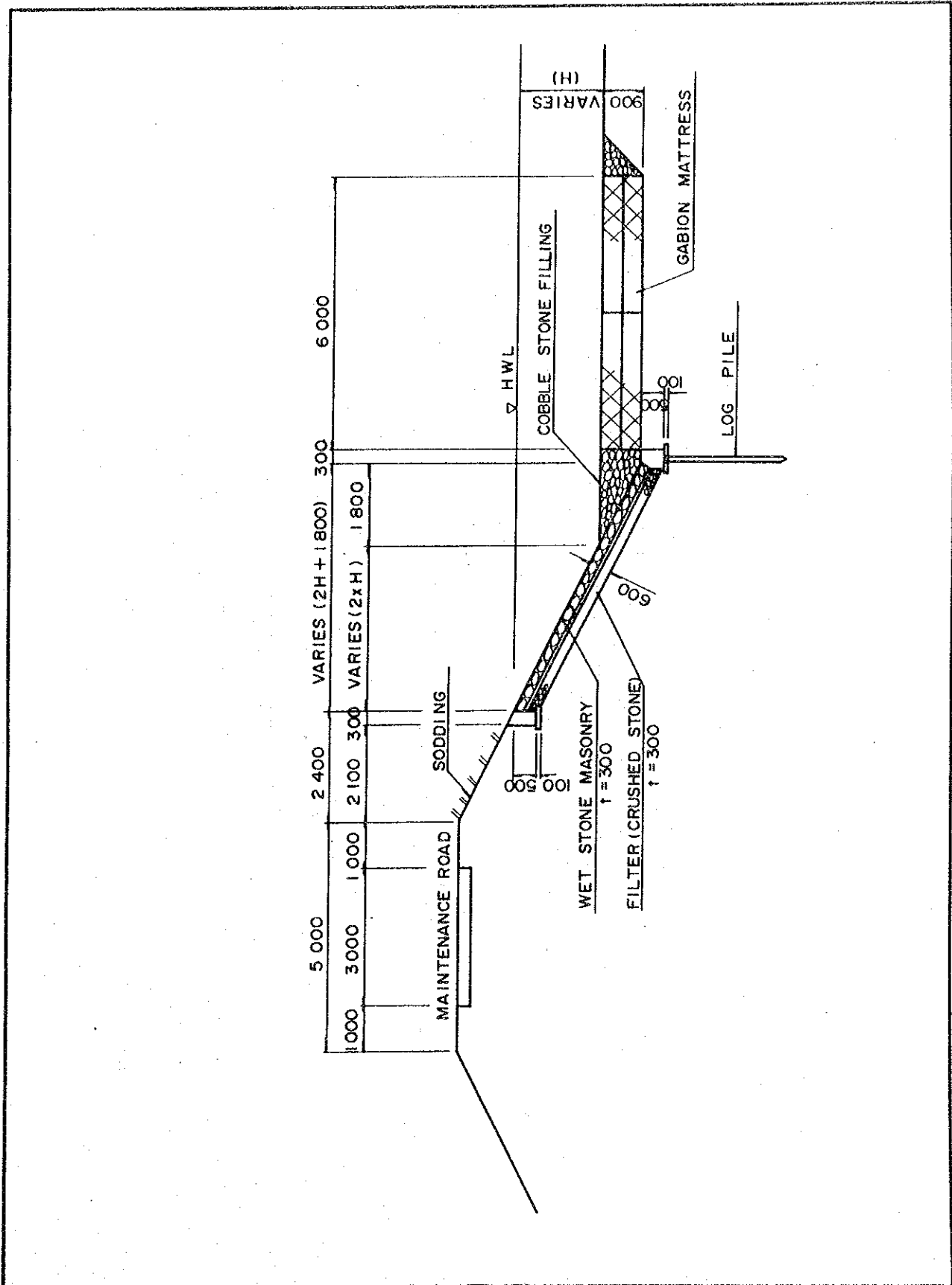


Secciones Transversales Típicas de Dique

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

Fig. 5-1-17 (2/2)

JAPAN INTERNATIONAL COOPERATION AGENCY

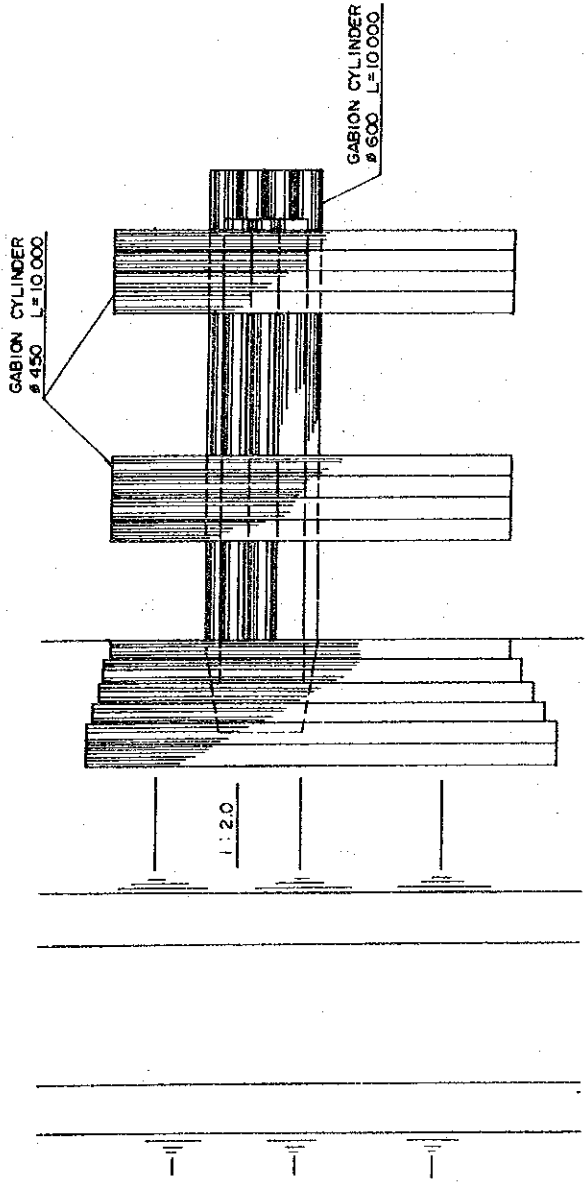
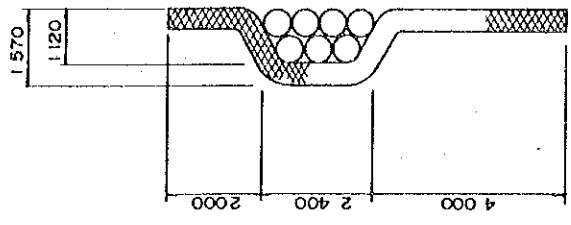
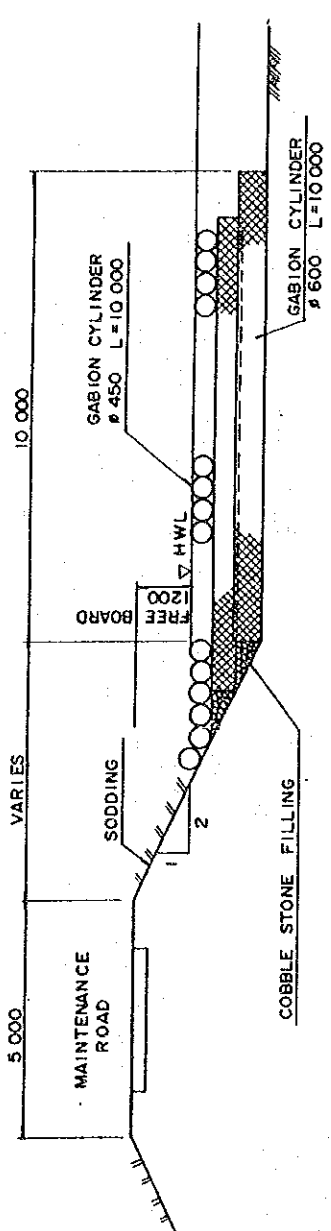


Dibujo Normal de Revestimiento

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

Fig. 5.1-18

JAPAN INTERNATIONAL COOPERATION AGENCY

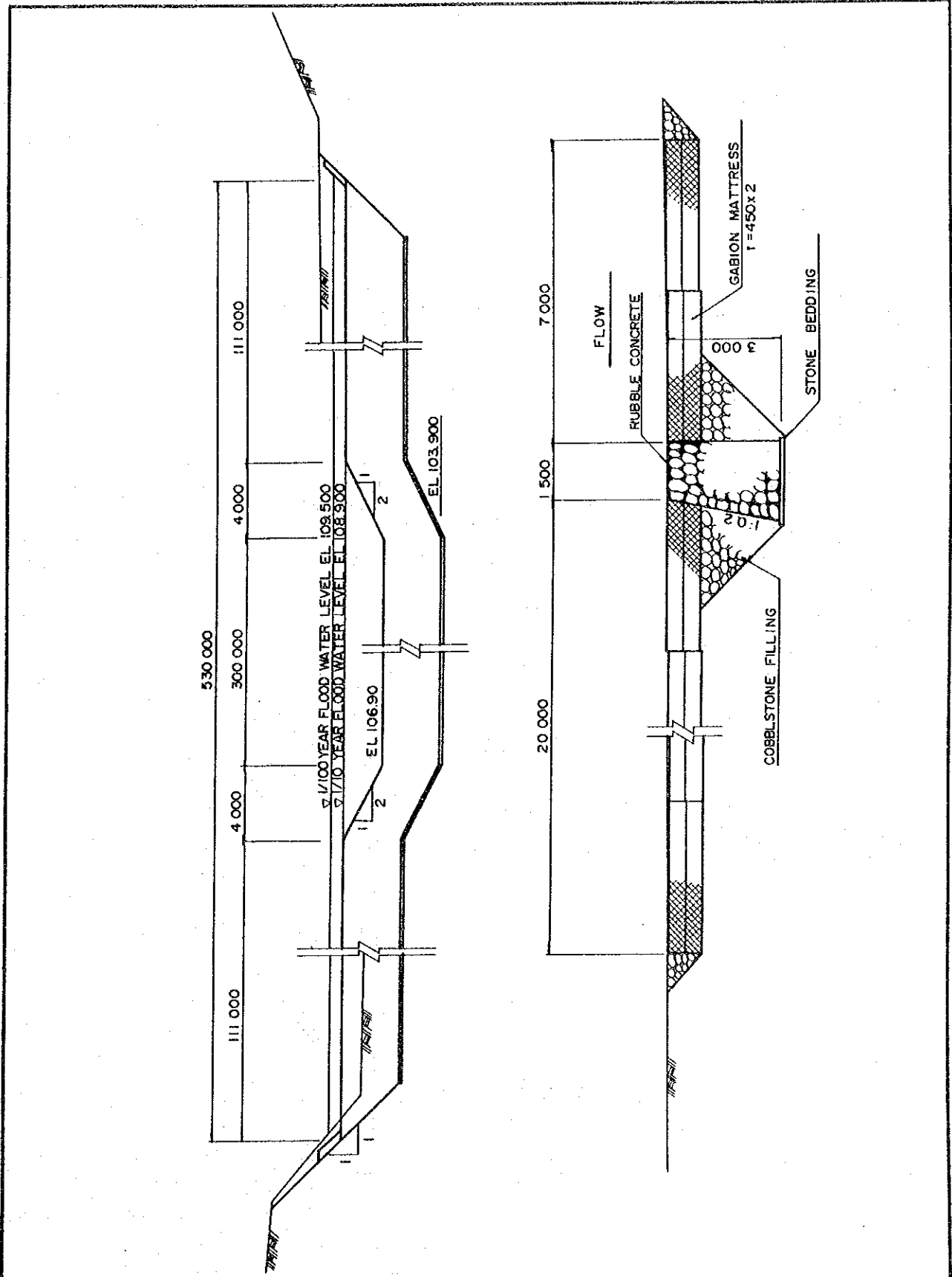


Dibujo Normal de Espigón

Fig. 5.1-19

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY



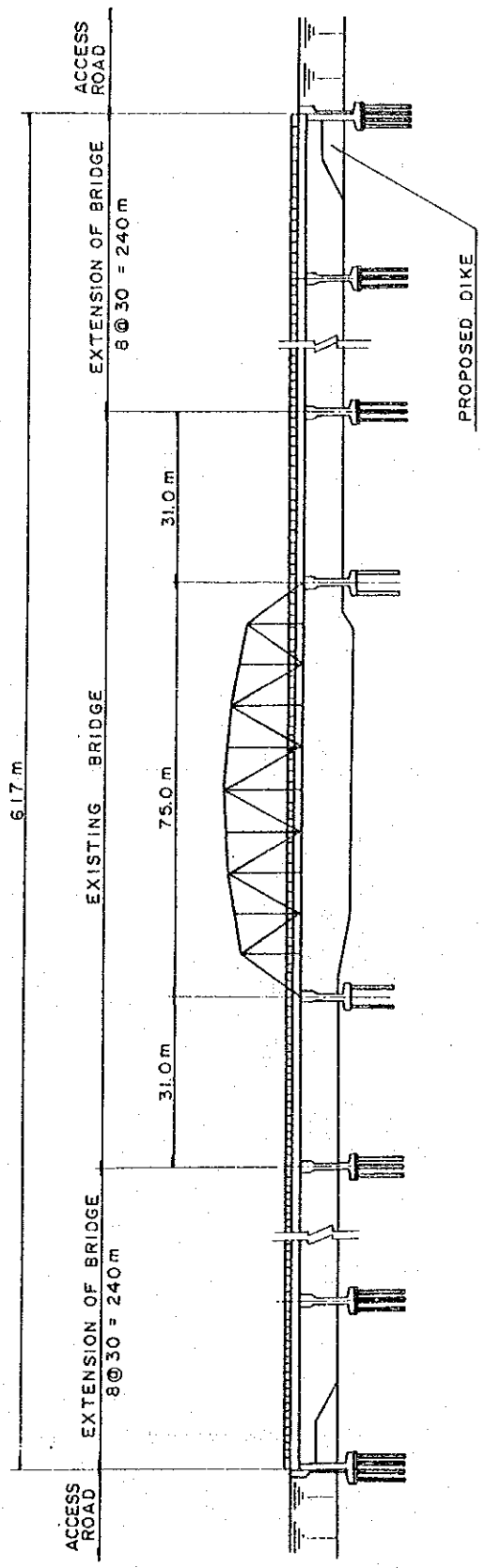
Perfil y Sección Transversal Normal de Solera de Fondo

Fig. 5.1-20

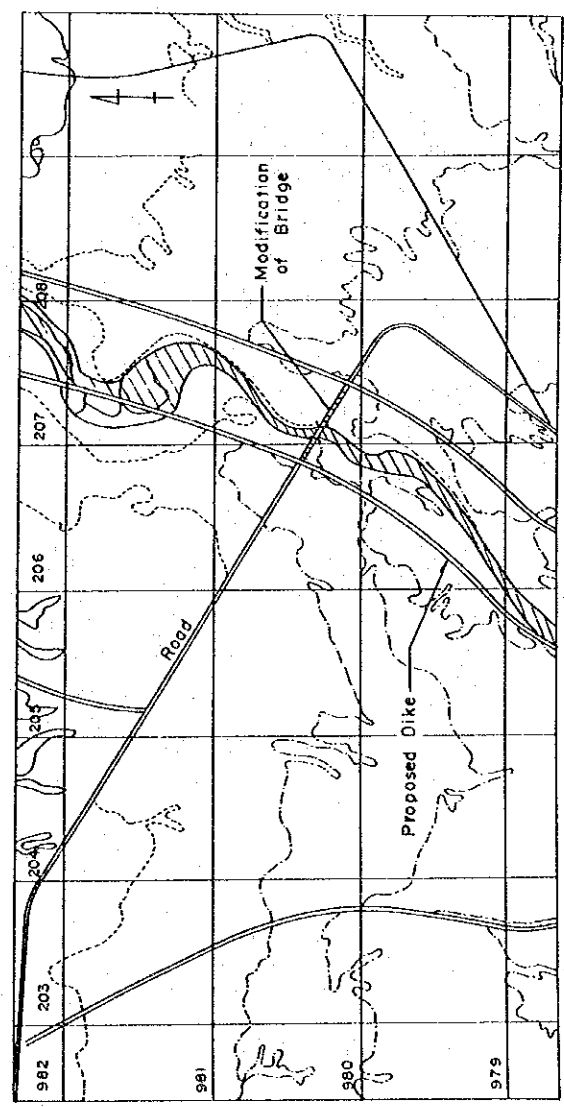
STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

