

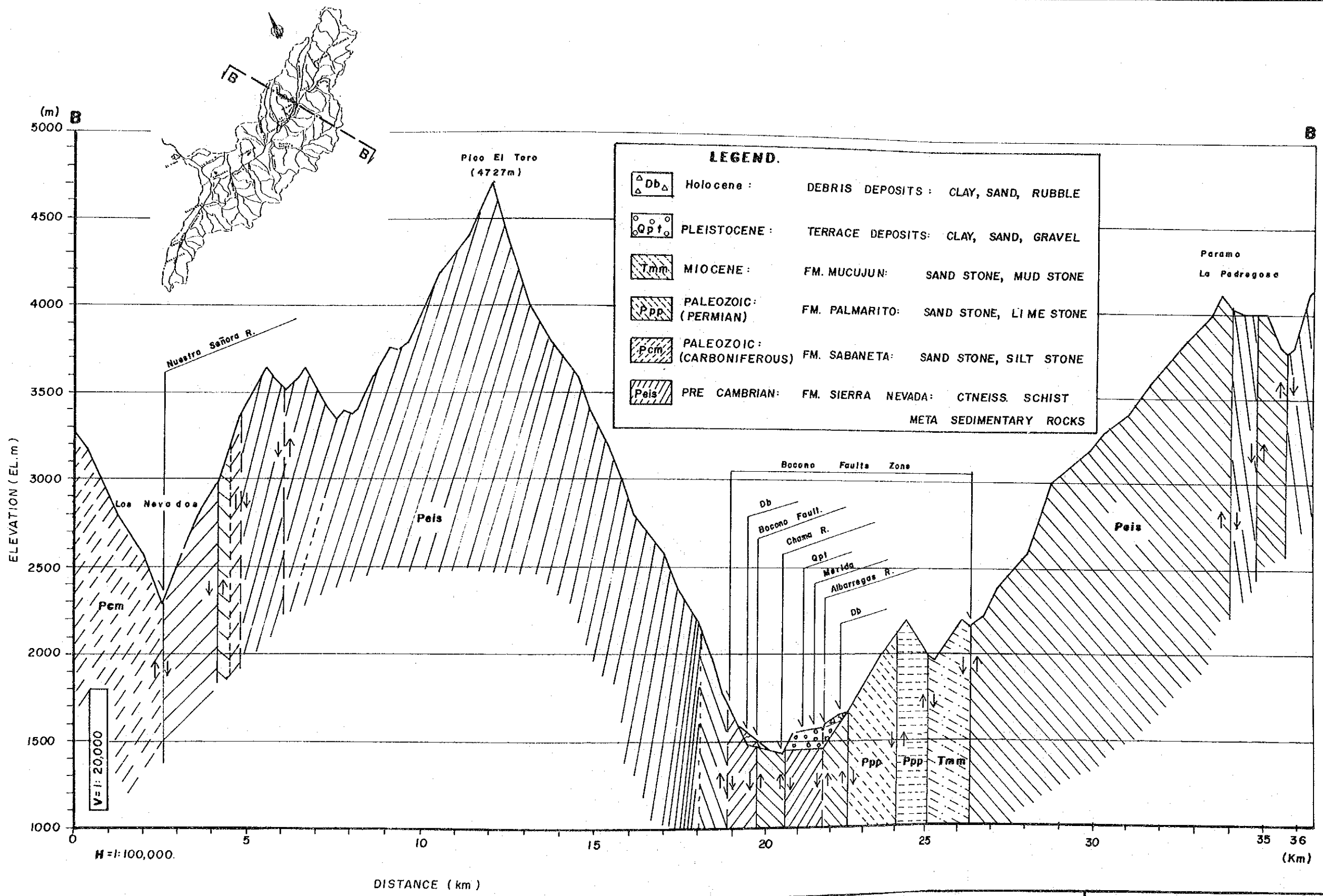
Chart	Symbol	Formation	Facies	Epoch	Era	
	Qal	Alluvium Deposits	Gravel, Sand, Silt, Clay	Holocene	Cenozoic Quaternary	
	Qpmo	Horaine Deposits	Gravel, Sand, Silt, Clay, Peat	Holocene		
	Qpt	Terrace Deposits	Gravel, Sand	Pleistocene		
	Qz	Tectonicted Quaternary Deposits	Conglomerate	Pleistocene		
	Tpnb	Betijoque Formation	Mudstone, Conglomerate	Pliocene	Cenozoic Tertiary	
	Tmi	Isnotu Formation	Mudstone, Sandstone	Miocene		
	Tun	Mucujún Formation	Sandstone, Calcareous Shale	Miocene		
	Tupa	Palmar Formation	Sandstone, Mudstone, Shale	Miocene		
	Tole	León Formation	Shale	Oligocene		
	Teca	Carbonera Formation	Sandy Shale, Coal	Eocene		
	Tpev	El Valle Formation	Mudstone, Sandstone	Paleocene-Eocene		
	Tpe	Unidentified Tertiary	Mudstone, Sandstone	Paleocene-Eocene		
	Kc	Colon Formation	Shale	Upper Cretaceous		Mesozoic
	Kl	La Luna Formation	Limestone	Upper Cretaceous		
	Kcp	Capacho Formation	Shale, Siltstone, Limestone	Middle Cretaceous		
	Kag	Aguardiente Formation	Sandstone, Limestone, Shale	Middle Cretaceous		
	Ka	Apon Formation	Limestone, Calcareous Shale	Lower Cretaceous		
	Karn	Apon Formation and Río Negro Formation	Limestone, Shale, Sandstone	Lower Cretaceous		
	Krn	Río Negro Formation	Sandstone, Arkose, Conglomerate, Shale	Lower Cretaceous		
	Jq	La Quinta Formation	Red Sandstone, Siltstone, Conglomerate	Jurassic		
	M	Unidentified Mesozoic				
	Ppp	Palmarito Formation	Shale, Maristone, Limestone	Permian	Paleozoic	
	Pcs	Sabaneta Formation	Siltstone, Sandstone	Carboniferous		
	Pcm	Mucuchachi Formation	Slate, Metasandstone, Green Schist	Carboniferous		
	Pet	Tostos Formation	Phyllite, Slate, Green Schist, Gneiss		Pre-Cambrian	
	Peis	Sierra Nevada Formation	Schist, Gneiss, Migmatite			
	Gr	Granite of El Carmen, Monzonite of La Carlota, Others	Granodirite, Quartz Monzonite		Paleozoic	

GEOLOGY OF CHAMA RIVER BASIN

2.1 - 3(2/2) チャマ川流域地質図

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図 2.1-4 チャマ川流域地質横断図

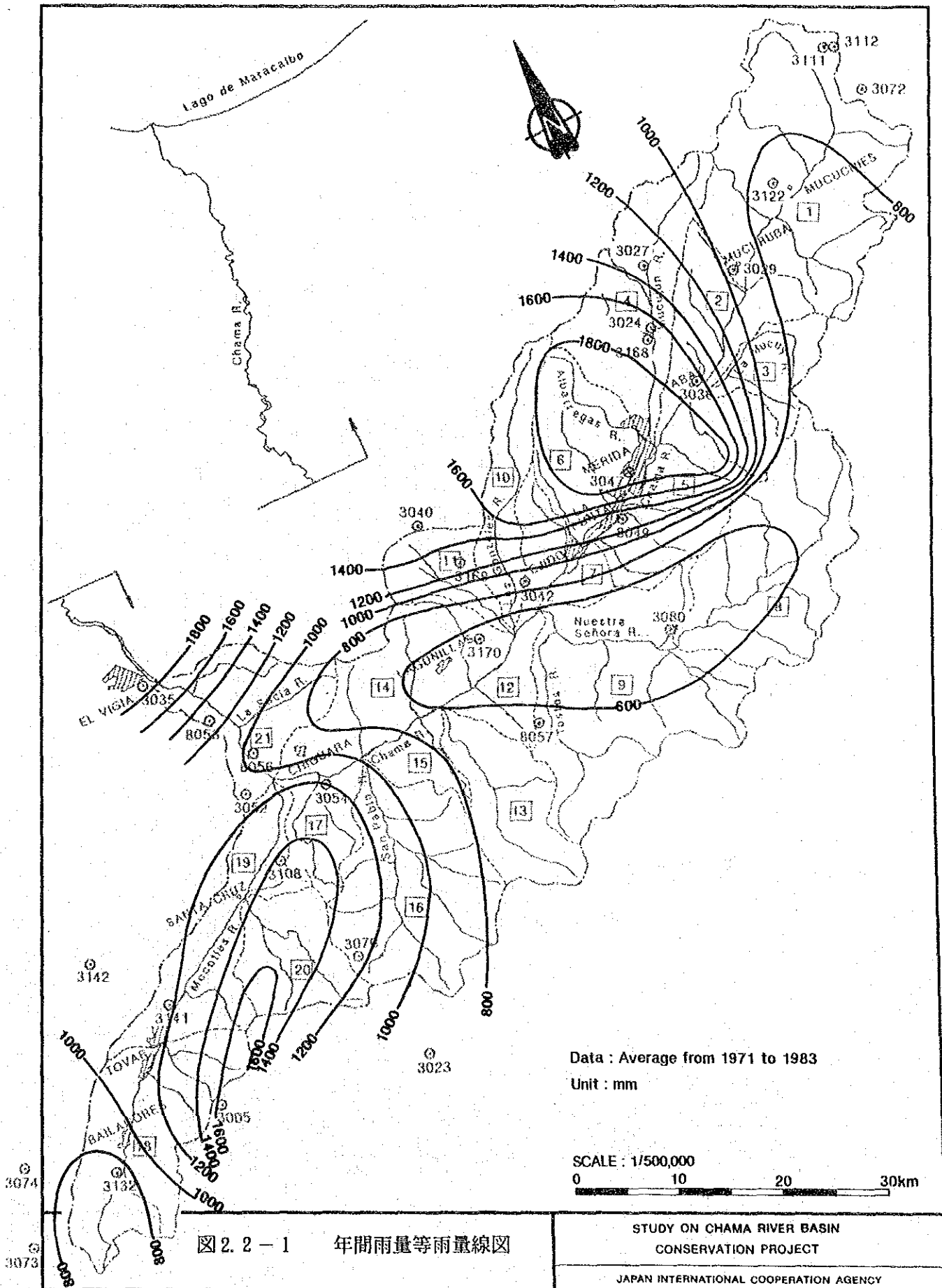


図 2.2 - 1 年間雨量等雨量線図

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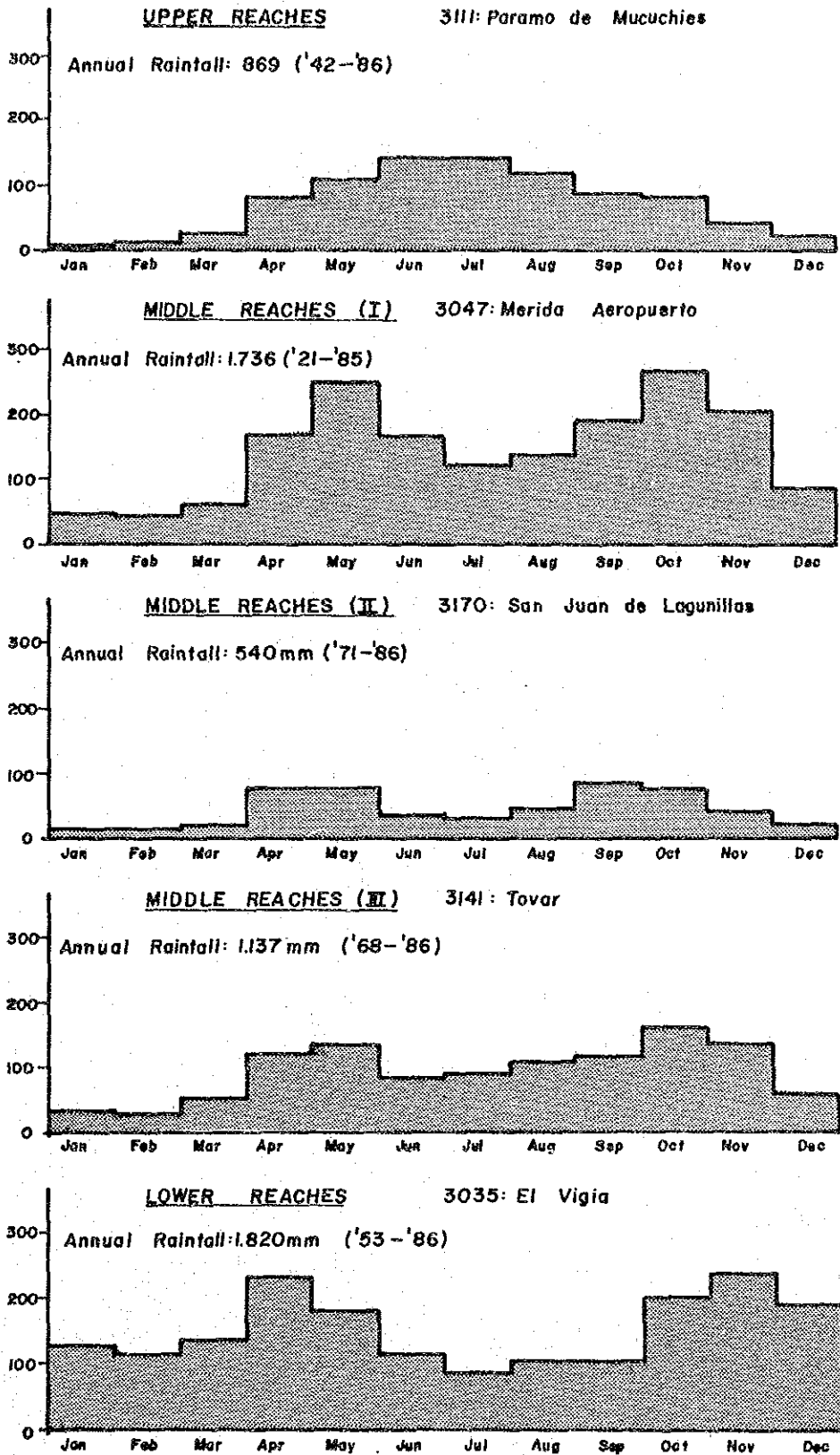


図 2. 2 - 2 年間降雨分布図

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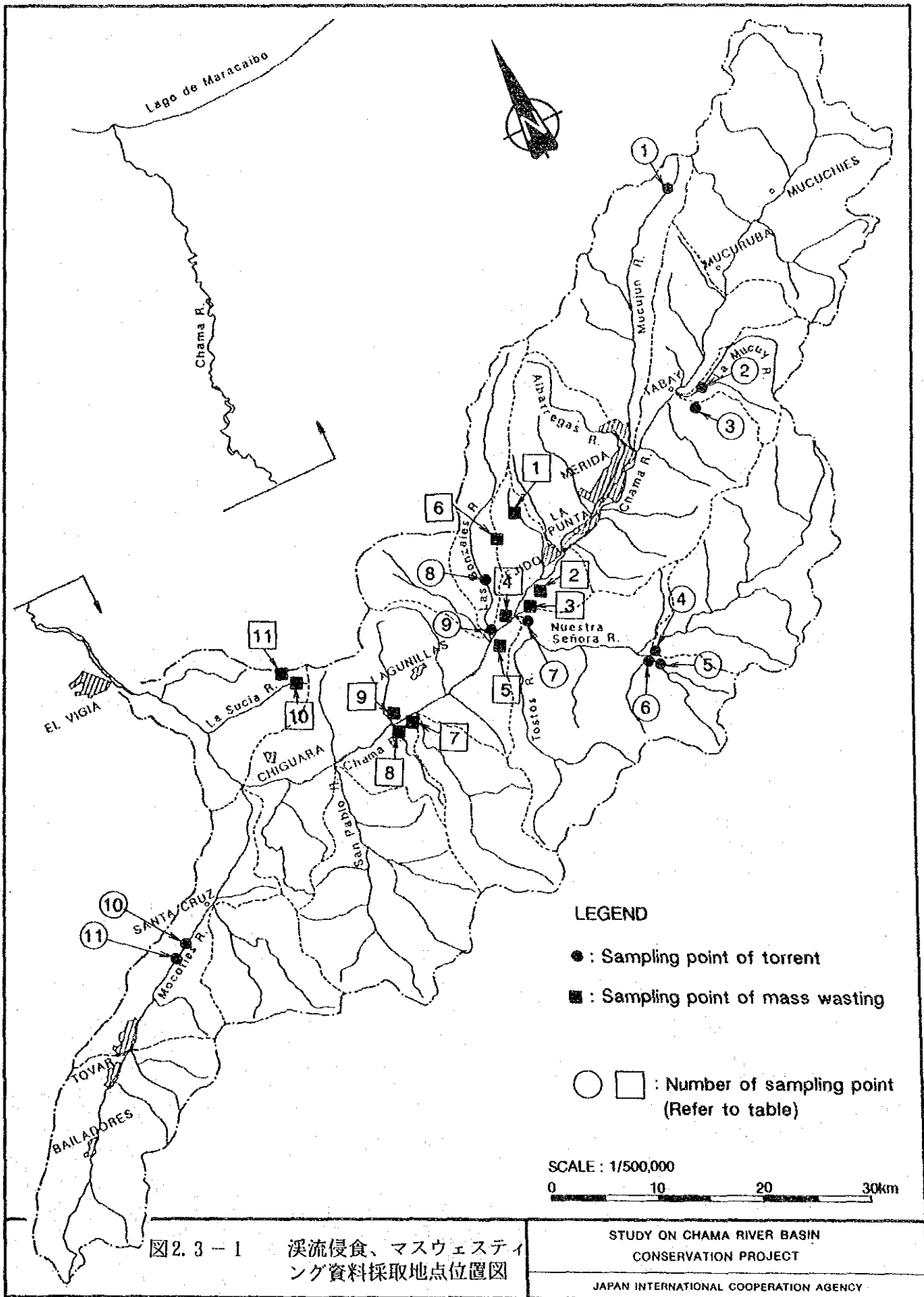


図2.3-1 溪流侵食、マスウェスティング資料採取地点位置図

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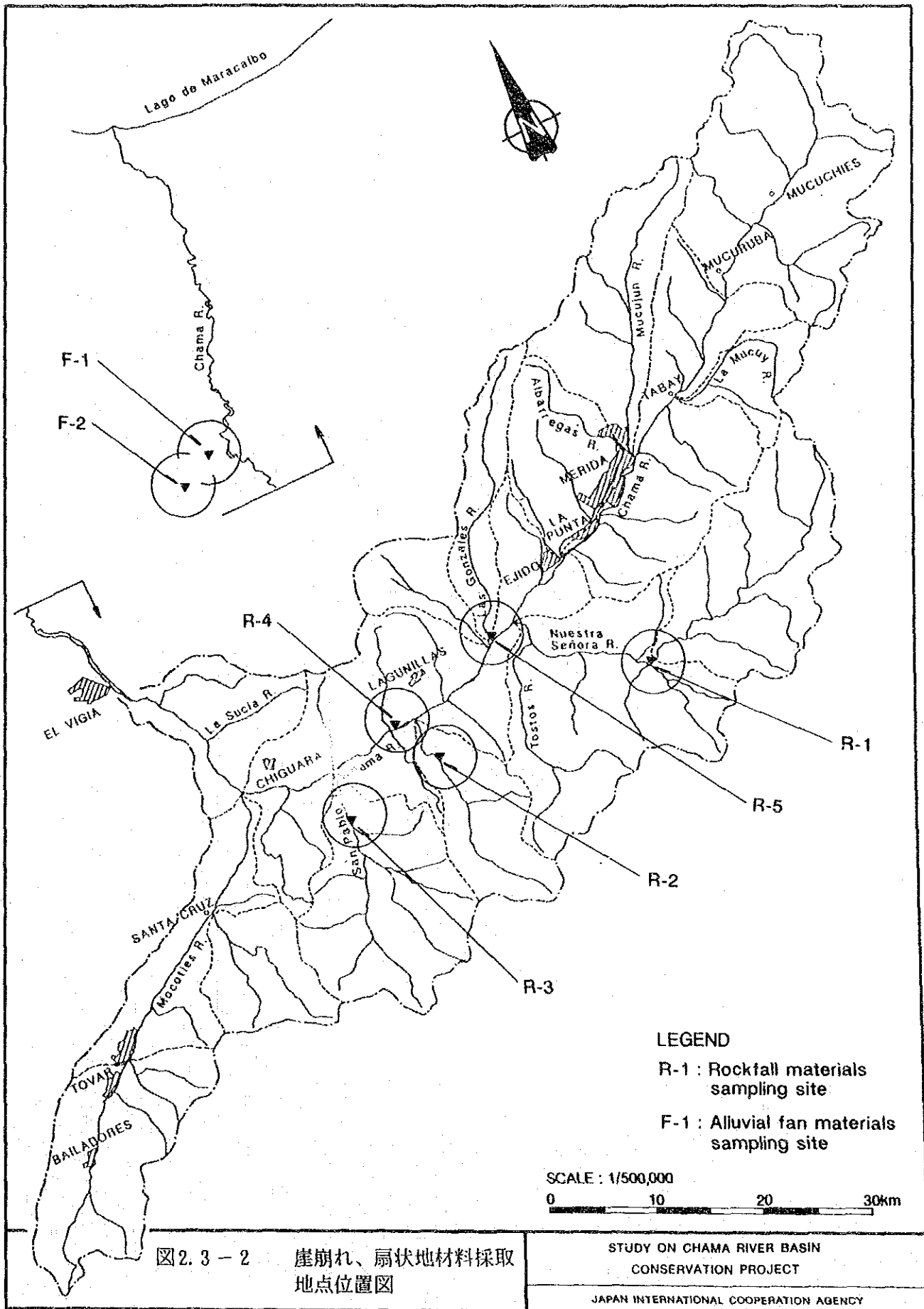


図 2.3 - 2 崖崩れ、扇状地材料採取地点位置図

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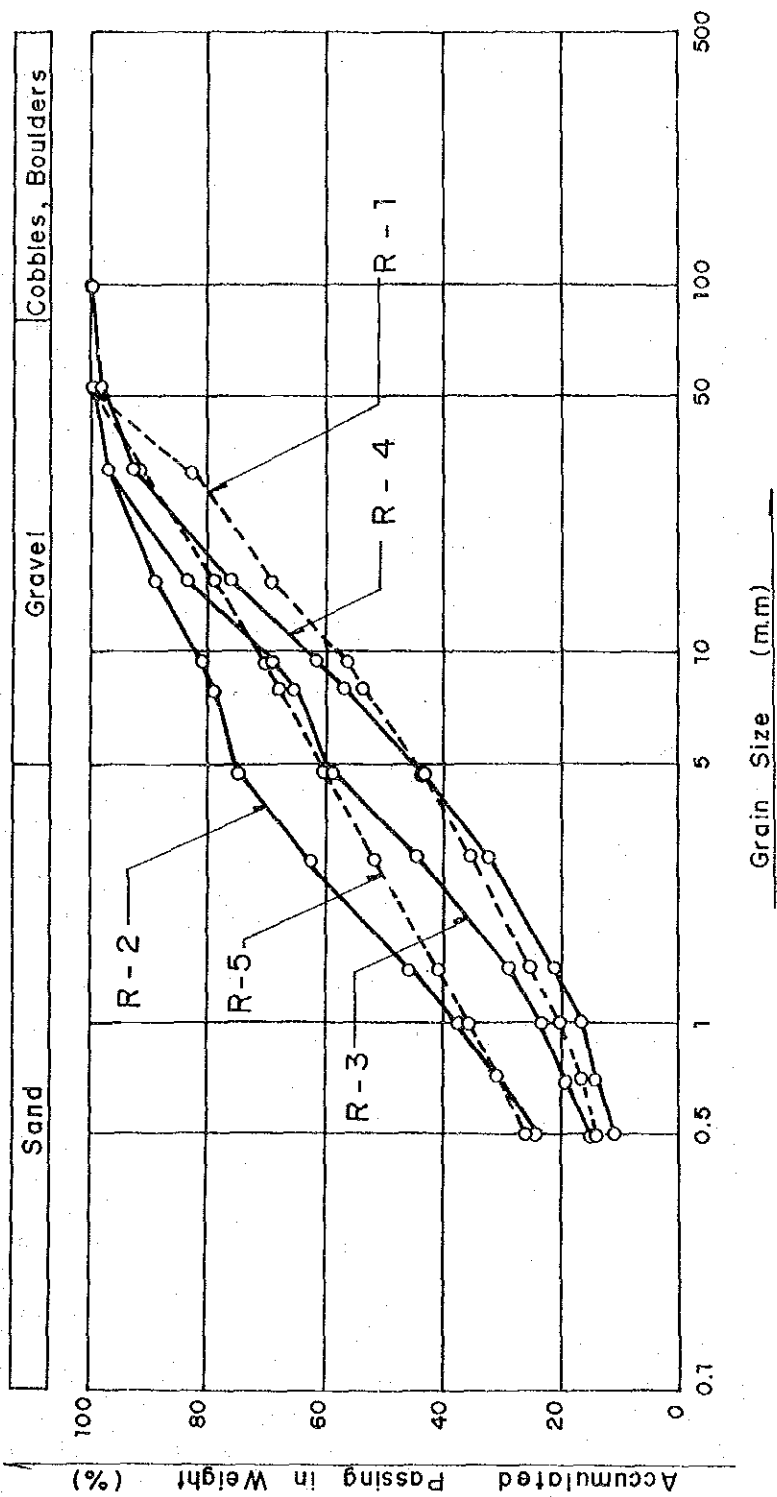


图 2.3 - 3 崖崩れ材料粒径加積曲線

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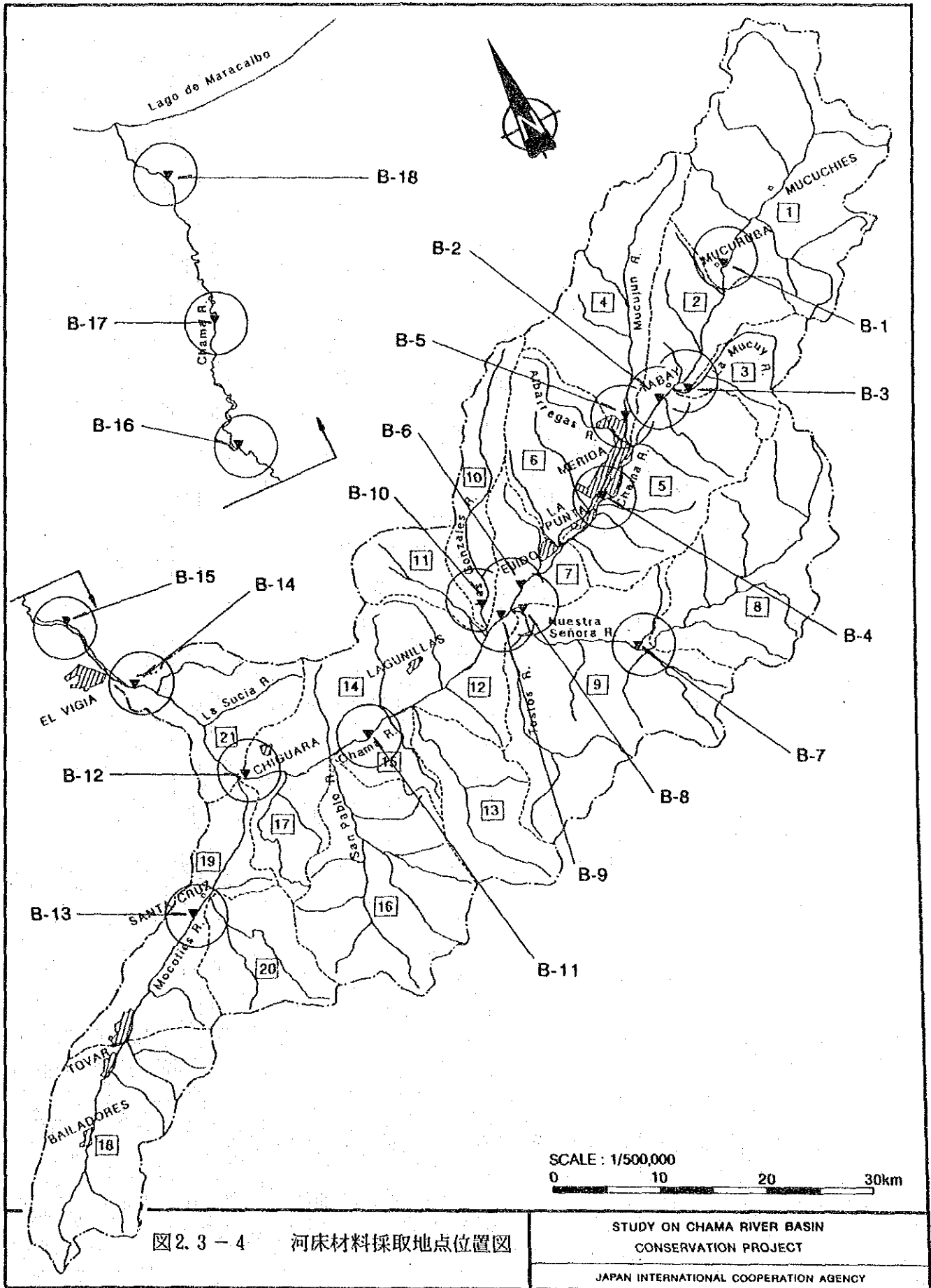


图 2.3 - 4 河床材料採取地点位置图

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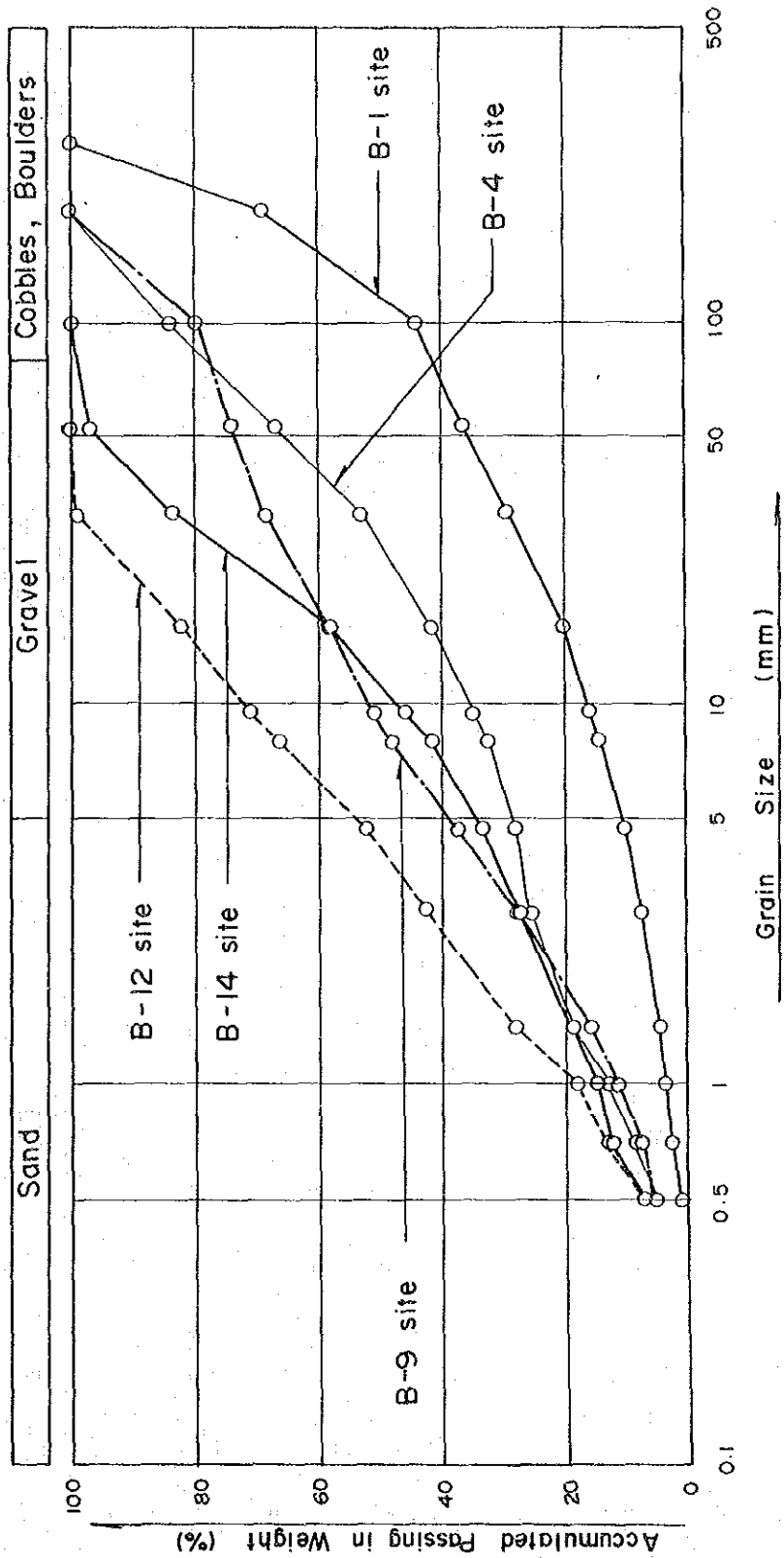


