

TABLES

Table 2.1(1/2) Existing River Conditions and Flow Capacity (Jaro River)

Station No.	Deepest Riverbed (EL. m)	Average Slope (1/n)	Dike Crown		River Width (m)	Dike Riverbed (EL. m)	Flow Capacity Non-uniform Flow		Water Level (EL. m)					Remarks
			Left (EL. m)	Right (EL. m)			Left (m ³ /s)	Right (m ³ /s)	100m ³ /s	200m ³ /s	550m ³ /s	1070m ³ /s	1400m ³ /s	
0.000	-0.90	5.000	2.00	0.20	88.9	-2.00	772	70	1.13	1.25	1.68	2.43	2.99	
0.230	-1.90	5.000	1.00	1.10	108.7	-1.95	94	97	1.19	1.46	2.54	3.94	4.66	
0.460	-1.73	5.000	1.07	1.10	121.0	-1.91	95	96	1.22	1.52	2.61	4.00	4.72	
0.690	-1.25	5.000	1.65	1.20	96.7	-1.86	227	99	1.24	1.57	2.66	4.03	4.74	
0.920	-1.45	5.000	1.60	2.20	116.5	-1.82	192	383	1.28	1.63	2.72	4.09	4.80	
1.150	-0.50	5.000	2.10	1.30	121.9	-1.77	322	100	1.32	1.70	2.85	4.21	4.91	
1.380	-1.56	5.000	2.80	1.74	126.0	-1.72	424	170	1.40	1.89	3.31	4.96	5.82	
1.610	-1.08	5.000	2.40	1.53	85.2	-1.68	315	121	1.42	1.94	3.35	4.98	5.84	
1.860	-1.52	5.000	2.30	1.10	69.0	-1.63	279	88	1.46	1.99	3.38	5.00	5.85	
2.090	-1.34	5.000	1.88	1.92	122.9	-1.58	169	176	1.49	2.05	3.44	5.06	5.92	STA.2+120
2.330	-1.08	5.000	1.80	1.65	143.3	-1.53	138	111	1.59	2.15	3.49	5.09	5.95	Inaree Creek
2.590	-0.73	5.000	2.23	1.64	93.0	-1.48	201	99	1.68	2.23	3.53	5.12	5.97	
2.830	-1.72	5.000	1.62	2.36	63.4	-1.43	97	216	1.72	2.30	3.59	5.16	6.01	
3.060	-1.53	5.000	2.04	2.44	83.3	-1.39	141	212	1.79	2.40	3.65	5.20	6.03	
3.310	-1.49	5.000	1.52	2.60	61.9	-1.34	89	228	1.88	2.50	3.74	5.26	6.09	
3.550	-0.81	5.000	2.85	2.86	68.7	-1.29	264	267	1.97	2.63	3.84	5.32	6.15	
3.780	-0.94	5.000	3.00	2.80	60.8	-1.24	277	220	2.04	2.73	3.95	5.40	6.21	
4.020	-2.04	5.000	1.30	1.91	50.9	-1.20	76	95	2.08	2.82	4.05	5.46	6.26	
4.250	-0.77	5.000	2.26	2.12	48.9	-1.15	114	99	2.15	2.91	4.17	5.56	6.36	
4.490	-1.98	2.500	2.42	2.36	72.6	-1.05	124	117	2.23	3.03	4.29	5.66	6.45	
4.730	0.10	2.500	2.00	1.40	77.2	-0.96	91	73	2.29	3.12	4.30	5.46	6.12	
4.970	-0.46	2.500	2.71	2.11	62.7	-0.86	139	92	2.38	3.23	4.59	6.02	6.82	
5.210	-0.51	2.500	2.30	2.81	51.6	-0.77	97	148	2.41	3.25	4.66	6.09	6.89	
	-0.20	2.500	2.80	3.40	59.6	-0.67	118	215	2.54	3.43	5.13	6.57	7.35	
5.450	-0.72	2.500	2.70	3.50	45.2	-0.67	118	215	2.54	3.43	5.13	6.57	7.35	
5.700	-0.06	2.500	3.80	2.90	62.1	-0.57	238	125	2.67	3.62	5.26	6.65	7.42	
5.940	-1.10	2.500	4.50	4.20	54.5	-0.47	384	313	2.75	3.72	5.20	6.08	6.61	Tikud Br.