LONGITUDINAL PROFILE



LOCATION MAP



Perfil de Extensión Propuesta de Puente de Puerto Chama

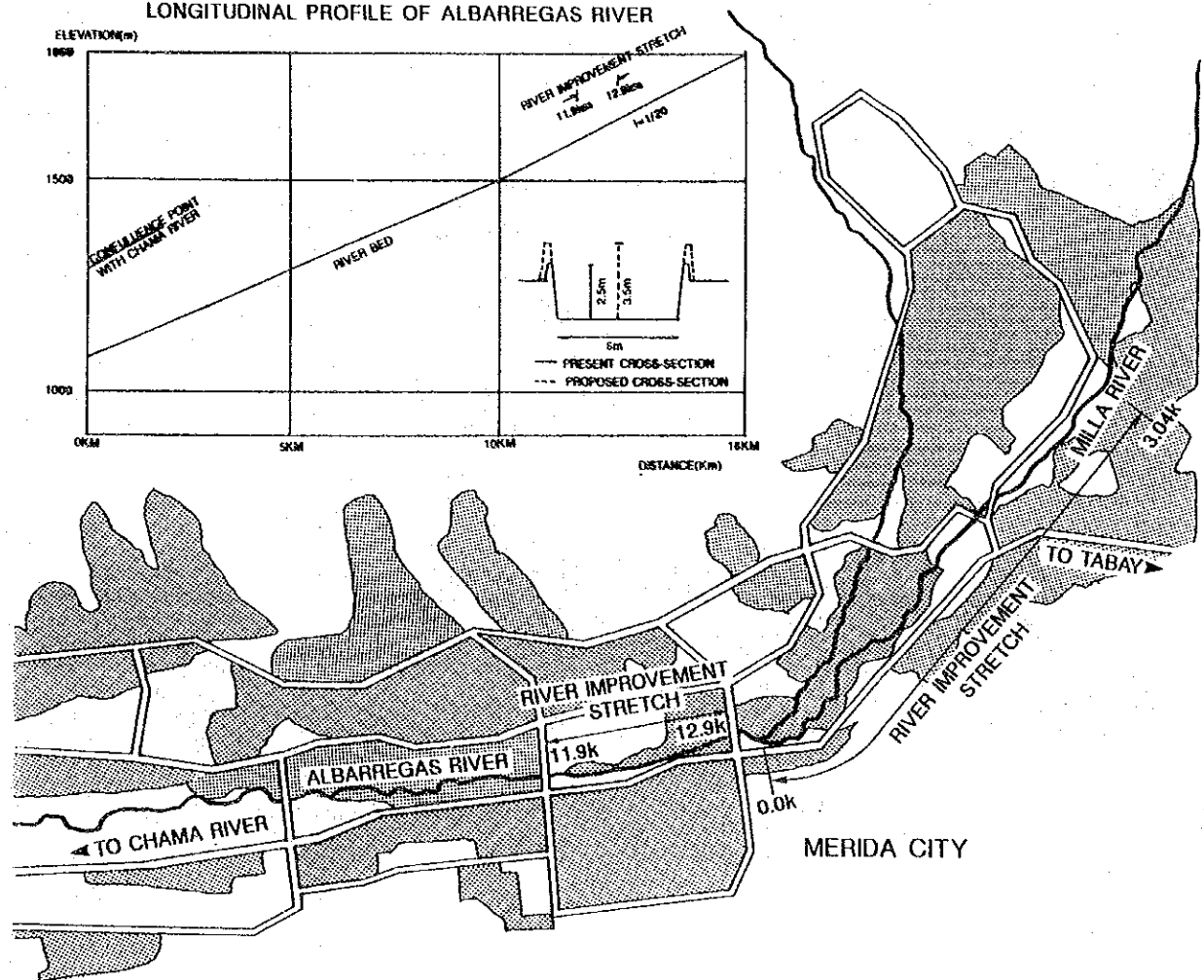
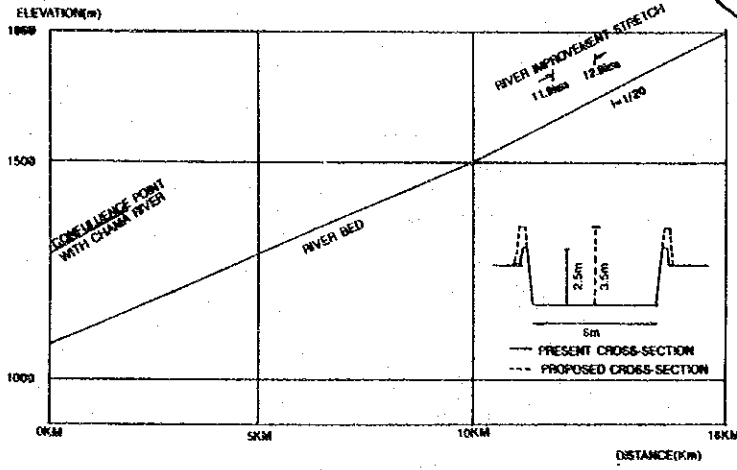
Fig. 5.1-21

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY



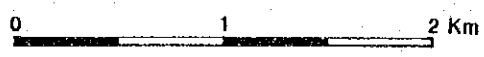
LONGITUDINAL PROFILE OF ALBARREGAS RIVER



LEGEND

: Urban area

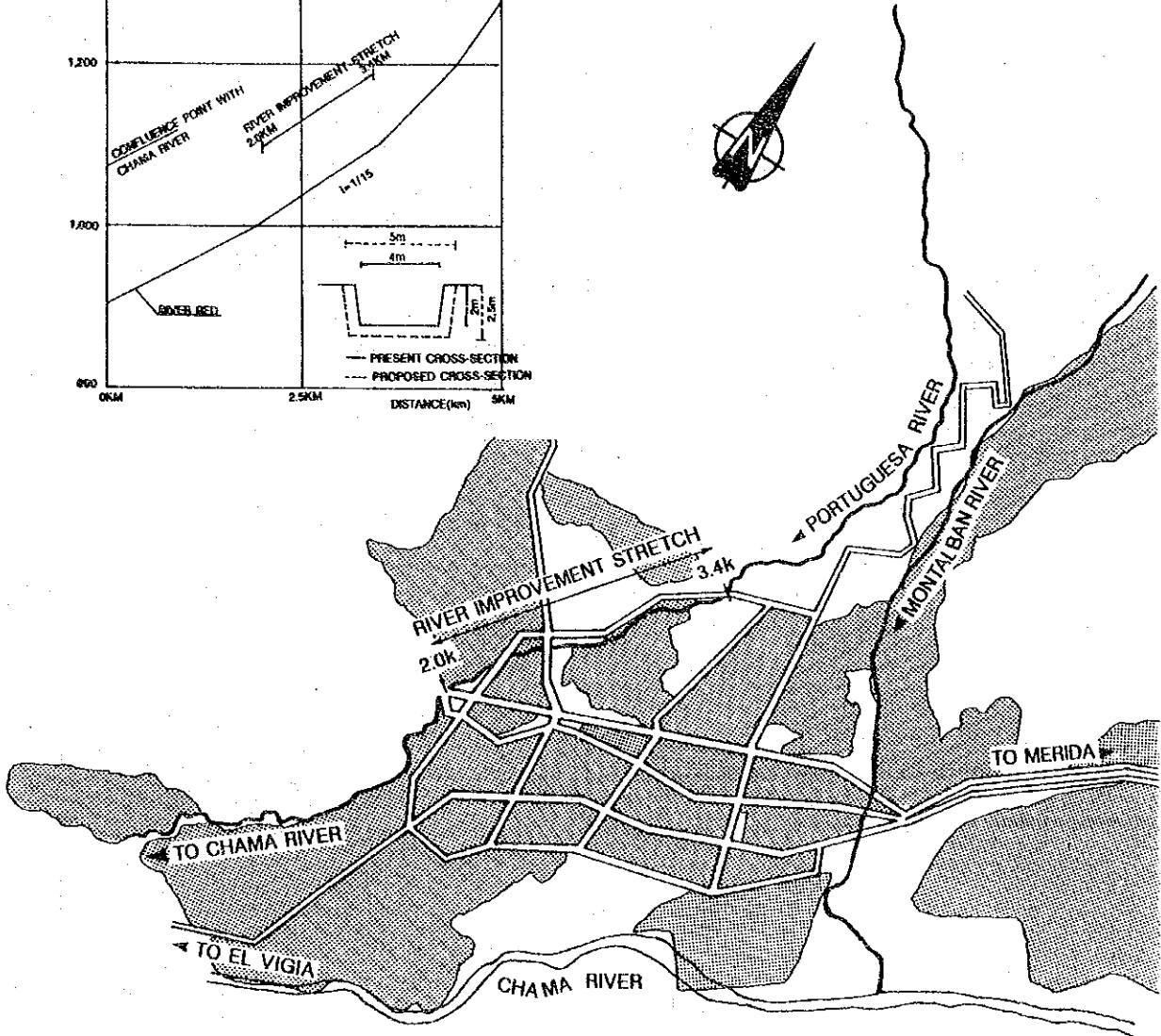
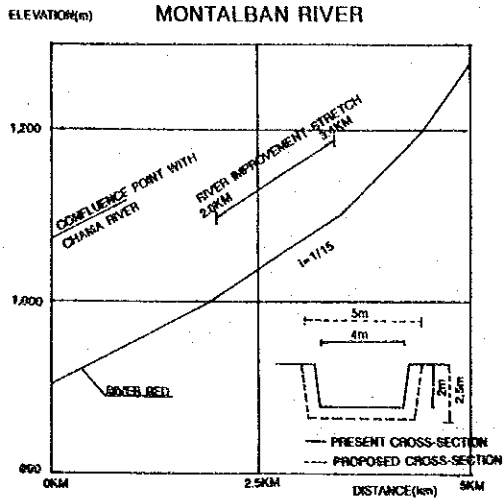
SCALE



Plan de Mejoramiento de Canal de Corriente para Río Albarregas y Qda. Milla en Ciudad de Mérida
Fig. 5.2-1

STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

LONGITUDINAL PROFILE OF MONTALBAN RIVER



EJIDO CITY

SCALE



LEGEND

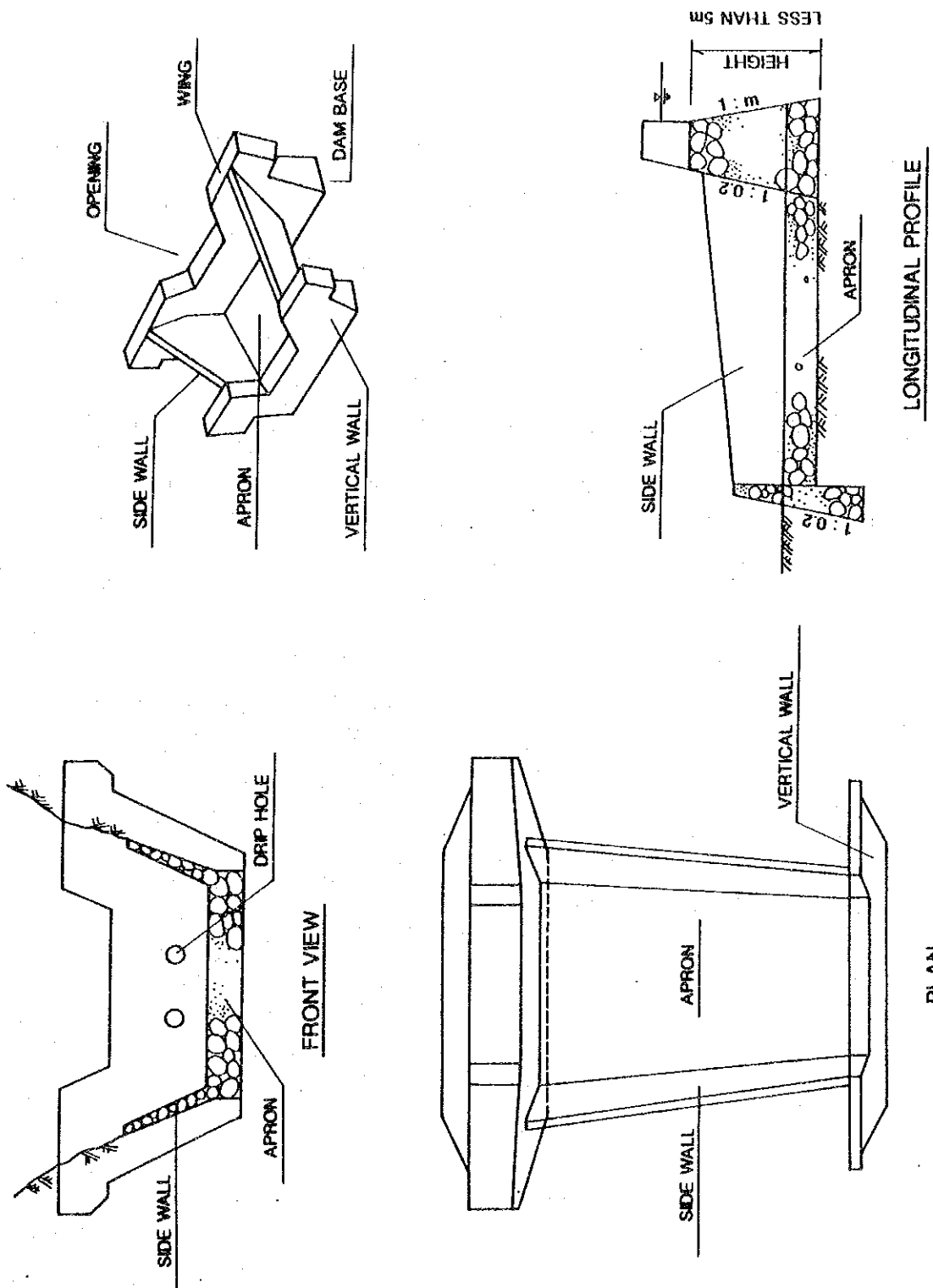
: Urban area

Plan de Mejoramiento de Canal de Corriente para Río Portuguesa en Ciudad de Ejido

Fig. 5.2-2

STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

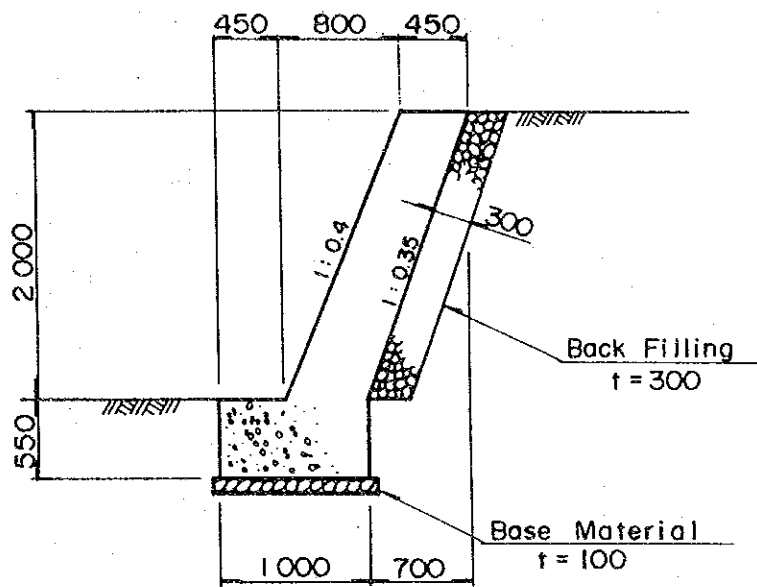


Estructura Típica de Presa de Detención

Fig. 5.2-3

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

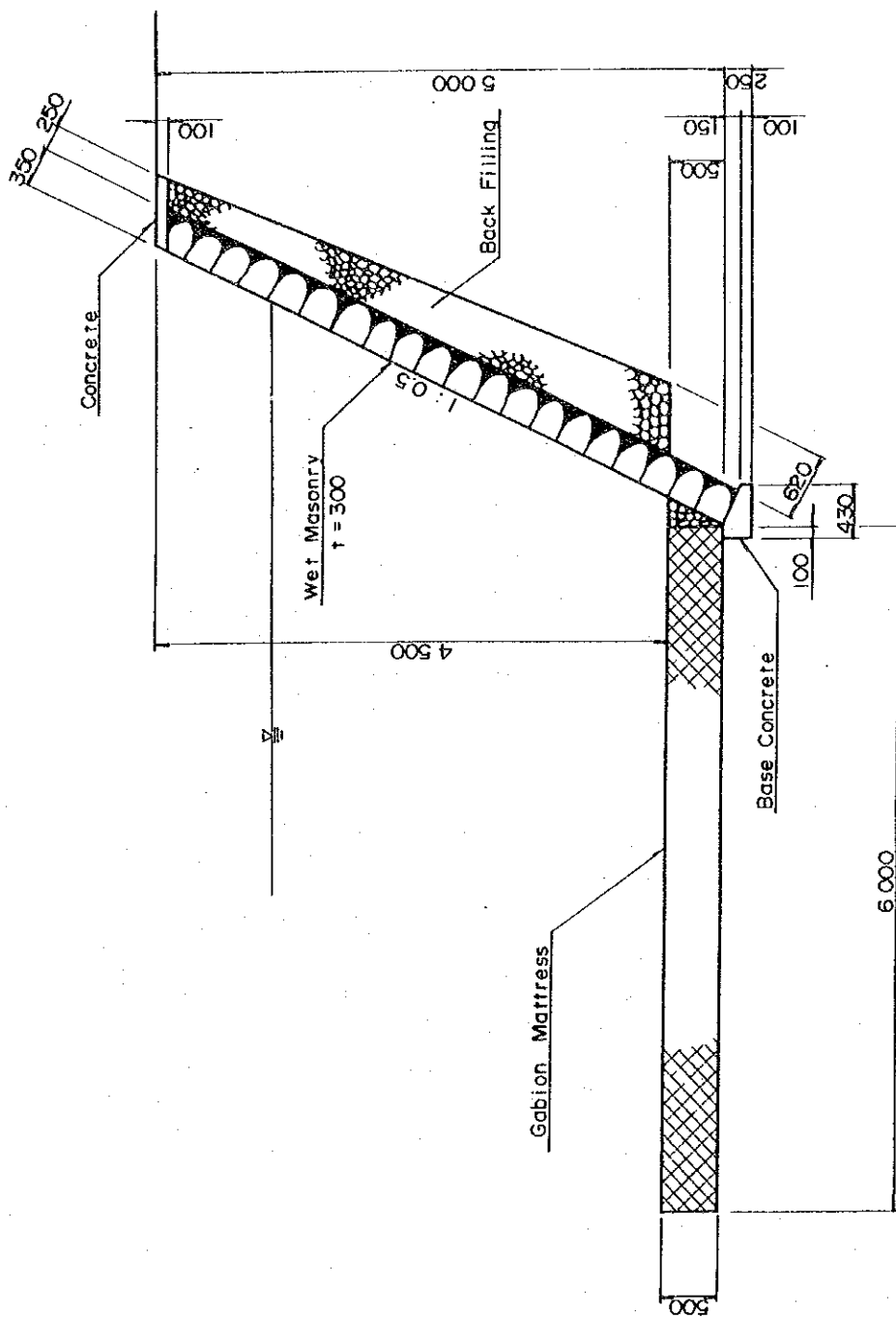


Estructura Típica de Muro de Retención para
Protección Vial

Fig. 5.2-4

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY



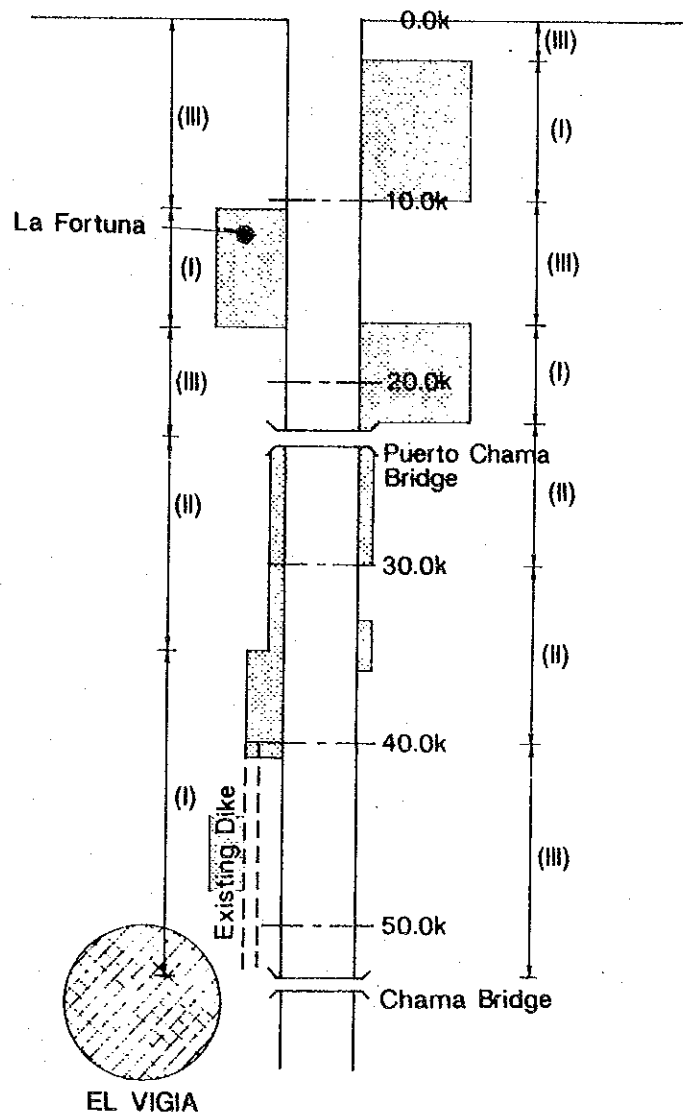
Estructura Típica de Revestimiento

Fig. 5.2-5




STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

Maracaibo Lake



LEGEND

-  : Plantain area in flood inundation area
-  : Village
-  : Urban area
- (I),(II),(III) : Priority of construction