図 2.3 - 5 チャマ川河床材料粒径加積曲線

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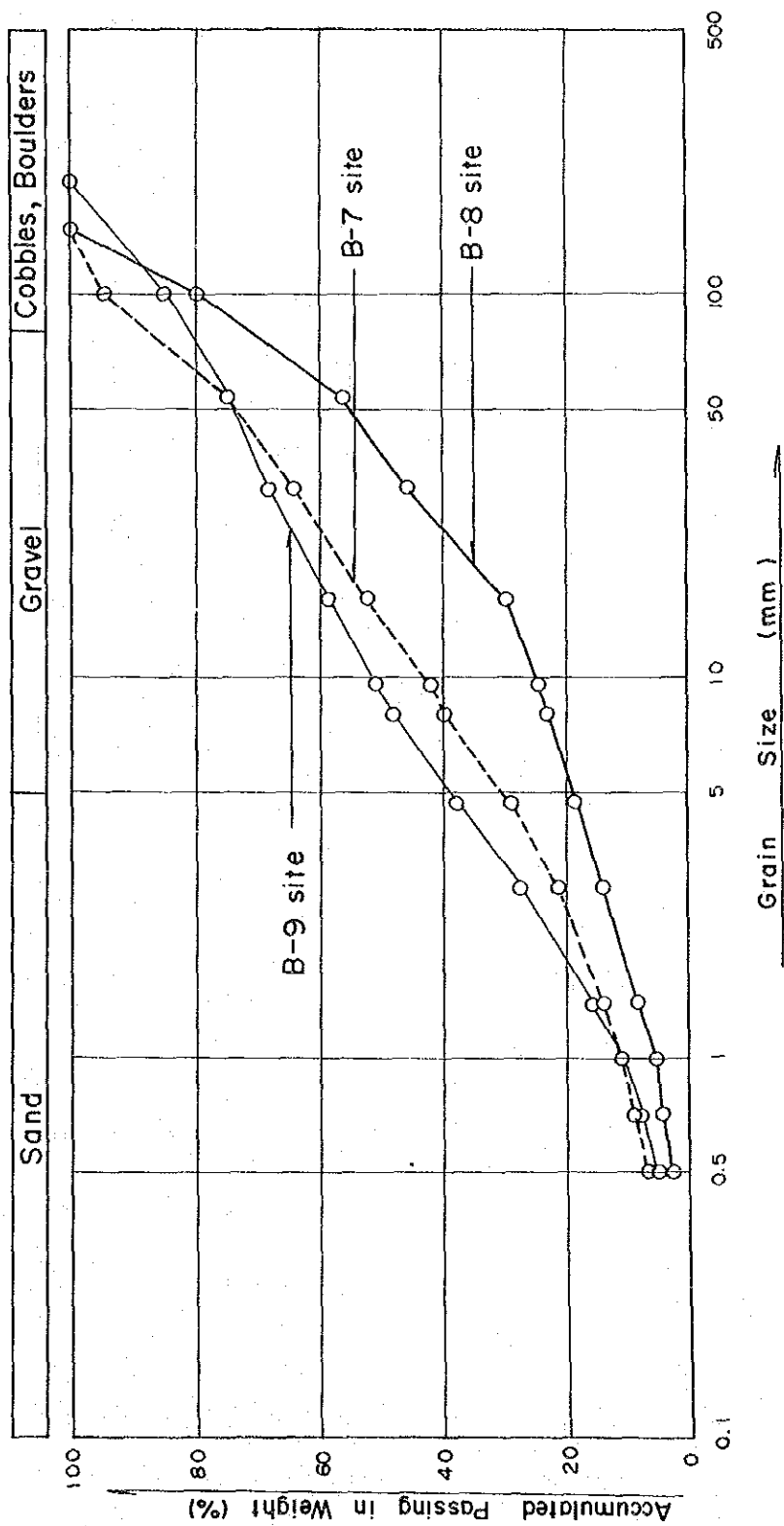


図2.3-6 ヌエスラセニョーラ川河床材料粒径加積曲線

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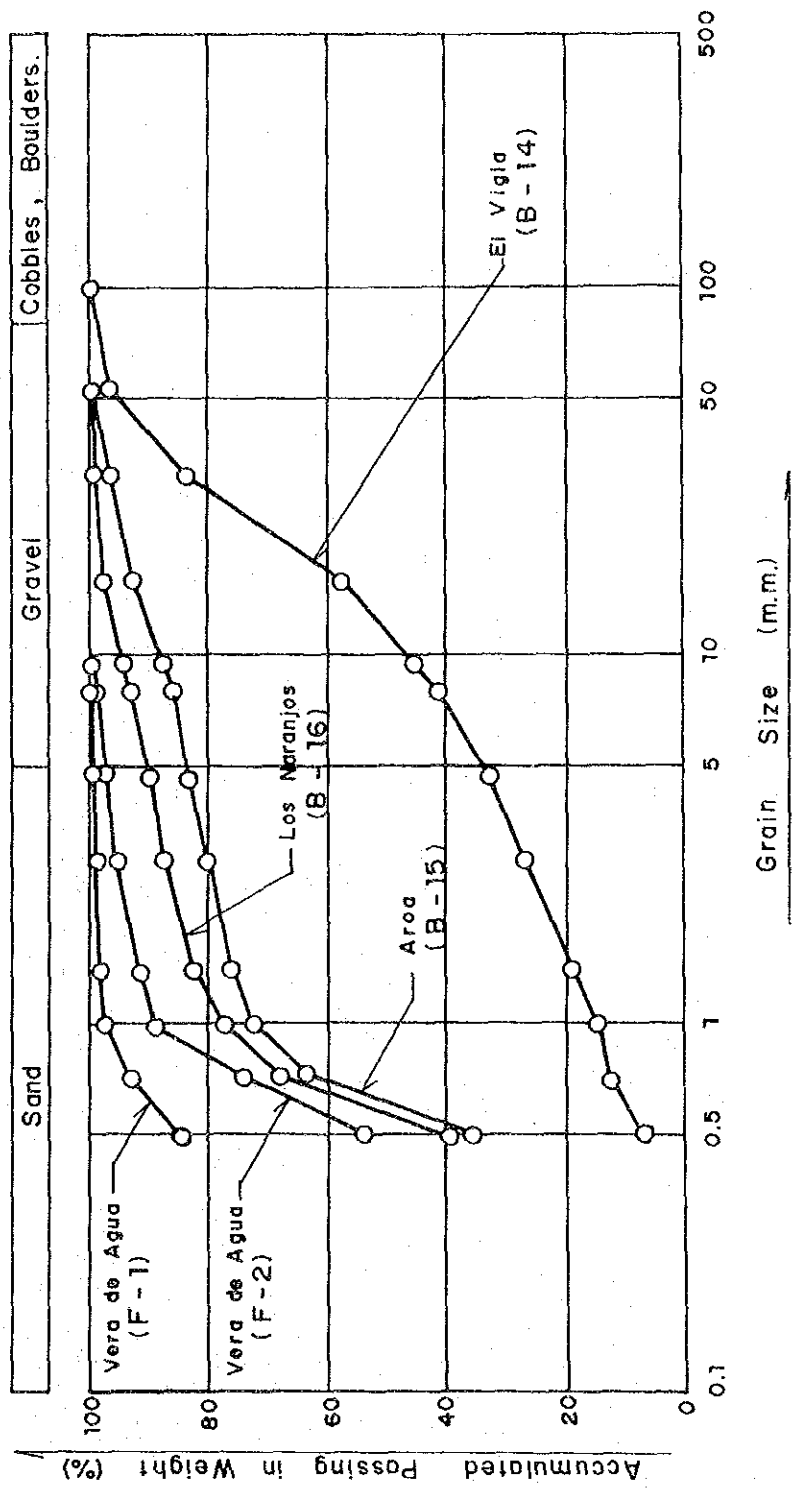


図2.3-7 チャマ川下流域扇状地河床材料粒径加積曲線

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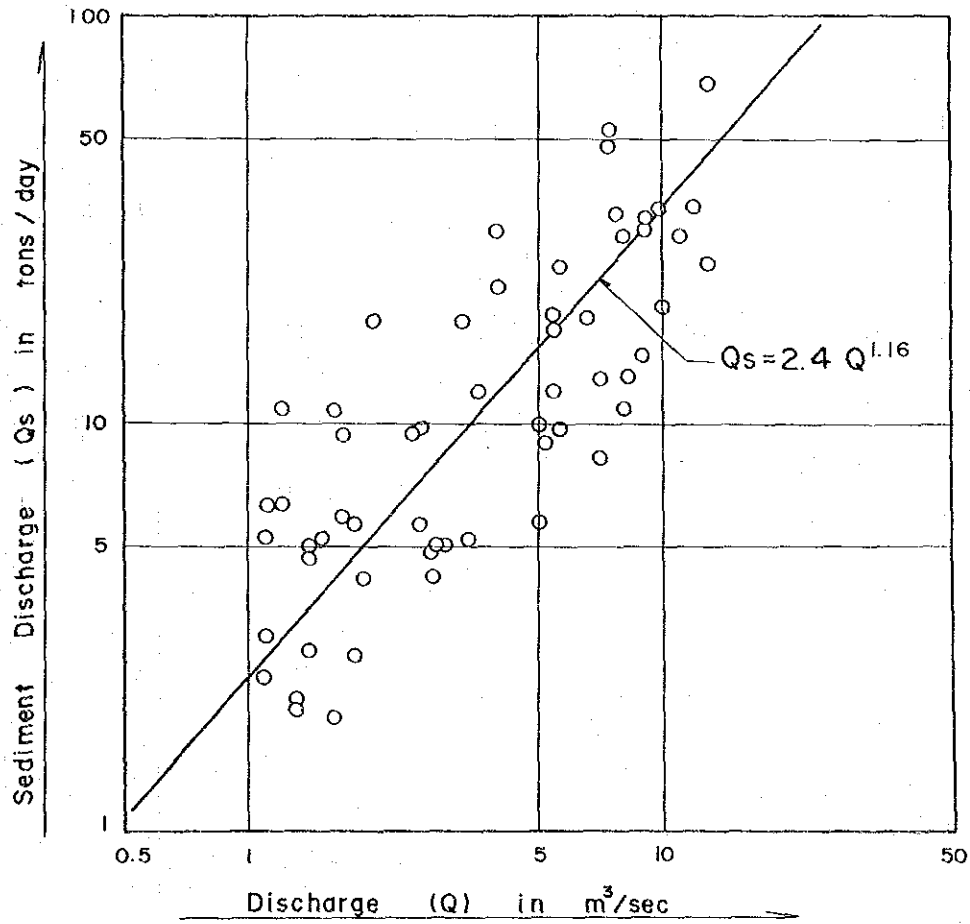


図2.3-8 ムクルバ観測所流量～浮遊砂量関係図

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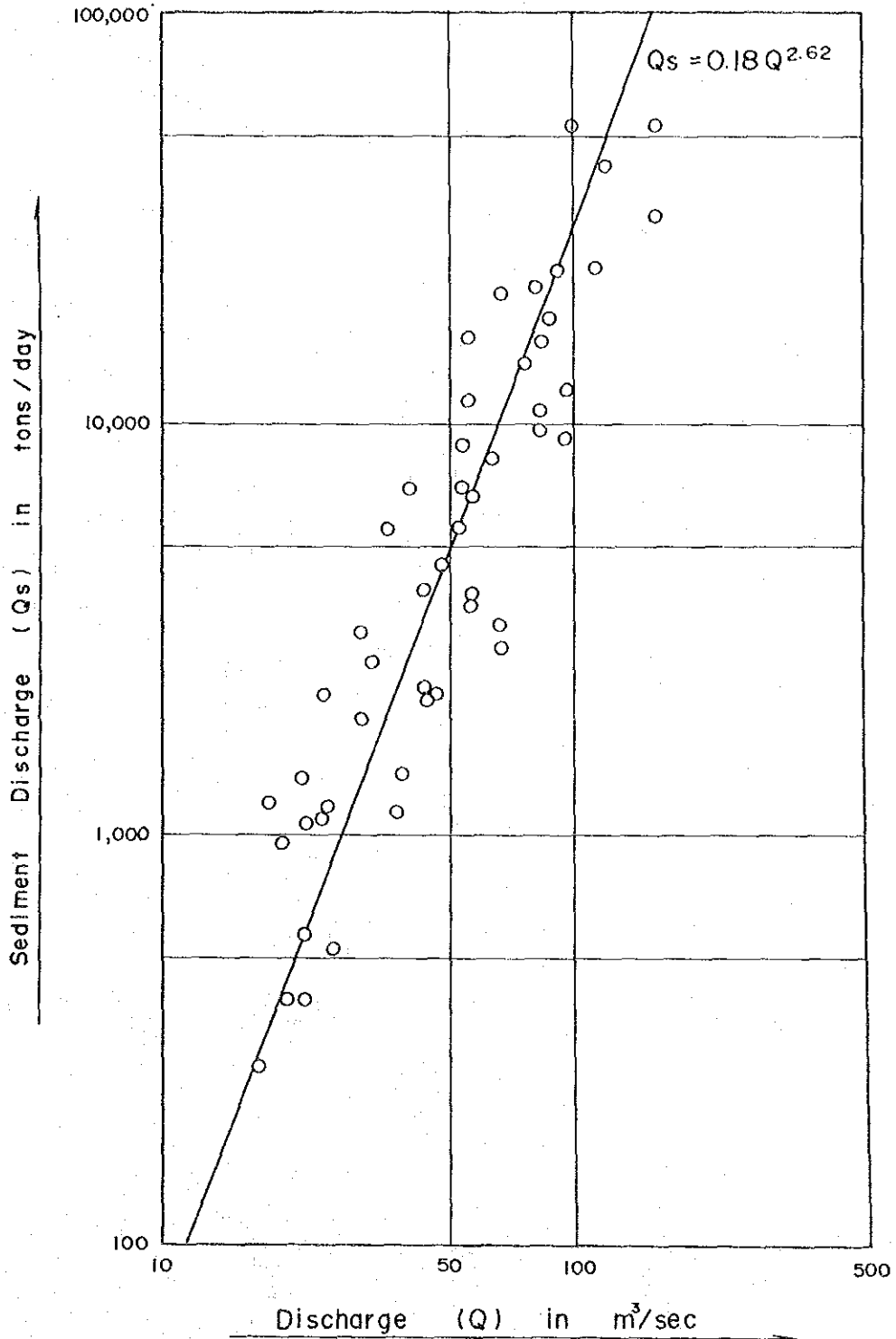


図2.3-9 プエルトチャマ橋地点流量
～浮遊砂量関係図

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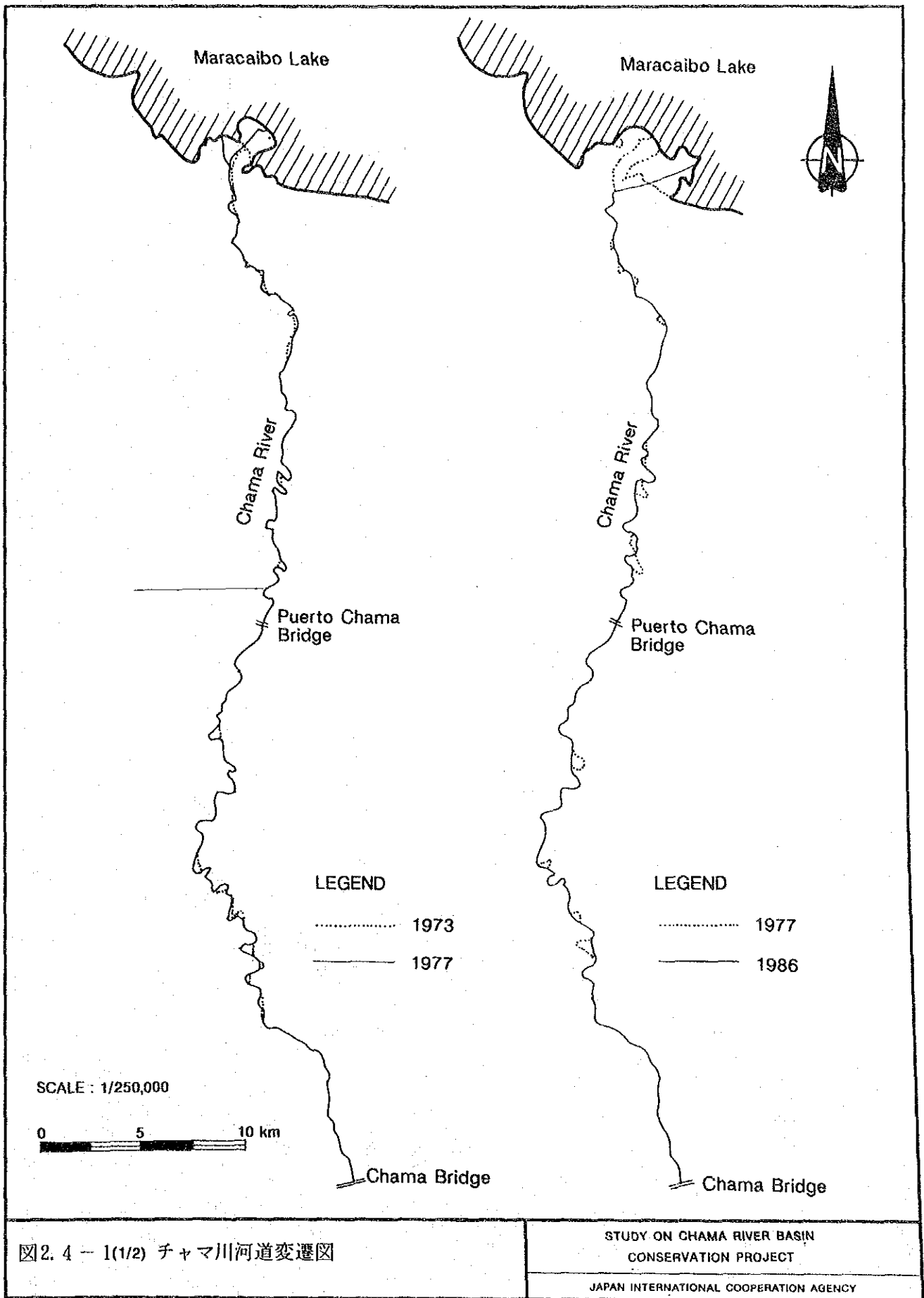
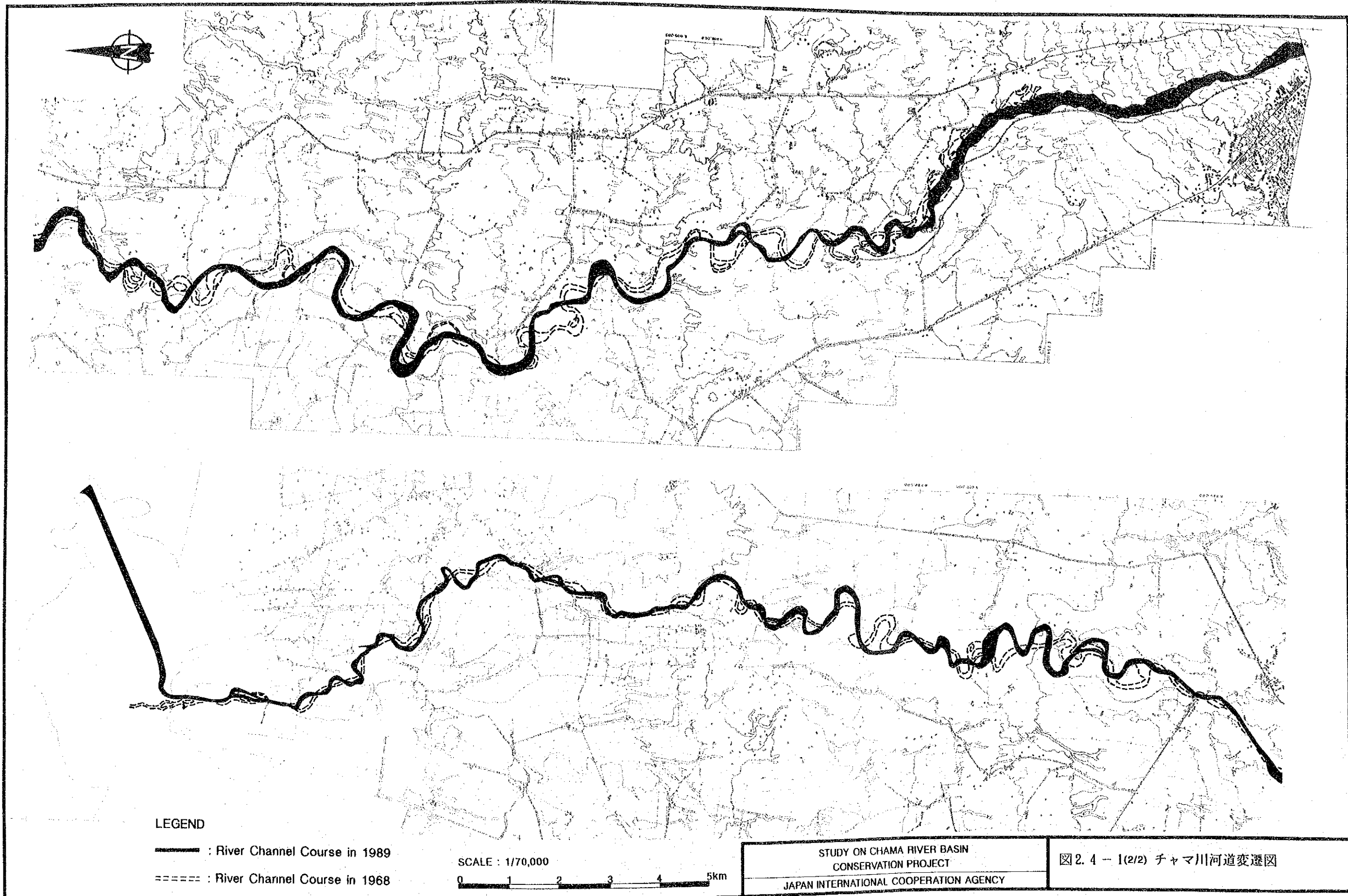


図2.4 - 1(1/2) チャマ川河道変遷図



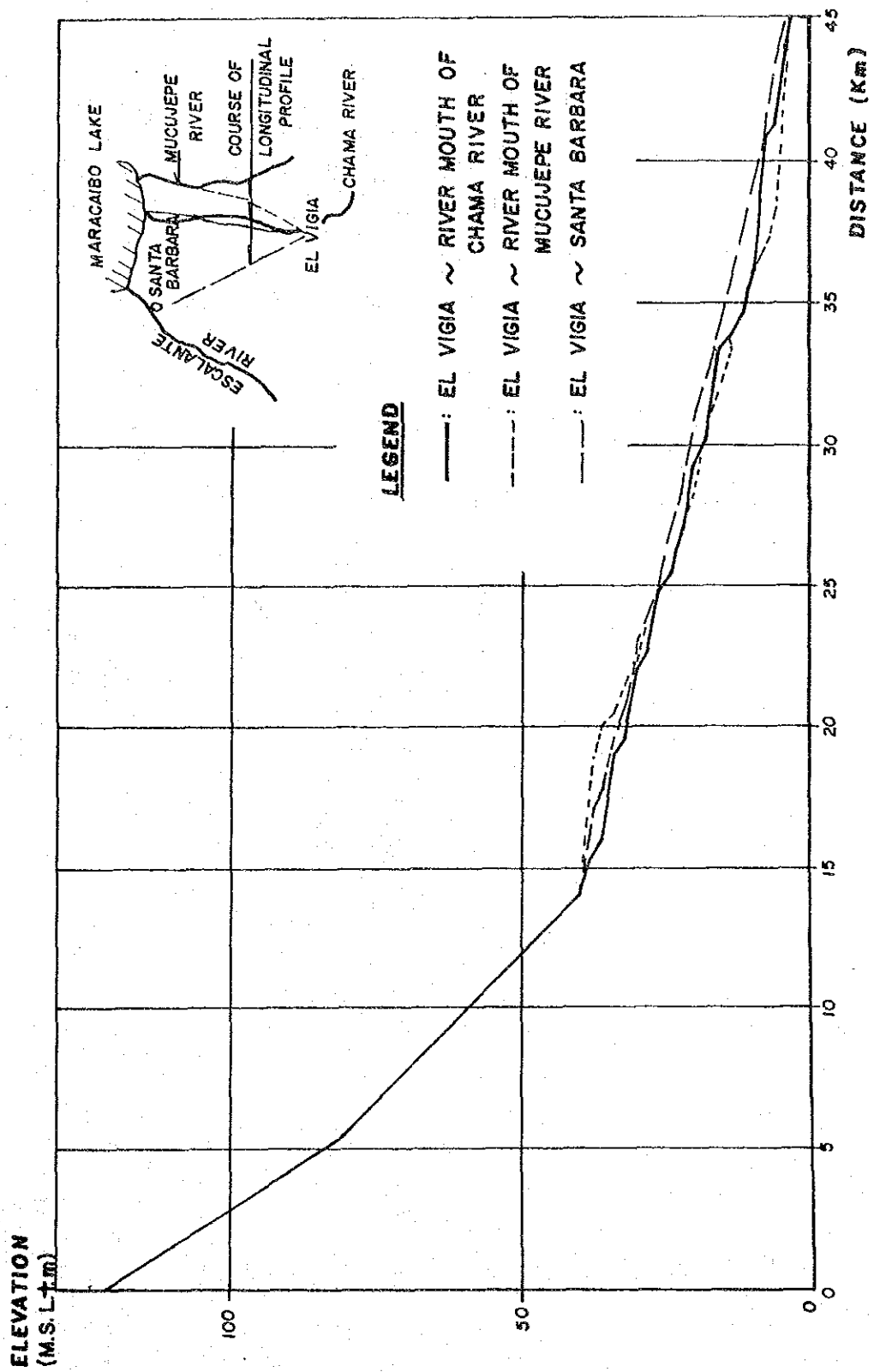


图 2.4 - 3 下流域縦断図

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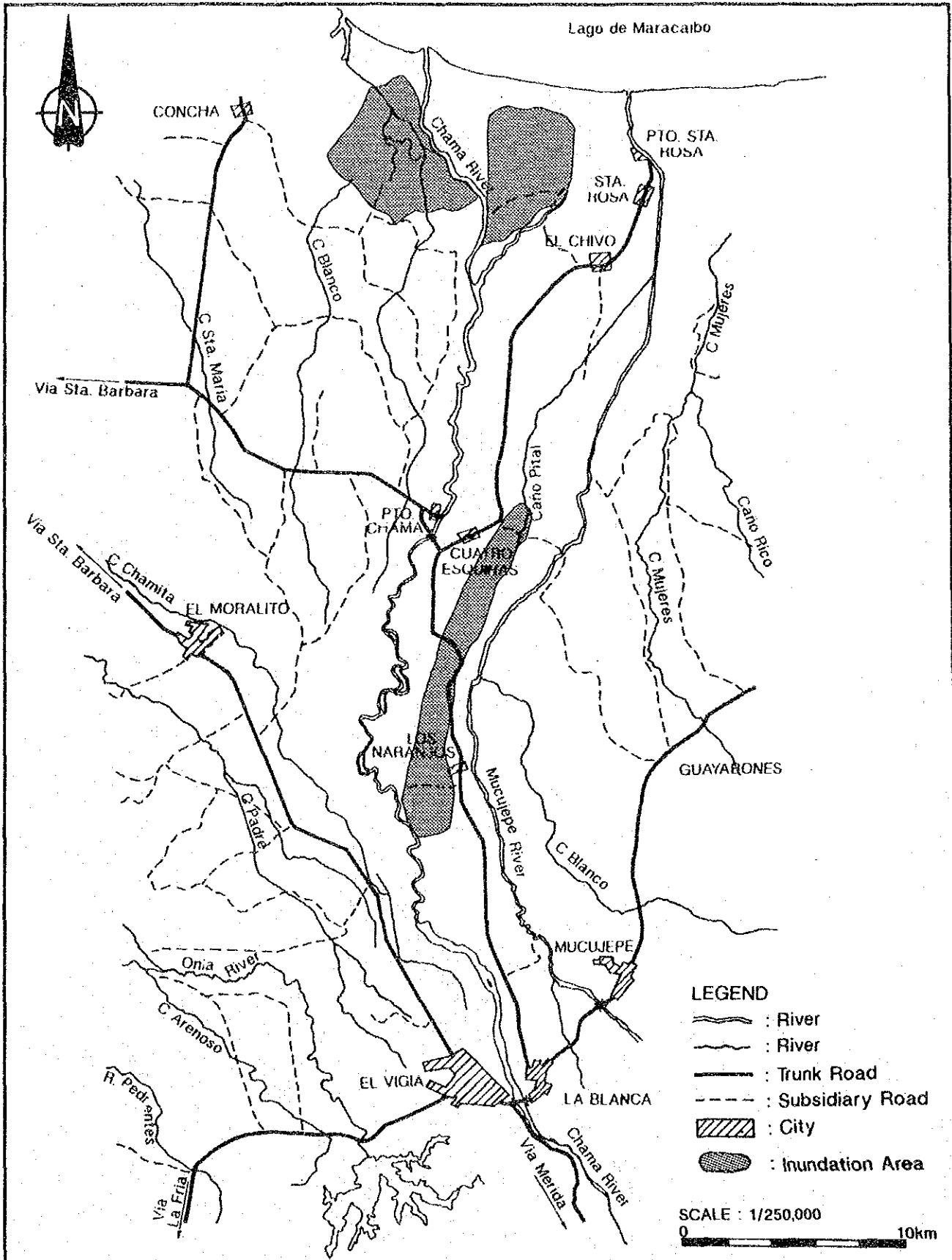


图2.5-1 1972年洪水氾滥域图

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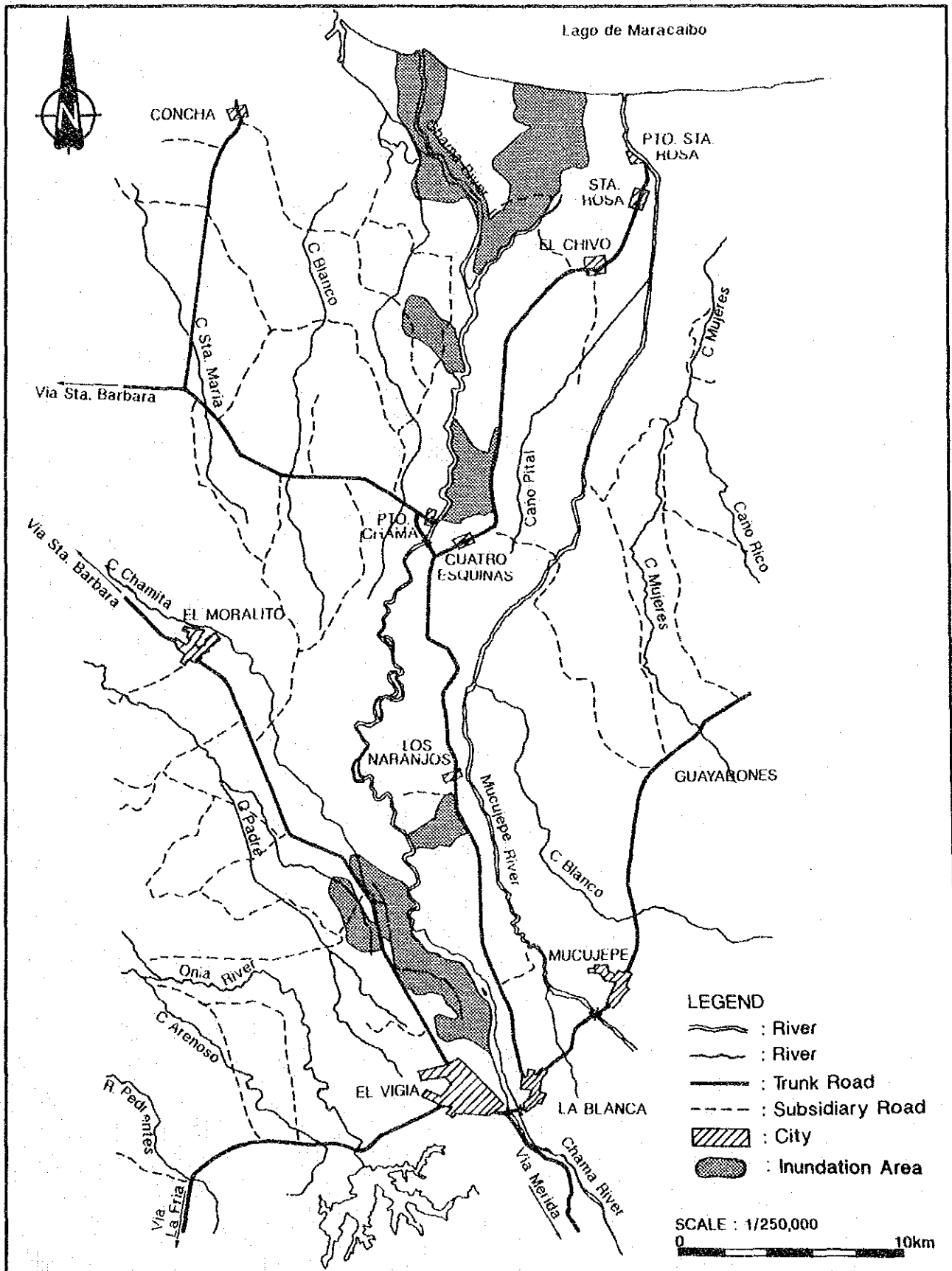