6.155	0.10	2.500	4.30	3.80	50.1	-0.39	261	184	2.93	3.96	5.89	7.60	8.60	
6.355	-1.05	2.500	5.02	4.27	41.3	-0.31	390	246	2.99	4.03	5.85	7.61	8.62	
6.455	0.30	2.500	4.40	4.10	51.7	-0.27	240	191	3.09	4.20	5.95	7.08	7.79	
6.555	0.00	2.500	4.71	4.30	58.3	-0.23	269	199	3.17	4.31	6.36	8.02	9.02	
6.755	-0.62	2.500	4.30	4.51	57.1	-0.15	192	220	3.22	4.40	6.42	8.06	9.05	
6.955	-0.20	2.500	3.90	4.80	44.7	-0.07	151	261	3.29	4.49	6.30	7.56	8.30	
7.130	-1.67	2.500	2.94	1.92	30.7	0.00	87	57	3.37	4.59	6.59	8.22	9.19	
7.355	-0.23	2.500	4.73	4.40	38.2	0.09	222	184	3.38	4.60	6.76	8.65	9.77	
7.460	0.30	2.500	4.70	4.20	56.9	0.13	203	161	3.43	4.68	6.68	8.31	9.29	
7.565	0.00	2.500	5.10	4.20	47.0	0.18	260	158	3.47	4.73	6.91	8.81	9.92	
7.775	-0.35	2.500	5.00	5.30	44.2	0.26	233	281	3.53	4.79	6.99	8.85	9.95	
7.930	0.50	2.500	6.00	5.30	88.1	0.32	378	259	3.63	4.95	7.02	8.75	9.79	Ledesco Br.
8.085	0.10	2.500	4.00	6.20	34.4	0.38	127	447	3.66	4.92	6.74	7.82	8.32	
8.185	-1.36	2.500	4.20	6.42	40.7	0.42	133	409	3.76	5.08	7.32	9.38	10.60	
8.395	0.30	2.500	5.50	6.60	58.4	0.51	256	272	3.80	5.14	7.40	9.42	10.64	
8.445	0.80	2.500	5.30	6.20	52.9	0.53	225	373	3.81	5.15	7.28	9.06	10.15	
8.675	0.41	2.500	5.70	5.12	51.2	0.62	278	195	3.85	5.19	7.49	9.52	10.74	
8.805	0.38	2.500	6.24	5.30	47.4	0.67	347	202	3.94	5.29	7.56	9.56	10.76	
9.100	0.80	2.500	5.30	5.40	45.3	0.79	189	196	4.08	5.45	7.61	9.33	10.39	
9.200	-0.69	2.500	5.85	6.50	64.4	0.83	250	346	4.13	5.52	7.88	9.87	11.07	
9.400	0.30	2.500	5.04	7.22	55.8	0.91	160	444	4.20	5.60	7.92	9.89	11.08	
9.505	-3.20	2.500	6.00	6.70	69.0	0.95	255	363	4.24	5.65	7.91	9.73	10.83	
9.610	0.02	2.500	5.80	6.85	40.2	0.99	238	389	4.18	5.54	7.97	9.96	11.15	
9.870	-1.48	2.500	5.40	6.87	34.7	1.10	172	360	4.37	5.80	8.14	10.06	11.23	
9.990	0.70	2.500	6.70	5.80	67.9	1.15	323	194	4.41	5.89	8.20	9.84	10.91	
10.285	0.60	2.500	6.80	10.10	52.6	1.26	323	1,044	4.48	5.96	8.35	10.19	11.38	Jaro Br.
10.350	1.30	2.500	6.10	5.30	47.3	1.29	224	154	4.53	5.95	8.19	9.64	10.59	Montinola Br.