Prioridad de Construcción para Mejoramiento de Canal de Corriente

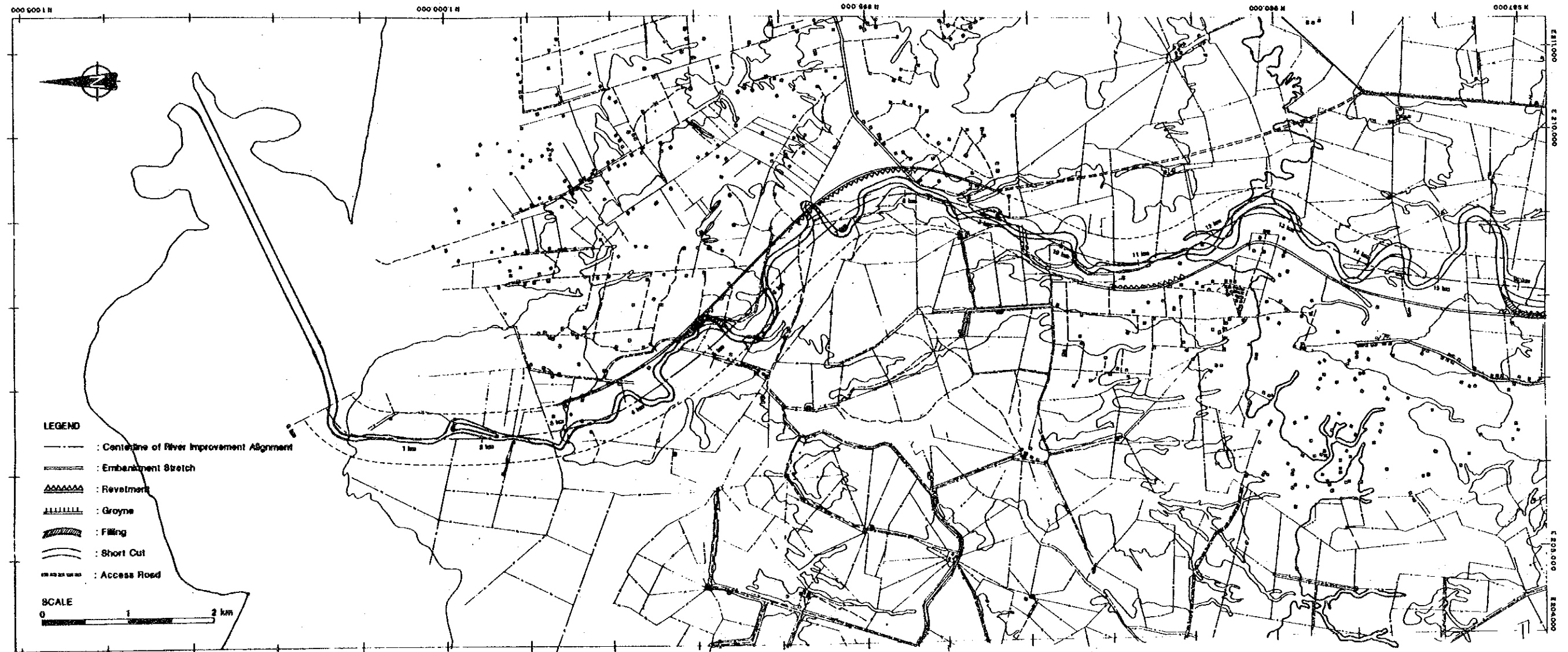
Fig. 5.3-1

STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT

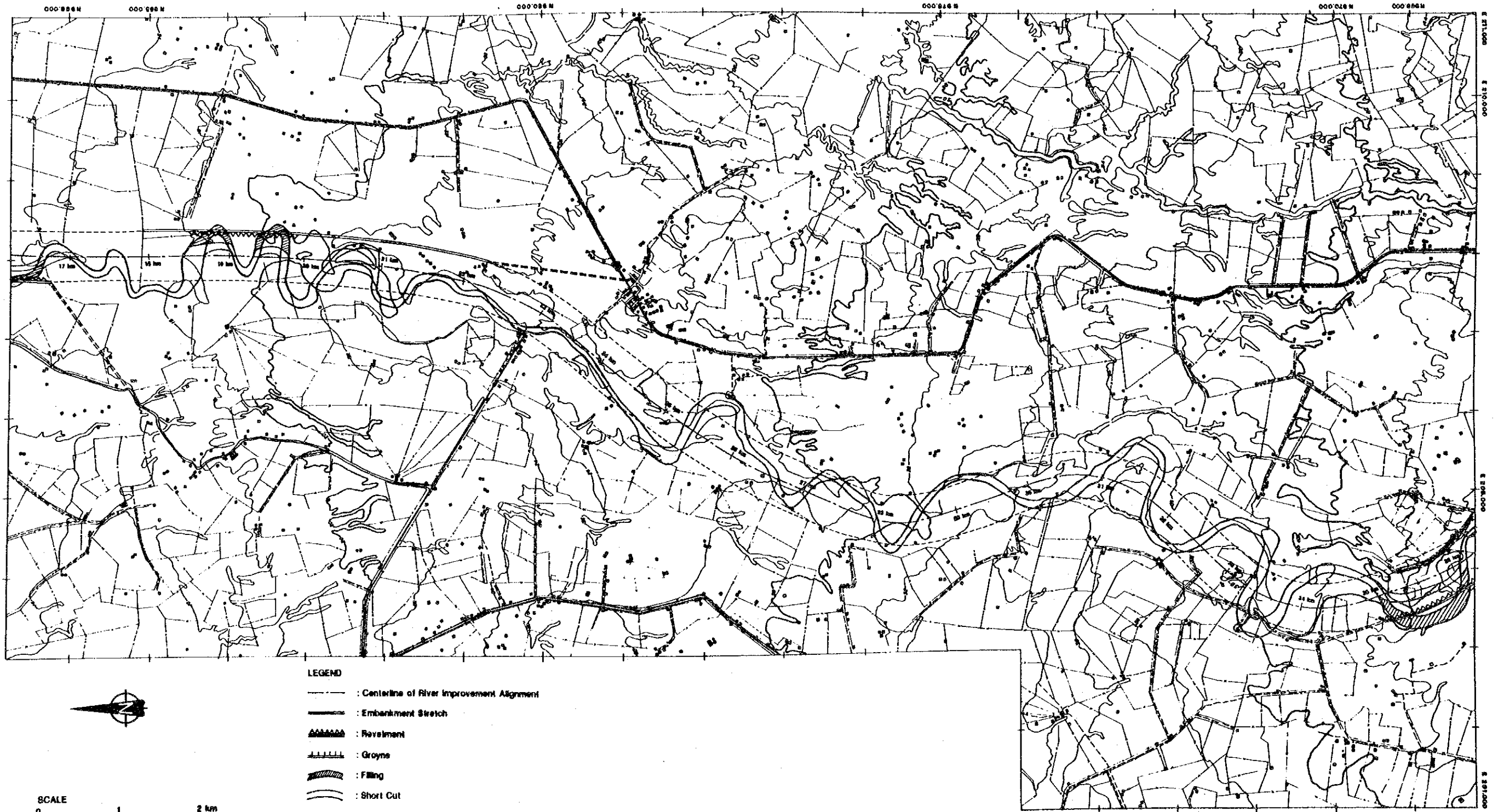
JAPAN INTERNATIONAL COOPERATION AGENCY

ITEM	UNIT	QUANTITY	PHASE 1 (1991-2000)	PHASE 2 (2001-2010)	PHASE 3 (2011-2020)
<u>BASIN-WIDE PROJECT</u>					
1. Sediment Control					
Sabo Dam (C-1, N-1, C-5)	m ³	142,100			
(C-2 - C-4)	m ³	84,600			
(C-6 - C-9)	m ³	91,400			
Continuous Dam	no.	110	(18 nos.)	(44 nos.)	(48 nos.)
Retaining Wall	no.	1,400	(340 nos.)	(450 nos.)	(610 nos.)
2. Flood Control					
Reinforcement of Existing Dike	km	12.0*			
River Improvement (Phase 1)	km	24.7*			
River Improvement (Phase 2)	km	31.4*			
River Improvement (Phase 3)	km	40.3*			
Puerto Chama Bridge Extension	m ²	6,100			
<u>LOCAL PROJECT</u>					
1. Sediment Control					
Check Dam	no.	88			
Retaining Wall	m	750			
Revetment	m	720			
2. Flood Control					
River Improvement of Albarregas River					
River Improvement of Millia River					
River Improvement of Portuguese River					
			PHASE 1 = Bs1,103 million (@ Bs110x10yrs)	PHASE 2 = Bs1,415 million (@ Bs142x10yrs)	PHASE 3 = Bs1,033 million (@ Bs103x10yrs)

* Cumulative length of both banks.



STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT	Plan de Mejoramiento de Río Chama para Plan de Acción
JAPAN INTERNATIONAL COOPERATION AGENCY	Fig. 6.1-1 (1/3)

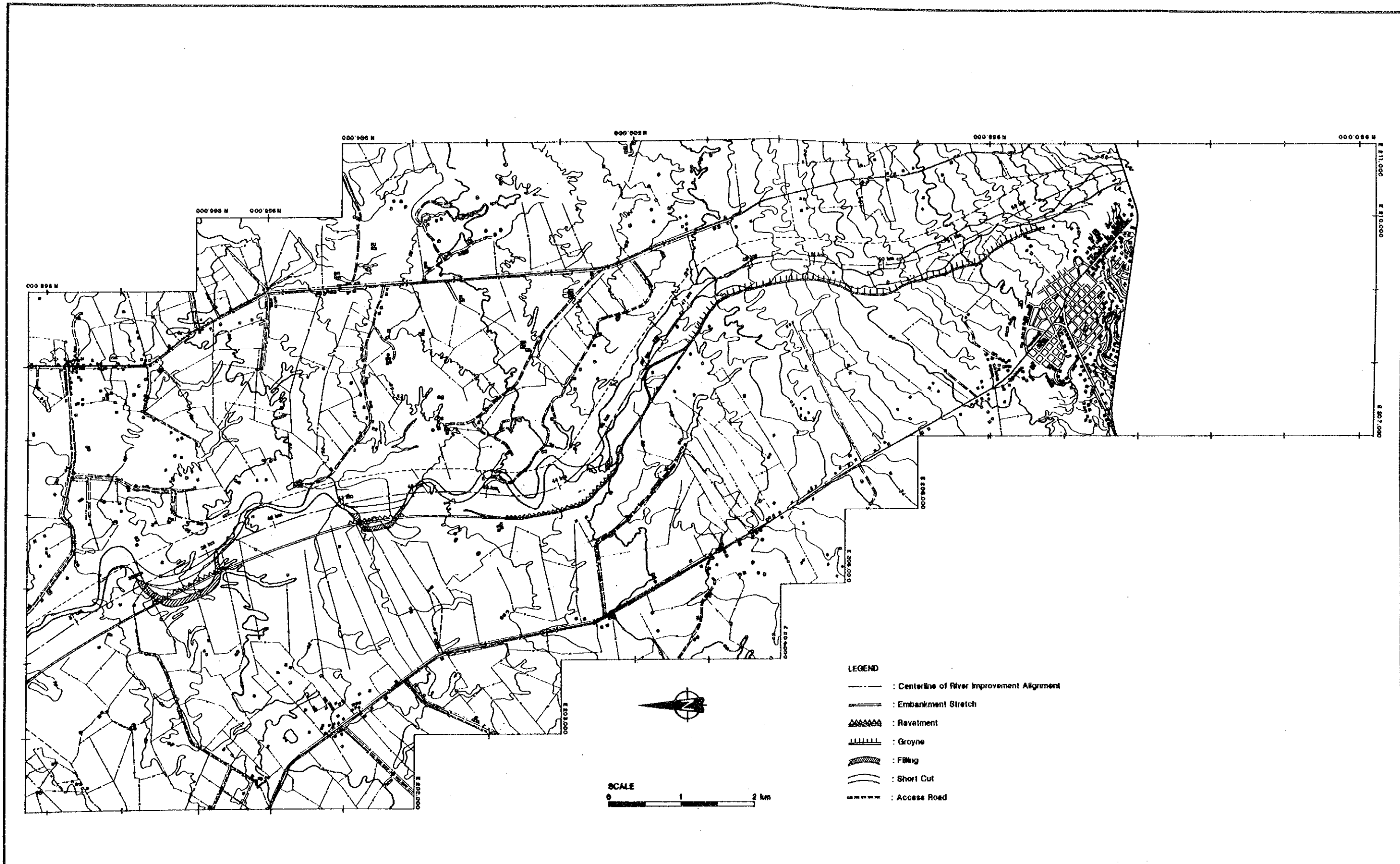


- LEGEND**
- : Centerline of River Improvement Alignment
 - : Embankment Stretch
 - ▬▬▬▬ : Revetment
 - ▬▬▬▬ : Groyne
 - ▬▬▬▬ : Filling
 - : Short Cut
 - : Access Road

SCALE
0 1 2 km

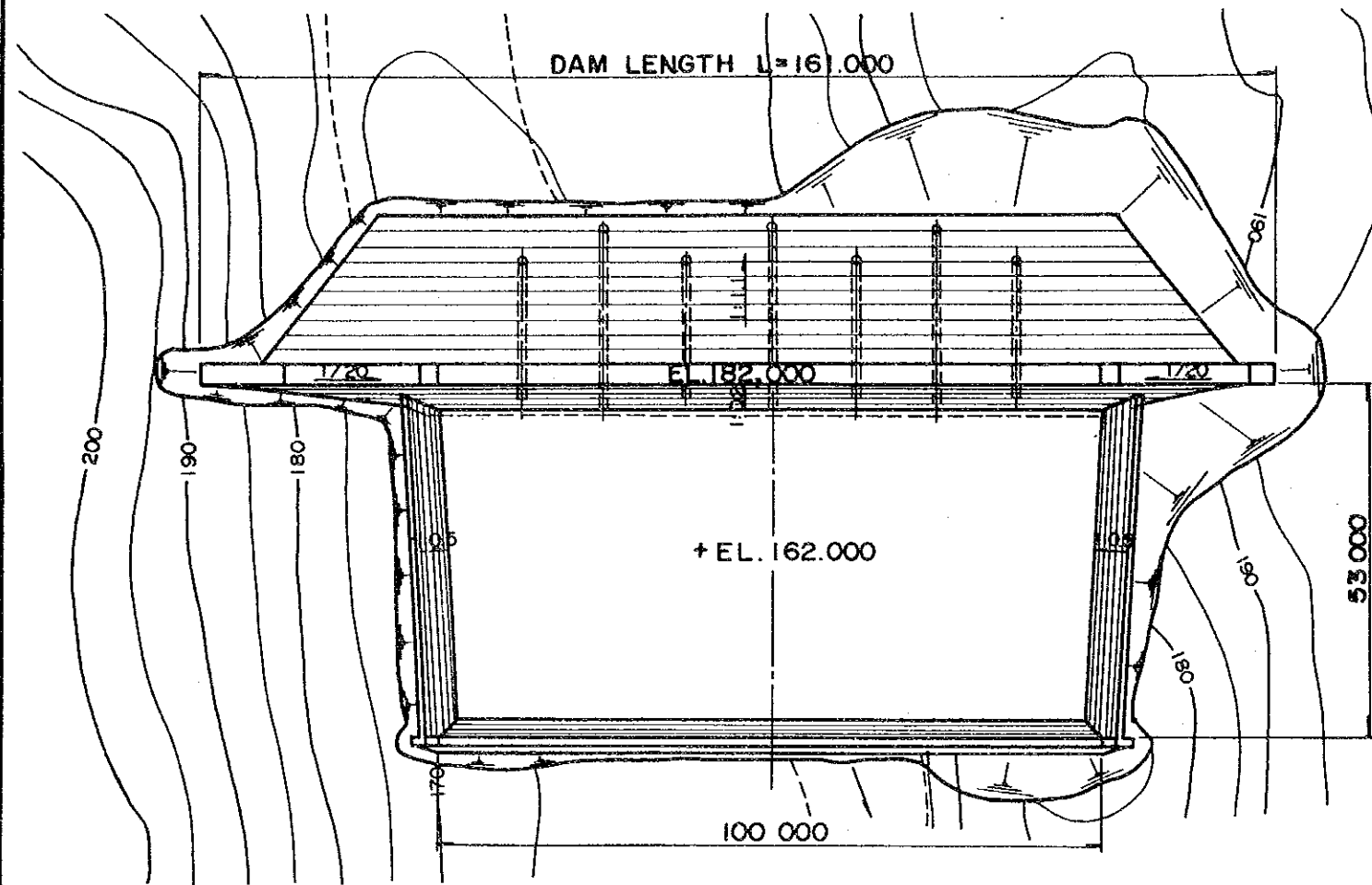
STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