图 2.5 - 2 1982年洪水氾濫域图

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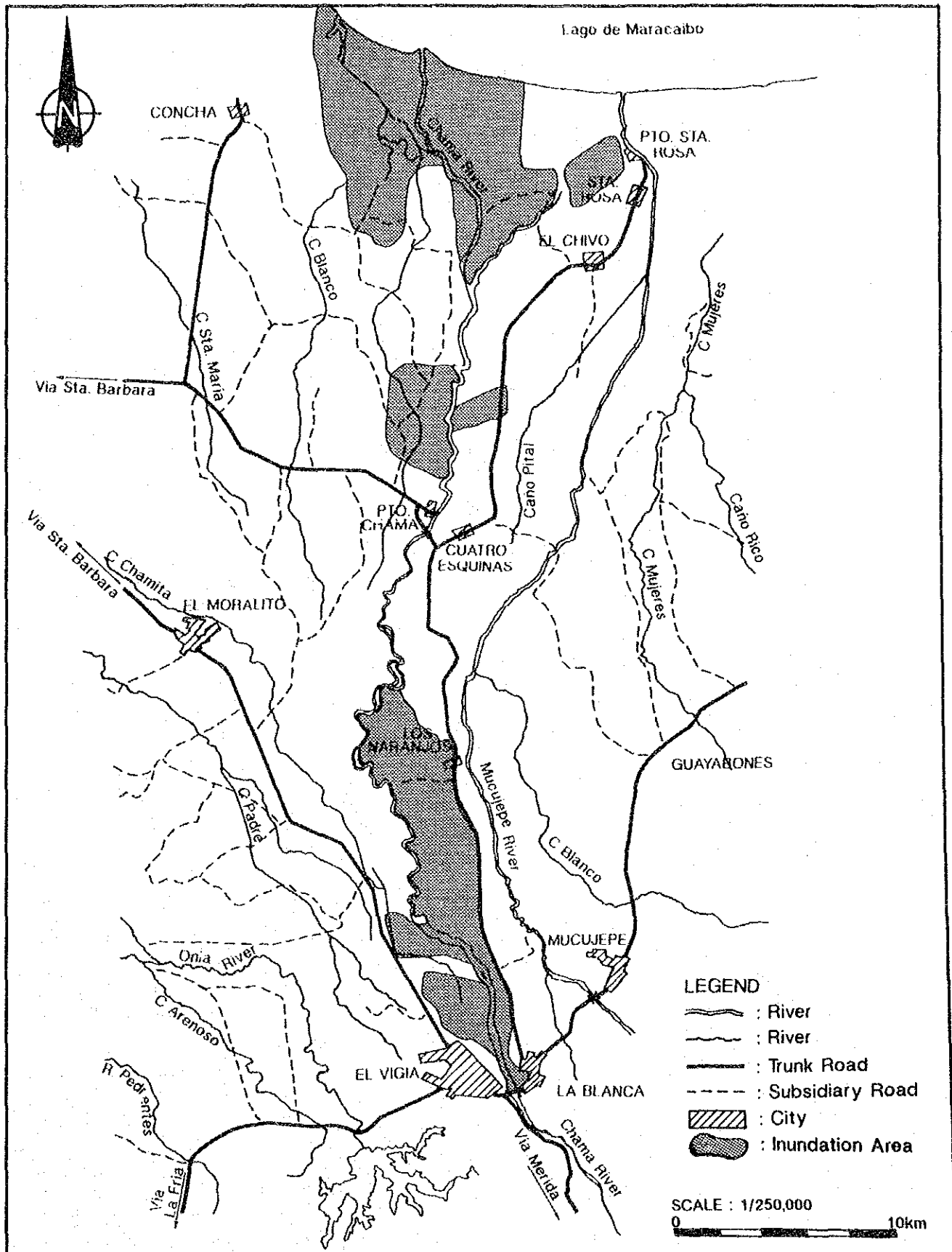


图 2.5 - 3 1988年洪水氾濫域图

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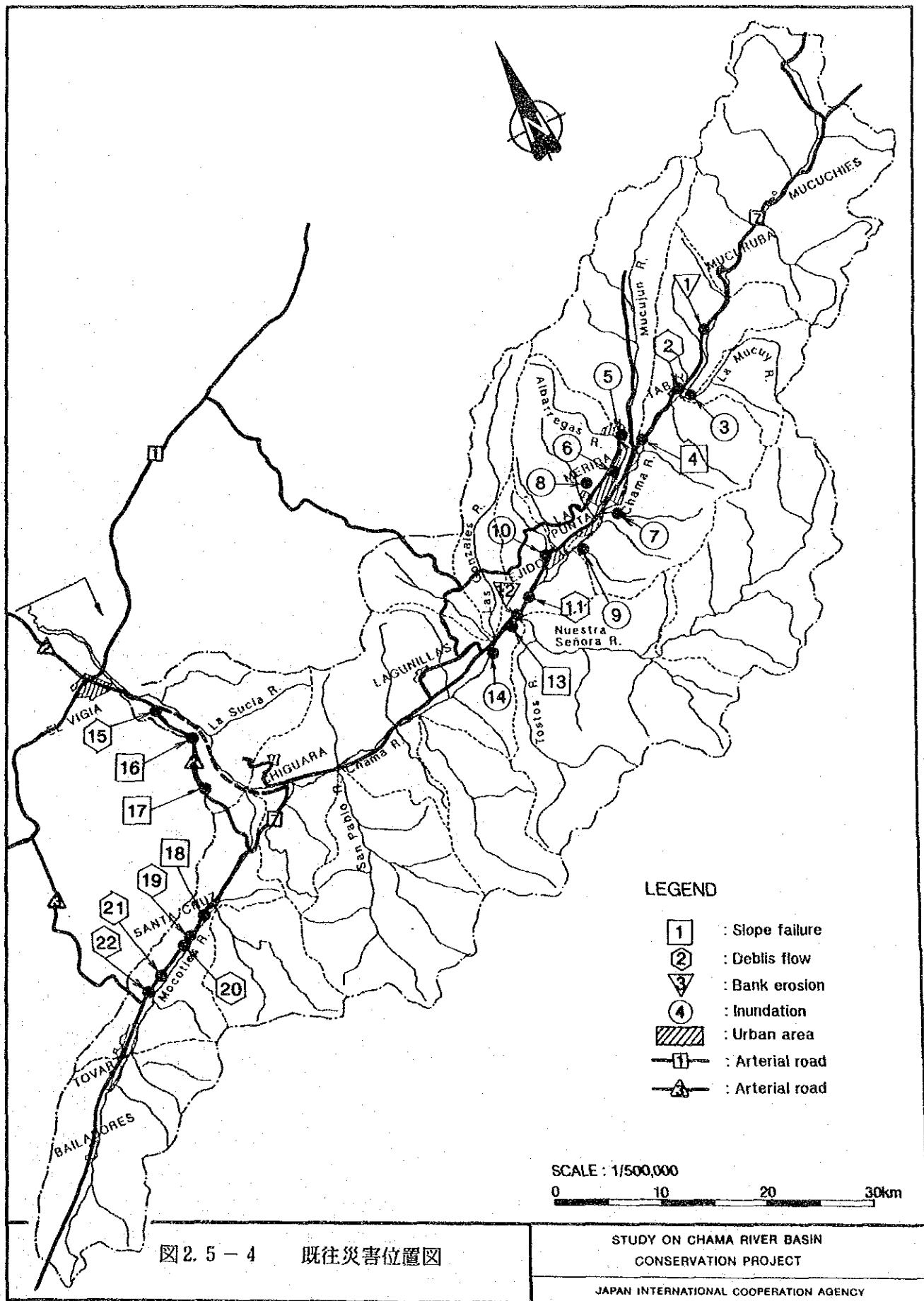
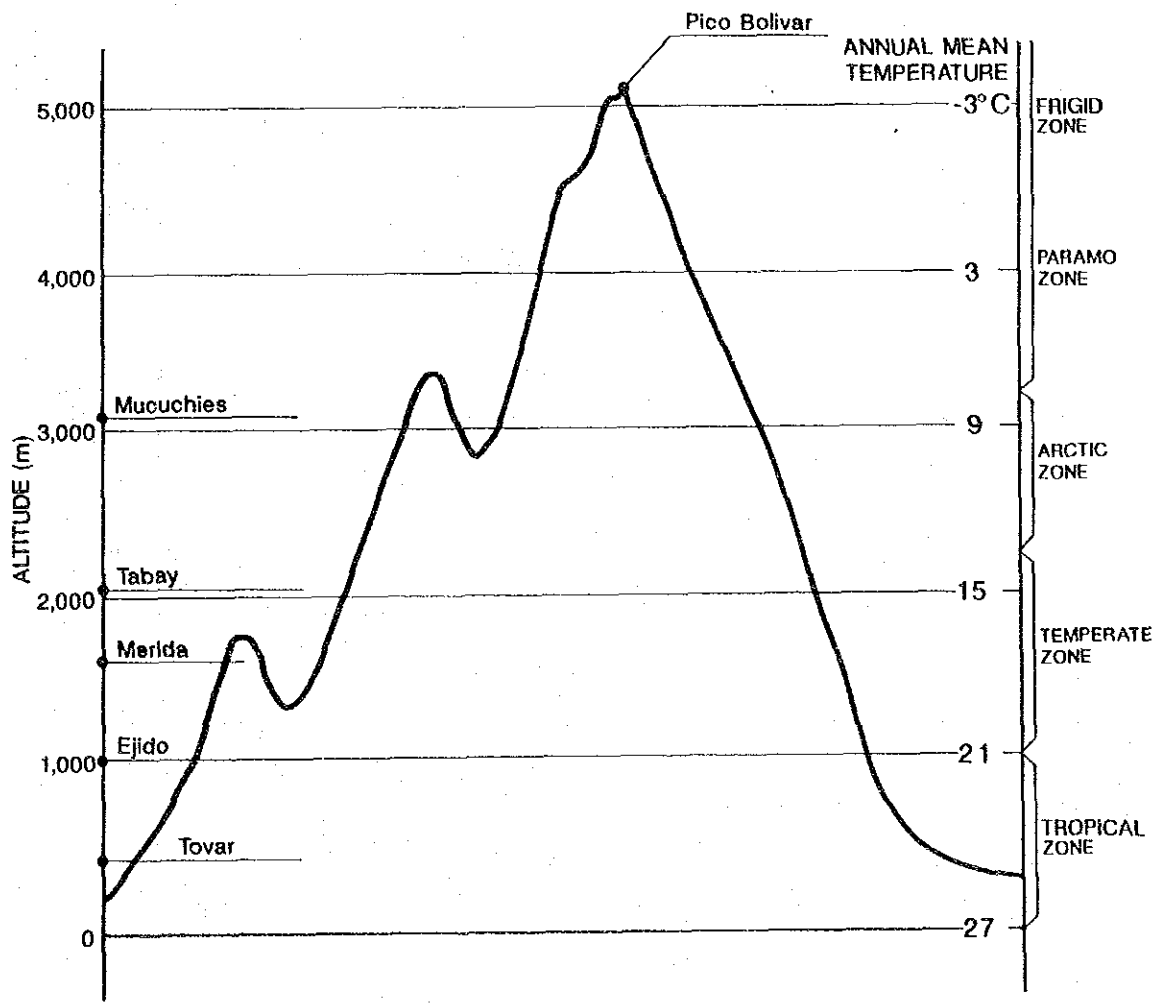


图 2.5 - 4 既往災害位置图

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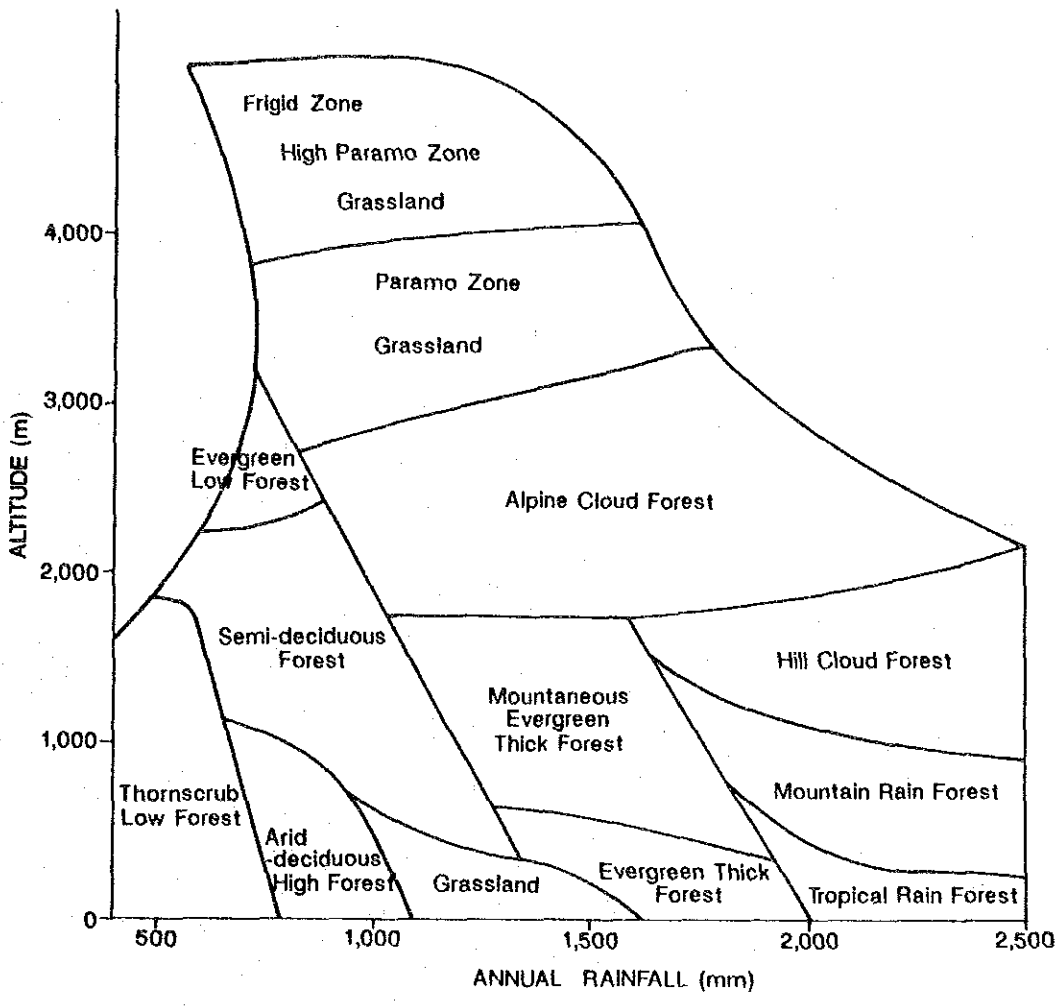


Source: ESTUDIOS ECOLOGICOS EN LOS PARAMOS ANDINOS 1980

図 2.6-1 アンデス山脈気候垂直分布図

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Source: ESTUDIOS ECOLOGICOS EN LOS PARAMOS ANDINOS 1980

図 2.6-2 アンデス山脈植生、高度、年雨量関係図

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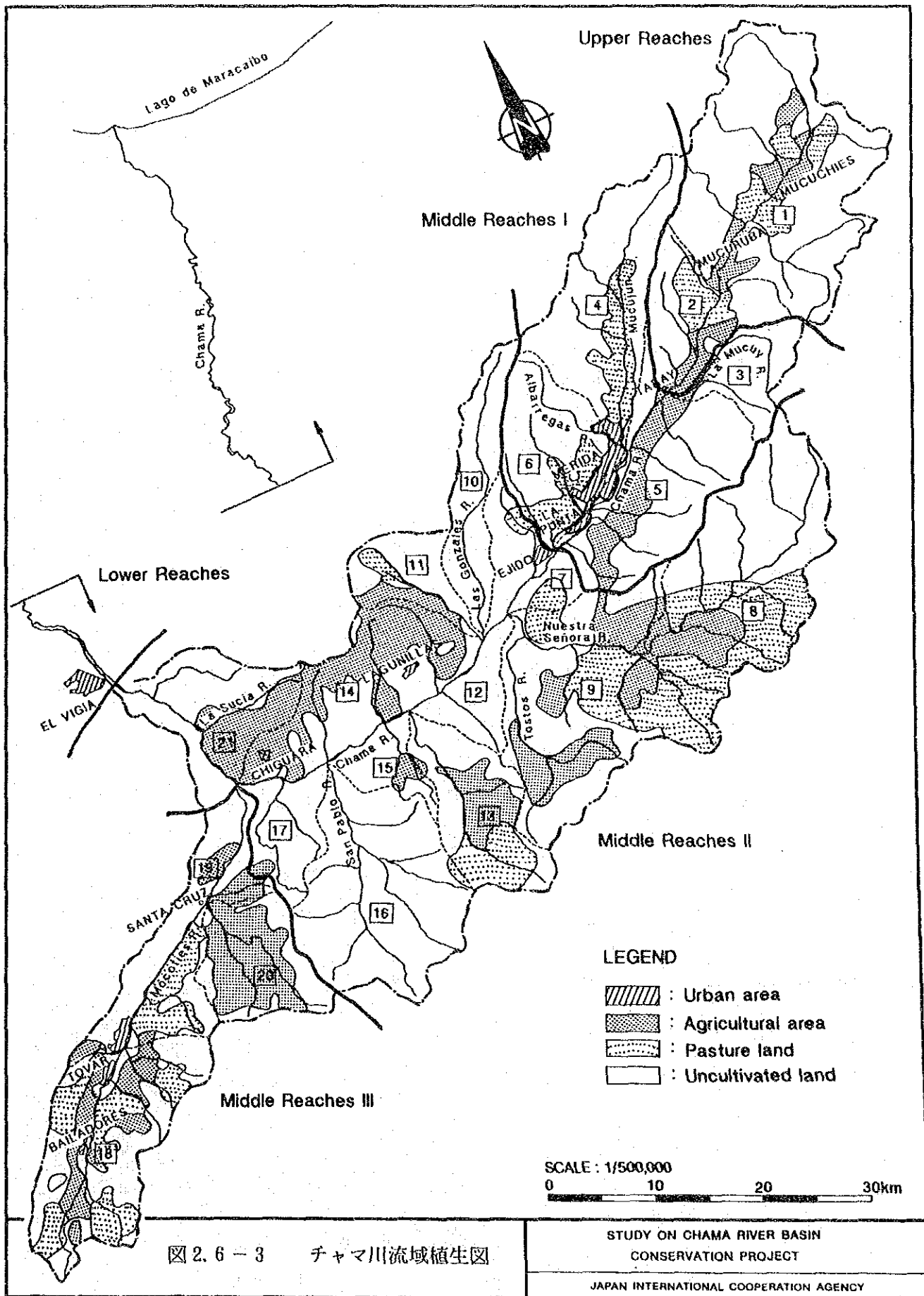


図 2.6-3 チャマ川流域植生図

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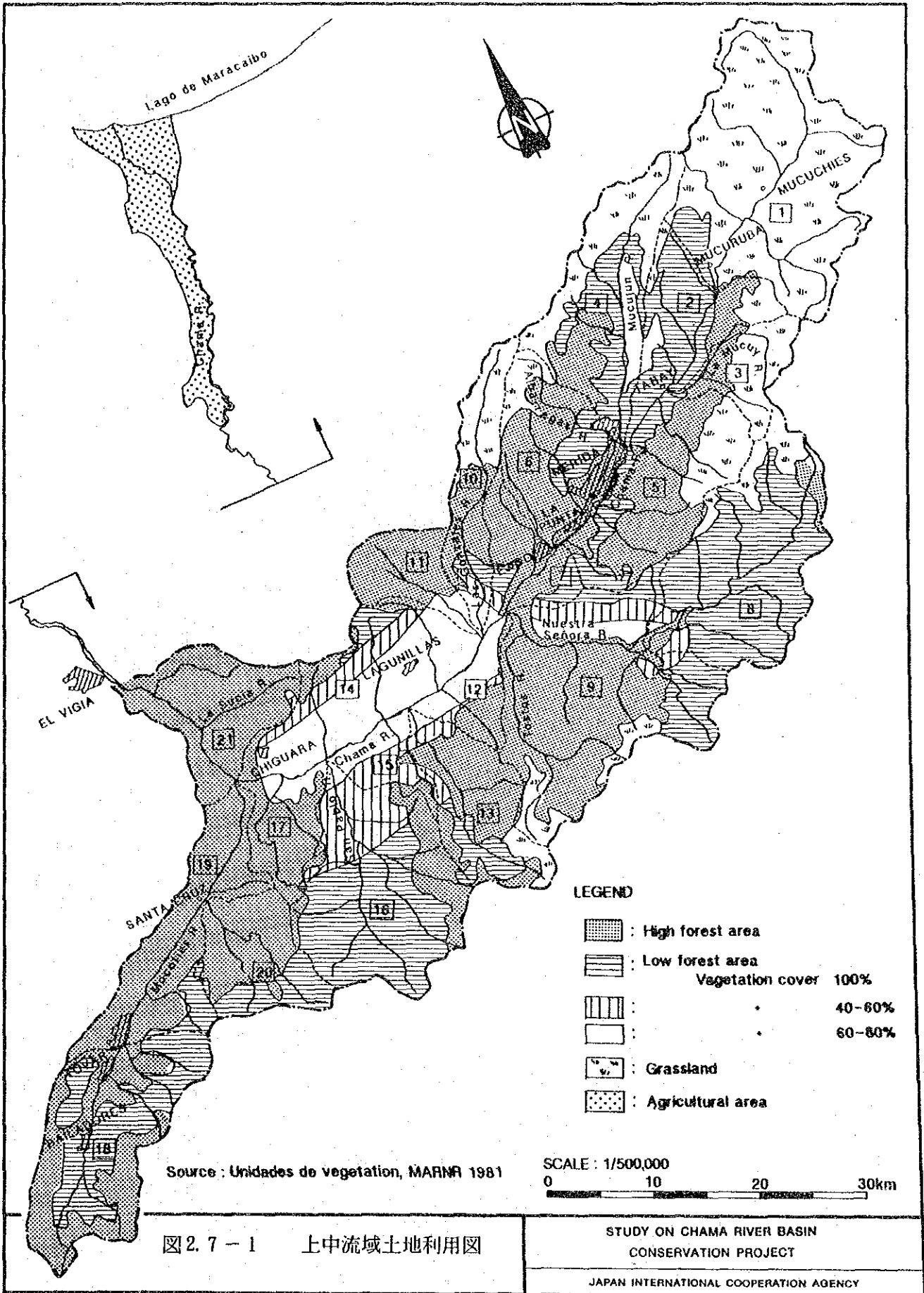


图 2.7 - 1 上中流域土地利用图

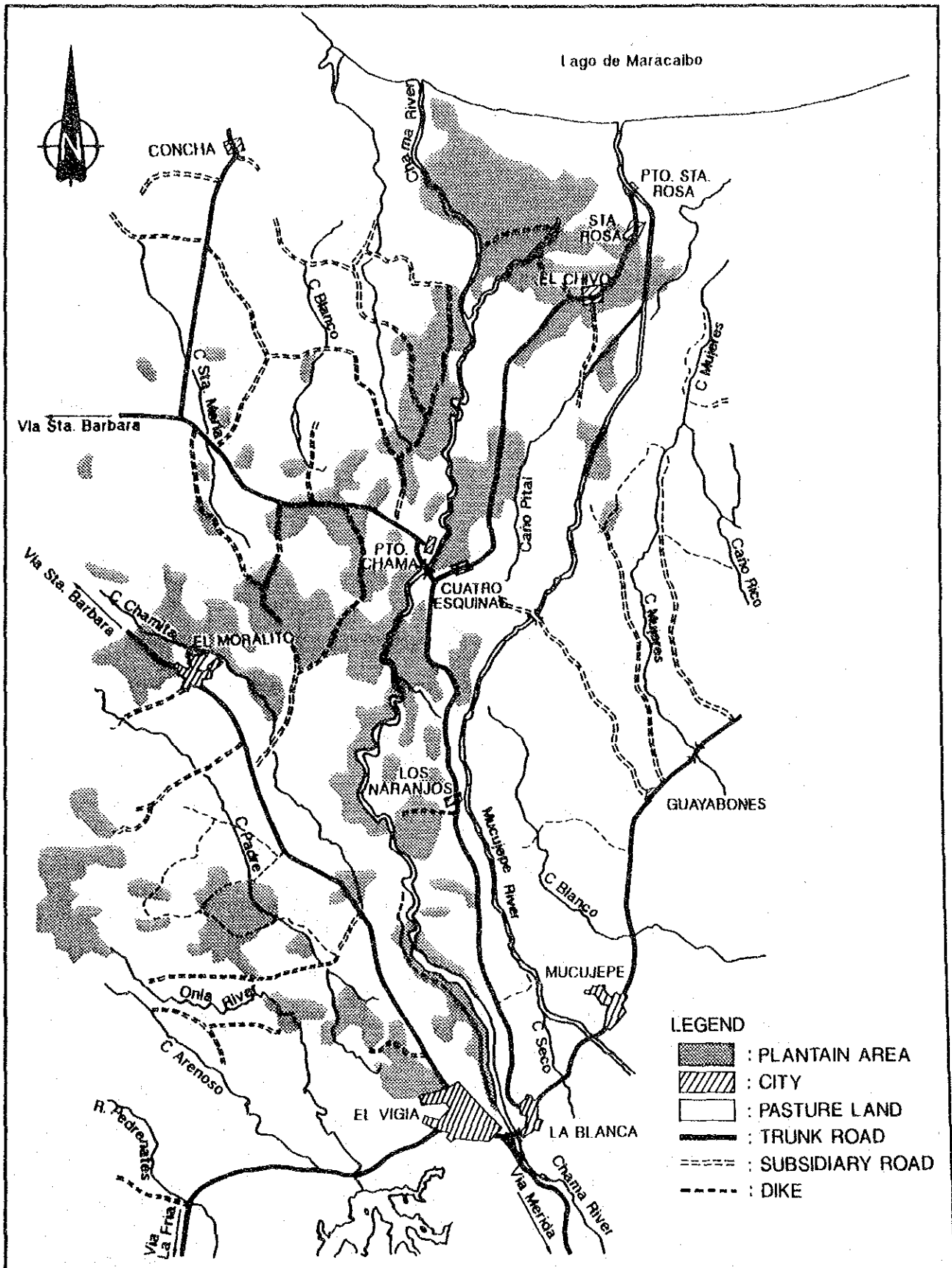


图2.7-2 下流域土地利用图

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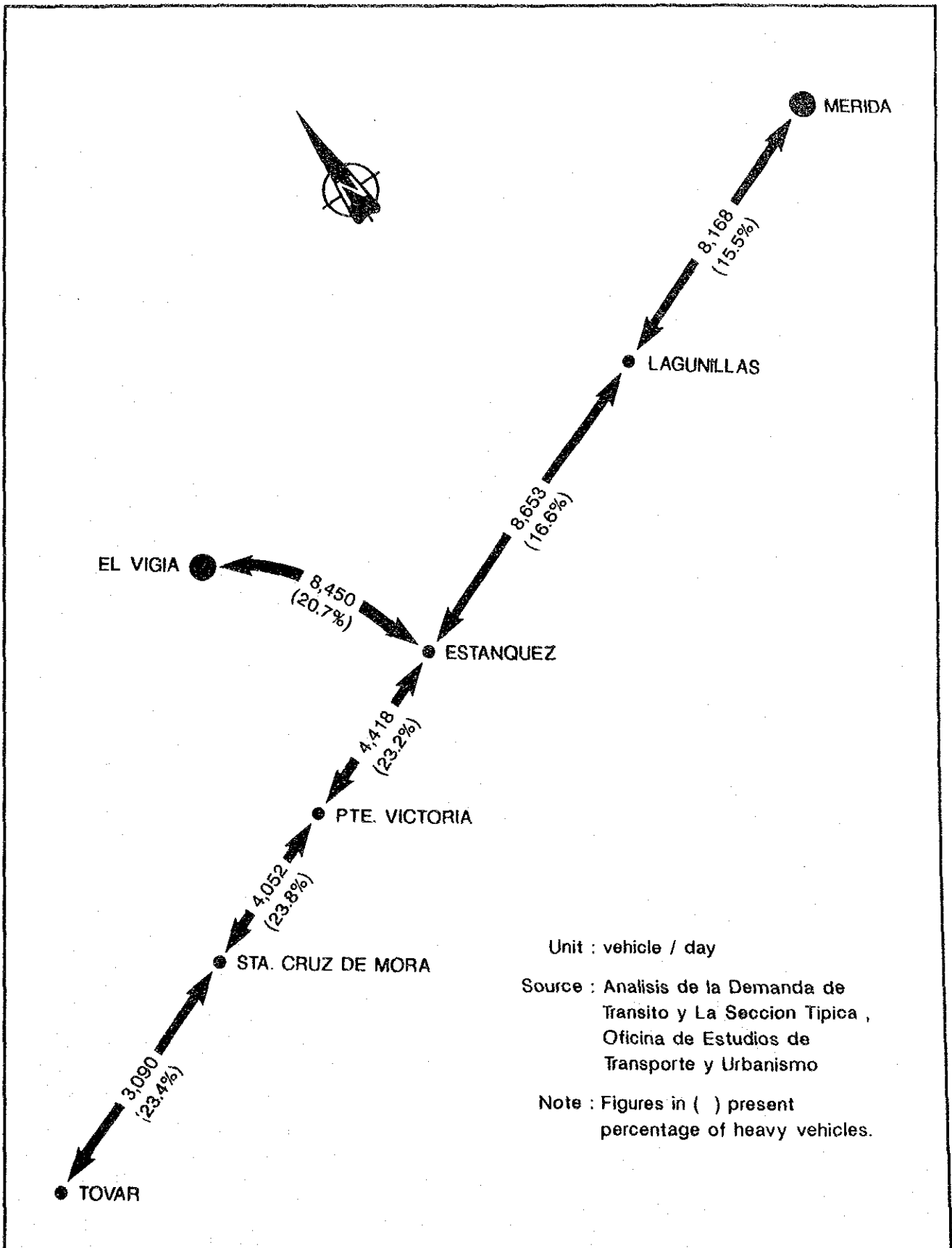