10.500	1.20	2.500	6.70	6.40	57.3	1.35	299	254	4.75	6.03	8.41	10.19	11.25	
10.550	1.20	2.500	6.70	6.40		1.37	266	223	4.90	6.24	8.67	10.46	11.47	
10.780	0.63	2.500	7.00	6.80	43.6	1.46	287	260	5.00	6.36	8.95	11.14	8.71	
10.975	1.40	2.500	5.90	7.50	62.5	1.54	158	343	5.10	6.49	8.97	11.00	9.44	
11.155	-0.43	1.500	7.80	7.70	41.1	1.66	352	339	5.25	6.64	9.31	11.52	11.28	
11.335	0.65	1.500	7.80	7.70	43.9	1.78	340	327	5.31	6.73	9.40	11.57	11.38	
11.425	1.30	1.500	8.20	8.00	51.7	1.84	391	363	5.38	6.83	9.34	11.30	10.85	
11.515	1.35	1.500	8.22	8.04	70.8	1.90	384	360	5.37	6.82	9.49	11.66	11.58	
11.695	1.20	1.500	7.80	8.00	53.7	2.02	309	335	5.50	6.98	9.63	11.72	11.69	
11.875	1.70	1.500	8.20	8.10	58.3	2.14	360	346	5.62	7.07	9.54	11.37	11.00	
12.095	1.80	1.500	8.40	8.00	50.2	2.29	354	300	5.79	7.25	9.87	11.98	12.22	
12.295	1.79	1.500	8.70	8.80	61.6	2.42	381	395	5.87	7.35	9.96	12.03	12.29	
12.400	2.30	1.500	8.20	8.60	53.3	2.49	317	373	5.89	7.36	9.88	11.69	11.70	
12.505	2.23	1.500	8.21	9.20	54.6	2.56	310	441	5.92	7.38	10.02	12.13	12.46	
12.705	1.54	1.500	8.90	9.10	48.0	2.69	386	412	6.00	7.48	10.16	12.18	12.53	
12.905	2.80	1.500	9.00	9.00	53.1	2.83	393	393	6.07	7.57	10.16	11.90	12.03	
13.105	2.66	1.500	9.20	9.21	50.9	2.96	397	399	6.17	7.67	10.39	12.42	12.90	
13.305	2.64	1.500	9.51	9.21	61.9	3.09	426	387	6.27	7.76	10.47	12.47	12.97	
13.405	3.40	1.500	9.40	7.50	53.6	3.16	411	180	6.32	7.80	10.46	12.22	12.54	
13.505	3.04	1.500	9.50	6.90	92.5	3.23	409	135	6.38	7.86	10.61	12.58	13.12	
13.685	3.19	1.500	9.50	9.70	62.8	3.35	408	433	6.43	7.89	10.61	12.60	13.14	
13.865	3.60	1.500	9.90	9.70	76.7	3.47	452	426	6.51	7.96	10.65	12.47	12.92	
14.065	3.23	1.500	9.55	9.80	60.0	3.60	396	429	6.64	8.05	10.72	12.74	13.33	
14.265	3.88	1.500	9.80	12.20	64.9	3.73	412	903	6.78	8.18	10.85	12.84	13.46	
14.355	3.90	1.500	9.40	10.50	65.1	3.79	356	500	6.81	8.20	10.89	12.66	13.15	
14.445	3.80	1.500	10.20	10.10	73.6	3.85	452	439	6.87	8.26	10.96	12.96	13.61	
14.625	4.00	1.500	10.40	9.40	61.4	3.97	468	339	6.94	8.32	11.04	13.03	13.69	
14.845	4.00	1.500	10.50	9.00	71.0	4.12	480	286	6.95	8.33	11.04	12.77	13.28	
15.040	3.80	1.500	10.00	10.30	68.6	4.25	403	441	7.03	8.41	11.15	13.13	13.81	
15.240	3.50	1.500	9.80	10.70	54.4	4.38	376	492	7.09	8.44	11.15	13.11	13.78	
15.335	4.30	1.500	10.10	10.70	65.6	4.46	401	478	7.19	8.53	11.26	13.00	13.56	