Plan de Mejoramiento de Río Chama para
Plan de Acción
Fig. 6-1-1 (2/3)

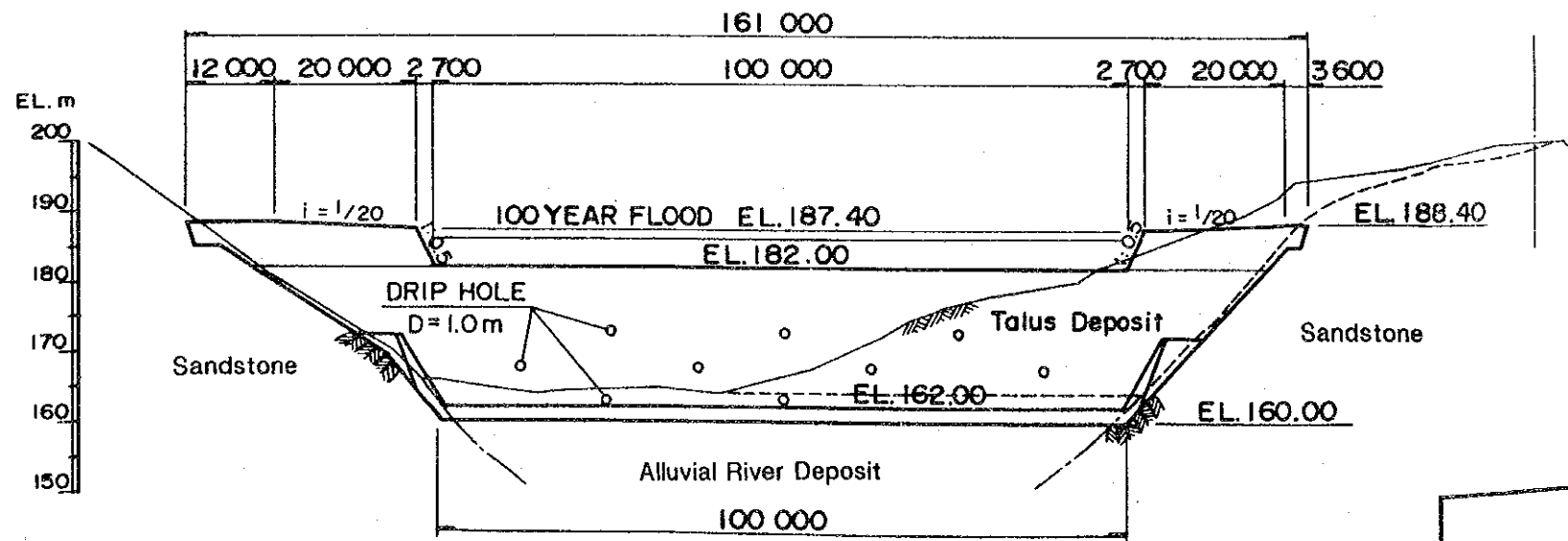


STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	Plan de Mejoramiento de Río Chama para Plan de Acción Fig 6-1-1 (3/3)
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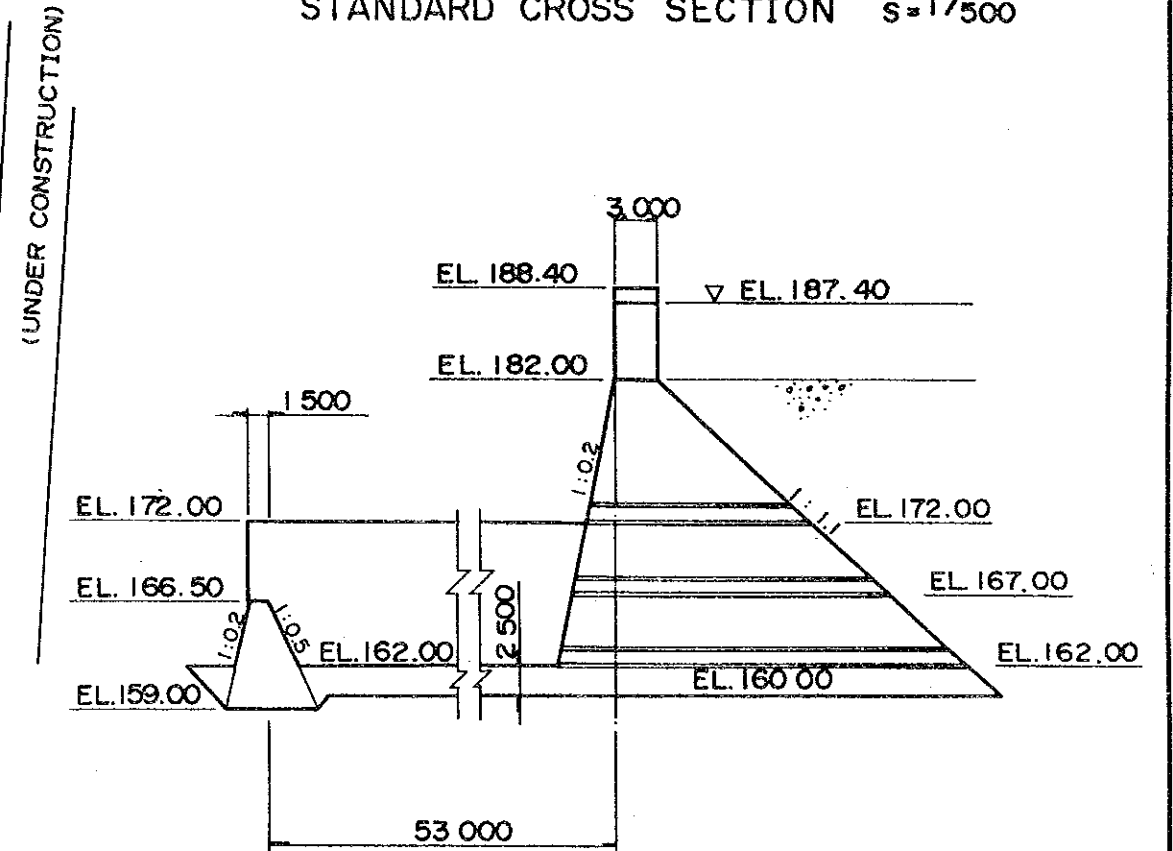
PLAN s = 1/1000



FRONT VIEW s = 1/1000



STANDARD CROSS SECTION s = 1/500



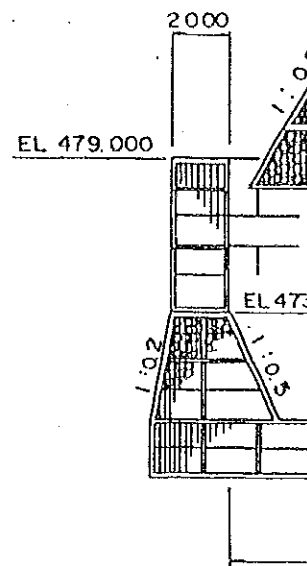
STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

Dibujos de Diseño Preliminar de Presa
Sabo C-1

Fig. 6.1-2

STANDA

NON-OVERFL



PLAN S=1/1000

DAM LENGTH 234 000

NON OVERFLOW SECTION 145 000

OVERFLOW SECTION 89 000

EL 485.000

EL 478.000

EL 470.000

46 000

FRONT VIEW S=1/1000

234 000

145 000

3500

75 000

3500

500
490
480
470

EL 483.000

EL 481.000

EL 485.000

EL 479.000

3000

EL 478.000

4000

Lower Terrace Deposit

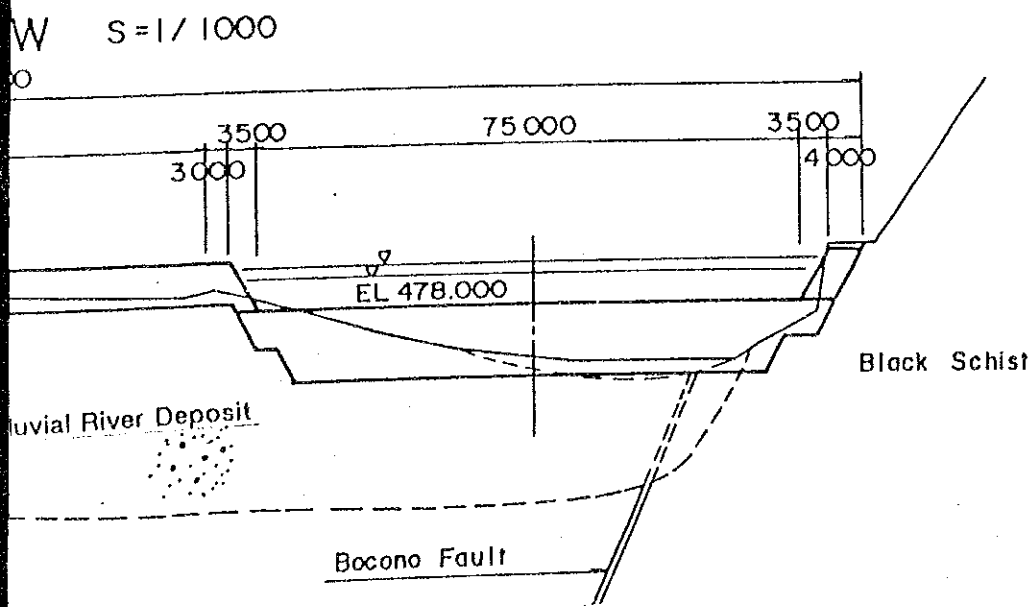
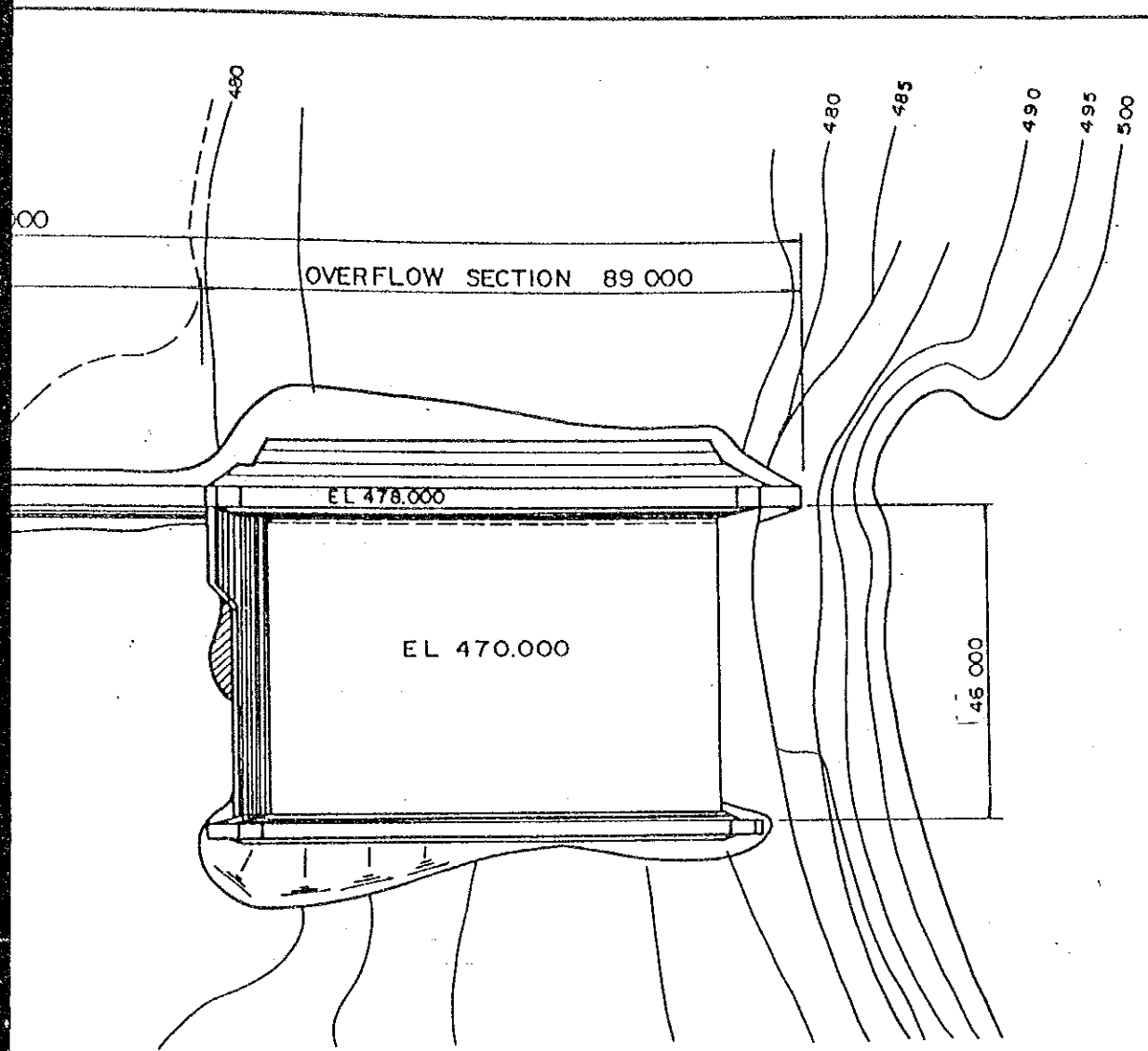
Alluvial River Deposit

Black Schist

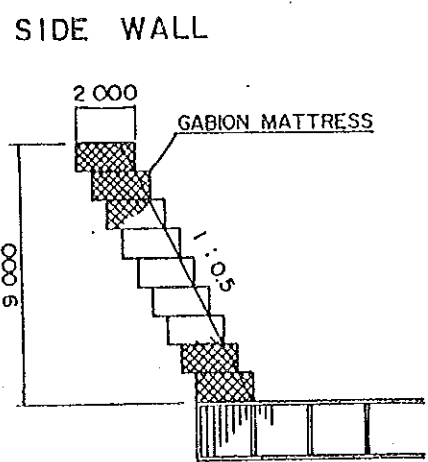
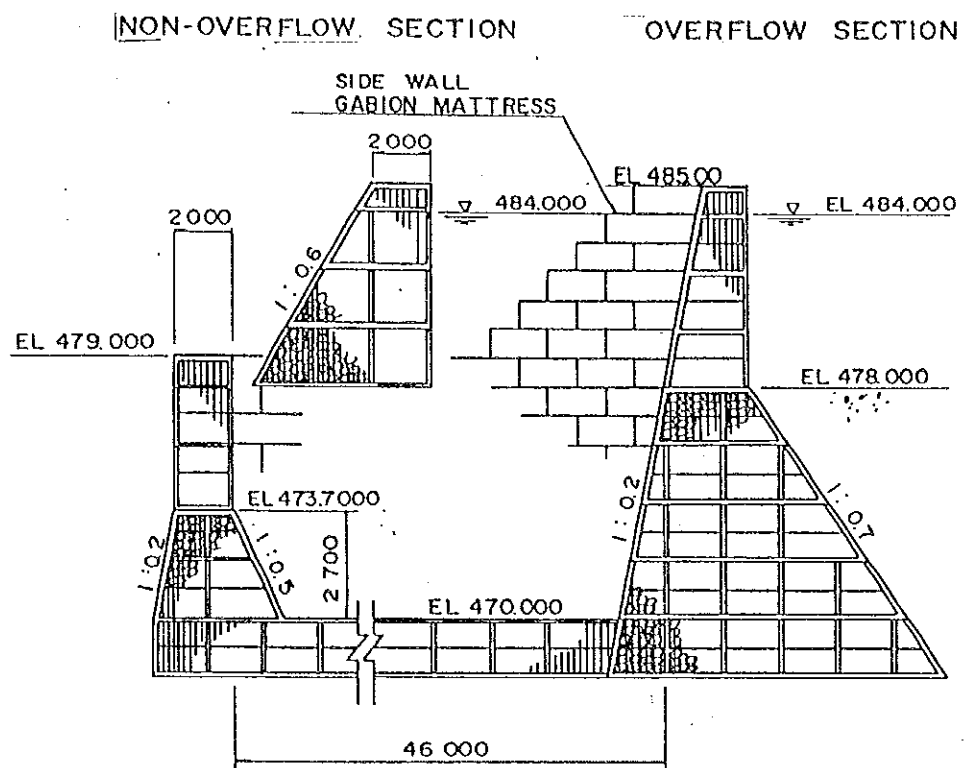
Bocono Fault