图 2.7-3 1985年幹線道路 2 号、7 号線交通量

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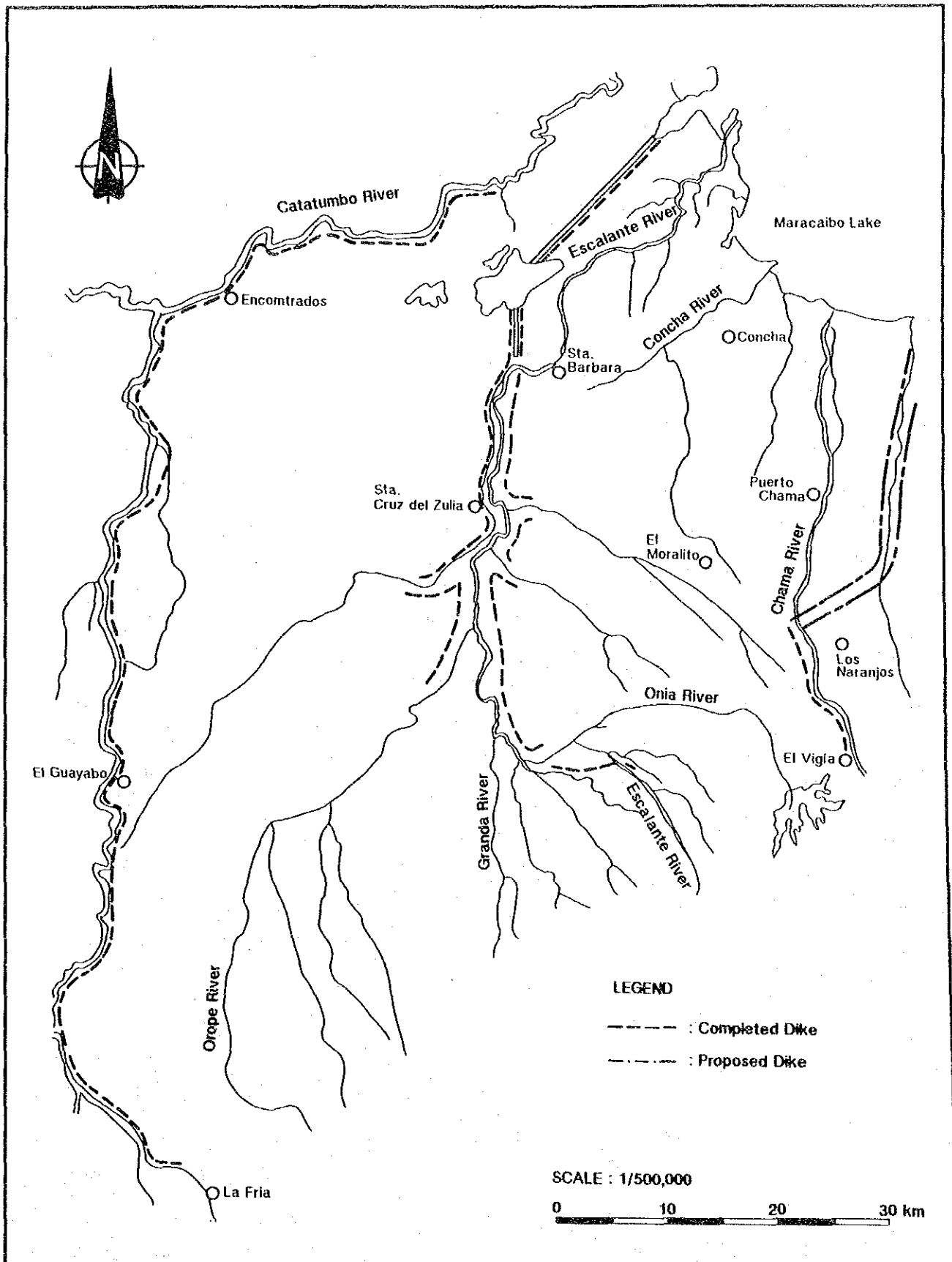


図2.9-1 南部マラカイボ地域河川改修区間

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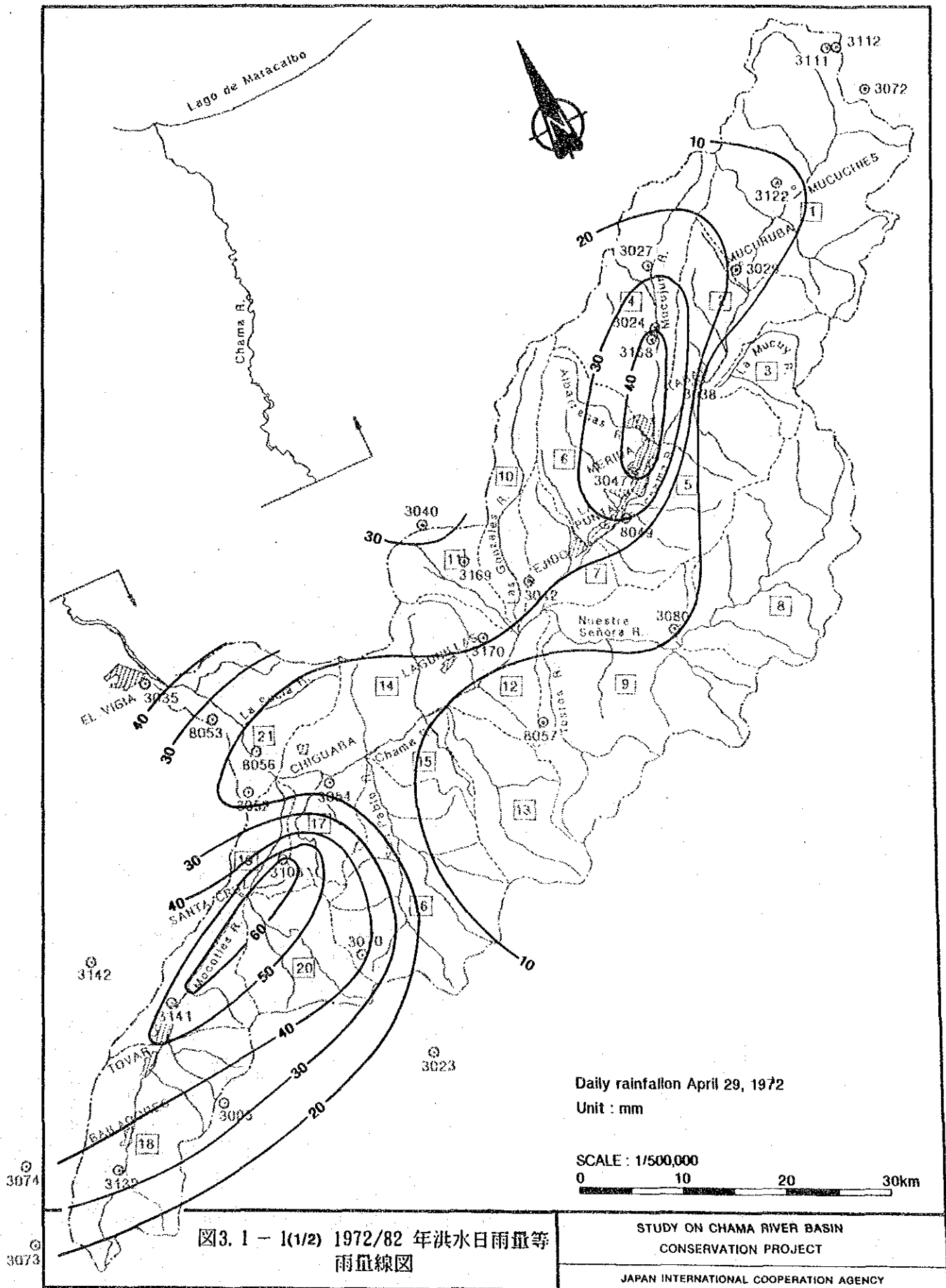


図3.1 - 1(1/2) 1972/82 年洪水日雨量等雨量線図

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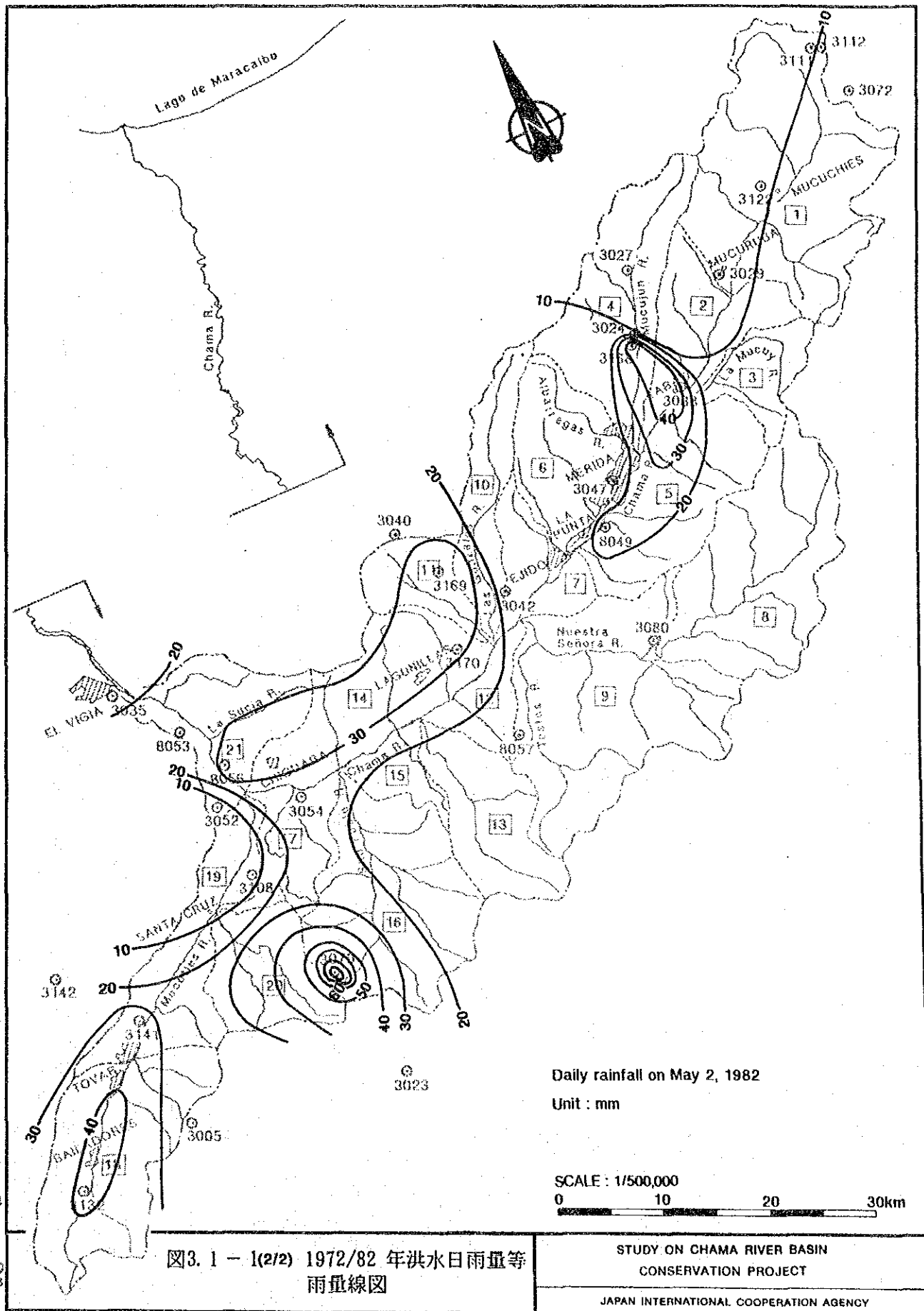


図3.1 - 1(2/2) 1972/82 年洪水日雨量等雨量線図

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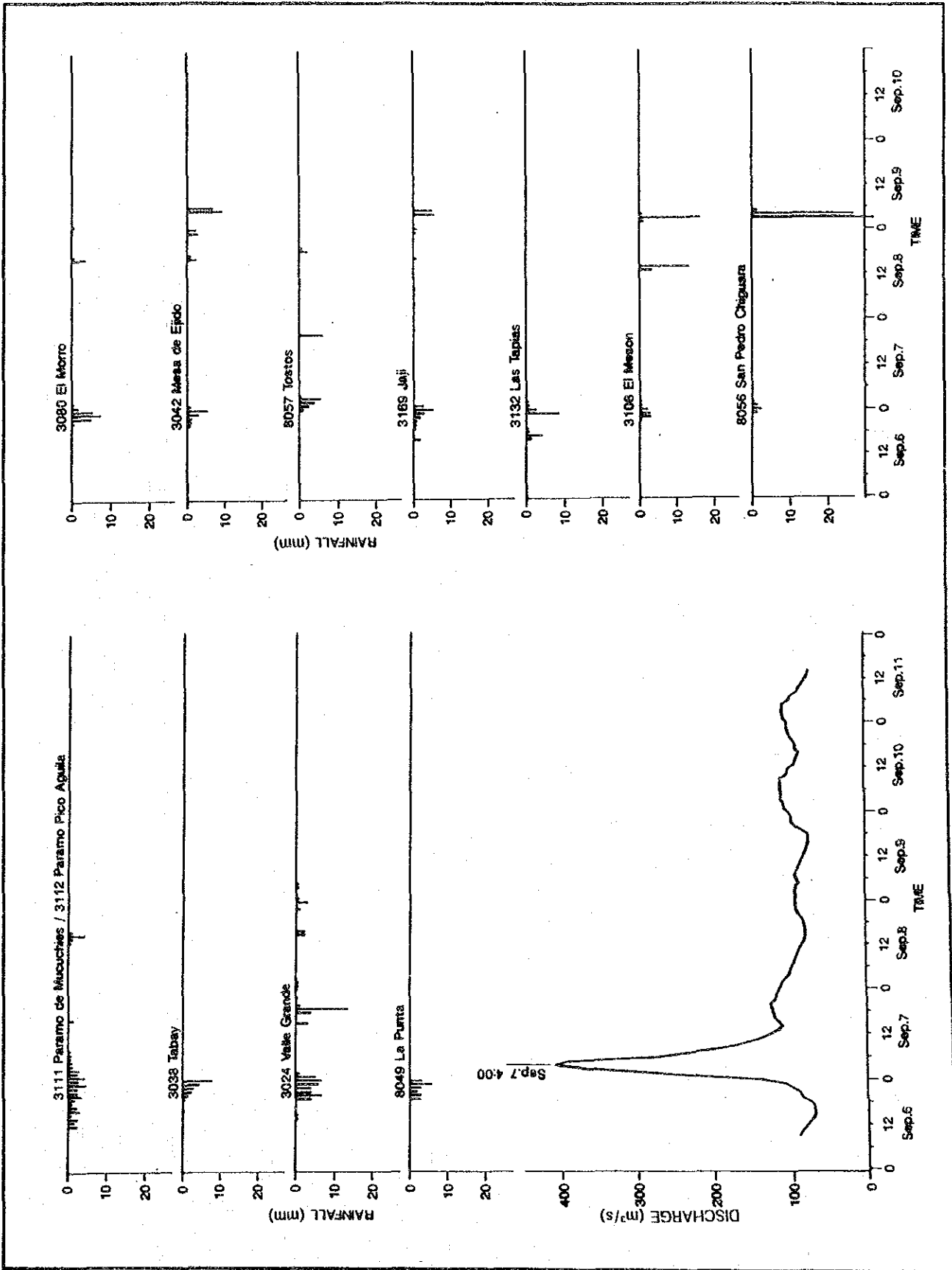


図3.1-2 1988年9月洪水時間雨量分布および
 チャマ川エヒド地点流量ハイドログラフ

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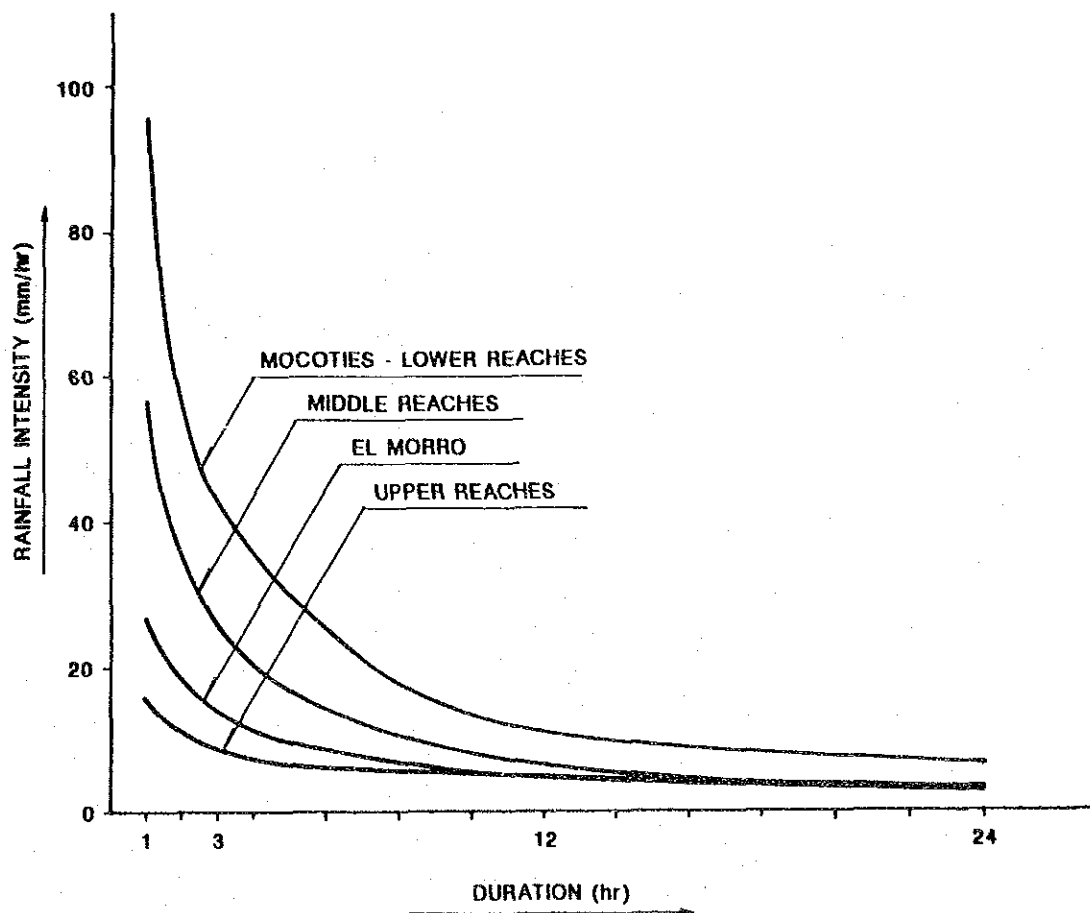


図3.1-3 降雨強度曲線 (100年確率)

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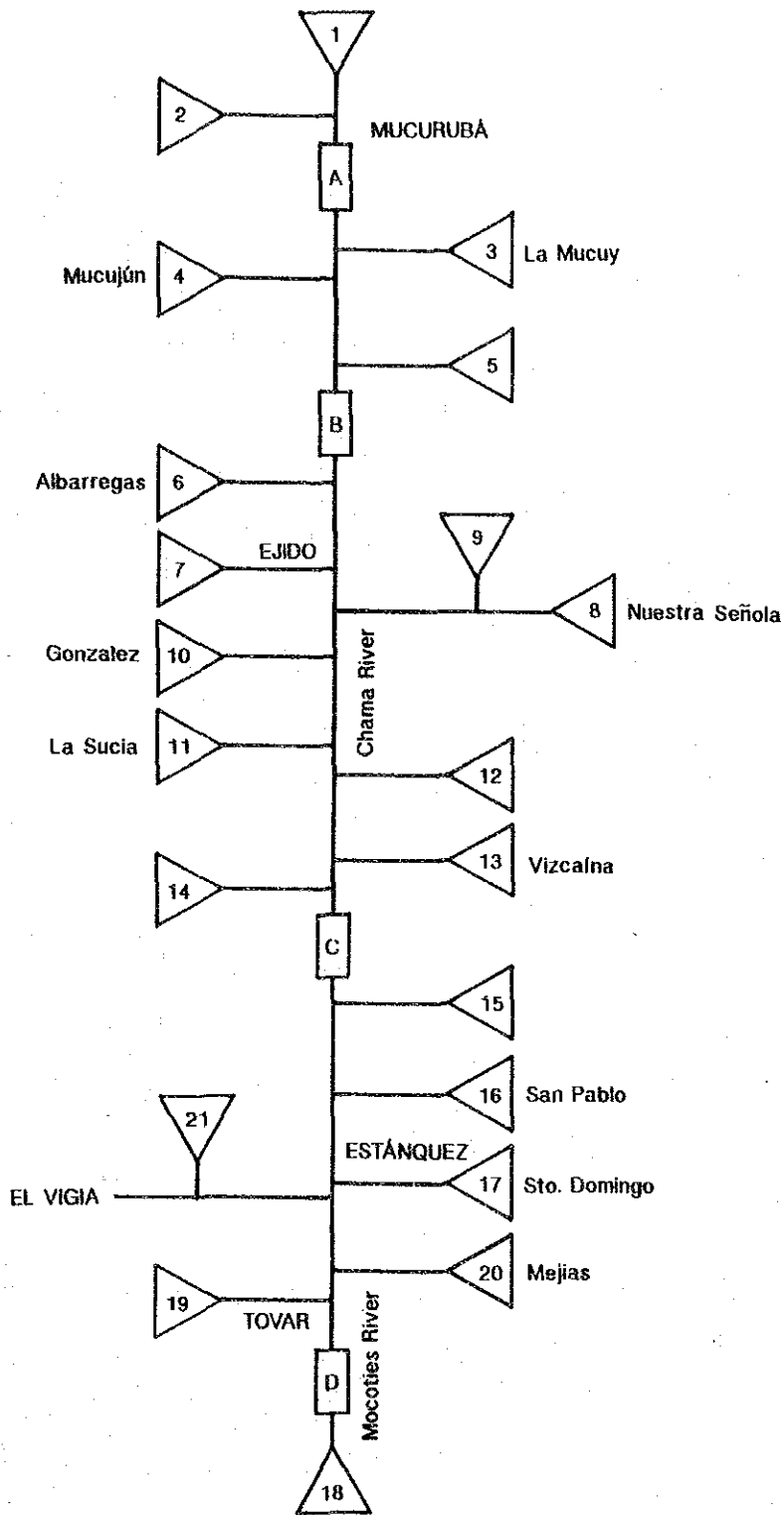
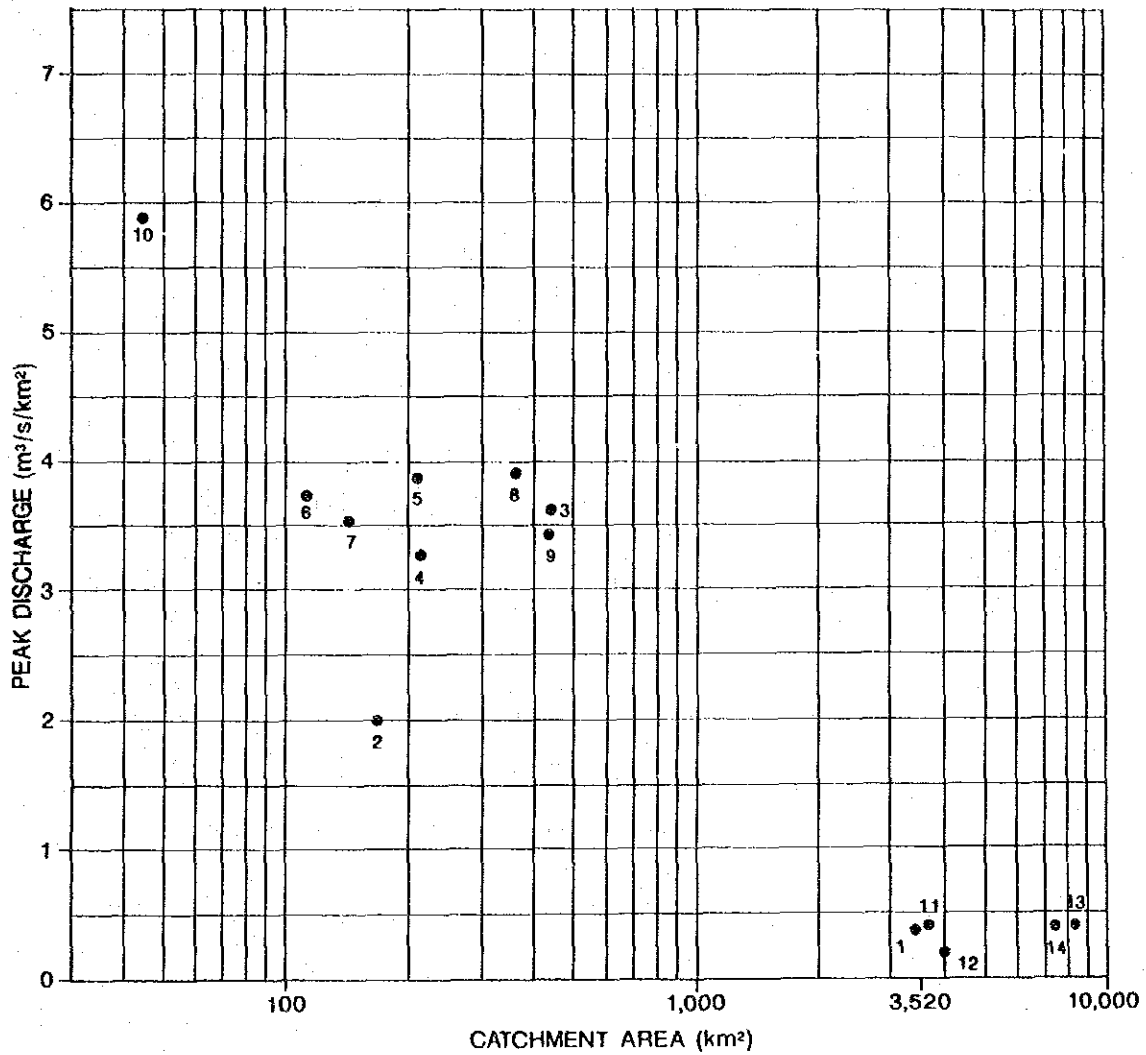


図3.1-4 貯留関数流出計算モデル図

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LEGEND

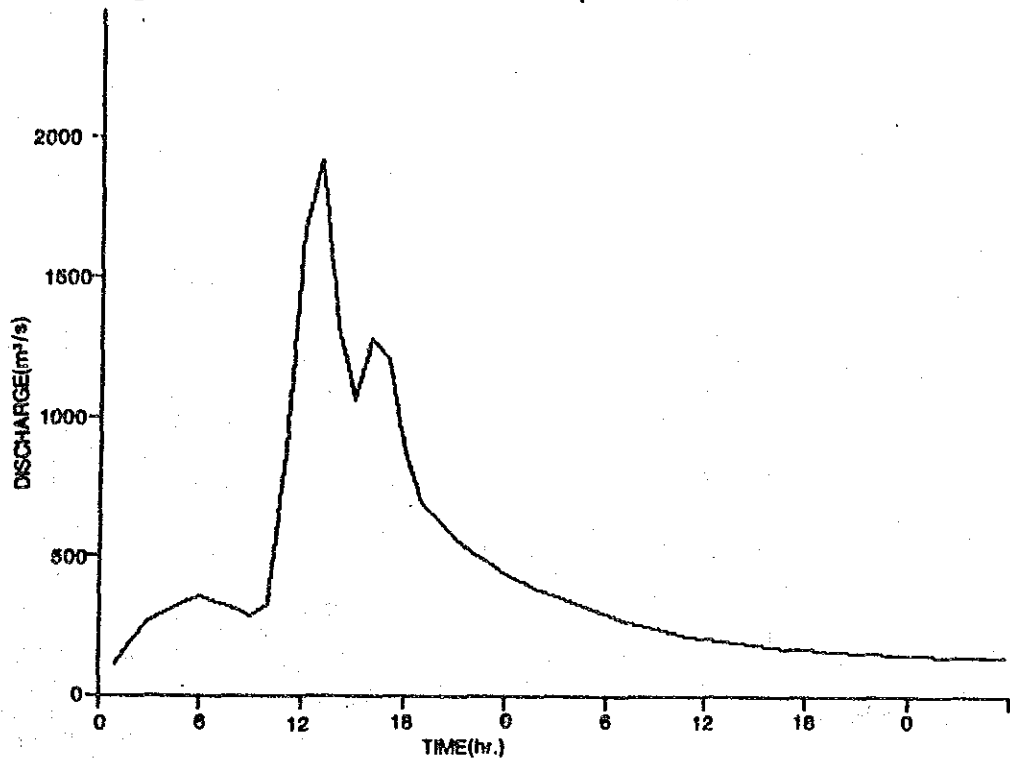
- 1 : Chama - El Vigla
- 2 : Mocotles - La Victoria
- 3 : Torondoy
- 4 : Chlruri
- 5 : Cans
- 6 : Vichu
- 7 : Poco
- 8 : Tucani
- 9 : Capaz
- 10 : Arapuey
- 11 : Chama
- 12 : Escalante
- 13 : Catatumbo
- 14 : Zulla

图3.1-5 比流量图

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CHAM8521 K=25 f1=.6/.8 Rsa=1000 1-DAY-RAIN 100-Y-DAD DEC. 5 9:-
 Starting: 85.12. 5. 9:00 EL VIGIA Qmax=1912.3



CHAM8621 K=25 f1=.6/.8 Rsa=1000 1-DAY-RAIN 100-Y 66-POINT OCT. 17 9:-
 Starting: 86.10.17. 9:00 EL VIGIA Qmax=2239.3

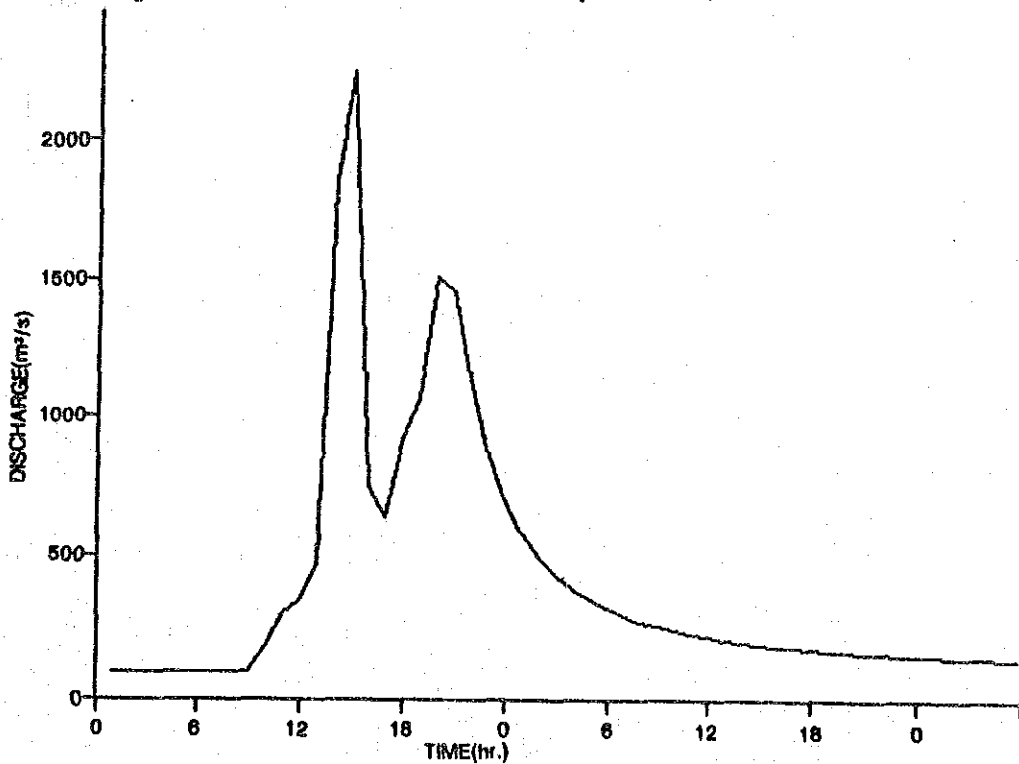


図3.1-6 流出計算ハイドログラフ (1985-1988)

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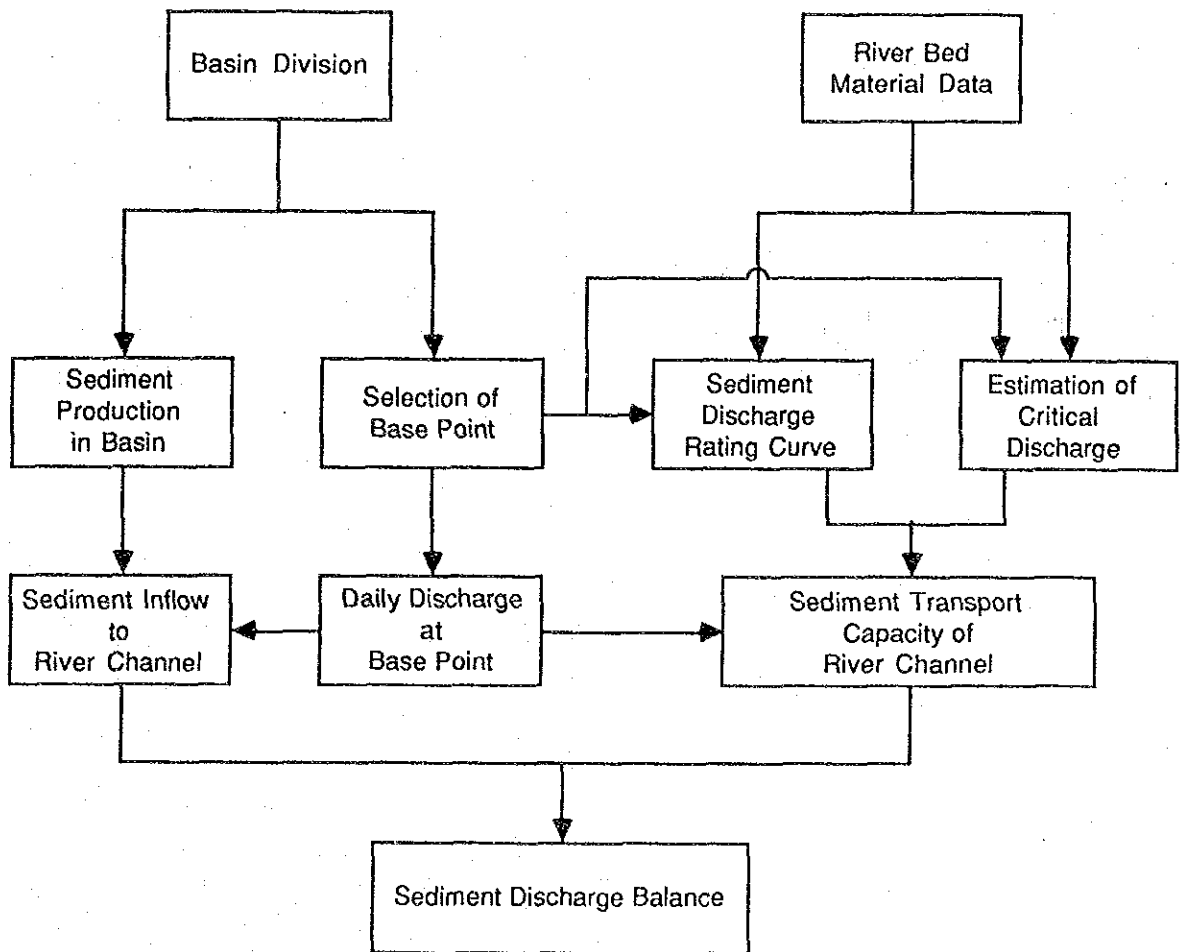