15.435	4.80	1.500	10.40	8.10	53.5	4.51	426	163	7.26	8.60	11.39	13.35	14.08	
15.635	5.40	1.500	10.10	11.80	55.4	4.65	383	657	7.43	8.68	11.39	13.38	14.12	
15.835	5.10	1.500	9.20	10.70	47.1	4.78	232	428	7.80					

Table 2.1 (2/2) Existing River Conditions and Flow Capacity (Aganan River)

Station No.	Deepest Riverbed	Average Slope	Dike Crown		River Width	Flow Capacity		Water Level (EL. m)					Remarks
			Right	Left		Nonuniform Flow		50m ³ /s	100m ³ /s	150m ³ /s	250m ³ /s	500m ³ /s	
(km)	(EL. m)	(1/n)	(EL. m)	(EL. m)	(m)	(m ³ /s)	(m ³ /s)						
0.050	5.400	850	12.3	11.9	90.0	221	192	9.5	10.5	11.3	12.7	14.7	
0.500	6.000	850	12.2	12.8	50.0	213	261	9.5	10.5	11.3	12.7	14.6	
1.000	7.500	850	13.0	13.2	40.0	270	297	9.7	10.7	11.5	12.9	14.7	
1.500	8.200	850	14.2	13.7	80.0	377	313	10.2	11.1	11.9	13.2	15.2	
2.000	8.000	850	14.4	14.6	72.5	371	397	10.5	11.4	12.2	13.5	15.4	
2.306	7.900	850	14.9	17.4	60.0	441	774	10.5	11.5	12.3	13.5	15.3	
2.500	8.200	850	15.7	15.7	70.0	530	530	10.6	11.6	12.4	13.6	15.5	
2.678	8.500	850	16.2	16.2	55.0	599	599	11.4	12.0	12.6	13.6	15.5	
3.000	9.100	850	14.6	15.3	50.0	227	322	13.0	13.6	14.0	14.8	16.6	
3.500	9.900	850	15.9	15.0	40.0	380	254	13.0	13.7	14.1	15.0	16.8	
4.000	10.100	850	17.2	16.0	50.0	493	333	13.2	13.9	14.4	15.4	17.3	
4.500	11.700	850	16.5	16.3	150.0	359	334	13.3	14.0	14.6	15.6	17.6	
5.000	11.500	850	16.6	17.9	110.0	360	535	13.5	14.2	14.8	15.8	17.6	
5.500	12.600	850	17.2	16.9	100.0	411	367	14.0	14.7	15.2	16.1	17.8	
6.000	12.300	850	18.9	17.9	130.0	632	476	14.4	15.0	15.6	16.4	18.1	
6.500	12.800	850	19.9	18.9	90.0	753	592	14.7	15.4	15.9	16.8	18.3	
7.000	13.300	850	20.9	18.0	40.0	820	339	15.3	16.0	16.6	17.5	19.0	
7.500	13.500	850	21.3	21.3	50.0	744	744	15.7	16.5	17.2	18.1	19.7	

Table 2.2 (1/2) Existing River Conditions and Flow Capacity (Iloilo River)

Station No.	Deepest Riverbed (EL. m)	Average Slope (1/n)	Dike Crown		River Width (m)	Design Riverbed (EL. m)	Flow Capacity Non-uniform Flow		Water Level (EL. m)					Remarks
			Left (EL. m)	Right (EL. m)			Left (m ³ /s)	Right (m ³ /s)	100m ³ /s	200m ³ /s	480m ³ /s	640m ³ /s	2000m ³ /s	
0.000	-6.90		1.70	2.00		-6.75			1.07	1.07	1.06	1.06	0.93	River Mouth
0.175	-8.60		0.78	2.32	203.3	-6.75	96	21,808	1.07	1.07	1.07	1.07	1.12	
0.400	-6.90		1.36	2.37	193.0	-6.75	3,090	11,755	1.07	1.07	1.08	1.08	1.23	
0.600	-6.34	Dredging	1.07	2.30	213.3	-6.75	100	8,147	1.07	1.07	1.08	1.09	1.32	