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY



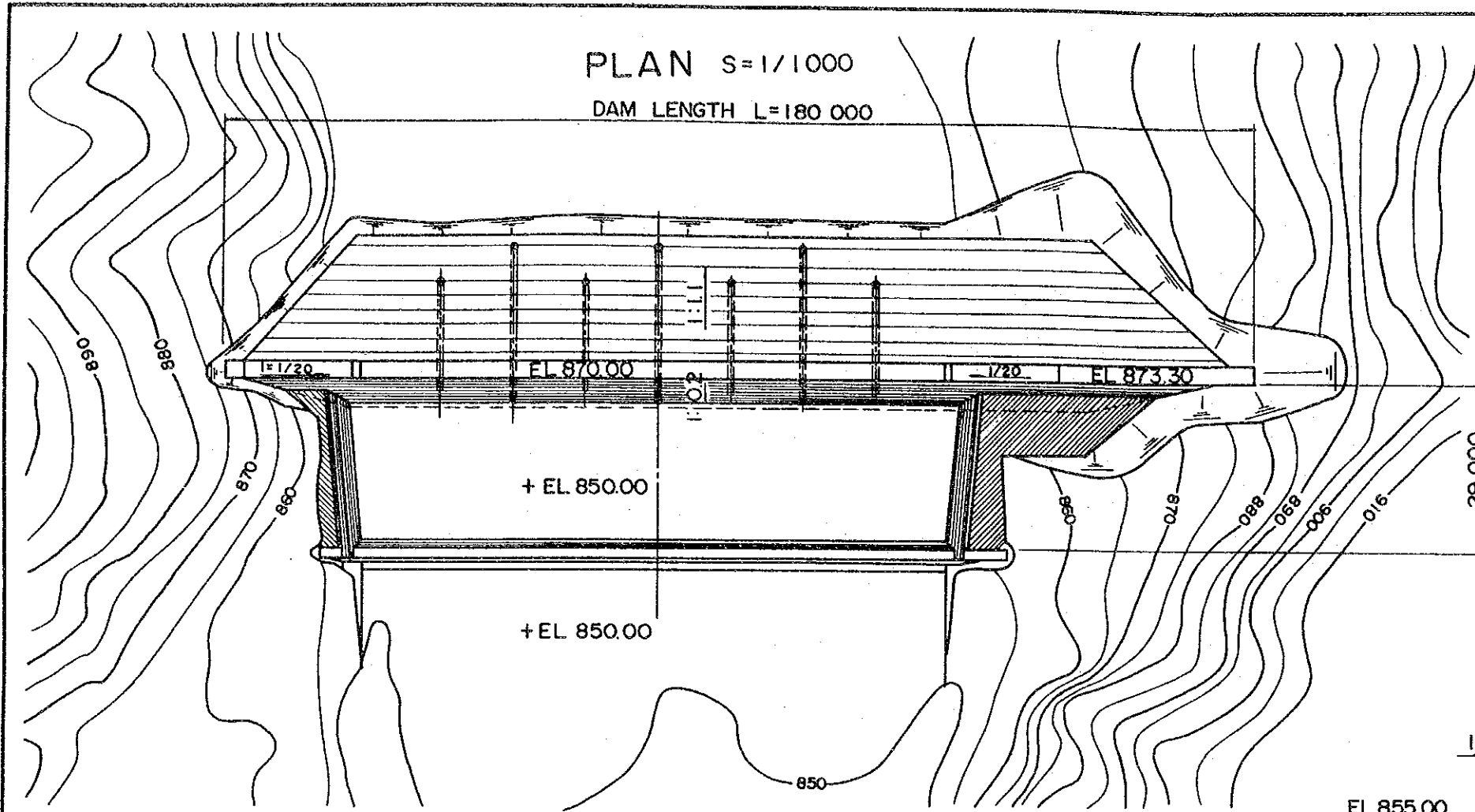
STANDARD CROSS SECTION $s = 1/250$



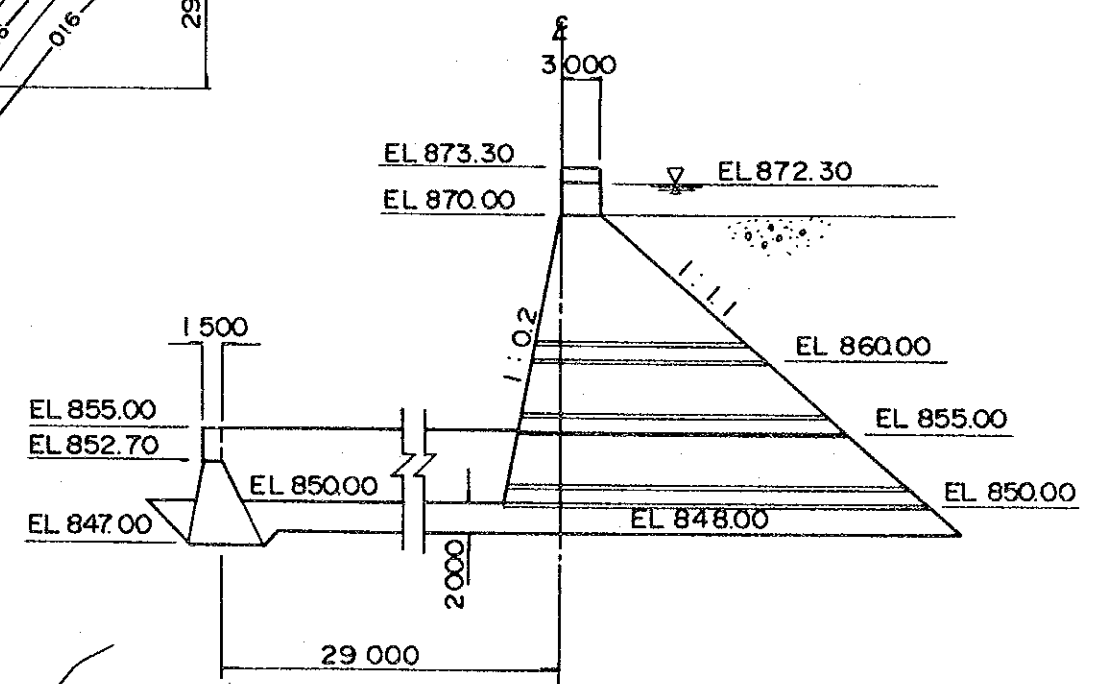
STUDY ON CHAMA RIVER BASIN
 CONSERVATION PROJECT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Dibujos de Diseño Preliminar de Presa
 Sabo C-5