図 3. 2 - 1 流送土砂、および土砂収支検討調査過程

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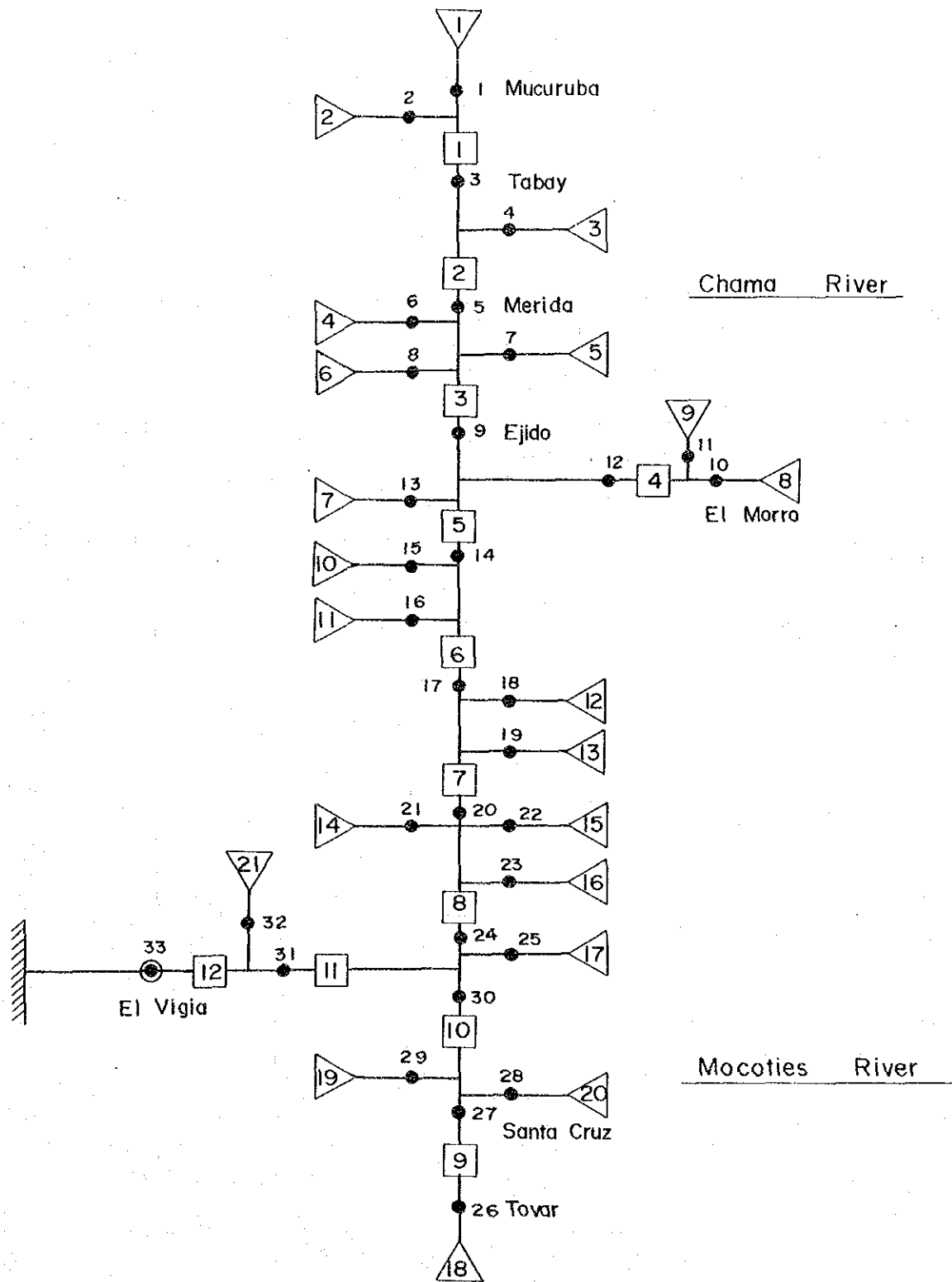


図3.2-2 流送土砂および土砂収支計算モデル図

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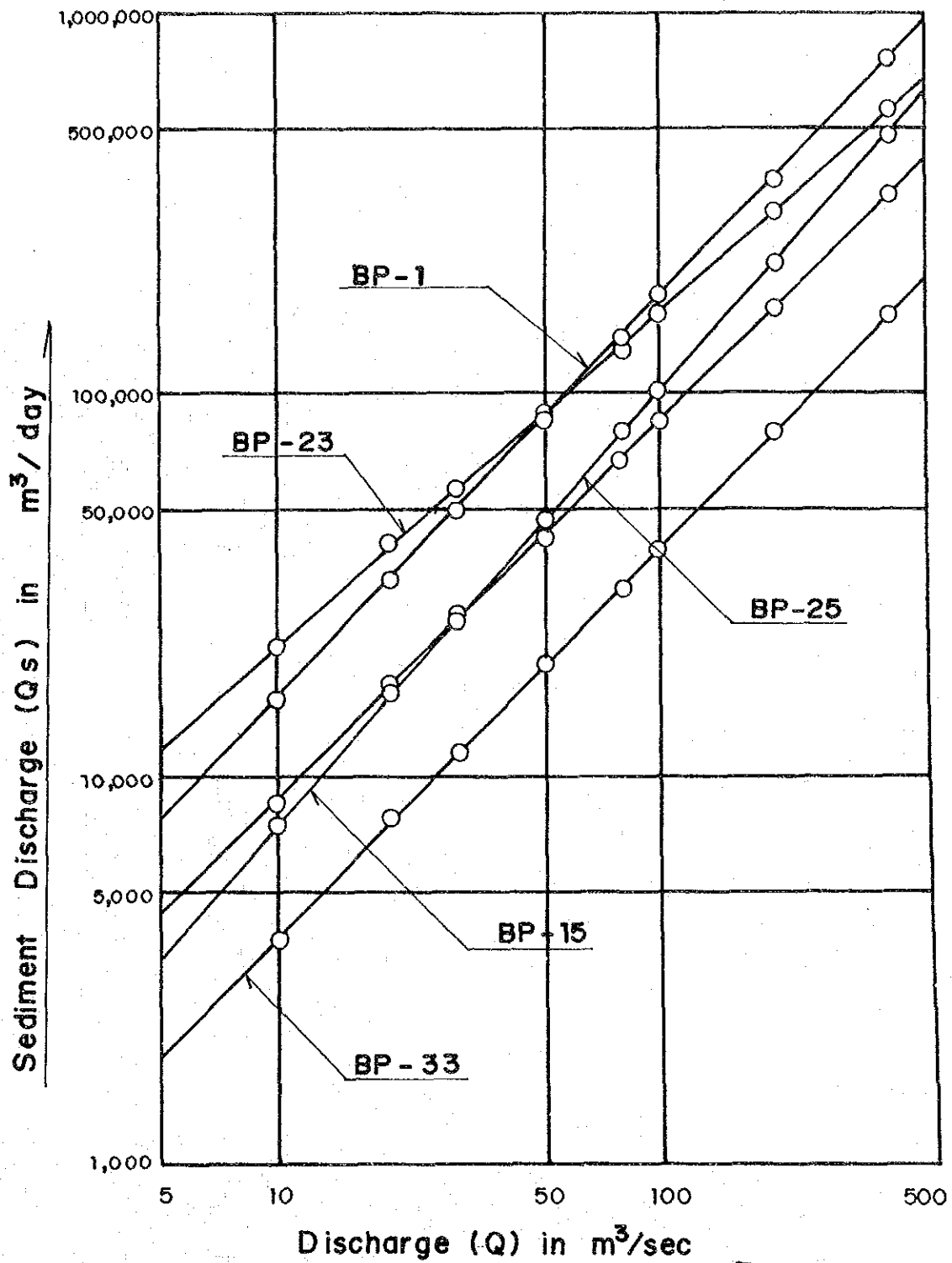


図3.2-3 検証地点流量掃流砂関係図

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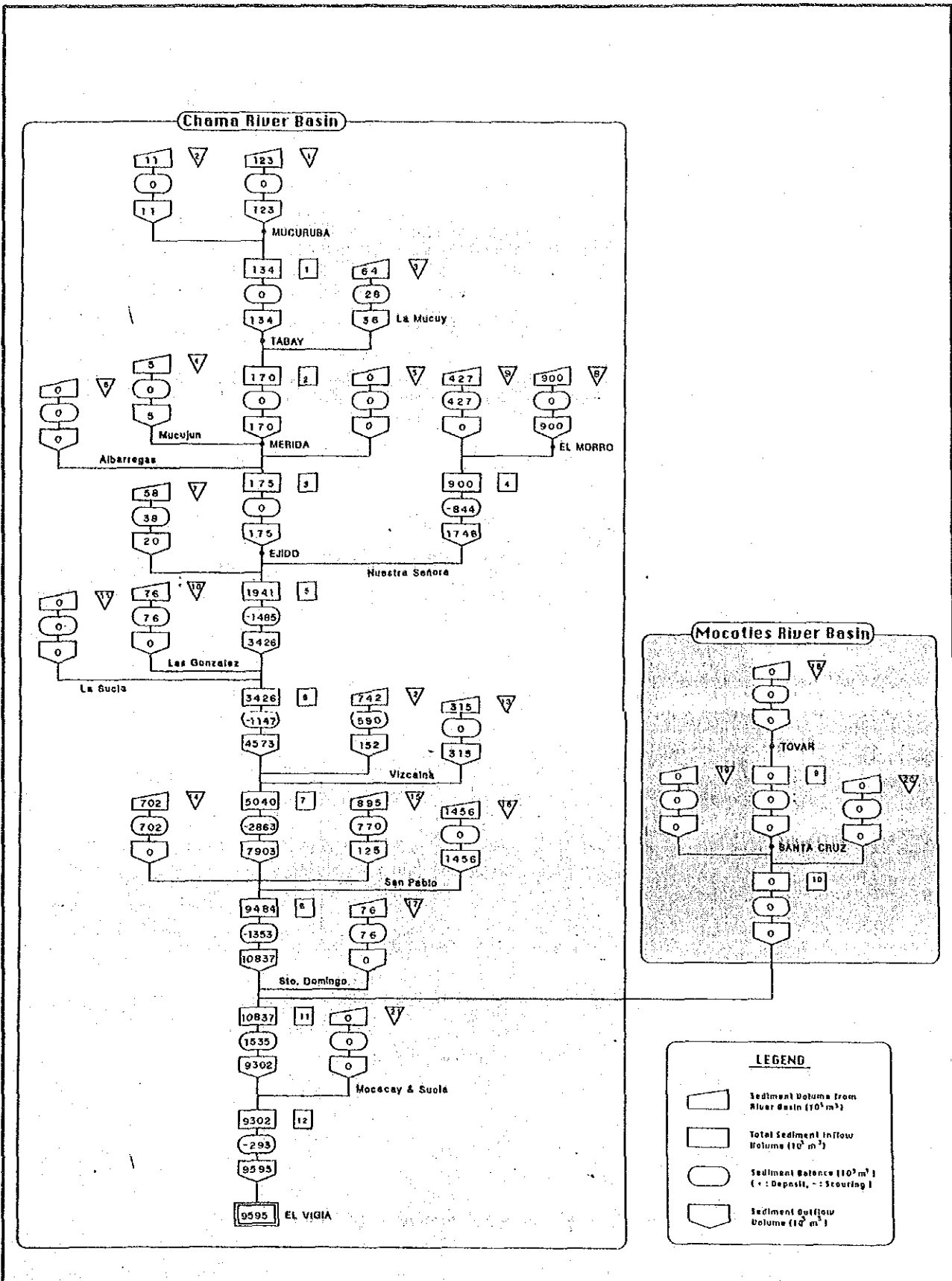


图3.2-4 計画土砂収支

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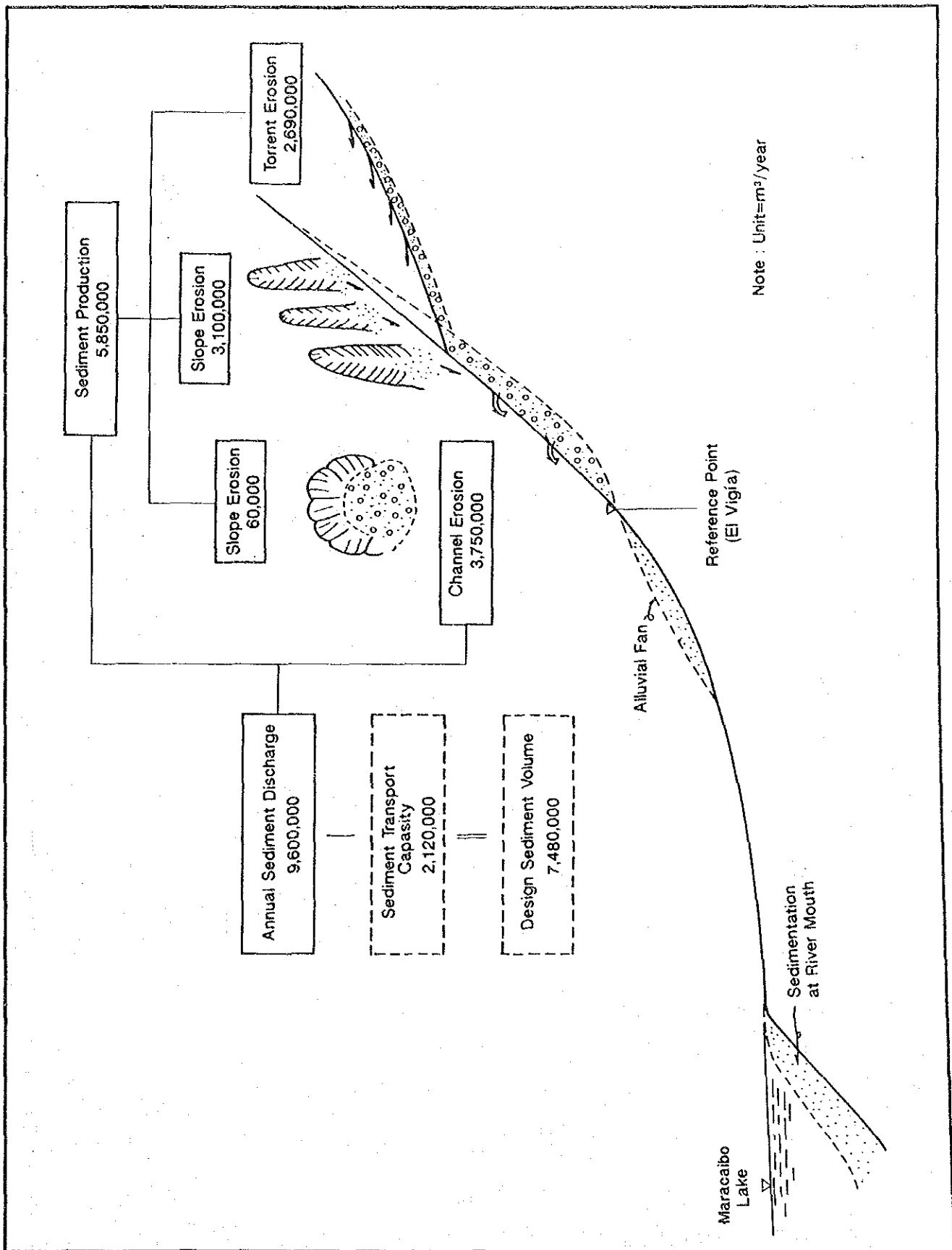


图 3.2 - 5 土砂收支模式图

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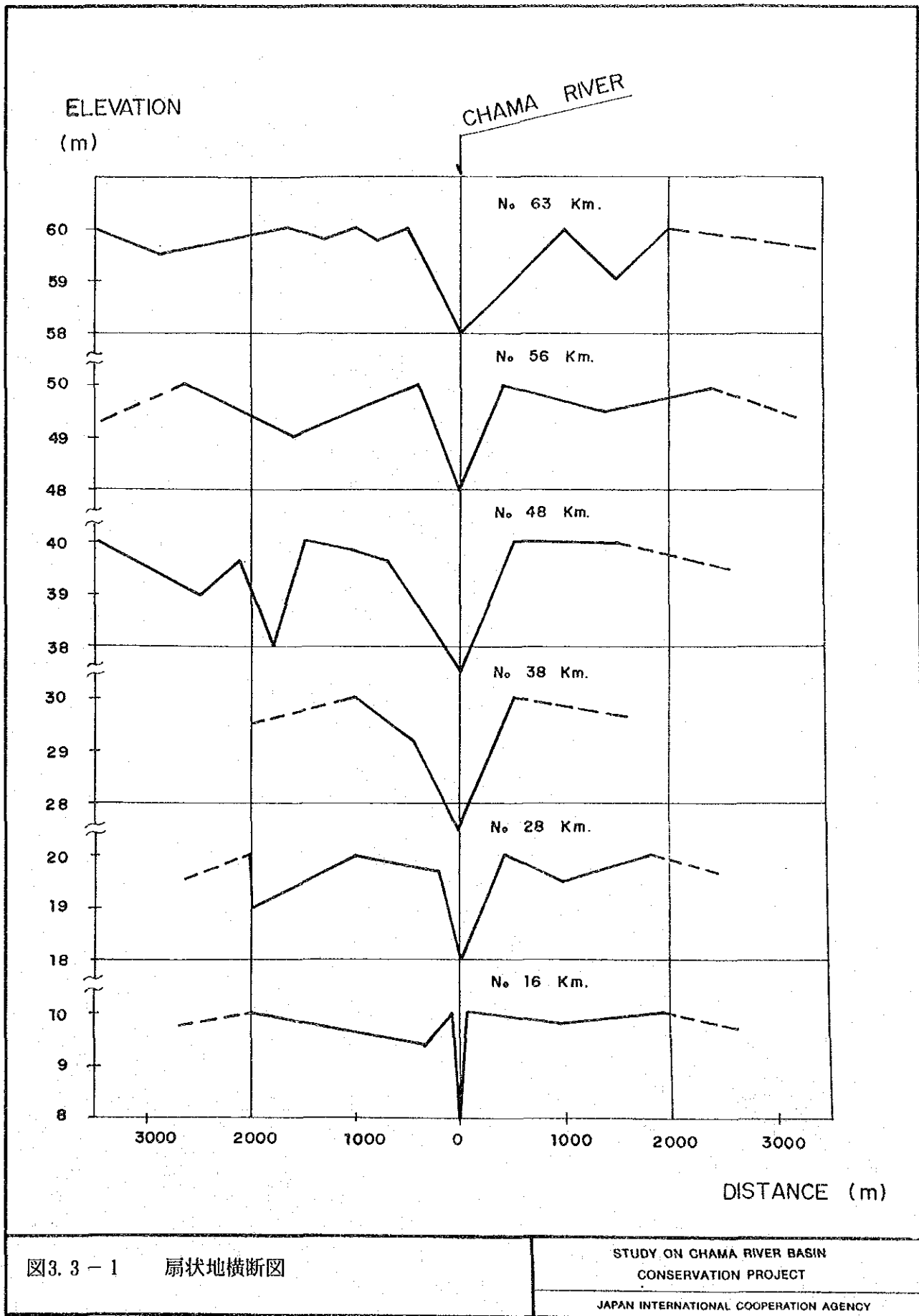


图3.3-1 扇状地横断面图

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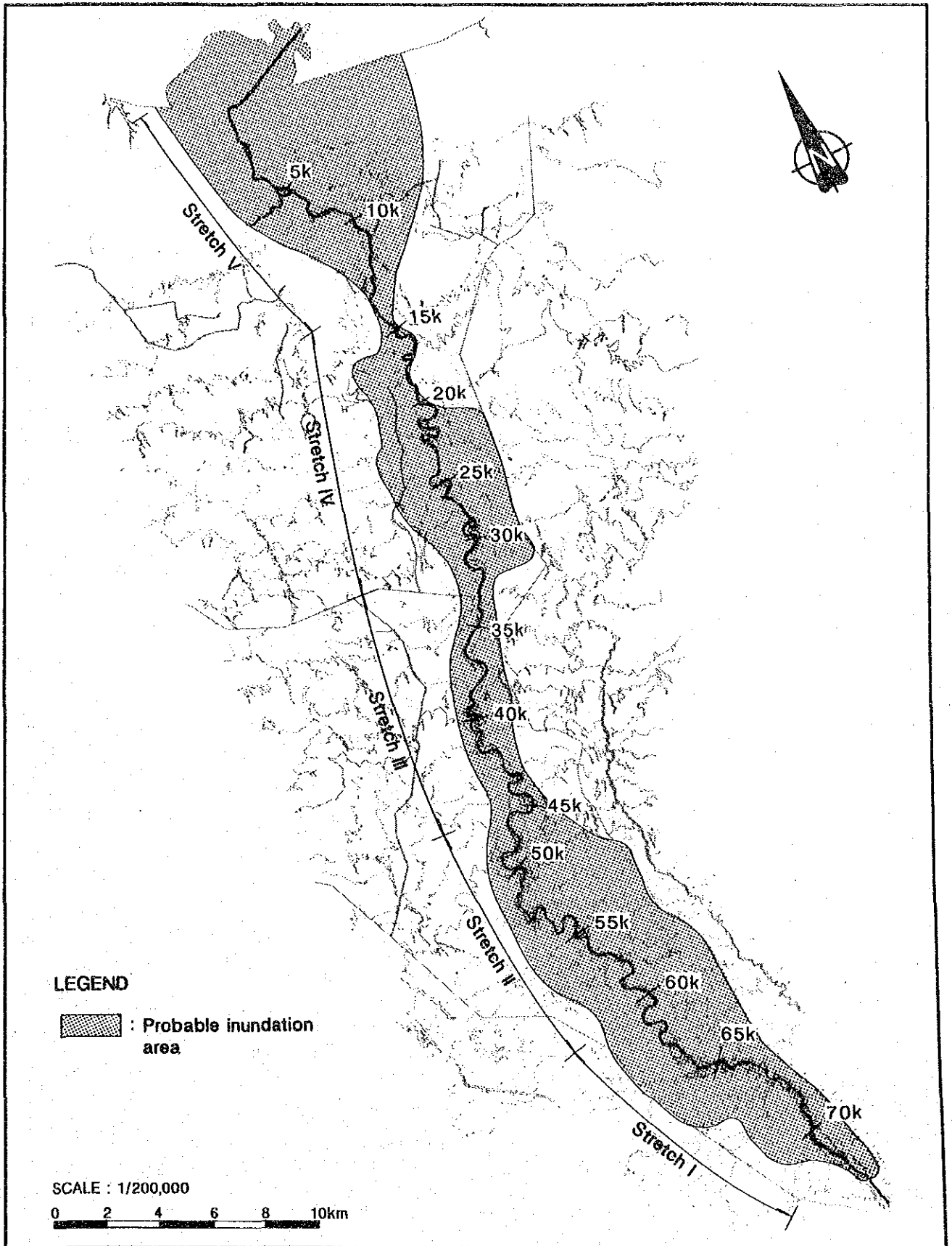
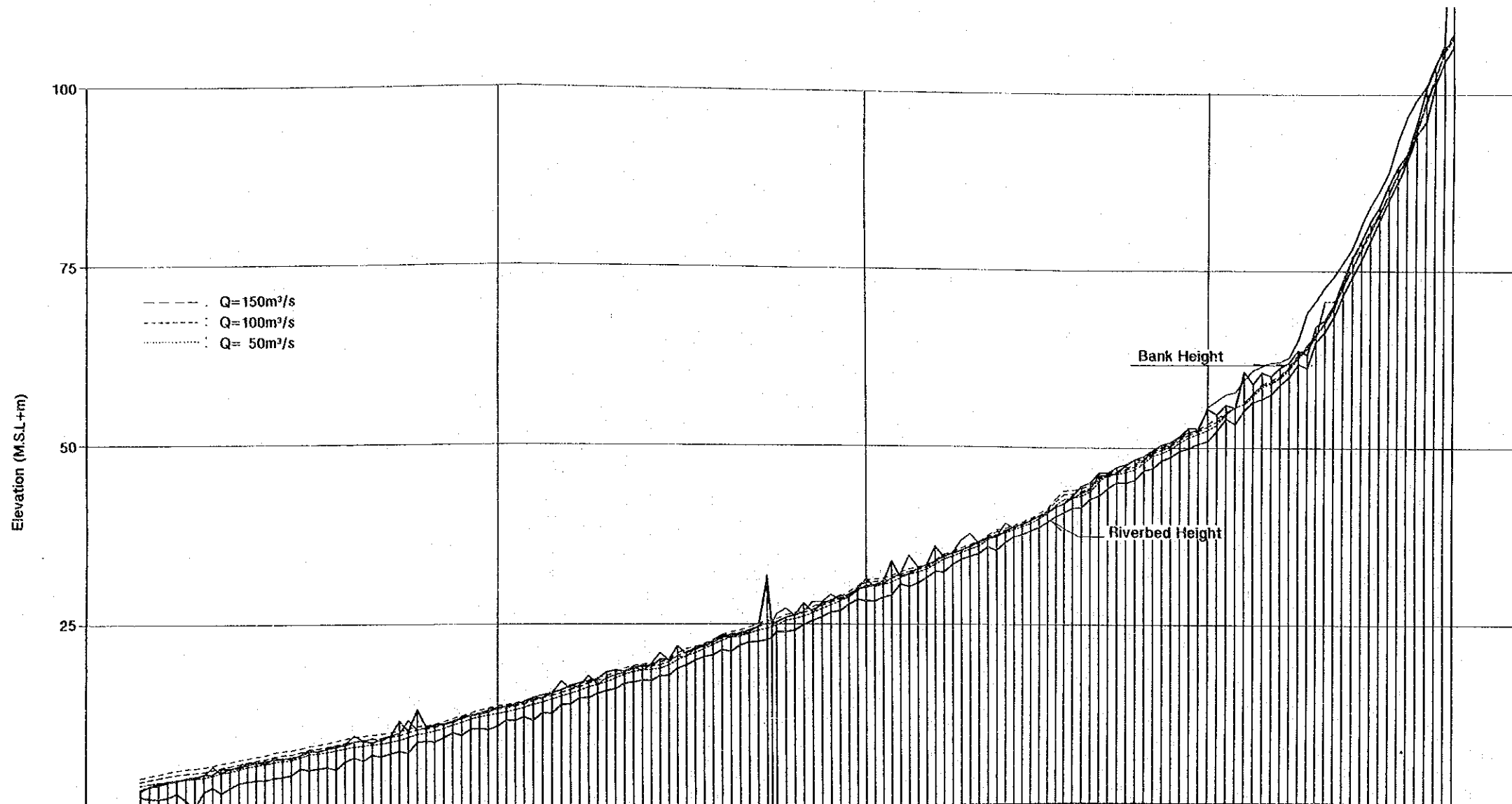