0.800	-6.69	Area	1.79	2.40	185.9	-6.75	4,801	8,507	1.07	1.07	1.08	1.10	1.33	
1.000	-6.30	By PPA	1.90	2.30		-5.75	5,277	7,622	1.07	1.07	1.09	1.10	1.34	
1.200	-7.92		1.83	1.70	239.9	-4.75	2,231	3,129	1.07	1.08	1.11	1.14	1.74	
1.360	-6.79		1.70	1.70	208.4	-4.75	3,219	3,219	1.07	1.08	1.11	1.14	1.71	
1.555	-6.42		1.71	1.74	143.5	-4.75	2,457	2,560	1.07	1.08	1.10	1.13	1.58	
1.800	-7.22		2.09	1.70	172.0	-4.75	2,567	2,868	1.07	1.08	1.12	1.16	1.85	
2.000	-7.20		1.50	1.80		-3.75	2,267	2,312	1.07	1.08	1.11	1.14	1.69	
2.180	-4.17		2.20	1.40	223.3	-3.75	3,723	1,242	1.07	1.08	1.15	1.21	2.22	
2.380	-4.28		2.30	1.40	132.2	-3.75	2,561	1,346	1.07	1.08	1.14	1.19	2.02	
2.577	-5.05	5,000	0.98	1.90	130.7	-3.71	98	2,283	1.07	1.09	1.18	1.25	2.41	
2.772	-4.59	5,000	1.70	2.10	132.2	-3.67	1,570	2,467	1.07	1.09	1.19	1.29	2.64	
2.927	-5.20	5,000	1.80	1.90		-3.64	1,666	1,874	1.08	1.10	1.21	1.31	2.47	Quino-Lopez Br.
3.200	-4.40	5,000	0.80	2.03	211.6	-3.59	94	1,638	1.08	1.10	1.26	1.40	3.15	
3.530	-4.20	5,000	2.10	2.43		-3.52	1,509	1,962	1.08	1.11	1.31	1.47	3.14	Forbes Br.
3.800	-2.10	5,000	1.90	1.90	253.3	-3.47	942	942	1.08	1.13	1.40	1.61	3.67	
4.000	-3.20	5,000	2.00	1.50	217.6	-3.43	980	531	1.08	1.14	1.43	1.65	3.67	
4.190	-1.40	5,000	1.91	1.90	159.8	-3.39	879	870	1.09	1.15	1.44	1.66	3.52	
4.200	-2.60	5,000	1.56	1.73		-3.39	515	622	1.09	1.16	1.51	1.76	3.85	
4.400	-4.50	5,000	1.62	1.70	145.8	-3.35	522	571	1.09	1.17	1.55	1.82	3.90	
4.600	-2.50	5,000	1.70	1.60	146.5	-3.31	549	491	1.09	1.18	1.58	1.86	3.98	
4.800	-2.70	5,000	1.55	1.48	166.2	-3.27	437	391	1.10	1.19	1.62	1.90	4.05	
4.890	-2.80	5,000	1.70	1.90		-3.25	516	626	1.10	1.20	1.63	1.93	3.97	
5.180	-3.90	5,000	1.98	2.07	215.3	-3.19	597	641	1.10	1.22	1.74	2.07	4.41	Manduriao River
5.230	-2.40	5,000	1.80	1.72	149.3	-3.18	458	423	1.10	1.20	1.65	1.94	3.99	Diversion Br.
5.400	-2.30	5,000	1.80	1.60	152.5	-3.15	383	303	1.11	1.25	1.82	2.16	4.51	
5.600	-2.40	5,000	1.88	0.98		-3.11	399	80	1.11	1.27	1.86	2.21	4.59	
5.800	-2.00	5,000	2.10	1.63	147.4	-3.07	471	298	1.12	1.27	1.88	2.23	4.61	
5.980	-1.30	5,000	1.80	1.70		-3.03	358	321	1.12	1.28	1.89	2.24	4.58	
6.000	-1.70	5,000	1.58	1.53	189.6	-3.03	269	251	1.13	1.29	1.91	2.28	4.70	
6.200	-2.20	5,000	1.70	1.71	144.7	-2.99	310	313	1.13	1.29	1.92	2.29	4.71	
6.500	-4.50	5,000	2.00	1.50		-2.93	426	240	1.13	1.29	1.91	2.25	4.32	Molo Br.