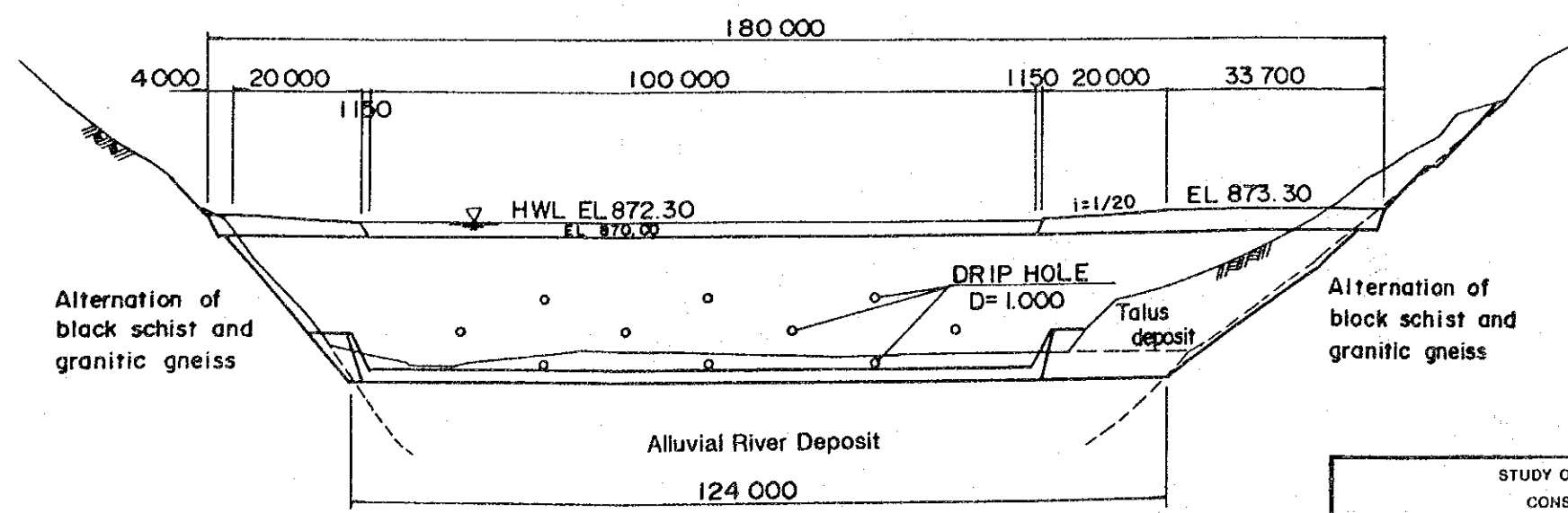
Fig. 6.1-3



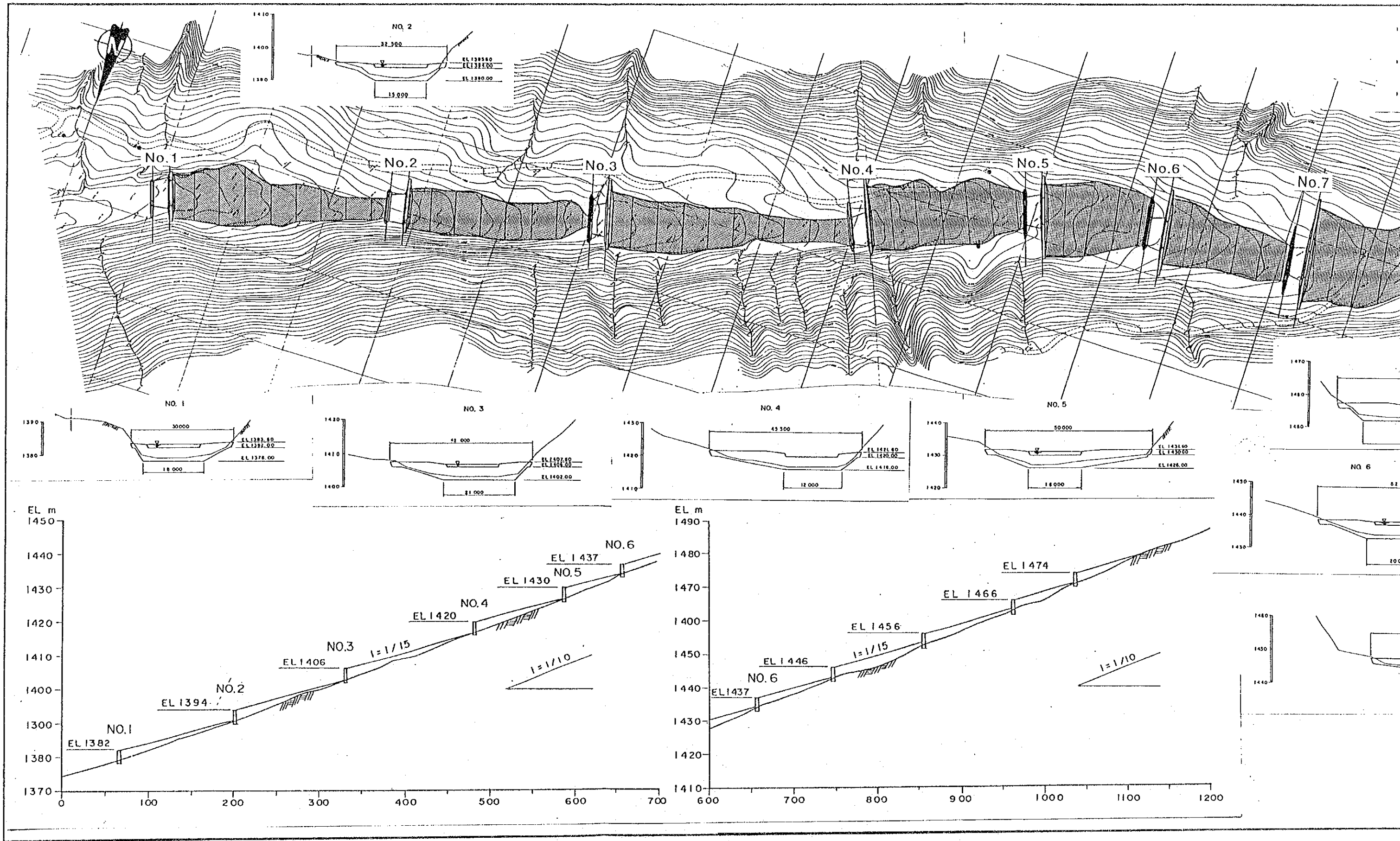
STANDARD CROSS SECTION S=1/500

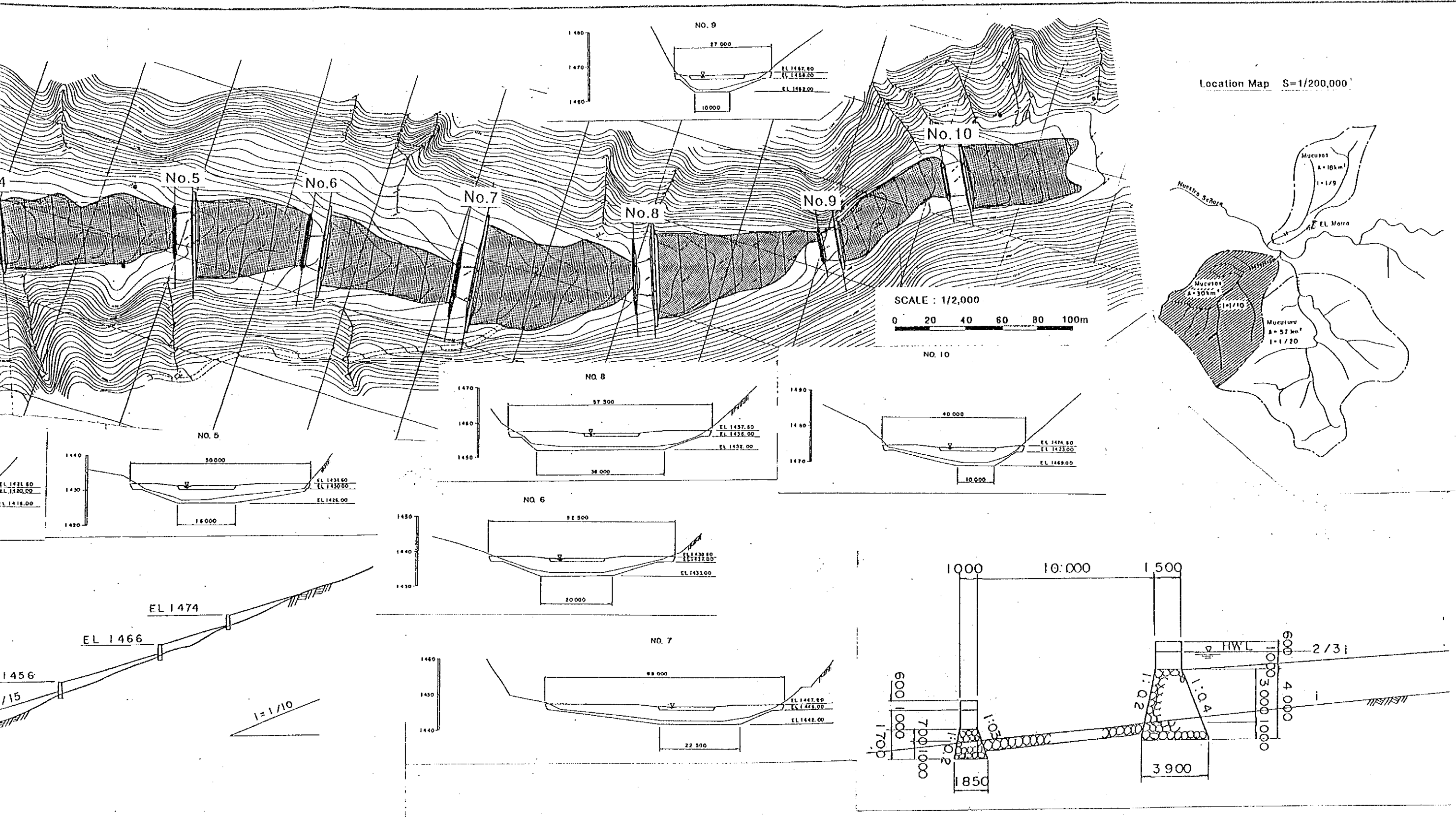


FRONT VIEW S=1/1000



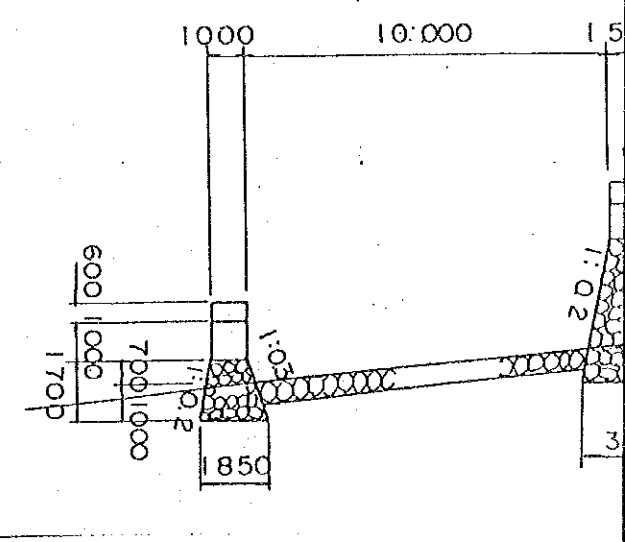
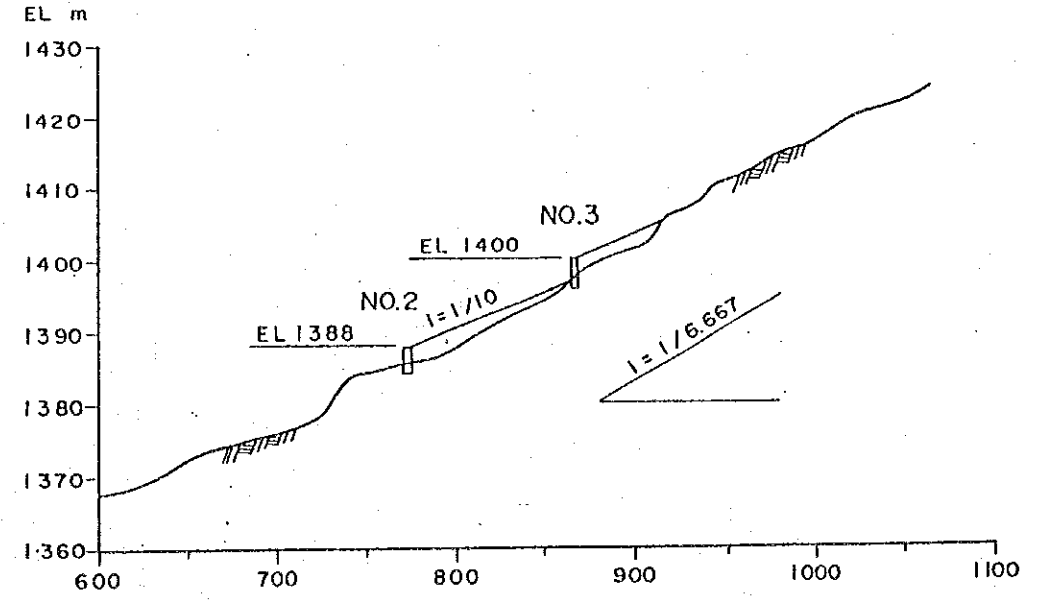
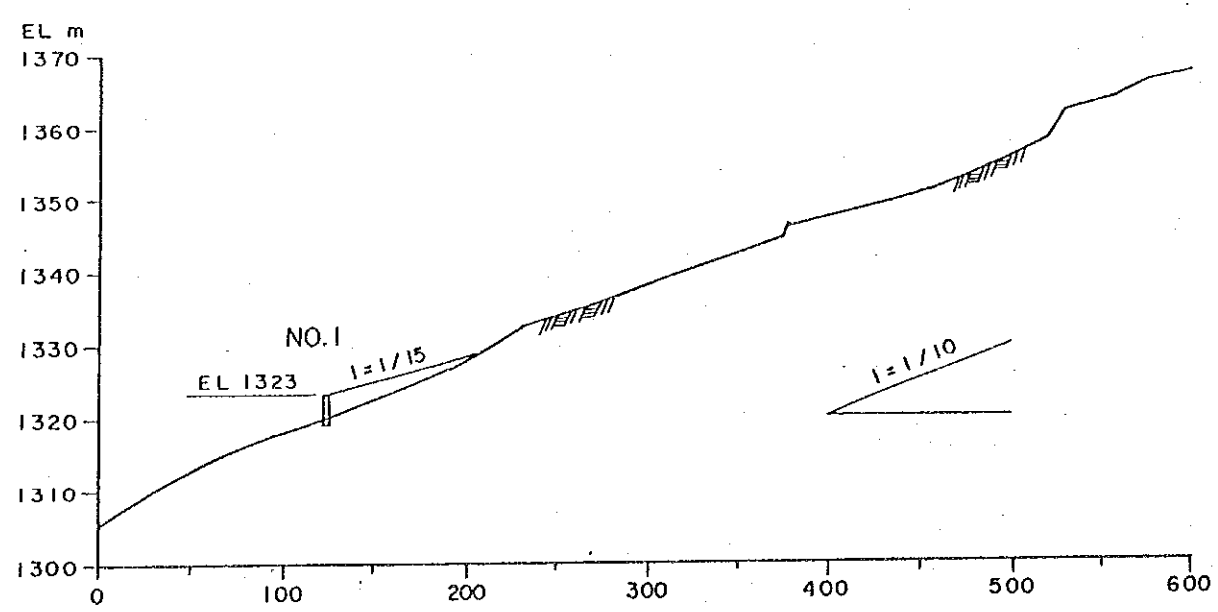
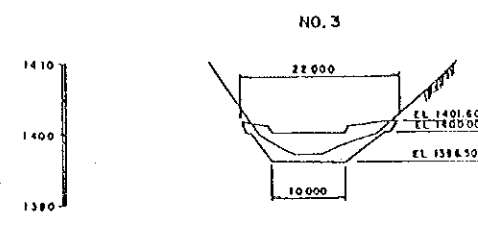
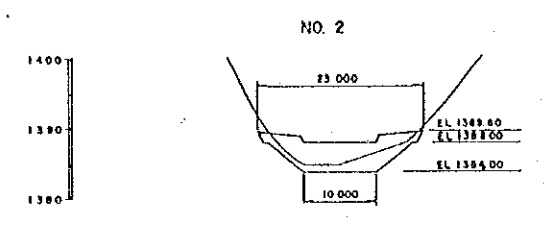
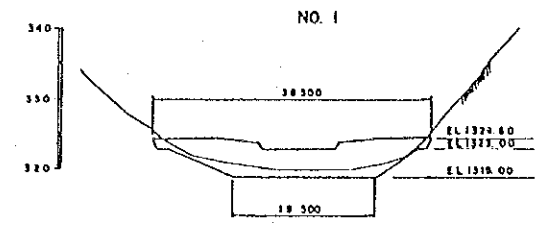
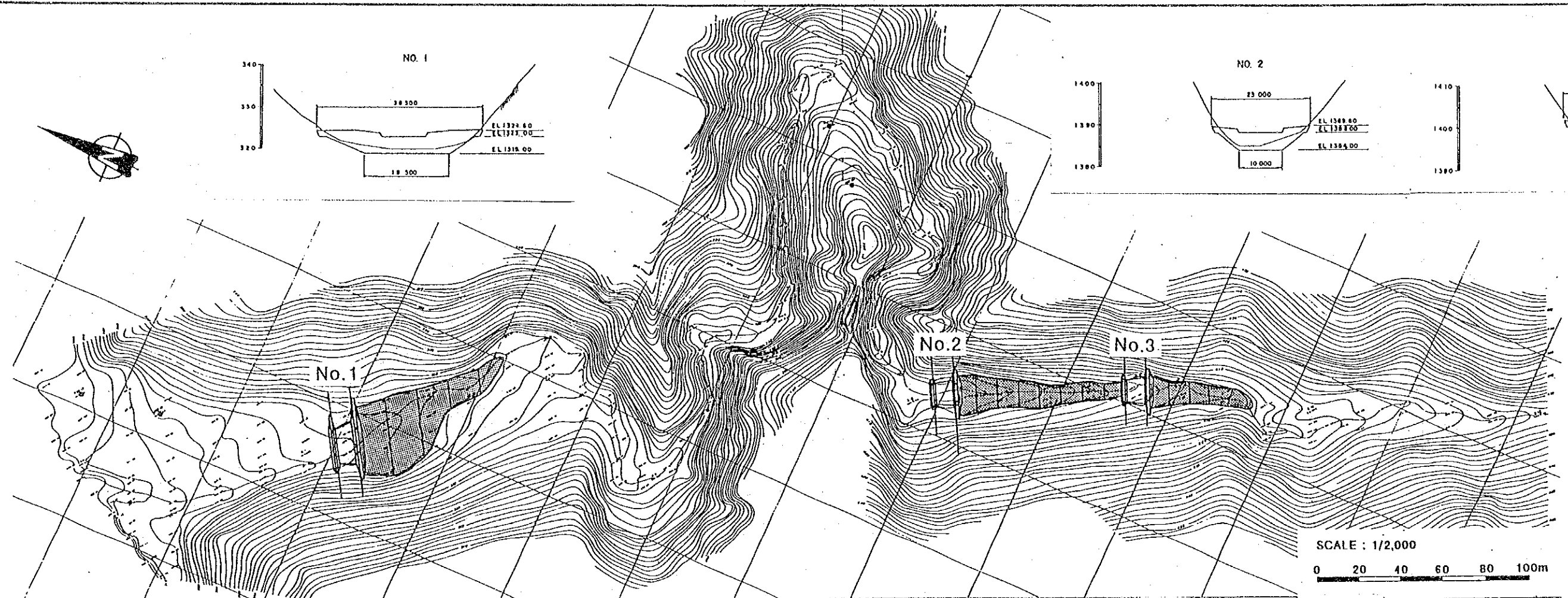
STUDY ON CHAMA RIVER BASIN CONSERVATION PROJECT JAPAN INTERNATIONAL COOPERATION AGENCY	Dibujos de Diseño Preliminar de Presa Sabo N-1 Fig. 6.1-4
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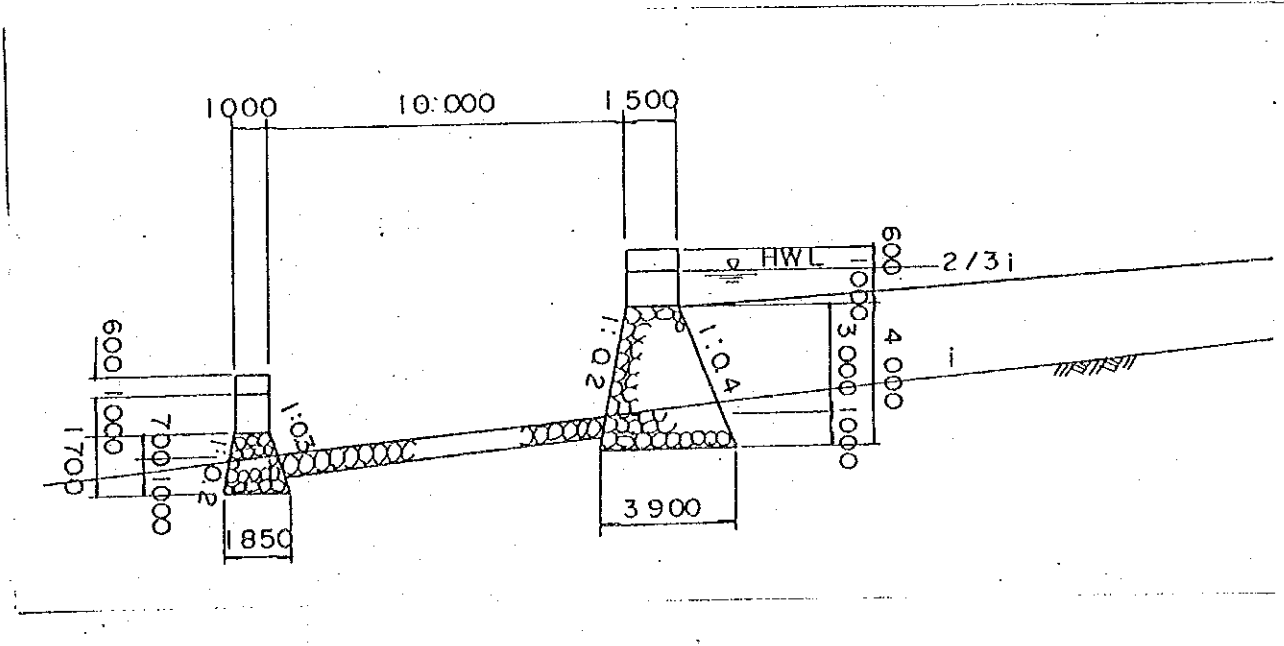
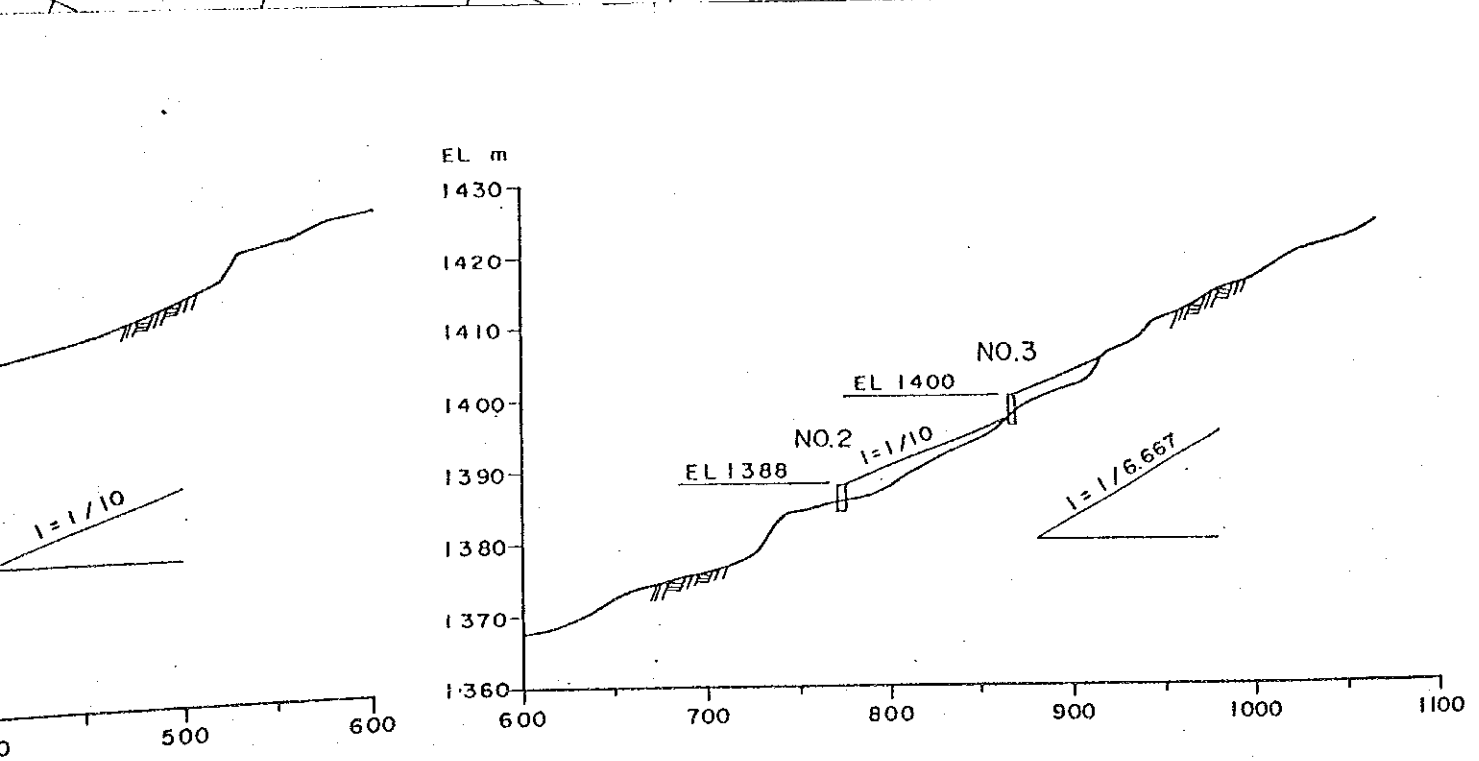
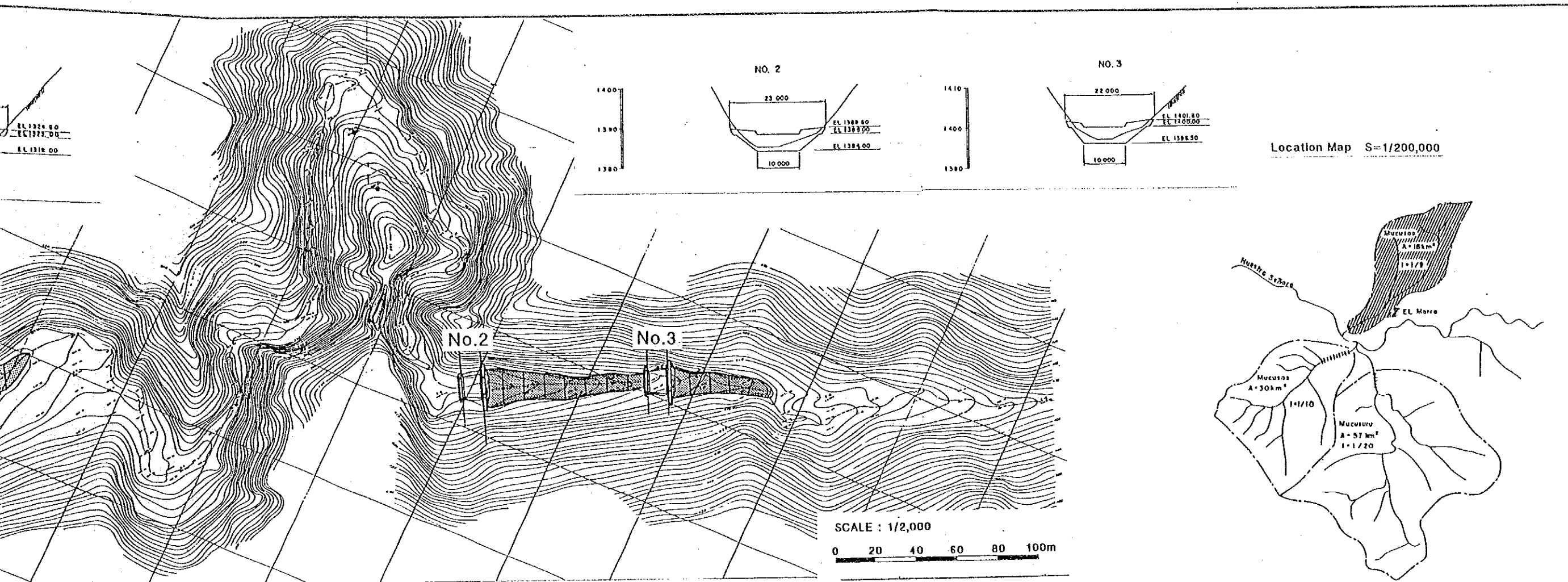