図3.3-2 想定氾濫域図

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

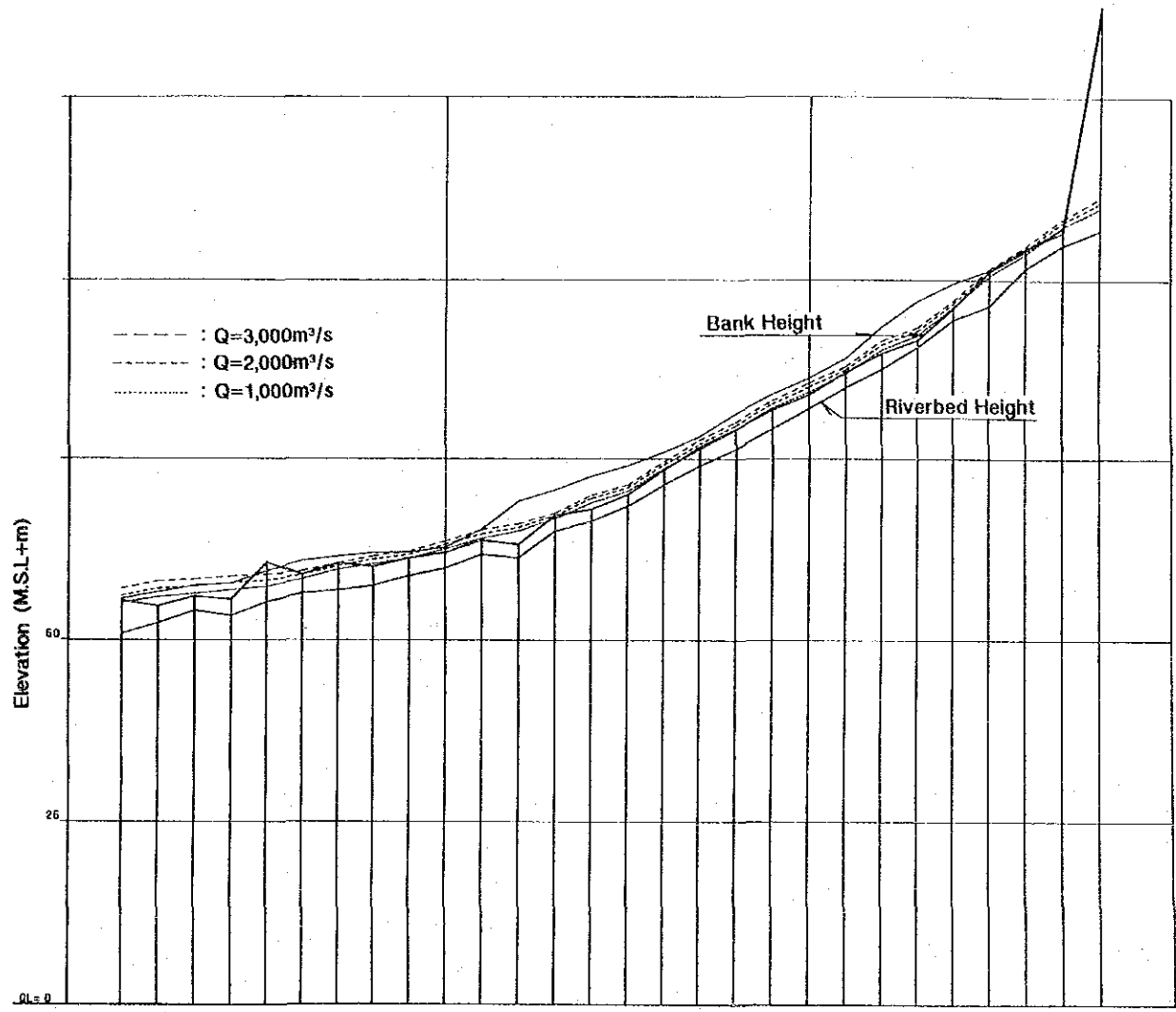
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STATION NUMBER	UNIT DISTANCE (m)	ACCUMULATIVE DISTANCE (m)	PRESENT RIVER BED	LEFT BANK	RIGHT BANK
0.000	0.0	0.0	1.40	2.20	2.40
0.500	500.0	500.0	1.16	2.50	2.80
1.000	1000.0	1000.0	1.06	3.00	3.22
1.500	1500.0	1500.0	1.10	3.40	3.60
2.000	2000.0	2000.0	0.82	4.00	3.90
2.500	2500.0	2500.0	0.04	4.20	4.00
3.000	3000.0	3000.0	2.10	4.50	4.50
3.500	3500.0	3500.0	2.10	4.70	4.50
4.000	4000.0	4000.0	2.61	5.20	5.30
4.500	4500.0	4500.0	2.61	5.20	5.30
5.000	5000.0	5000.0	3.67	6.10	6.20
5.500	5500.0	5500.0	3.67	6.20	6.50
6.000	6000.0	6000.0	4.11	6.80	6.70
6.500	6500.0	6500.0	4.11	6.80	6.70
7.000	7000.0	7000.0	4.36	6.80	6.70
7.500	7500.0	7500.0	5.25	7.10	7.60
8.000	8000.0	8000.0	5.25	7.70	7.60
8.500	8500.0	8500.0	5.44	8.00	8.00
9.000	9000.0	9000.0	5.44	8.40	8.40
9.500	9500.0	9500.0	6.36	8.10	8.10
10.000	10000.0	10000.0	6.36	8.60	8.60
10.500	10500.0	10500.0	7.11	9.10	9.10
11.000	11000.0	11000.0	7.11	9.40	9.40
11.500	11500.0	11500.0	7.46	9.60	9.60
12.000	12000.0	12000.0	7.46	10.10	10.10
12.500	12500.0	12500.0	7.65	10.40	10.40
13.000	13000.0	13000.0	7.65	10.40	10.40
13.500	13500.0	13500.0	7.88	11.80	11.80
14.000	14000.0	14000.0	7.88	11.80	11.80
14.500	14500.0	14500.0	8.98	12.60	12.60
15.000	15000.0	15000.0	8.98	12.60	12.60
15.500	15500.0	15500.0	9.06	13.00	13.00
16.000	16000.0	16000.0	9.06	13.00	13.00
16.500	16500.0	16500.0	9.86	13.70	13.70
17.000	17000.0	17000.0	9.86	13.70	13.70
17.500	17500.0	17500.0	10.62	14.10	14.10
18.000	18000.0	18000.0	10.62	14.10	14.10
18.500	18500.0	18500.0	11.10	14.80	14.80
19.000	19000.0	19000.0	11.10	14.80	14.80
19.500	19500.0	19500.0	11.88	15.30	15.30
20.000	20000.0	20000.0	11.88	15.30	15.30
20.500	20500.0	20500.0	12.42	15.80	15.80
21.000	21000.0	21000.0	12.42	15.80	15.80
21.500	21500.0	21500.0	13.00	16.00	16.00
22.000	22000.0	22000.0	13.00	16.00	16.00
22.500	22500.0	22500.0	13.40	16.60	16.60
23.000	23000.0	23000.0	13.40	16.60	16.60
23.500	23500.0	23500.0	14.00	17.00	17.00
24.000	24000.0	24000.0	14.00	17.00	17.00
24.500	24500.0	24500.0	14.81	17.20	17.20
25.000	25000.0	25000.0	14.81	17.20	17.20
25.500	25500.0	25500.0	15.39	17.60	17.60
26.000	26000.0	26000.0	15.39	17.60	17.60
26.500	26500.0	26500.0	15.81	18.00	18.00
27.000	27000.0	27000.0	15.81	18.00	18.00
27.500	27500.0	27500.0	16.42	18.30	18.30
28.000	28000.0	28000.0	16.42	18.30	18.30
28.500	28500.0	28500.0	17.00	18.60	18.60
29.000	29000.0	29000.0	17.00	18.60	18.60
29.500	29500.0	29500.0	17.78	19.10	19.10
30.000	30000.0	30000.0	17.78	19.10	19.10
30.500	30500.0	30500.0	18.36	19.50	19.50
31.000	31000.0	31000.0	18.36	19.50	19.50
31.500	31500.0	31500.0	18.98	20.00	20.00
32.000	32000.0	32000.0	18.98	20.00	20.00
32.500	32500.0	32500.0	19.56	20.40	20.40
33.000	33000.0	33000.0	19.56	20.40	20.40
33.500	33500.0	33500.0	20.14	20.80	20.80
34.000	34000.0	34000.0	20.14	20.80	20.80
34.500	34500.0	34500.0	20.72	21.20	21.20
35.000	35000.0	35000.0	20.72	21.20	21.20
35.500	35500.0	35500.0	21.30	21.60	21.60
36.000	36000.0	36000.0	21.30	21.60	21.60
36.500	36500.0	36500.0	21.88	22.00	22.00
37.000	37000.0	37000.0	21.88	22.00	22.00
37.500	37500.0	37500.0	22.46	22.40	22.40
38.000	38000.0	38000.0	22.46	22.40	22.40
38.500	38500.0	38500.0	23.04	22.80	22.80
39.000	39000.0	39000.0	23.04	22.80	22.80
39.500	39500.0	39500.0	23.62	23.20	23.20
40.000	40000.0	40000.0	23.62	23.20	23.20
40.500	40500.0	40500.0	24.20	23.60	23.60
41.000	41000.0	41000.0	24.20	23.60	23.60
41.500	41500.0	41500.0	24.78	24.00	24.00
42.000	42000.0	42000.0	24.78	24.00	24.00
42.500	42500.0	42500.0	25.36	24.40	24.40
43.000	43000.0	43000.0	25.36	24.40	24.40
43.500	43500.0	43500.0	25.94	24.80	24.80
44.000	44000.0	44000.0	25.94	24.80	24.80
44.500	44500.0	44500.0	26.52	25.20	25.20
45.000	45000.0	45000.0	26.52	25.20	25.20
45.500	45500.0	45500.0	27.10	25.60	25.60
46.000	46000.0	46000.0	27.10	25.60	25.60
46.500	46500.0	46500.0	27.68	26.00	26.00
47.000	47000.0	47000.0	27.68	26.00	26.00
47.500	47500.0	47500.0	28.26	26.40	26.40
48.000	48000.0	48000.0	28.26	26.40	26.40
48.500	48500.0	48500.0	28.84	26.80	26.80
49.000	49000.0	49000.0	28.84	26.80	26.80
49.500	49500.0	49500.0	29.42	27.20	27.20
50.000	50000.0	50000.0	29.42	27.20	27.20
50.500	50500.0	50500.0	30.00	27.60	27.60
51.000	51000.0	51000.0	30.00	27.60	27.60
51.500	51500.0	51500.0	30.58	28.00	28.00
52.000	52000.0	52000.0	30.58	28.00	28.00
52.500	52500.0	52500.0	31.16	28.40	28.40
53.000	53000.0	53000.0	31.16	28.40	28.40
53.500	53500.0	53500.0	31.74	28.80	28.80
54.000	54000.0	54000.0	31.74	28.80	28.80
54.500	54500.0	54500.0	32.32	29.20	29.20
55.000	55000.0	55000.0	32.32	29.20	29.20
55.500	55500.0	55500.0	32.90	29.60	29.60
56.000	56000.0	56000.0	32.90	29.60	29.60
56.500	56500.0	56500.0	33.48	30.00	30.00
57.000	57000.0	57000.0	33.48	30.00	30.00
57.500	57500.0	57500.0	34.06	30.40	30.40
58.000	58000.0	58000.0	34.06	30.40	30.40
58.500	58500.0	58500.0	34.64	30.80	30.80
59.000	59000.0	59000.0	34.64	30.80	30.80
59.500	59500.0	59500.0	35.22	31.20	31.20
60.000	60000.0	60000.0	35.22	31.20	31.20
60.500	60500.0	60500.0	35.80	31.60	31.60
61.000	61000.0	61000.0	35.80	31.60	31.60
61.500	61500.0	61500.0	36.38	32.00	32.00
62.000	62000.0	62000.0	36.38	32.00	32.00
62.500	62500.0	62500.0	36.96	32.40	32.40
63.000	63000.0	63000.0	36.96	32.40	32.40
63.500	63500.0	63500.0	37.54	32.80	32.80
64.000	64000.0	64000.0	37.54	32.80	32.80
64.500	64500.0	64500.0	38.12	33.20	33.20
65.000	65000.0	65000.0	38.12	33.20	33.20
65.500	65500.0	65500.0	38.70	33.60	33.60
66.000	66000.0	66000.0	38.70	33.60	33.60
66.500	66500.0	66500.0	39.28	34.00	34.00
67.000	67000.0	67000.0	39.28	34.00	34.00
67.500	67500.0	67500.0	39.86	34.40	34.40
68.000	68000.0	68000.0	39.86	34.40	34.40
68.500	68500.0	68500.0	40.44	34.80	34.80
69.000	69000.0	69000.0	40.44	34.80	34.80
69.500	69500.0	69500.0	41.02	35.20	35.20
70.000	70000.0	70000.0	41.02	35.20	35.20
70.500	70500.0	70500.0	41.60	35.60	35.60
71.000	71000.0	71000.0	41.60	35.60	35.60
71.500	71500.0	71500.0	42.18	36.00	36.00
72.000	72000.0	72000.0	42.18	36.00	36.00
72.500	72500.0	72500.0	42.76	36.40	36.40
73.000	73000.0	73000.0	42.76	36.40	36.40

STUDY ON CHAMA RIVER BASIN
 CONSERVATION PROJECT
 JAPAN INTERNATIONAL COOPERATION AGENCY

図3.3-3 河口-エルヒビア間不等流
 計算結果



STATION NUMBER	UNIT DISTANCE (m)	RECURRING LATIVE DISTANCE (m)	PRESENT RIVER BED ELEVATION (m)	LEFT BANK ELEVATION (m)	RIGHT BANK ELEVATION (m)
68,000	500.0	500.0	60.93	64.80	65.30
69,000	500.0	1000.0	62.23	64.80	64.80
70,000	500.0	1500.0	63.47	67.40	64.80
71,000	500.0	2000.0	63.24	67.70	64.80
72,000	500.0	2500.0	65.15	68.40	69.70
73,000	500.0	3000.0	64.36	69.80	68.20
74,000	500.0	3500.0	66.78	61.40	69.60
75,000	500.0	4000.0	67.44	61.80	69.00
76,000	500.0	4500.0	68.78	62.00	61.20
77,000	500.0	5000.0	68.90	62.80	61.60
78,000	500.0	5500.0	61.07	66.10	63.60
79,000	500.0	6000.0	61.20	68.00	63.00
80,000	500.0	6500.0	64.84	70.90	67.00
81,000	500.0	7000.0	66.26	72.80	67.00
82,000	500.0	7500.0	66.38	74.00	70.00
83,000	500.0	8000.0	71.96	76.80	73.48
84,000	500.0	8500.0	74.01	79.00	76.60
85,000	500.0	9000.0	76.32	81.20	79.00
86,000	500.0	9500.0	79.06	83.00	81.70
87,000	500.0	10000.0	81.80	86.10	83.80
88,000	500.0	10500.0	84.40	84.80	85.80
89,000	500.0	11000.0	87.33	83.20	88.60
90,000	500.0	11500.0	90.36	86.70	91.30
91,000	500.0	12000.0	94.08	90.10	95.70
92,000	500.0	12500.0	96.81	100.90	100.70
93,000	500.0	13000.0	101.12	109.90	107.60
94,000	500.0	13500.0	104.30	116.10	106.70
95,000	500.0	14000.0	108.42	126.20	137.20

図3.3-4 エルビヒア近傍築堤区間不等流計算結果

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

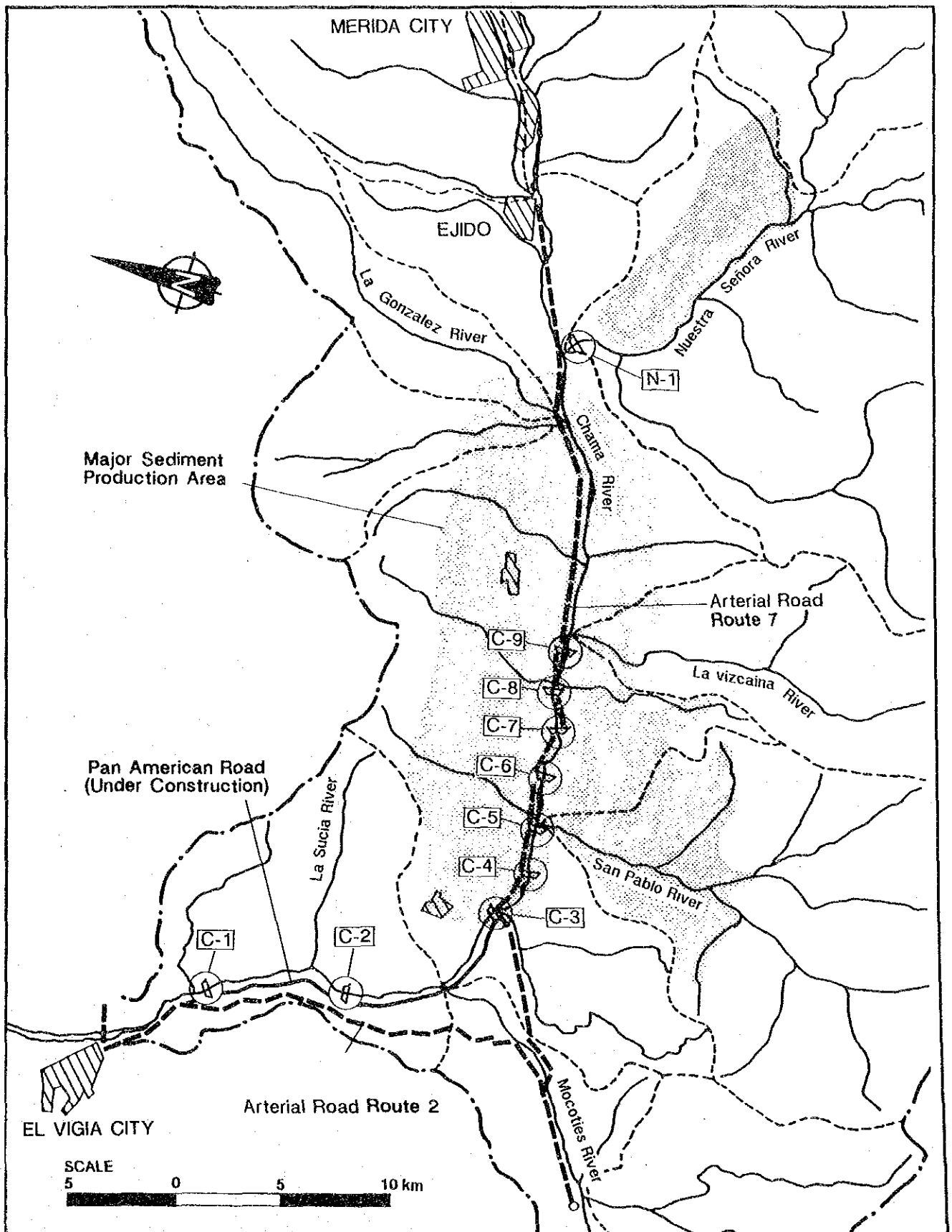


図5.1-1 広域防災計画砂防施設設置予定位置図

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

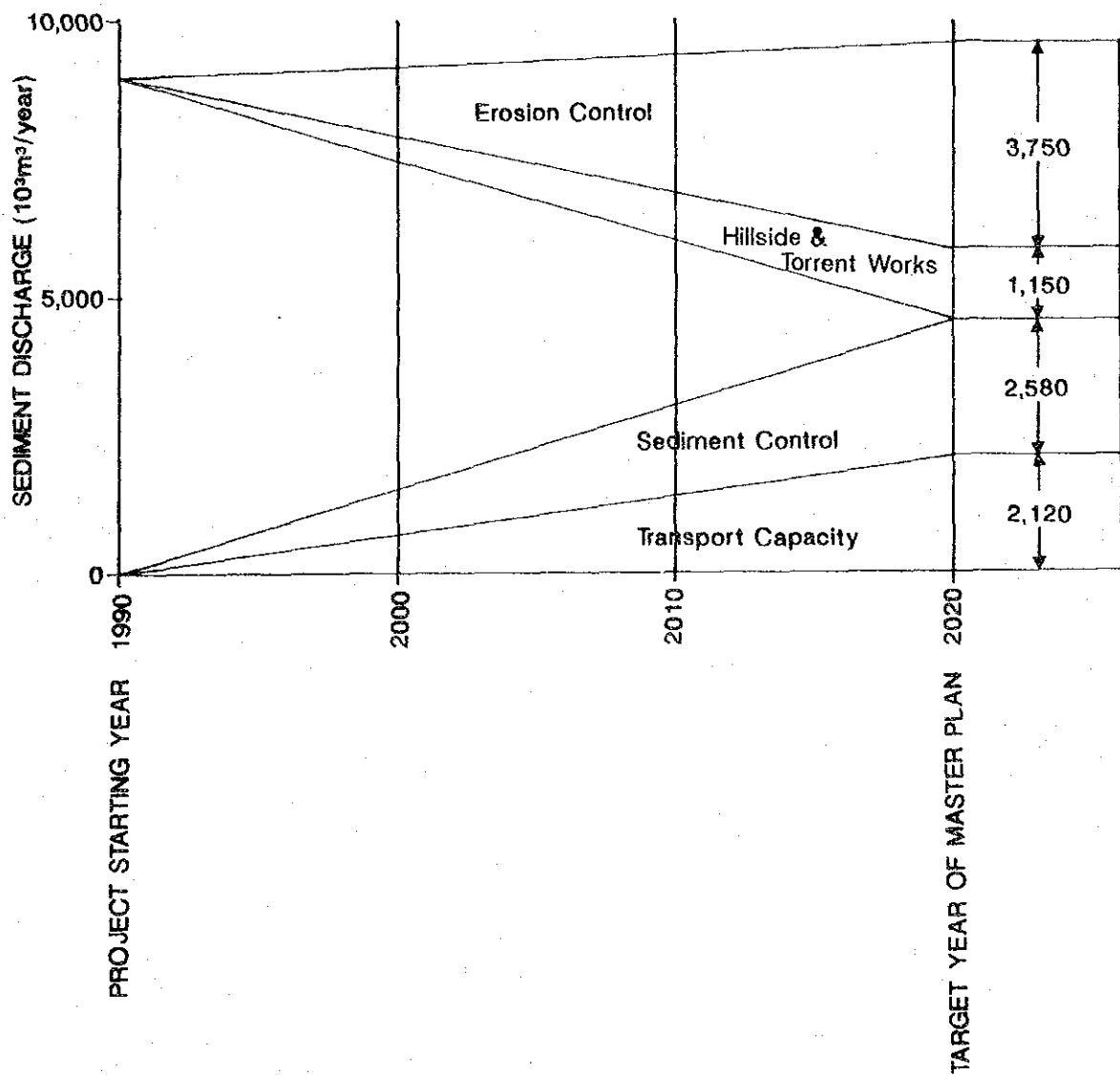


図 5.1 - 2 砂防計画土砂調節模式図

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

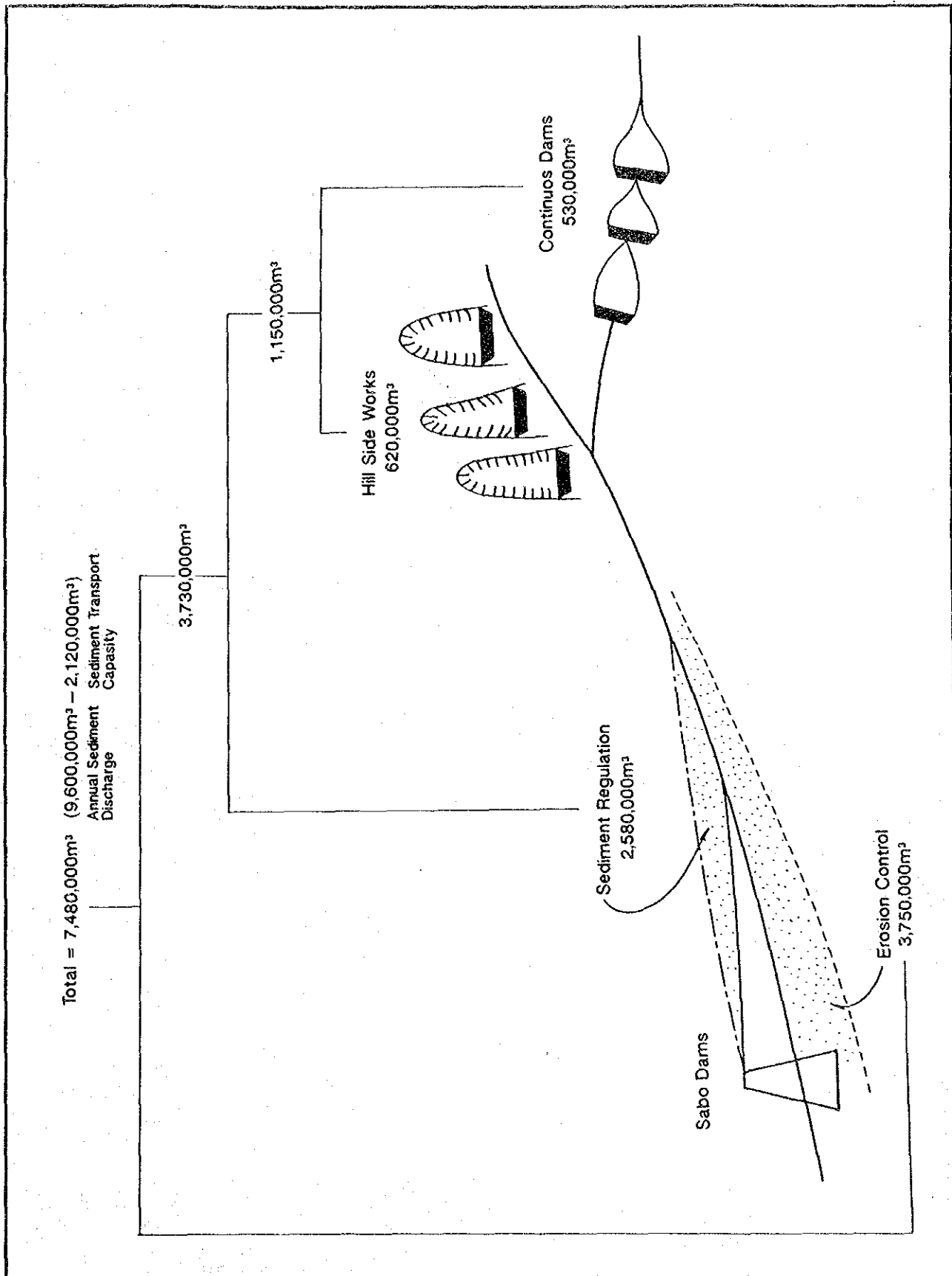
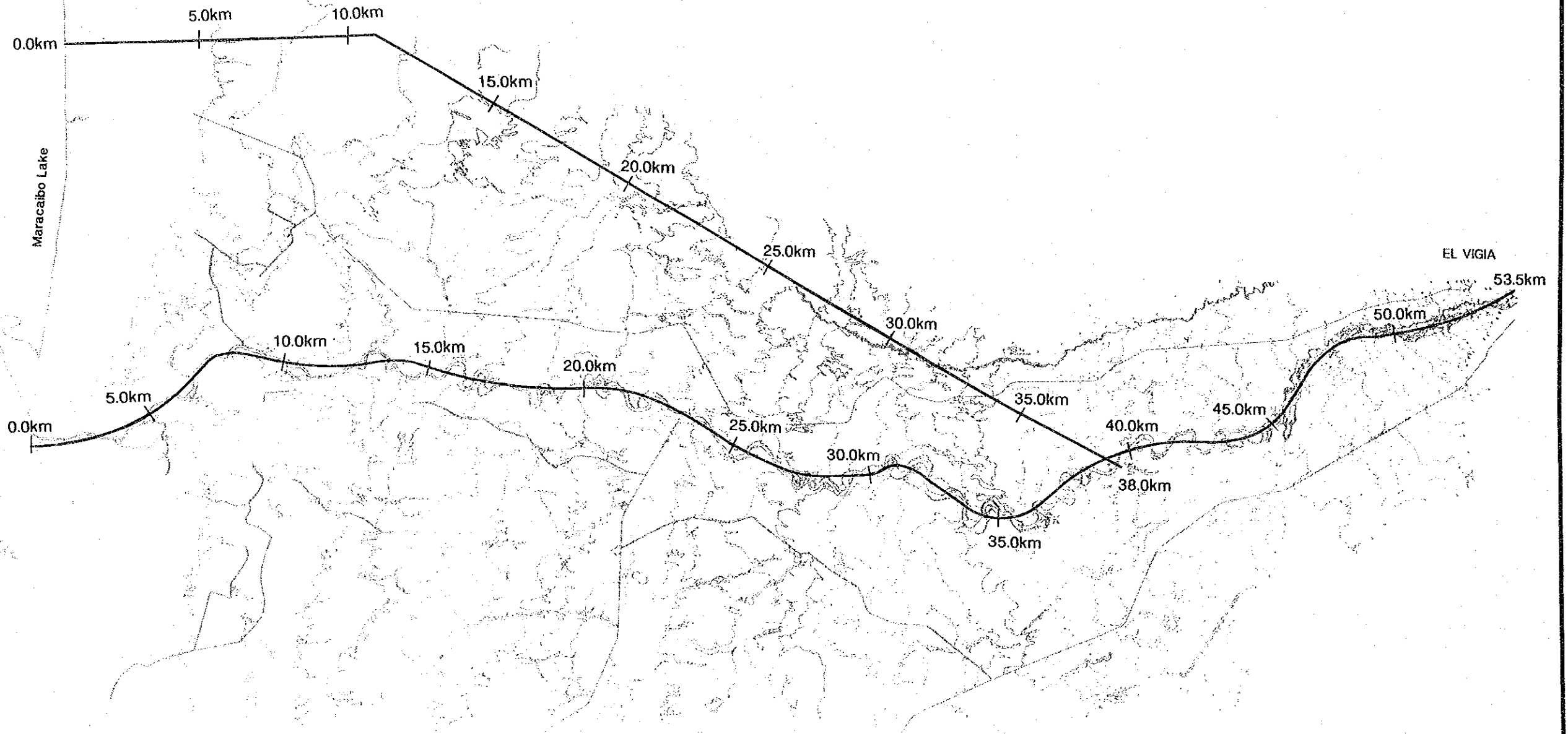
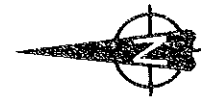


图5.1-3 砂防計画土砂配分模式図

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SCALE : 1/140,000
 0 2 4 6 8 10km

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図5.1-4 チャマ川蛇行中心線図および
 ムクヘペ放水路計画法線

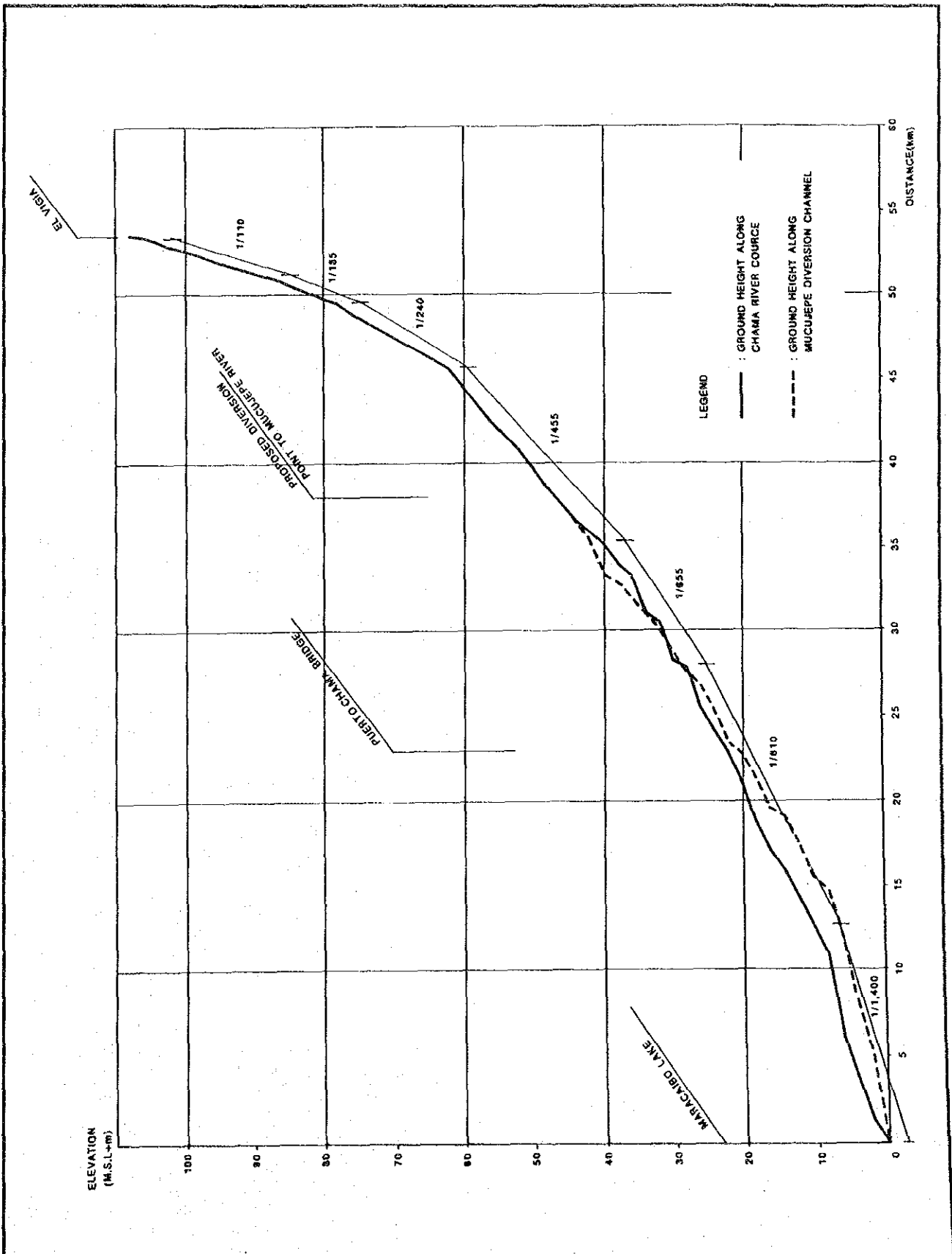


図5.1-5 チャマ川およびムクヘペ川縦断面図

STUDY ON CHAMA RIVER BASIN
 CONSERVATION PROJECT
 JAPAN INTERNATIONAL COOPERATION AGENCY

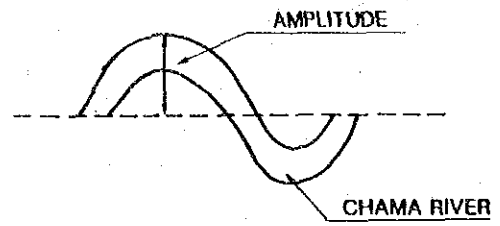
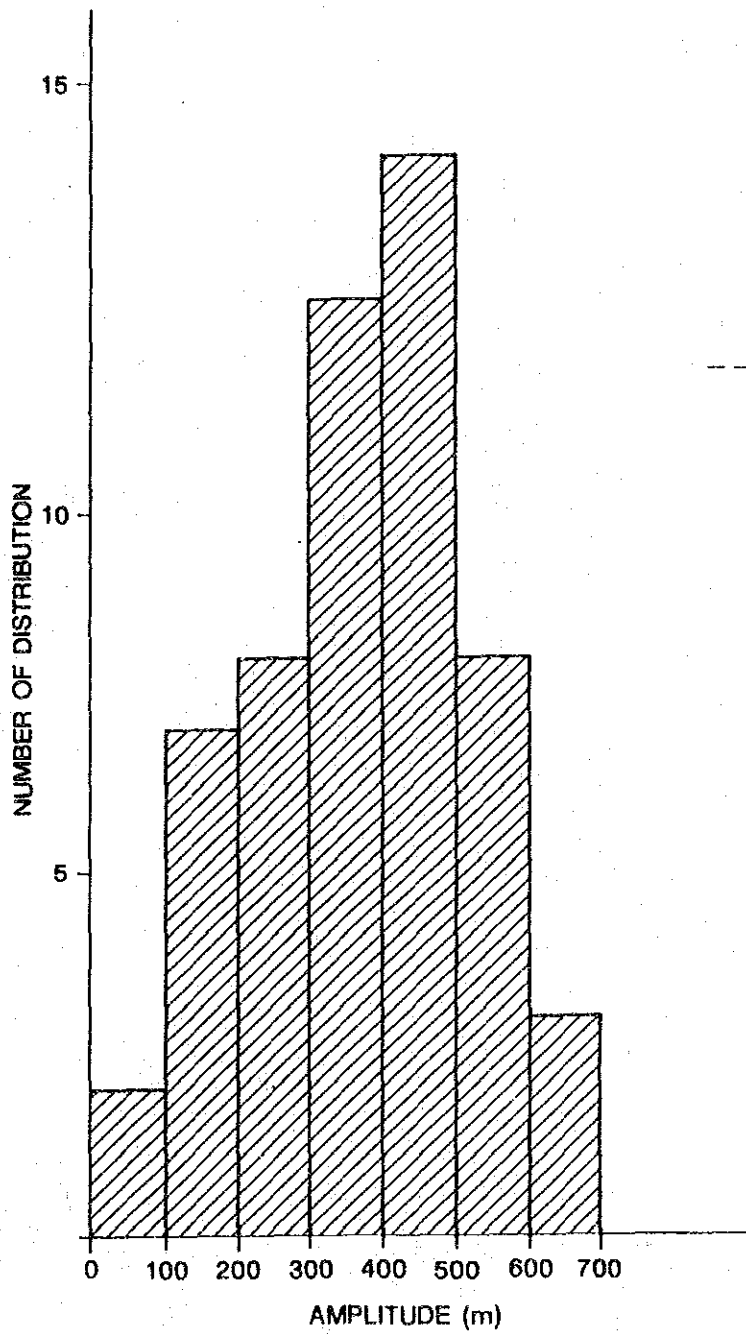