6.600	-1.70	500	2.10	1.60	206.5	-2.73	412	250	1.13	1.33	2.03	2.43	4.95	
6.800	-1.40	500	2.27	1.50	165.0	-2.33	468	217	1.13	1.33	2.04	2.42	4.88	
7.000	-0.74	500	1.39	0.78		-1.93	176	72	1.14	1.35	2.05	2.43	4.77	
7.200	-1.60	500	1.39	1.69	144.7	-1.53	156	242	1.15	1.41	2.21	2.62	5.23	
7.400	-1.80	500	2.00	1.90	146.7	-1.13	328	299	1.15	1.42	2.22	2.64	5.24	

Table 2.2(2/2) Existing River Conditions and Flow Capacity of Iloilo River (Mandurriao River)

Station No.	Deepest Riverbed (m)	Average Slope (1/n)	Dike Crown		River Width (m)	Average Riverbed (EL. m)	Flow Capacity Non-siltation Dow		Water Level (EL. m)					Remarks
			Left (EL. m)	Right (EL. m)			Left (m ^{3/s})	Right (m ^{3/s})	16m ^{3/s}	37m ^{3/s}	90m ^{3/s}	120m ^{3/s}	360m ^{3/s}	
0.000	-1.10		1.800	2.300		-1.20	403.408	739.264	1.100	1.120	1.150	1.200	1.726	Confluence of Bado River
0.050	-1.21	6,000.0	1.760	1.770	68,000	-1.19	321.709	325.929	1.102	1.128	1.199	1.282	1.897	
0.100	-0.90	6,000.0	2.080	1.480	65,400	-1.18	373.322	166.545	1.104	1.137	1.241	1.345	2.338	
0.150	-0.88	6,000.0	1.700	1.840	71,600	-1.18	226.135	271.162	1.105	1.140	1.237	1.370	2.158	
0.200	-1.20	6,000.0	1.800	1.800		-1.17	252.187	252.187	1.105	1.142	1.265	1.379	2.778	
0.250	-0.74	6,000.0	1.590	2.140	65,300	-1.16	175.632	338.463	1.106	1.145	1.279	1.402	2.270	
0.300	-1.32	6,000.0	1.780	2.340	62,500	-1.15	210.326	360.955	1.108	1.151	1.308	1.443	2.591	
0.350	-1.32	6,000.0	2.130	2.230	55,700	-1.14	293.963	319.889	1.108	1.153	1.318	1.459	2.242	
0.400	-1.00	6,000.0	1.800	2.300		-1.13	217.856	353.392	1.108	1.151	1.307	1.459	2.614	
0.450	-0.95	6,000.0	1.890	2.410	55,200	-1.13	214.960	374.355	1.110	1.159	1.345	1.495	2.386	
0.500	-1.37	6,000.0	1.910	2.220	55,800	-1.12	204.936	274.409	1.112	1.166	1.372	1.531	2.515	
0.550	-1.04	6,000.0	1.630	2.040	62,600	-1.11	139.833	230.185	1.112	1.169	1.380	1.540	2.336	
0.600	-0.90	6,000.0	2.100	2.100		-1.10	229.049	229.049	1.114	1.176	1.407	1.574	2.815	
0.650	-0.65	6,000.0	1.570	2.120	74,300	-1.09	113.258	219.492	1.116	1.182	1.432	1.610	2.678	
0.700	-0.83	6,000.0	1.770	1.870	39,900	-1.08	152.455	172.124	1.116	1.182	1.430	1.605	2.617	
0.750	-0.80	6,000.0	1.580	1.700	48,900	-1.08	107.533	127.396	1.119	1.193	1.470	1.658	2.314	
0.800	-0.80	6,000.0	1.800	1.600		-1.07	156.356	117.844	1.119	1.190	1.445	1.612	2.770	
0.860	-1.11	6,000.0	1.620	1.770	42,700	-1.06	137.476	129.154	1.123	1.207	1.515	1.715	2.684	
0.920	-1.11	6,000.0	1.930	1.610	39,200	-1.05	60.313	102.388	1.124	1.211	1.527	1.728	2.744	