STUDY ON CHAMA RIVER BASIN
 CONSERVATION PROJECT
 JAPAN INTERNATIONAL COOPERATION AGENCY

Disposición de Presa Continua de Poca
 Altura sobre Qda. Mucusás
 Fig. 6.1-5



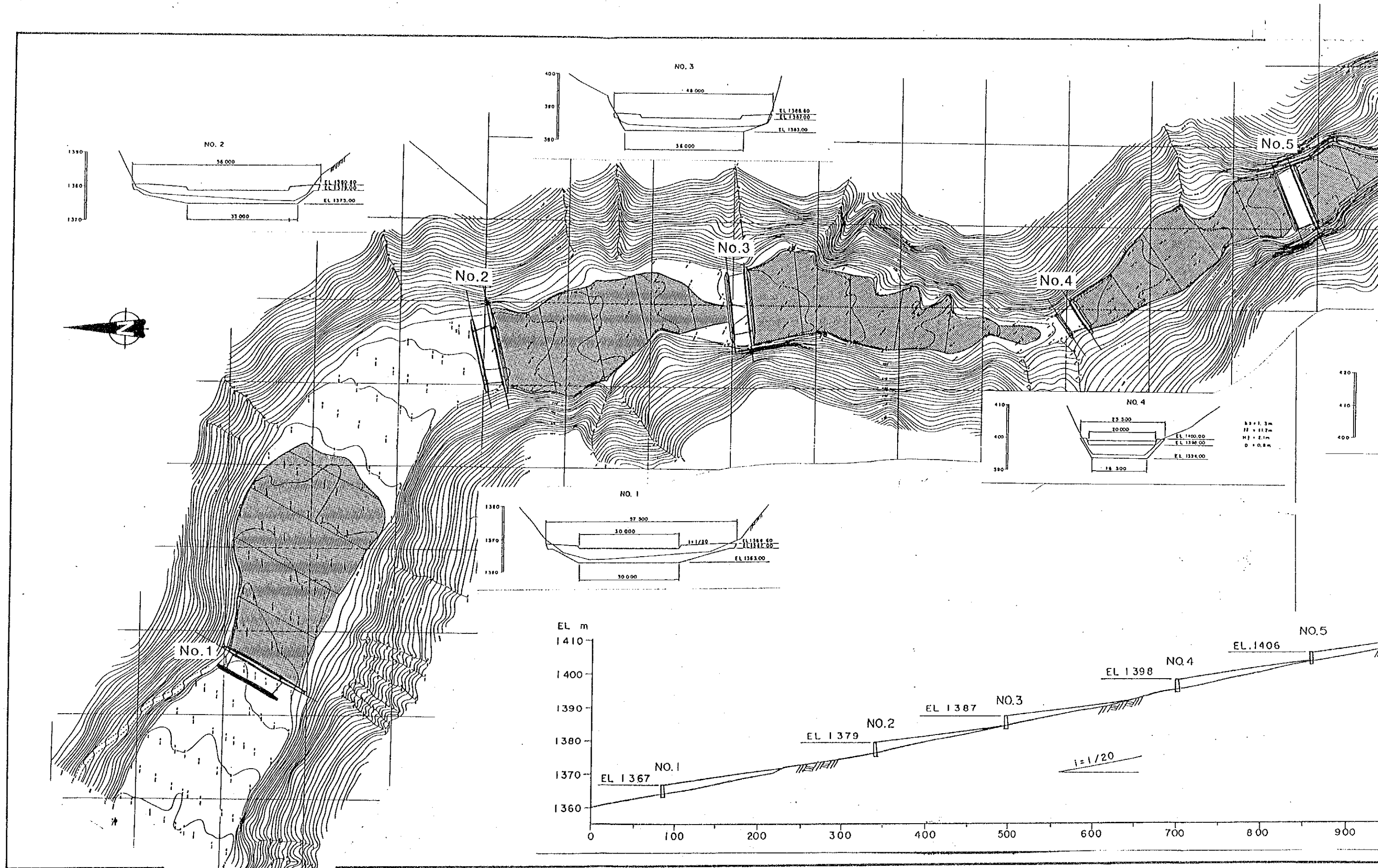
STUDY ON CHAMA RIVER BASIN
 CONSERVATION PROJECT
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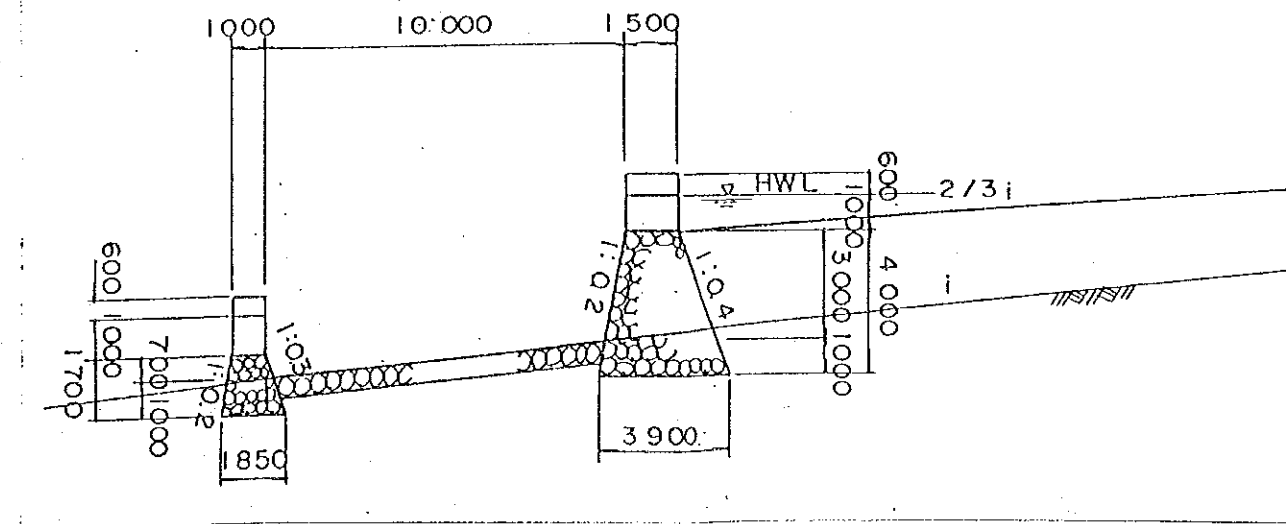
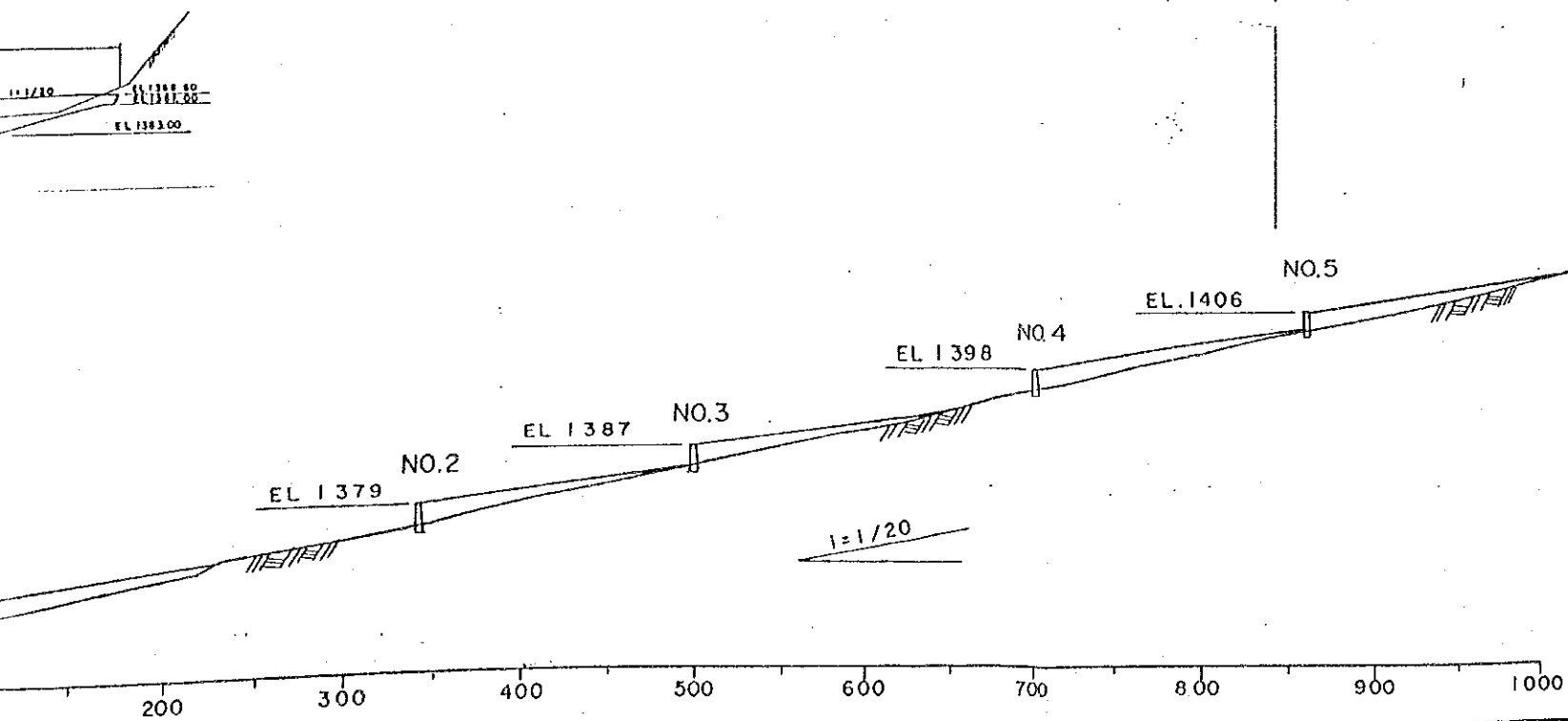
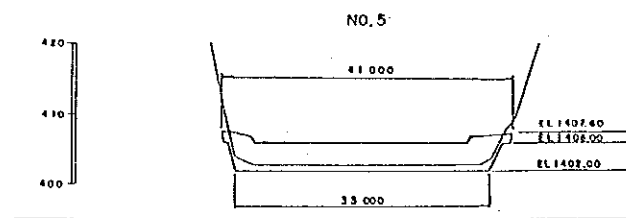
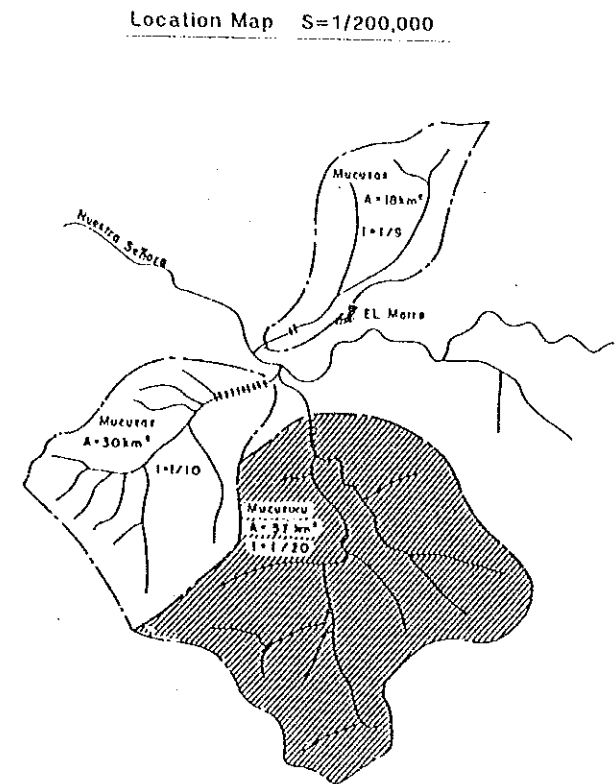
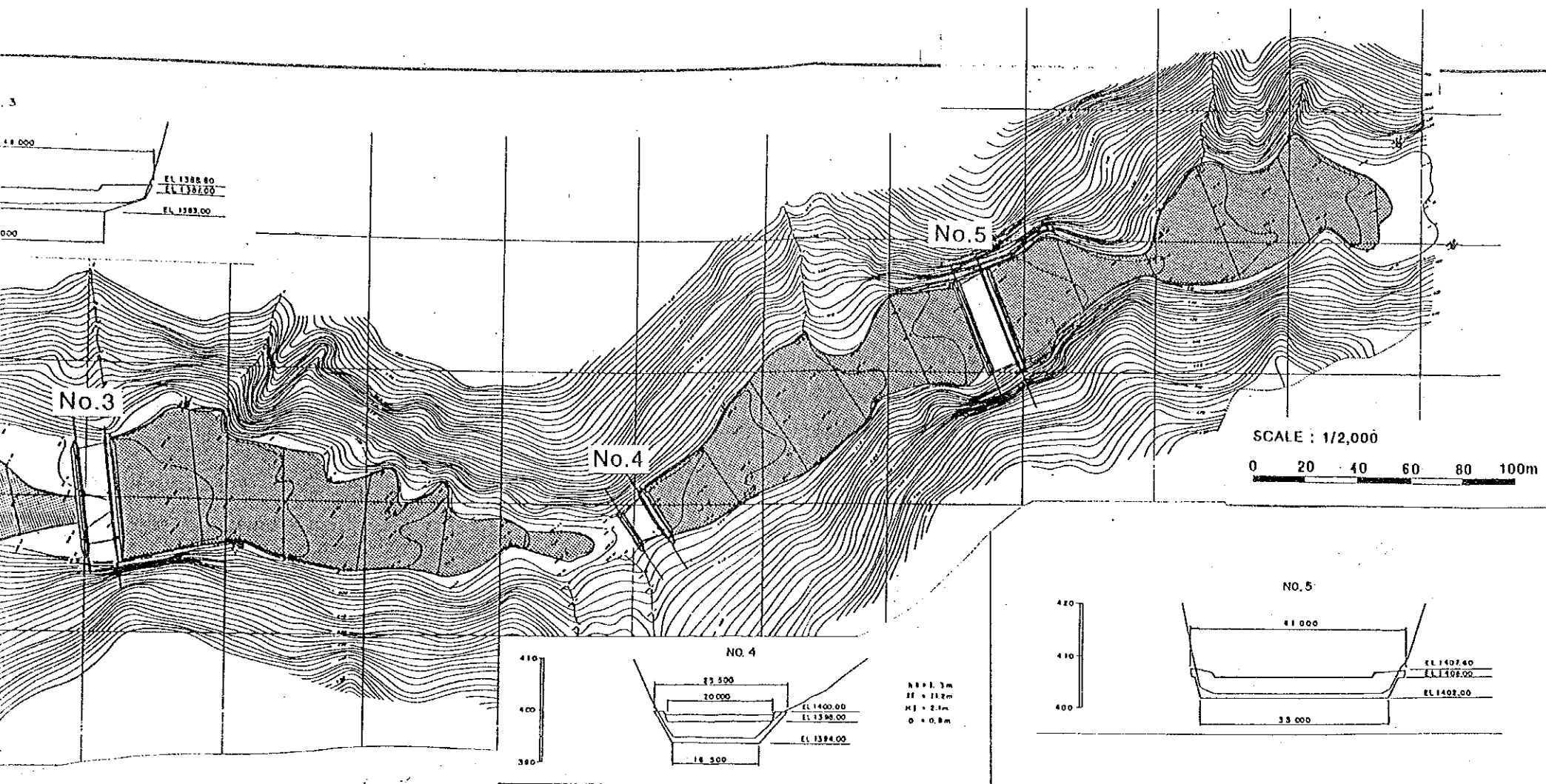


STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

Disposición de Presa Continua de Poca
Altura sobre Qda. Mucusós

Fig. 6.1-6

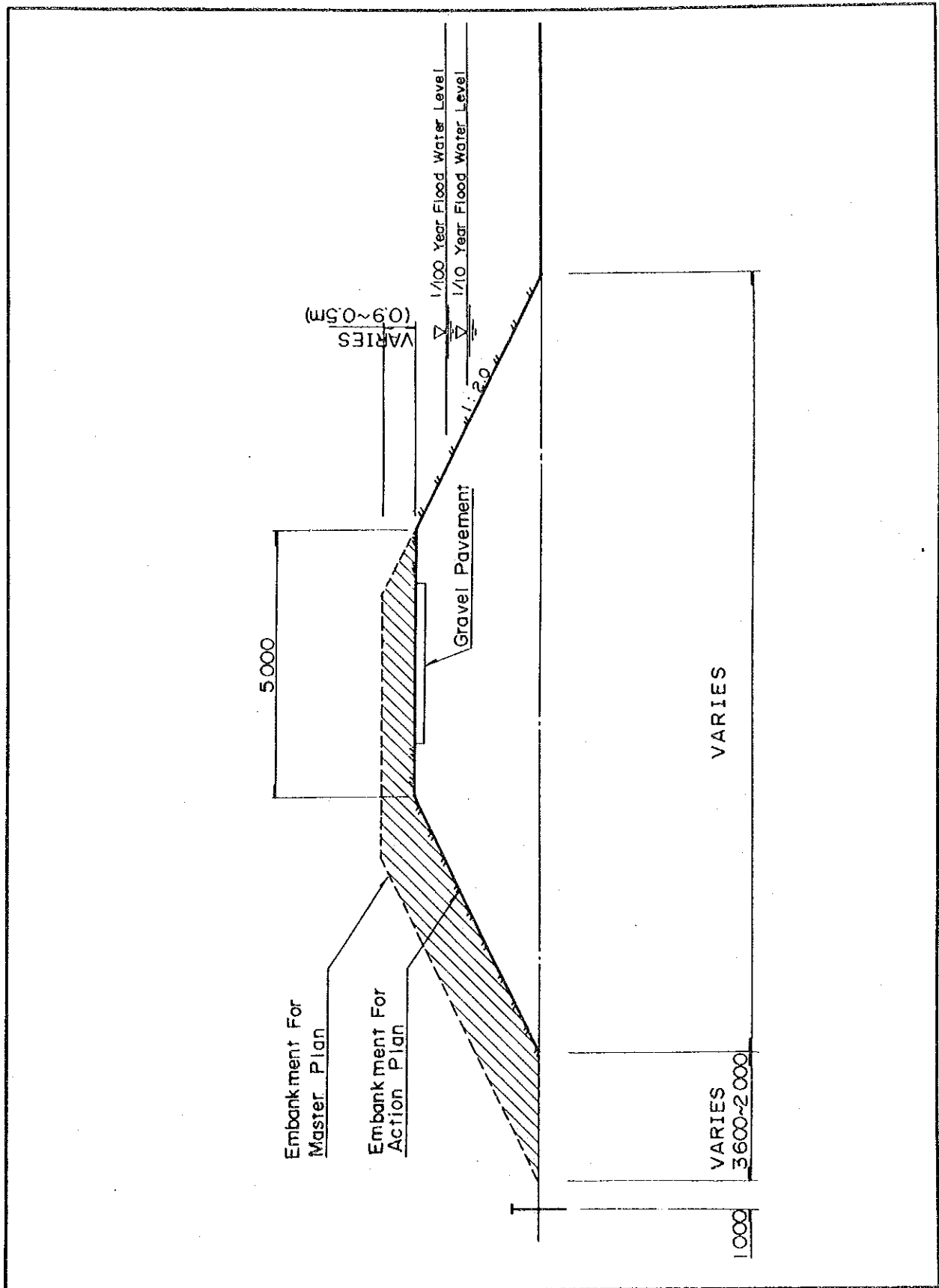




STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

Disposición de Presa Continua de Poca
Altura sobre Qda. Mucusurú

Fig. 6.1-7



Dibujo Normal de Sección Transversal de Dique para Plan de Acción

Fig. 6.1-8

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

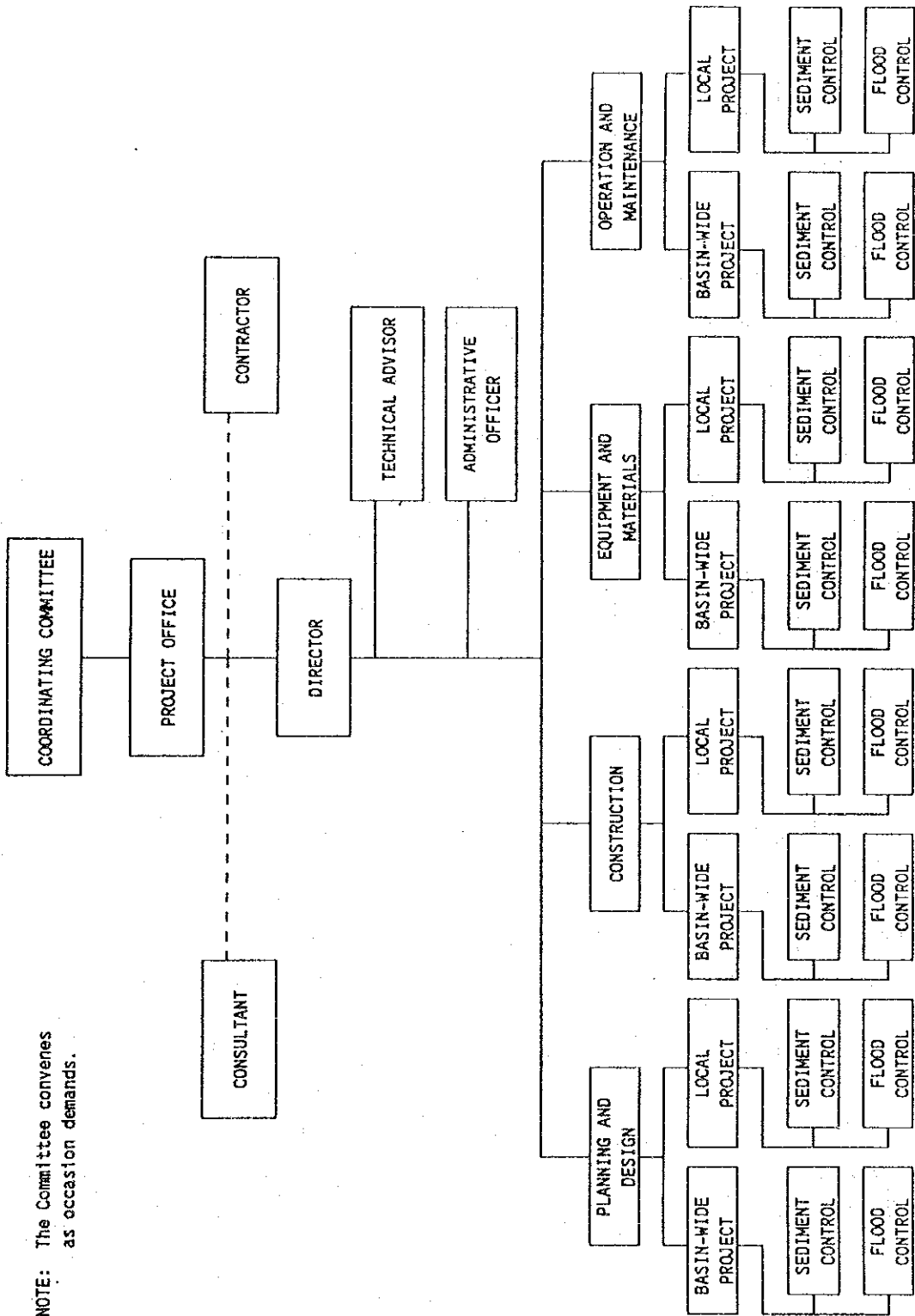
JAPAN INTERNATIONAL COOPERATION AGENCY

Description	Unit	Quantity	1st Year 1991	2nd Year 1992	3rd Year 1993	4th Year 1994	5th Year 1995	6th Year 1996	7th Year 1997	8th Year 1998	9th Year 1999	10th Year 2000
PRE-CONSTRUCTION STAGE												
I Detailed Design												
II Tendering												
CONSTRUCTION STAGE												
I BASIN-WIDE PROJECT												
A Sediment Control Works												
1. Preparatory Works	LS	1										
2. Sabo Dam	m ³	62,500										
2.1 C-1 Sabo Dam	m ³	14,600				(C-1)						
2.2 C-5 Sabo Dam	m ³	65,000						(C-5)				
2.3 N-1 Sabo Dam	m ³										(N-1)	
3. Continuous Low Dam	No.	10				(Mucusás)			(Mucusurú)			
3.1 Mucusás	No.	5										
3.2 Mucusurú	No.	3										
3.3 Mucusós	No.	340				(113 nos.)				(227 nos.)		
4. Retaining Wall	No.											
B Flood Control Works												
1. Preparatory Works	LS	1										
2. Land Clearing	ha	674										
3. Dike Embankment	m ³	745,000				(Sec 1)	(Sec 5)	(Sec 2)	(Sec 3)			
4. Sod Facing	ha	28				(Sec 1)	(Sec 5)	(Sec 2)	(Sec 3)			
5. Revetment	m	10,300				(Sec 1)	(Sec 5)	(Sec 2)	(Sec 3)			
6. Groin	No.	325										
7. Groundsfill	No.	1				(Groundsfill)						
II LOCAL PROJECT												
A Sediment Control Works												
1. Preparatory Works	LS	1										
2. Retaining Wall	No.	750										
3. Check Dam	m	88										
4. Revetment	m	720						(42 nos.)		(46 nos.)		
B Flood Control Works												
1. Albarregas River	m ³	660										
2. Milla River	LS	1										
3. Portuguesu River	m ³	4,500										

Cronograma de Construcción para Plan de Acción
 Fig. 6.3-1

STUDY ON CHAMA RIVER BASIN
 CONSERVATION PROJECT
 JAPAN INTERNATIONAL COOPERATION AGENCY

NOTE: The Committee convenes as occasion demands.

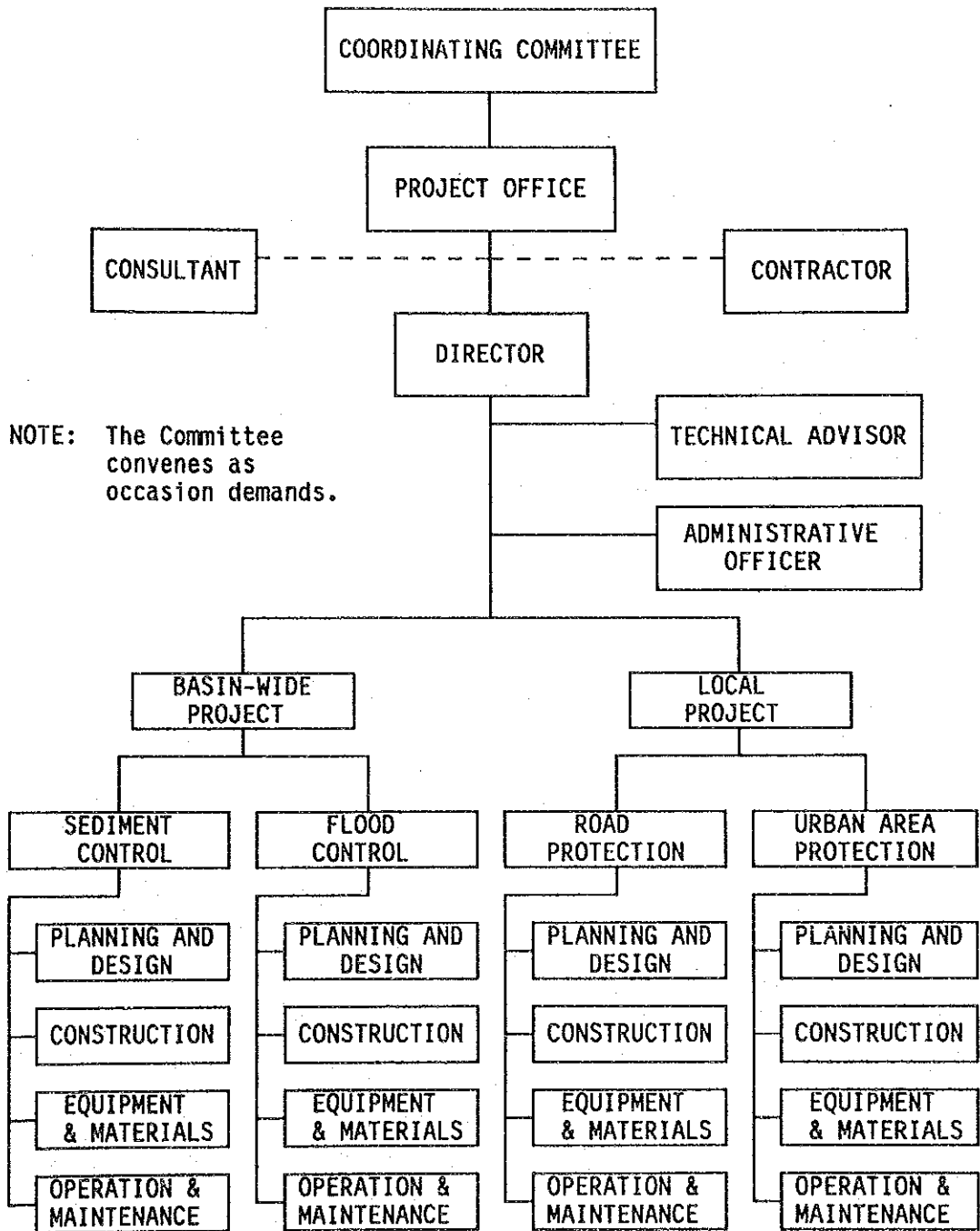


Organización de Oficina de Proyecto (Caso 1)

Fig. 6.5-1

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY



Organización de Oficina de Proyecto (Caso 2)

Fig. 6.5-2

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

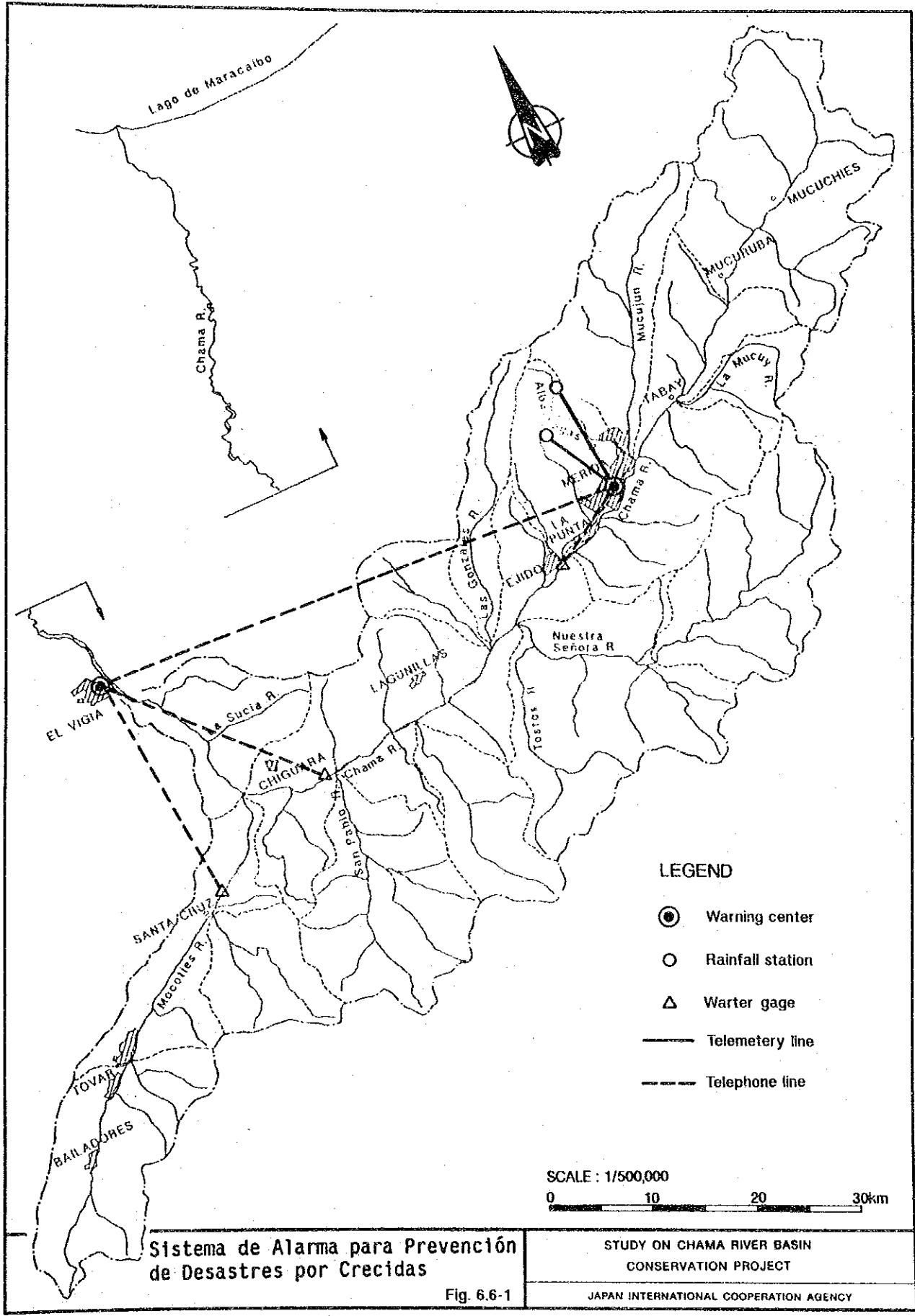


Fig. 6.6-1

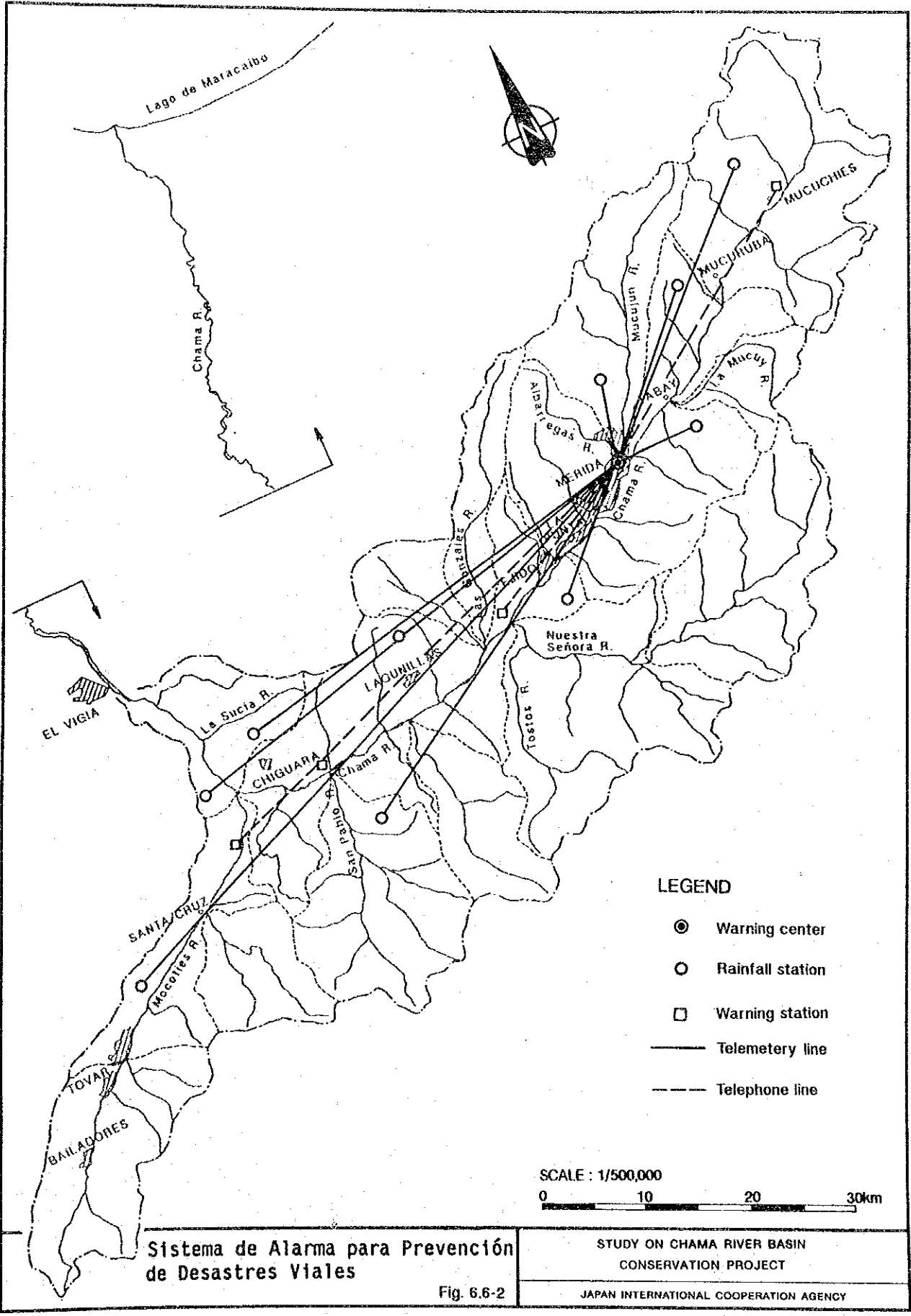


Fig. 8.6-2