図 5. 1 - 6 チャマ川下流域蛇行振巾分布図

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

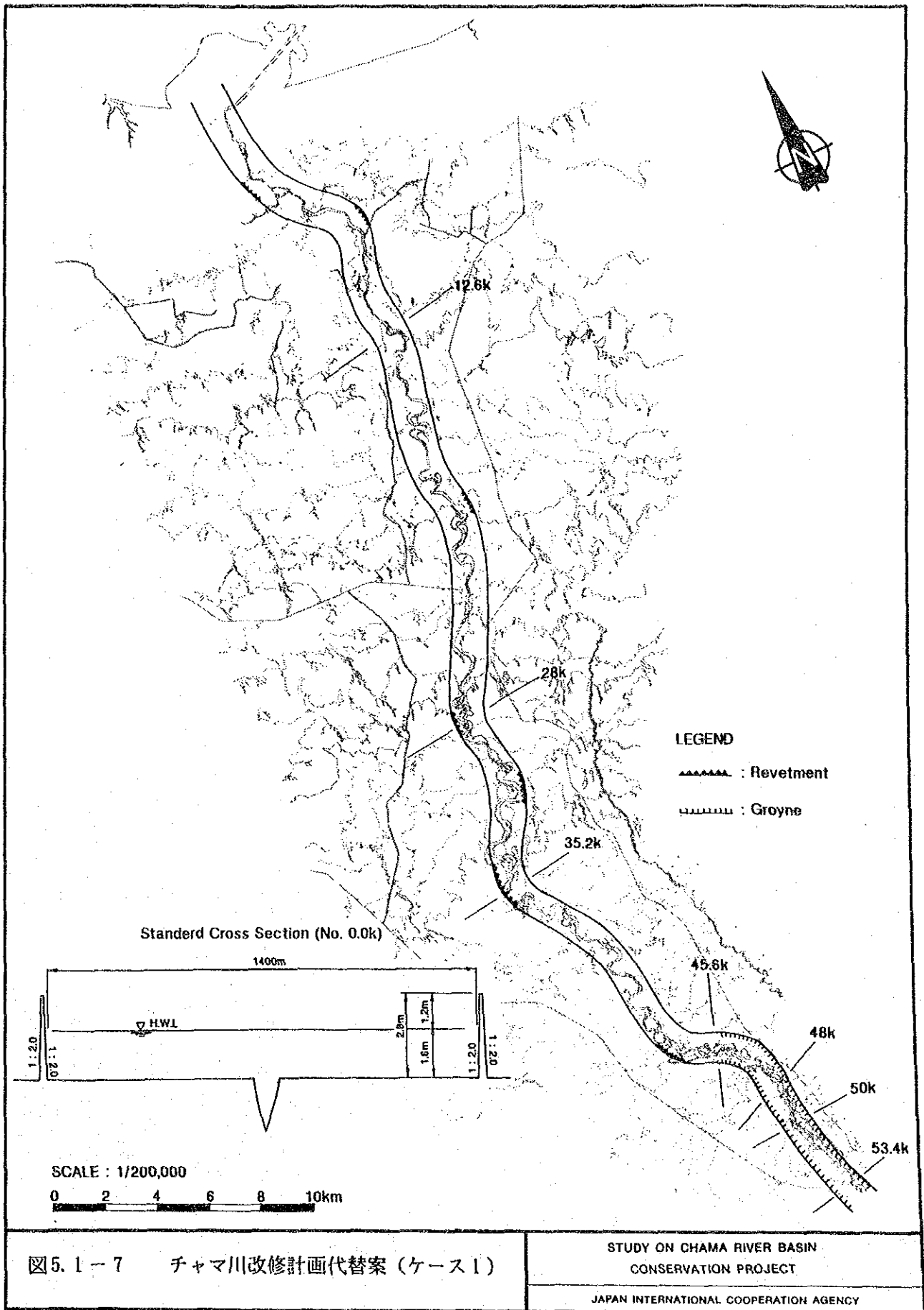


図5.1-7 チャマ川改修計画代替案(ケース1)

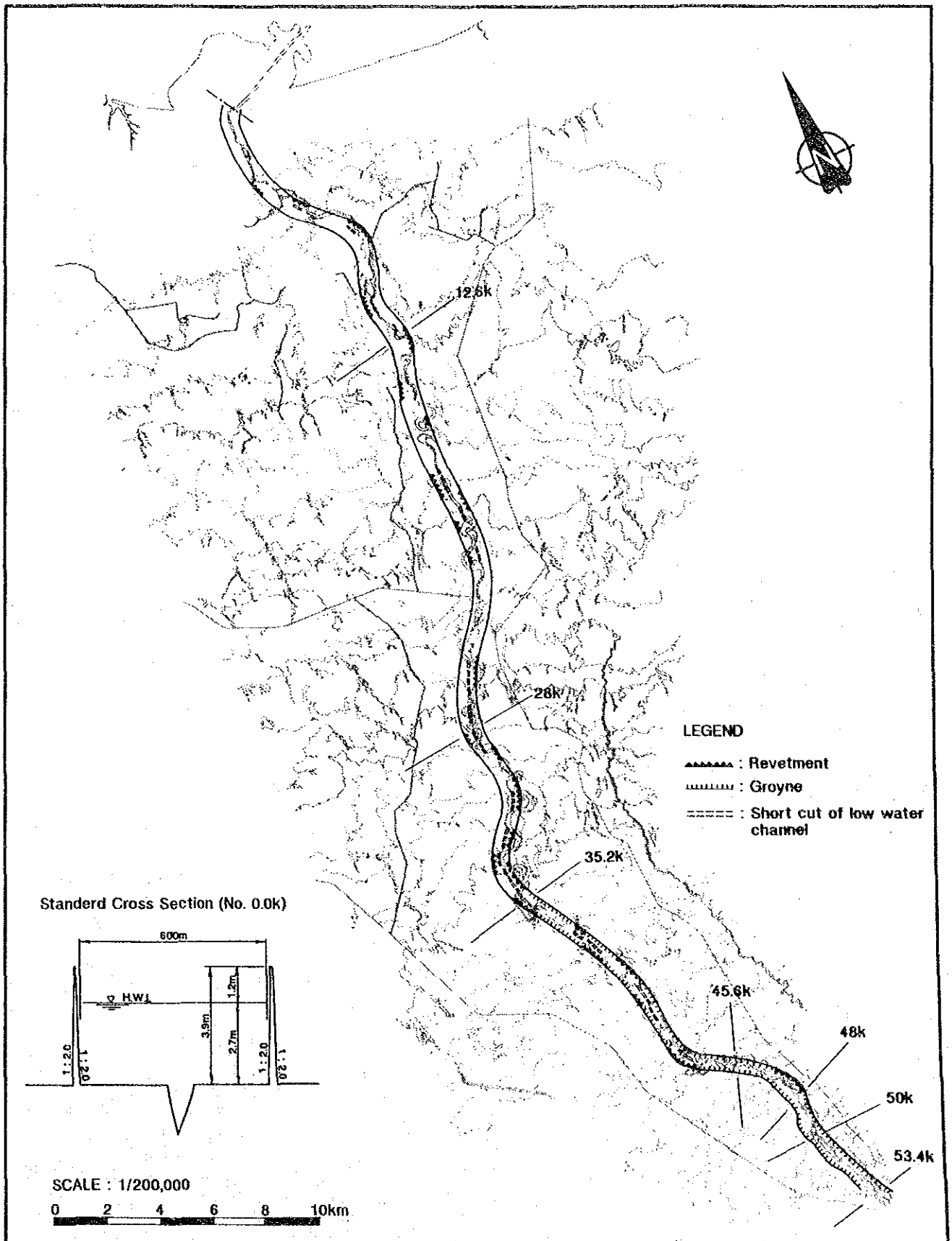


図5.1-8 チャマ川改修計画代替案(ケース2)

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

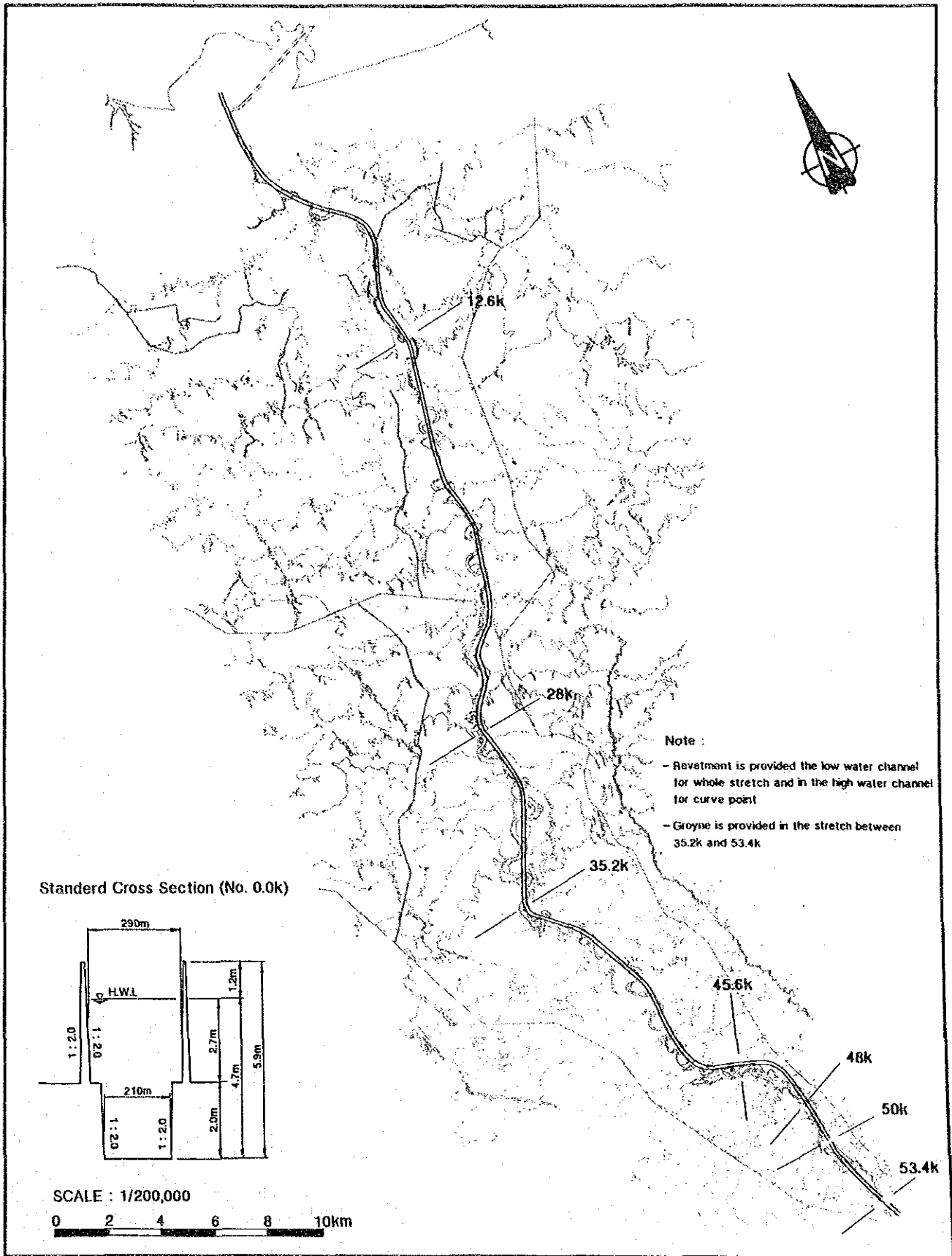
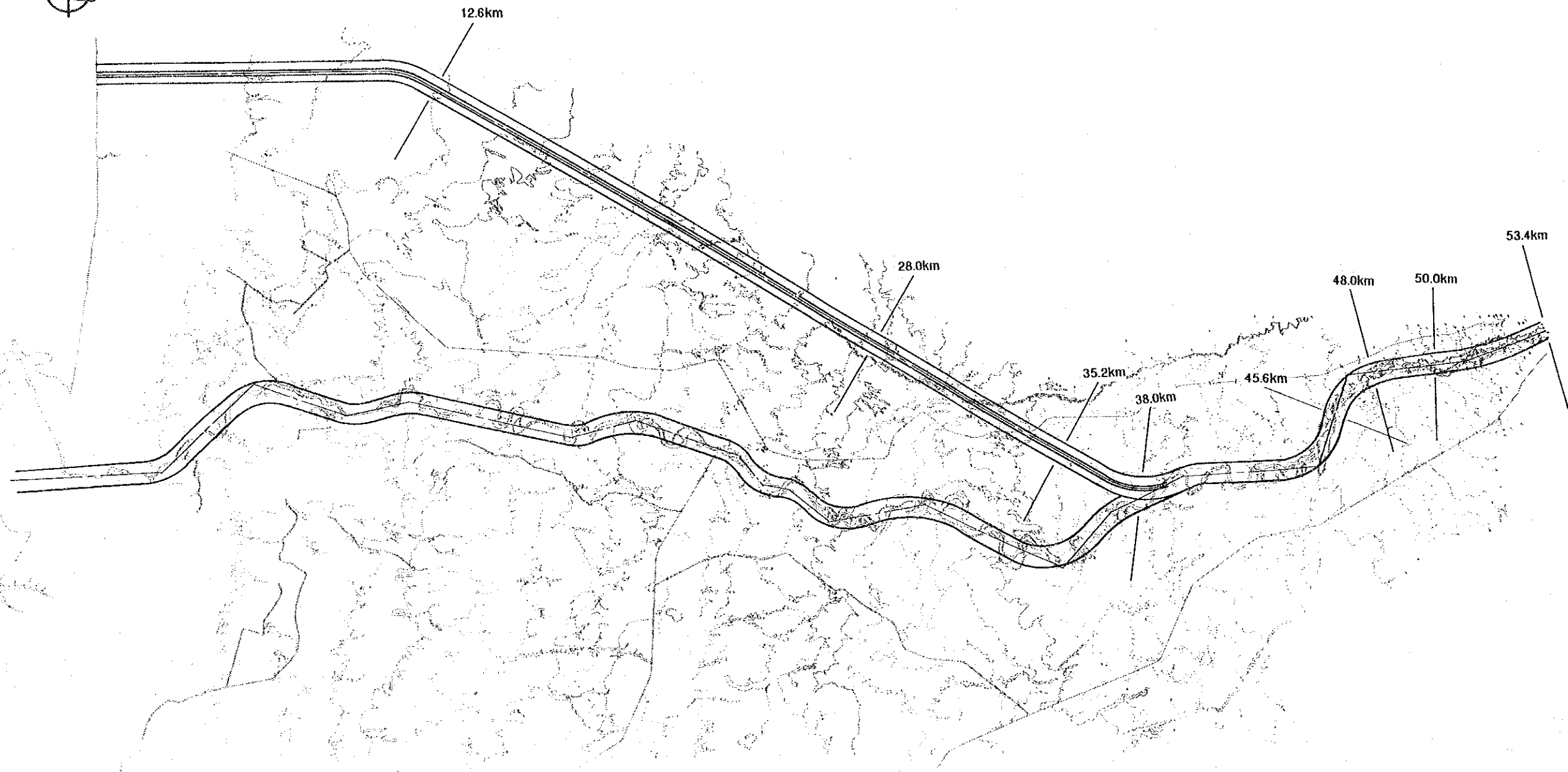


図5.1-9 チャマ川改修計画代替案(ケース3)

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

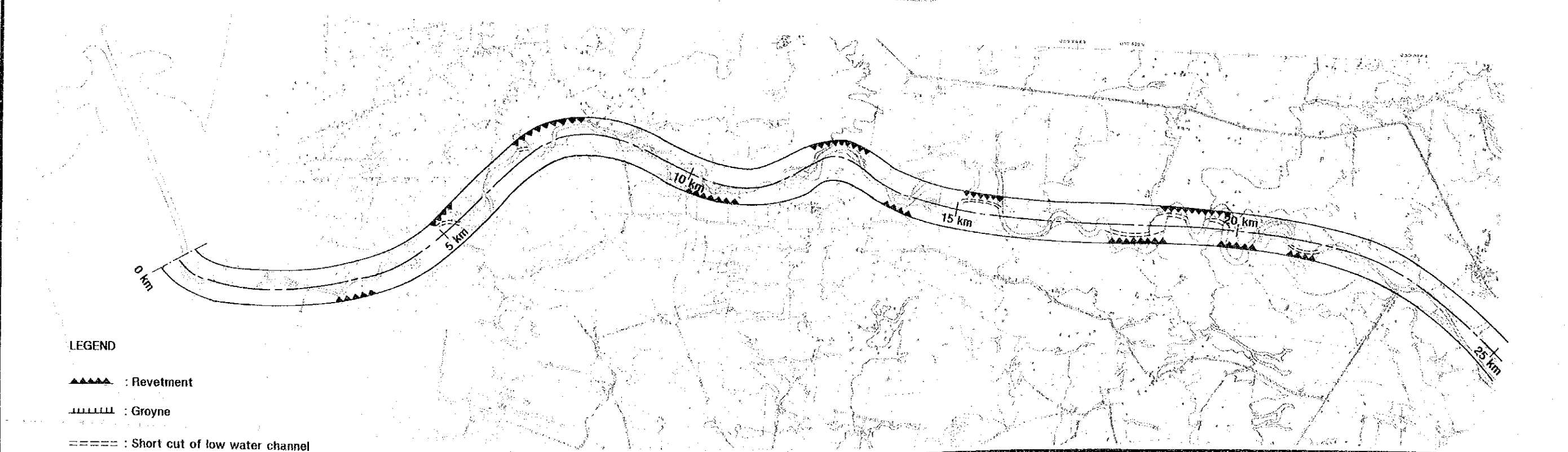
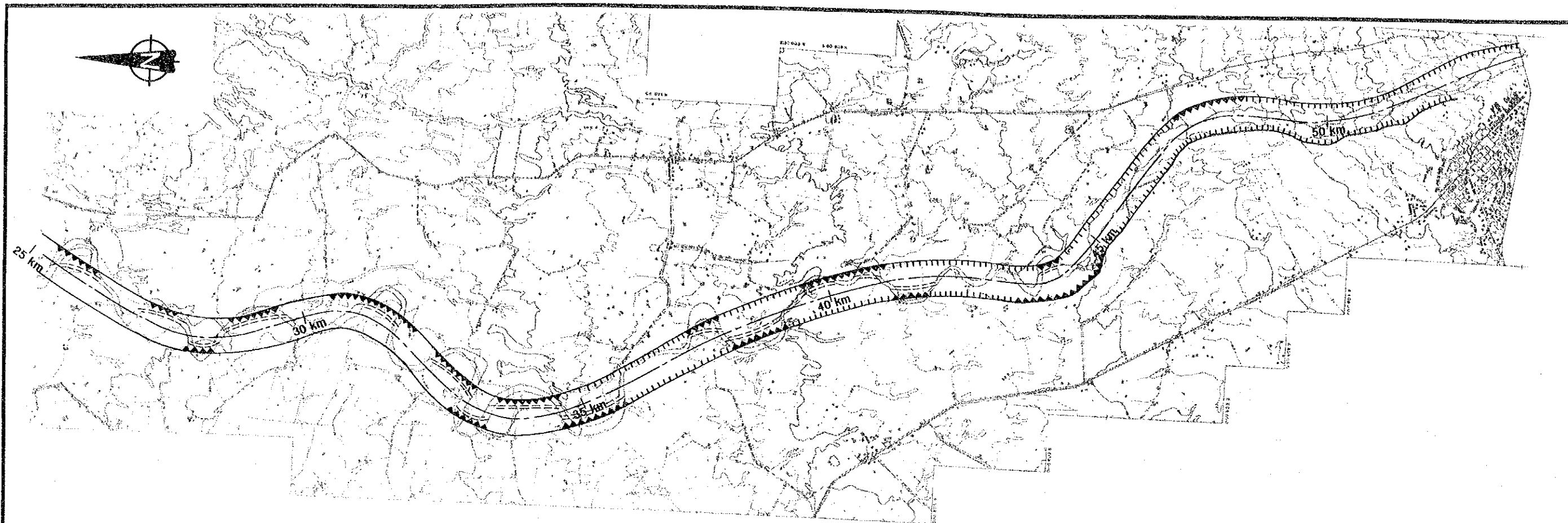
JAPAN INTERNATIONAL COOPERATION AGENCY



SCALE : 1/140,000
0 2 4 6 8 10km

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

図5.1-10 ムクヘベ放水路案平面図



LEGEND

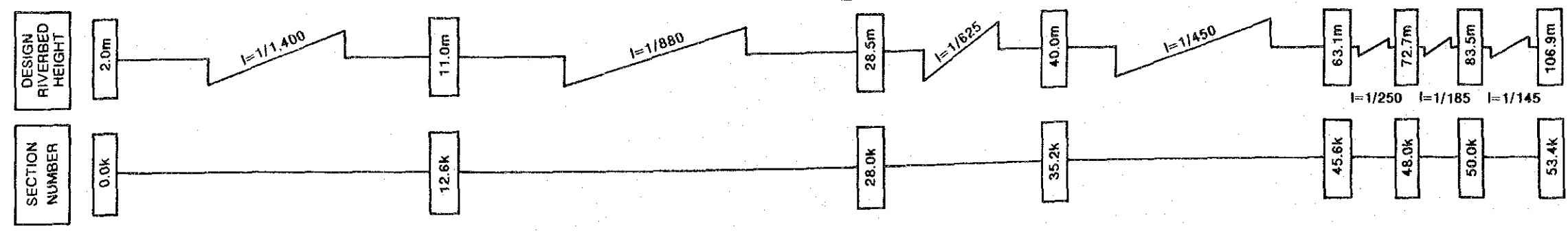
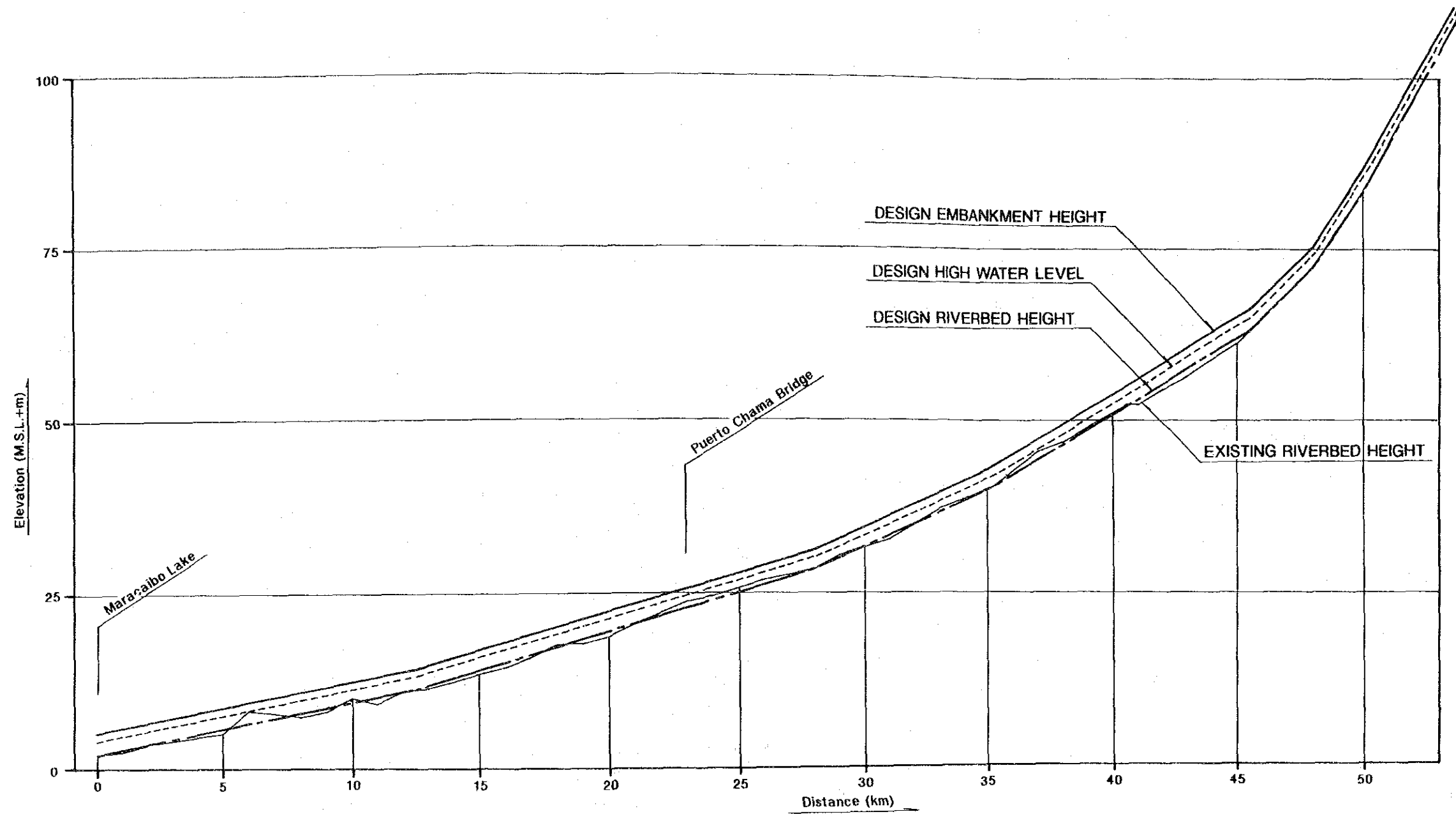
- ▲▲▲▲▲ : Revetment
- ||||| : Groyne
- ===== : Short cut of low water channel

SCALE : 1/70,000



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図5.1-11 チャマ川改修計画法線図



STUDY ON CHAMA RIVER BASIN
 CONSERVATION PROJECT
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図 5.1-12 チャマ川改修計画縦断面図

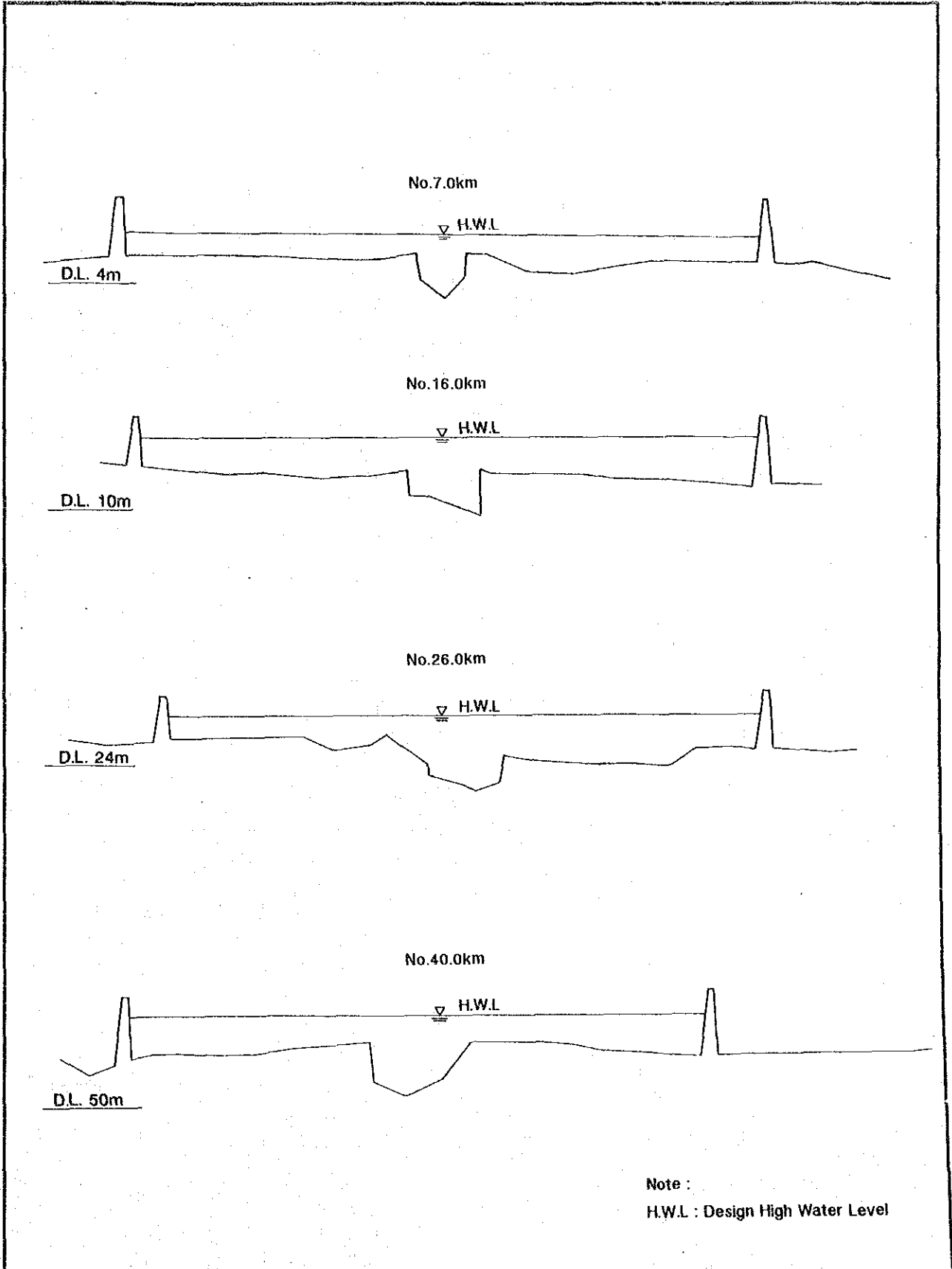
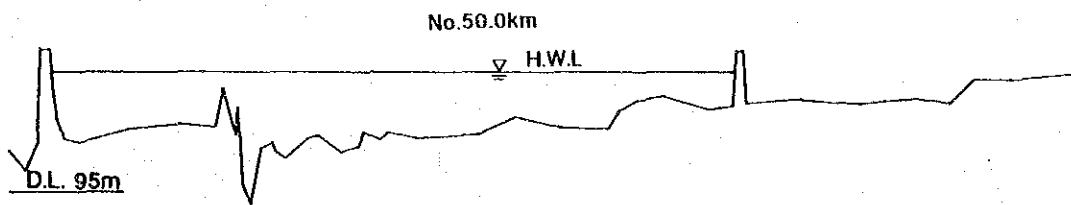
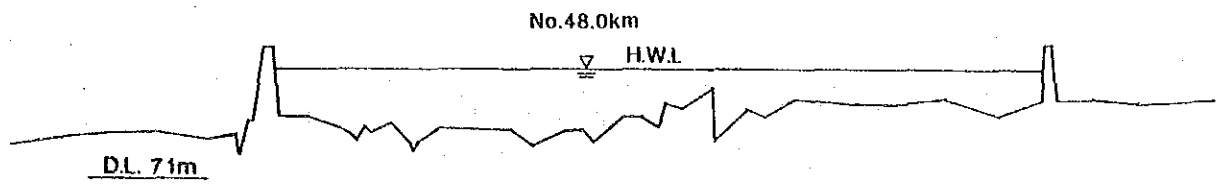