0.990	-1.16	6,000.0	1.300	1.560	36,600	-1.04	16.110	91.163	1.127	1.219	1.552	1.758	2.574	
1.060	-1.10	6,000.0	2.100	1.600		-1.02	179.581	98.899	1.128	1.222	1.544	1.783	2.994	
1.110	-0.92	6,000.0	1.880	1.260	39,300	-1.02	124.929	39.511	1.133	1.242	1.622	1.845	2.599	
1.160	-1.04	6,000.0	1.390	1.780	34,000	-1.01	57.493	109.444	1.135	1.245	1.620	1.836	2.629	
1.210	-1.09	6,000.0	1.110	1.570	37,300	-1.00	17.747	77.042	1.140	1.261	1.670	1.999	2.734	
1.260	-1.00	6,000.0	1.300	1.700		-0.99	71.639	101.774	1.140	1.260	1.627	1.813	2.805	
1.310	-1.04	6,000.0	1.390	1.520	37,400	-0.98	47.000	61.444	1.151	1.300	1.777	2.032	3.375	
1.360	-0.84	6,000.0	1.270	2.020	40,200	-0.97	32.919	119.739	1.153	1.302	1.773	2.022	3.187	
1.410	-1.05	6,000.0	1.330	1.320	41,100	-0.97	42.322	36.996	1.153	1.302	1.780	2.036	2.959	
1.460	-1.00	6,000.0	1.600	1.800		-0.96	68.027	68.027	1.158	1.319	1.799	2.040	3.782	
1.510	-1.46	6,000.0	1.890	1.790	36,400	-0.95	92.945	82.700	1.162	1.333	1.863	2.138	2.373	
1.560	-1.02	6,000.0	1.600	2.080	31,500	-0.94	63.449	118.391	1.162	1.330	1.833	2.094	2.854	
1.610	-0.99	6,000.0	2.300	1.360	33,900	-0.93	154.879	37.877	1.169	1.351	1.895	2.160	2.692	
1.660	-1.00	6,000.0	1.800	1.700		-0.92	76.273	66.741	1.182	1.368	1.944	2.199	3.424	
1.710	-1.42	6,000.0	1.800	1.350	46,200	-0.92	72.818	32.119	1.186	1.406	1.989	2.267	2.126	
1.760	-1.24	6,000.0	2.030	1.550	24,600	-0.91	91.949	47.914	1.195	1.425	2.032	2.309	3.080	
1.830	-1.10	6,000.0	1.800	1.600		-0.89	67.574	50.033	1.206	1.451	2.056	2.320	5.760	
1.880	-1.00	6,000.0	2.200	2.200		-0.89	97.119	97.119	1.214	1.475	2.130	2.425	4.123	
1.900	-1.19	6,000.0	0.690	2.410	28,500	-0.88	13.509	117.700	1.213	1.474	2.133	2.433	3.348	
1.960	-1.56	6,000.0	1.310	2.400	25,700	-0.87	24.719	117.329	1.217	1.480	2.134	2.426	3.864	
2.020	-1.42	6,000.0	1.300	2.240	35,100	-0.86	37.312	96.390	1.222	1.496	2.175	2.480	3.988	
2.070	-1.40	6,000.0	1.300	2.200		-0.86	23.131	96.452	1.226	1.500	2.140	2.419	3.850	
2.120	-1.55	6,000.0	0.840	2.360	32,400	-0.85	14.591	103.714	1.234	1.523	2.216	2.531	3.309	
2.170	-1.00	6,000.0	1.750	1.740	24,200	-0.84	53.712	52.999	1.245	1.534	2.219	2.532	2.927	
2.215	-1.31	6,000.0	0.700	1.670	36,700	-0.83	13.166	43.442	1.262	1.582	2.306	2.623	3.168	
2.200	-1.10	6,000.0	2.100	2.200		-0.83	74.792	82.396	1.273	1.600	2.300	2.593	3.672	
2.250	-1.22	6,000.0	2.510	0.950	35,800	-0.83	104.525	15.135	1.286	1.630	2.357	2.673	3.147	
2.300	-0.43	6,000.0	0.990	2.110	41,400	-0.82	15.386	69.495	1.297	1.652	2.399	2.722	2.828	
2.350	-1.58	6,000.0	1.310	1.880	28,800	-0.81	17.975	51.811	1.313	1.676	2.406	2.718	2.680	