図5.1-13(1/2) チャマ川改修計画代表横断面図

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

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

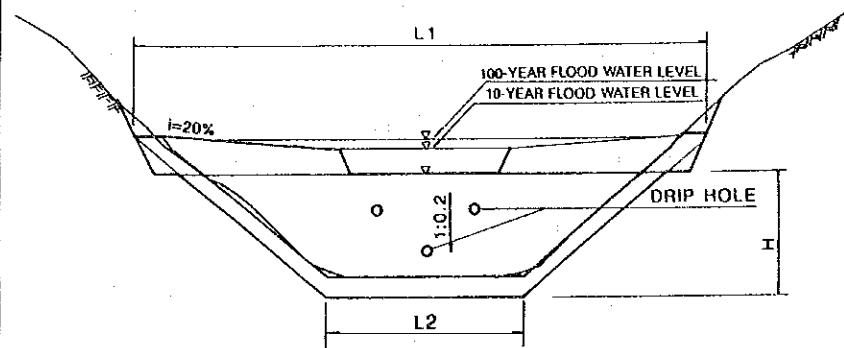
図5.1-13(2/2) チャマ川改修計画代表横断面図

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

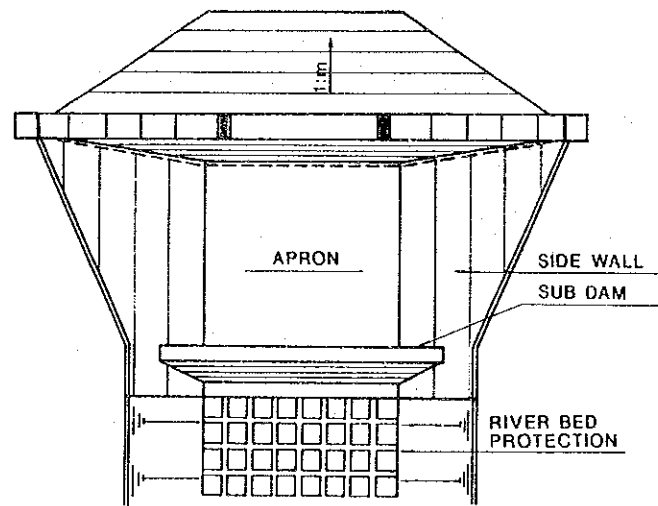
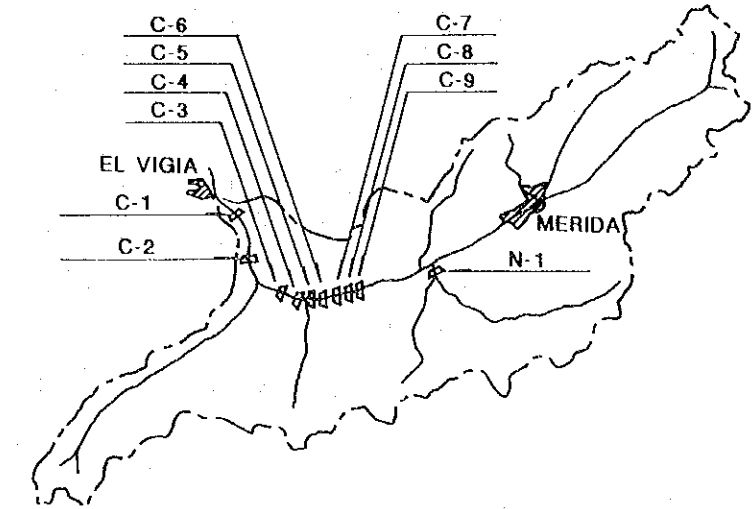
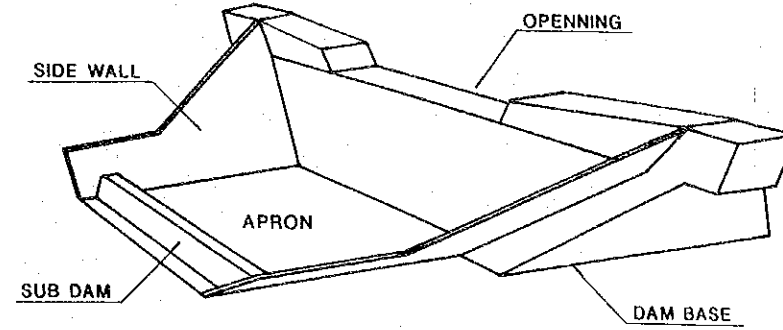
JAPAN INTERNATIONAL COOPERATION AGENCY

TYPICAL SABO DAM

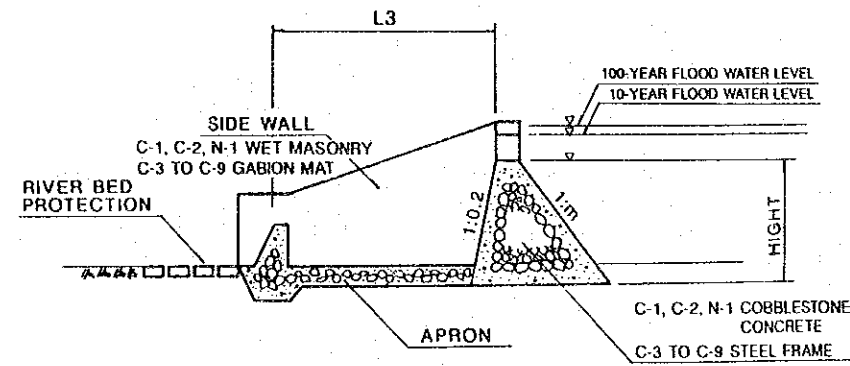
LOCATION OF PROPOSED SABO DAMS



FRONT VIEW



PLAN



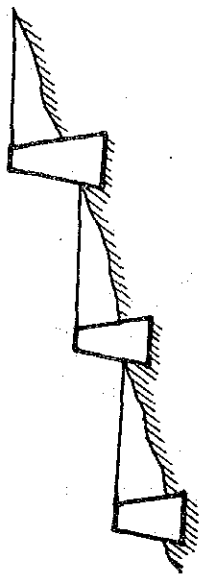
LONGITUDINAL PROFILE

Major Dimensions of Sabo Dam

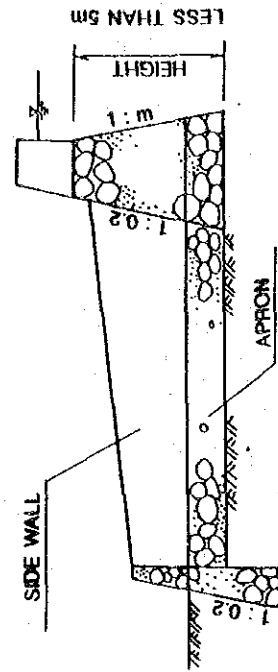
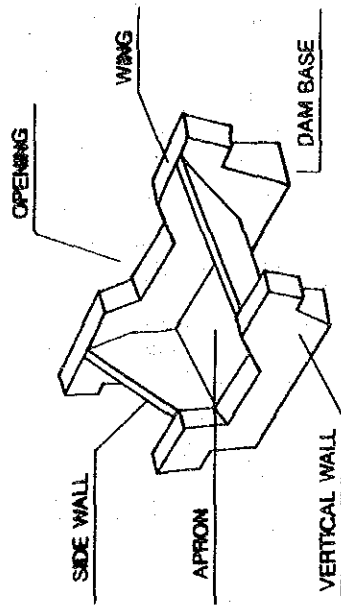
Dam Name	Name of River	Height (m)	m	L1 (m)	L2 (m)	L3 (m)	Dam Volume (m ³)
C-1	Chama River	22	1.10	170	100	50	62,500
C-2	Chama River	22	1.10	120	60	50	40,500
C-3	Chama River	11	0.75	150	80	45	17,100
C-4	Chama River	11	0.75	200	150	45	27,000
C-5	Chama River	9	0.70	230	70	45	14,600
C-6	Chama River	11	0.75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

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT
JAPAN INTERNATIONAL COOPERATION AGENCY

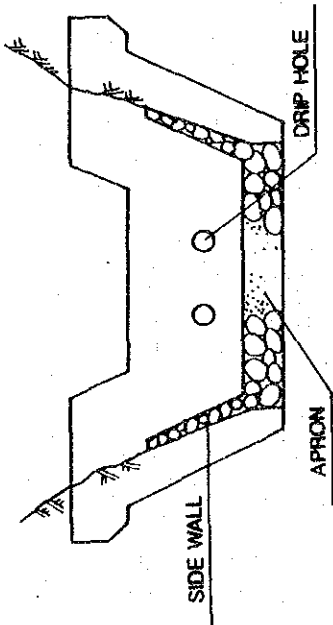
図5.1-14 砂防ダム標準図



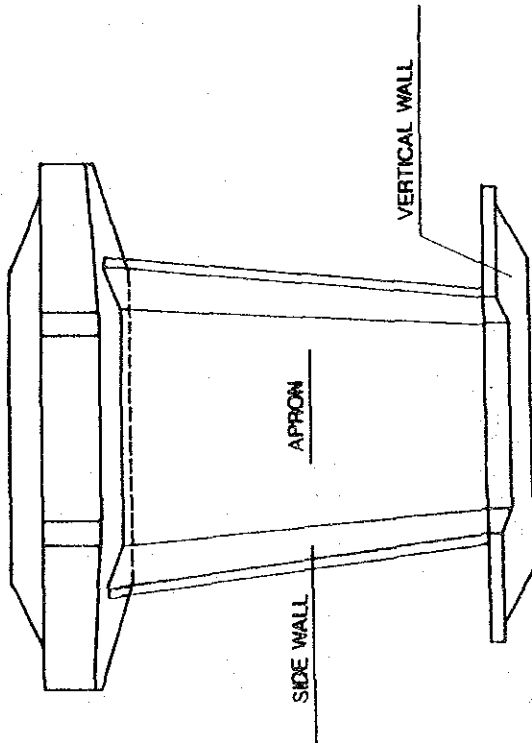
CONTINUOUS DAM



LONGITUDINAL PROFILE



FRONT VIEW



PLAN

図5.1-15 低ダム標準図

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

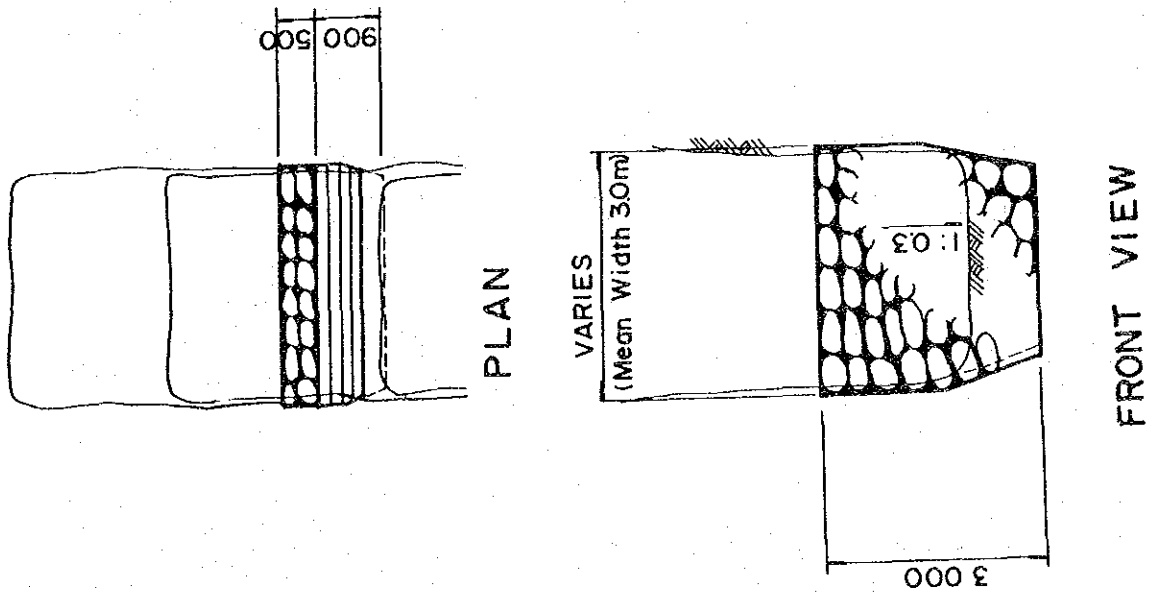
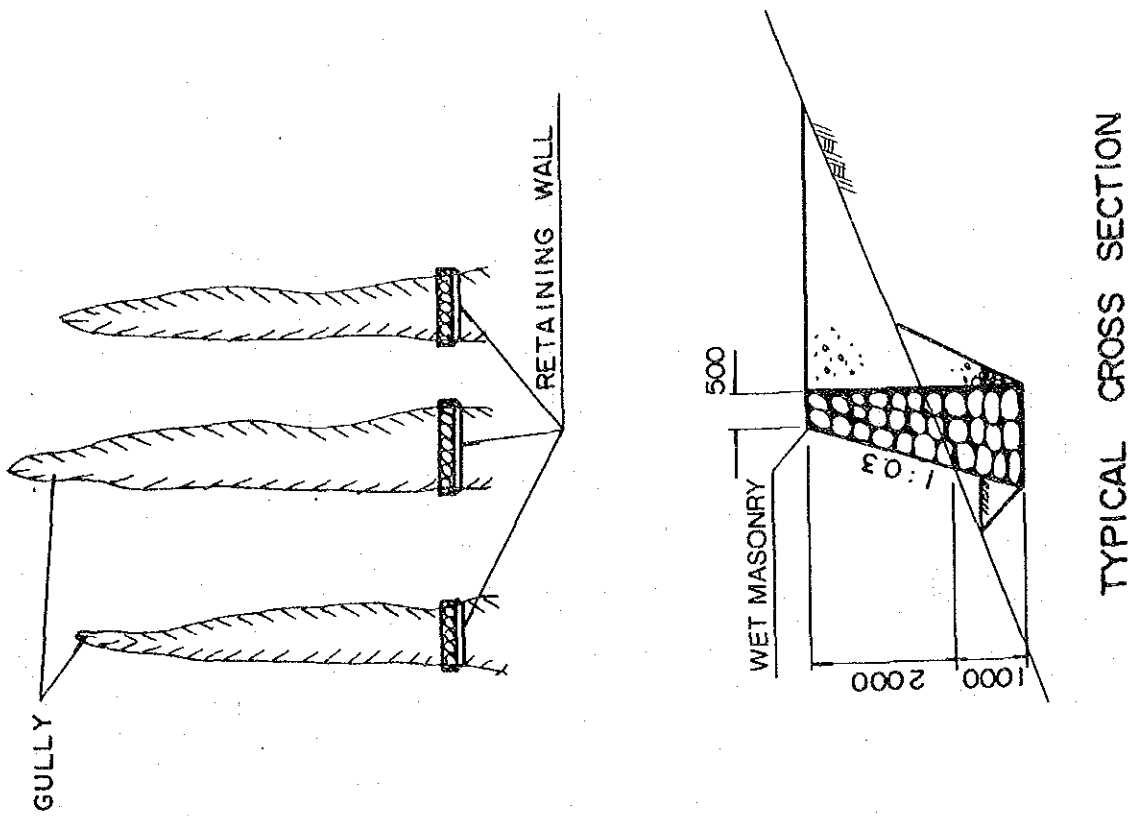


図5.1-16 ガリ侵食防止擁壁概要図

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

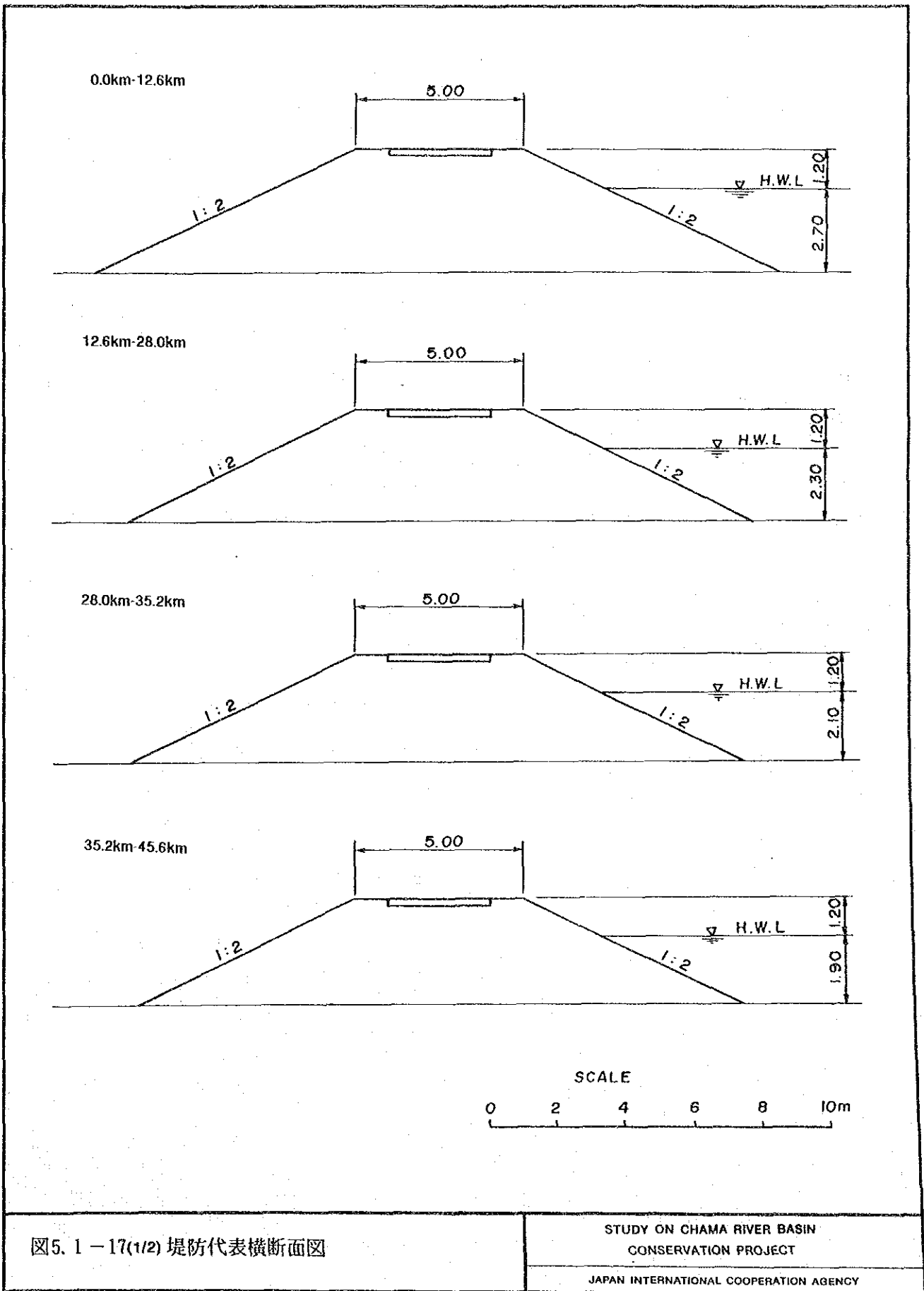


图5.1-17(1/2) 堤防代表横断面图

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

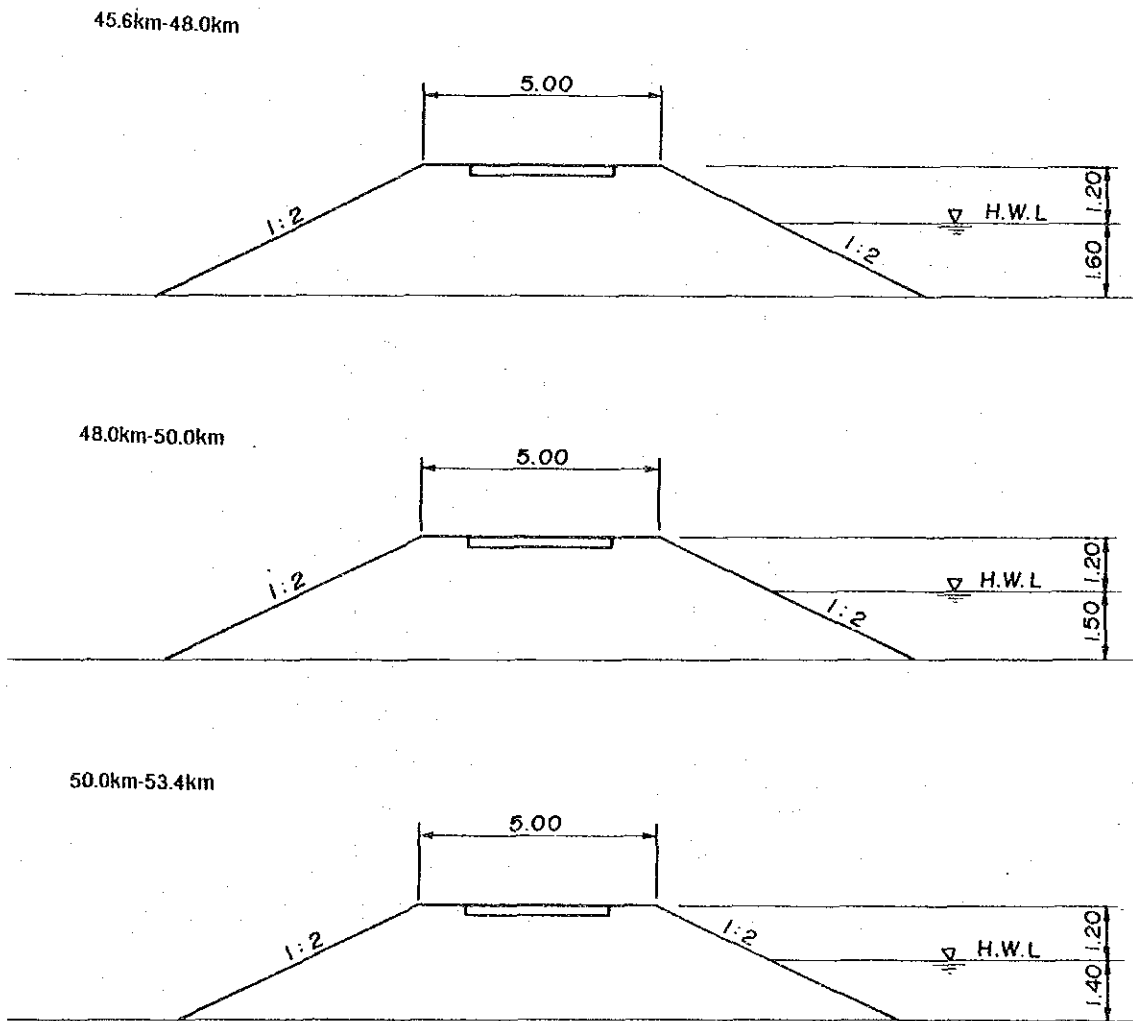


图5.1-17(2/2) 堤防代表横断面图

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

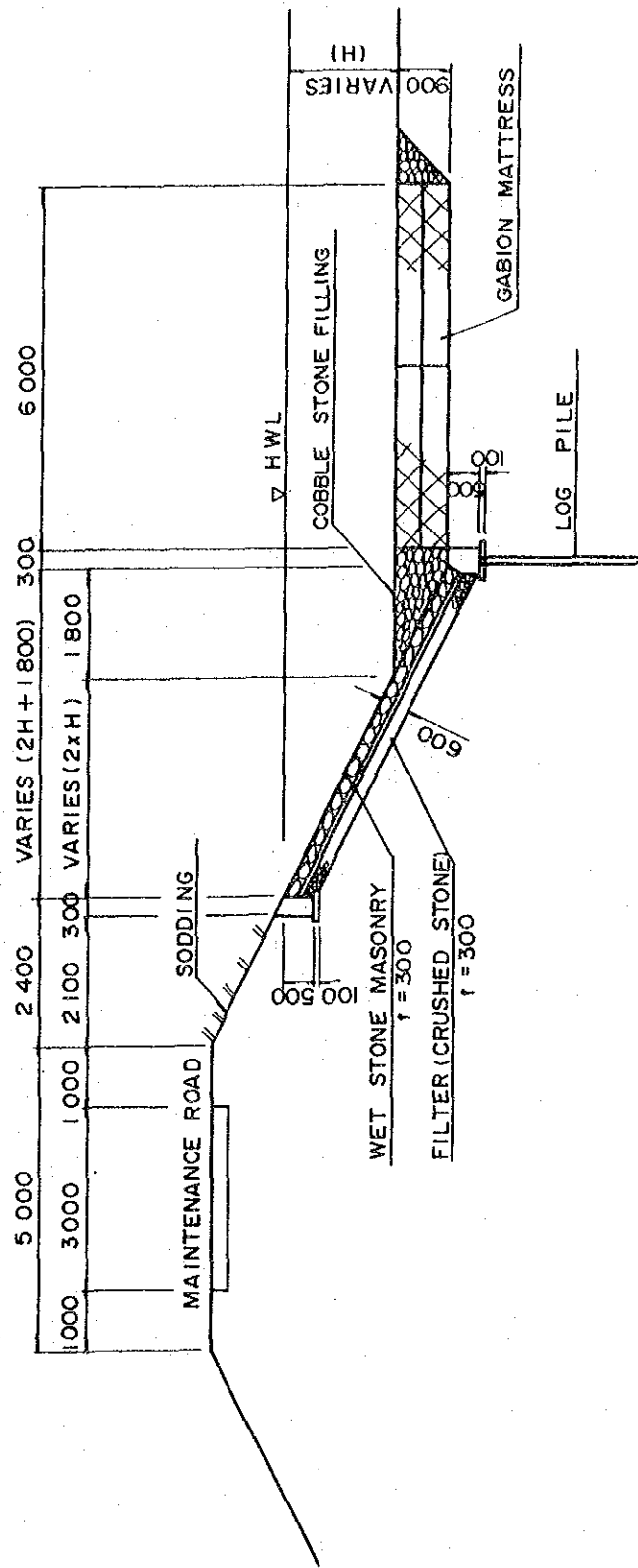


图 5.1 - 18 護岸標準図

STUDY ON CHAMA RIVER BASIN
CONSERVATION PROJECT

JAPAN INTERNATIONAL COOPERATION AGENCY

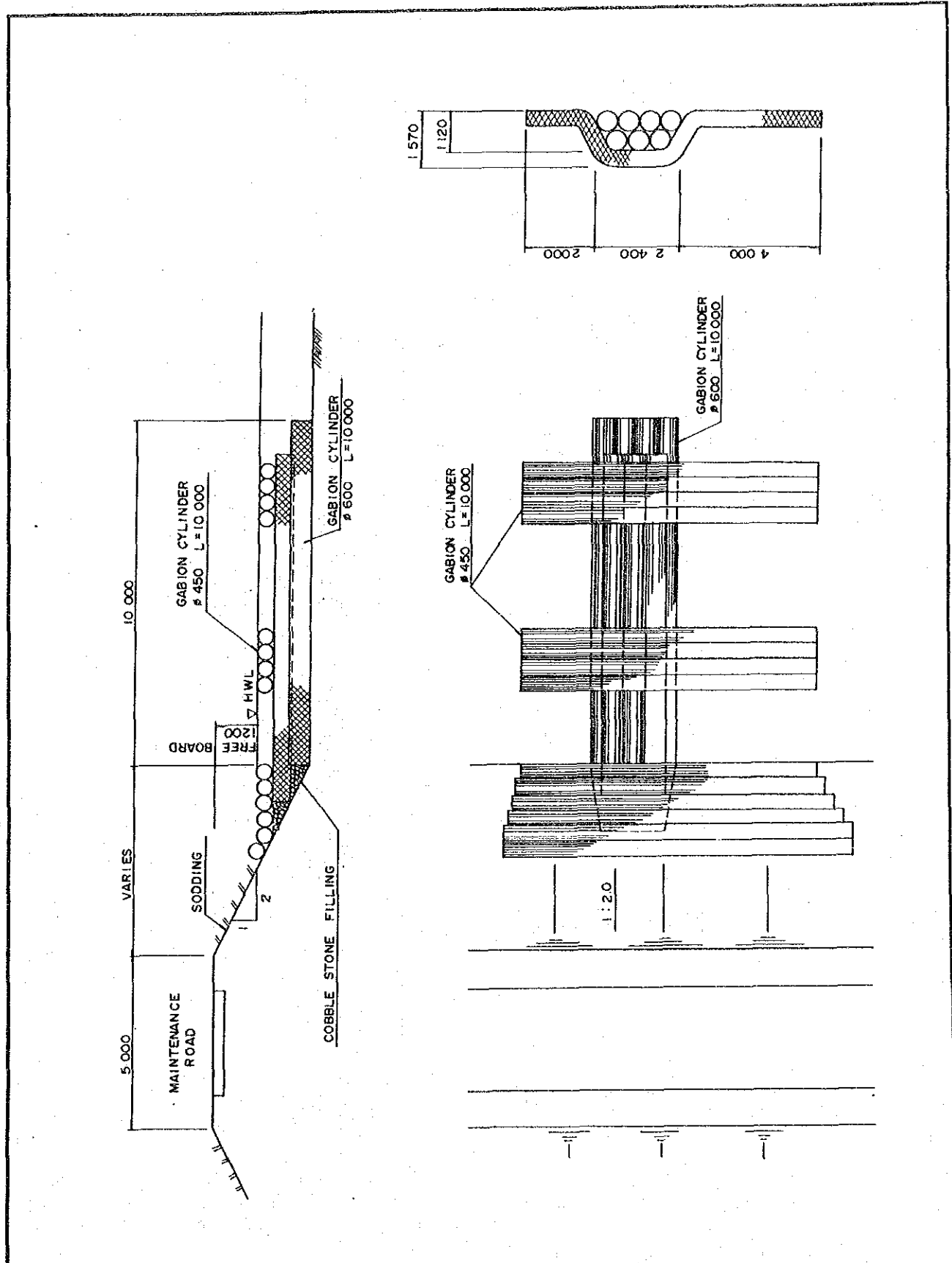


図 5. 1 - 19 水制標準図

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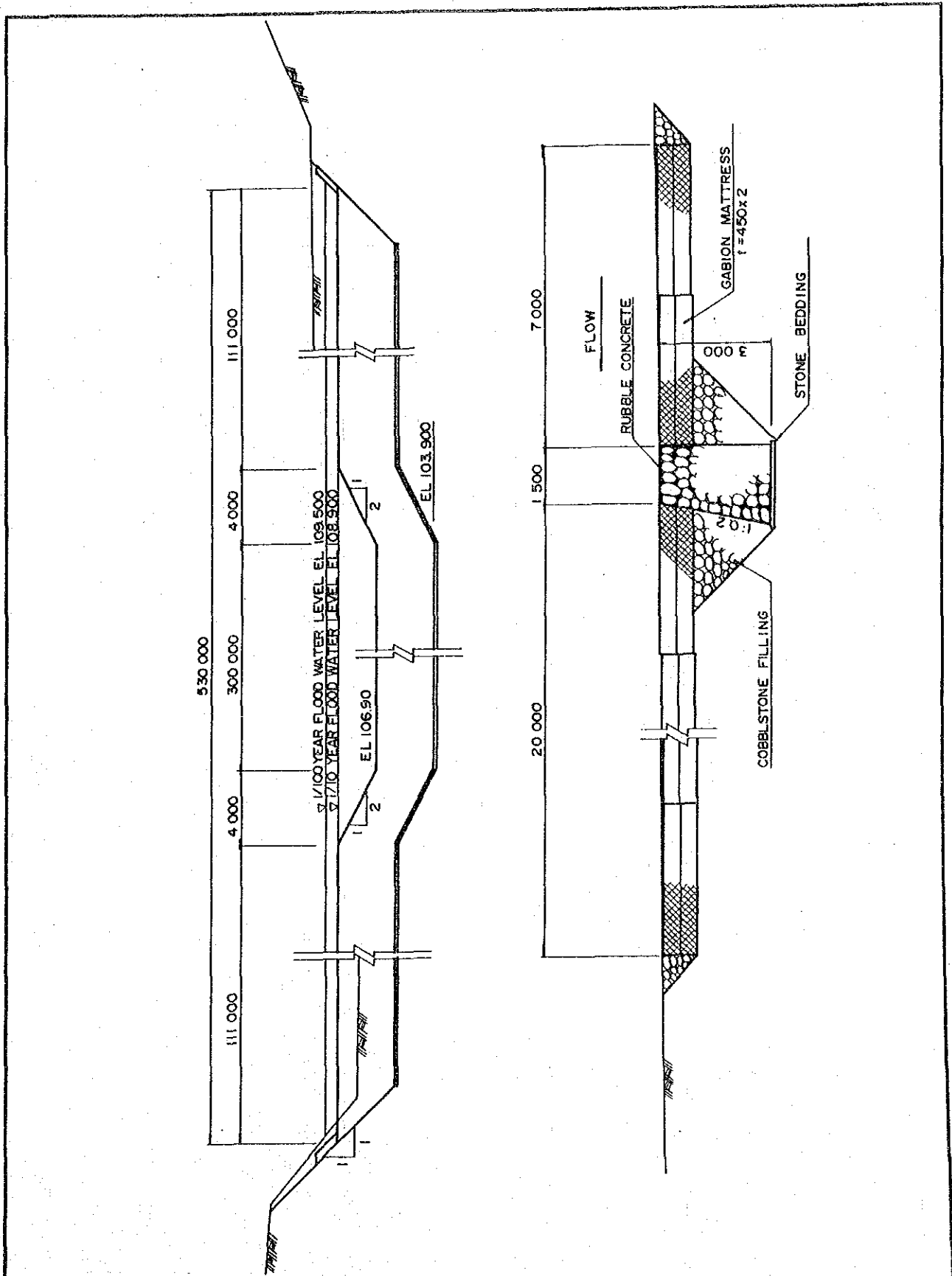


図5.1-20 床固め縦断標準横断図

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