2.400	-0.80	6,000.0	0.800	2.400		-0.80	13.617	97.171	1.315	1.670	2.340	2.591	3.510	
2.450	-1.43	6,000.0	0.710	2.330	19,000	-0.79	12.636	75.533	1.344	1.744	2.550	2.892	3.369	
2.510	-1.04	6,000.0	1.790	2.080	19,800	-0.78	41.434	60.140	1.343	1.726	2.491	2.826	3.032	
2.580	-1.30	6,000.0	0.830	2.670	22,300	-0.77	13.483	96.053	1.366	1.783	2.601	2.943	3.666	
2.650	-0.90	6,000.0	2.300	2.800		-0.76	71.157	111.205	1.370	1.787	2.583	2.890	5.719	
2.710	-1.04	6,000.0	2.950	1.310	25,600	-0.75	110.466	17.158	1.411	1.858	2.716	3.099	3.764	
2.770	-1.00	6,000.0	1.600	2.200	38,900	-0.74	25.078	55.942	1.429	1.888	2.761	3.114	3.511	
2.830	-1.39	6,000.0	2.900	1.600	34,400	-0.73	101.948	24.815	1.435	1.895	2.763	3.107	3.698	
2.890	-0.80	6,000.0	2.800	1.500		-0.72	91.134	20.147	1.447	1.916	2.787	3.131	4.553	
2.940	-1.55	6,000.0	1.100	1.050	18,300	-0.71	15.035	14.619	1.457	1.929	2.795	3.133	2.512	
3.010	-0.60	6,000.0	3.500	3.500		-0.70	134.548	134.348	1.471	1.958	2.866	3.231	4.651	
3.060	-1.32	6,000.0	0.920	0.850	15,600	-0.69	13.324	12.745	1.483	1.976	2.906	3.284	3.277	
3.110	-0.70	6,000.0	1.400	3.400		-0.68	17.128	127.260	1.506	2.007	2.904	3.262	4.516	
3.160	-0.87	2,000.0	1.010	2.560	15,900	-0.66	13.783	66.113	1.520	2.042	2.983	3.370	2.672	
3.210	-0.60	2,000.0	4.200	4.200	19,400	-0.63	162.767	162.767	1.544	2.061	2.963	3.354	4.439	
3.260	-0.97	2,000.0	1.290	0.870		-0.61	15.793	12.296	1.555	2.091	3.062	3.463	3.290	
3.300	-1.00	2,000.0	2.600	1.300		-0.59	68.461	15.698	1.577	2.080	2.956	3.297	4.032	
3.365	-0.34	2,000.0	1.140	2.130	10,700	-0.55	13.924	35.821	1.636	2.184	3.181	3.394	3.226	
3.430	-0.63	2,000.0	1.430	2.860	11,900	-0.54	13.931	17.674	1.670	2.219	3.183	3.386	3.269	
3.460	-0.60	2,000.0	2.300	1.400	13,700	-0.52	15.805	99.284	1.701	2.253	3.221	3.632	2.253	
3.510	-0.58	2,000.0	2.300	1.360	12,100	-0.51	37.663	14.996	1.782	2.289	3.169	3.523	4.371	
3.560	-0.40	2,000.0	4.200	4.200		-0.48	62.172	14.365	1.826	2.365	3.323	3.733	4.372	
3.610	-1.85	2,000.0	1.010	1.500	15,600	-0.46	135.749	135.749	1.893	2.444	3.416	3.826	4.729	
3.660	-0.90	2,000.0	1.900	1.500		-0.43	11.187	14.989	1.888	2.427	3.380	3.788	3.378	
3.720	-0.50	2,000.0	0.890	3.000	11,400	-0.41	17.252	14.260	2.000	2.523	3.481	3.883	3.769	
3.770	-1.18	2,000.0	1.150	3.170	16,300	-0.38	8.842	57.238	2.202	2.638	3.586	4.071	4.071	
3.820	-1.00	2,000.0	0.700	1.000	11,100	-0.35	10.486	63.911	2.226	2.679	3.644	4.057	4.848	
3.880	-0.40	2,000.0	1.800	1.600		-0.33	7.231	9.344	2.229	2.685	3.653	4.060	4.182	
3.930	0.21	2,000.0	1.190	2.590	15,100	-0.30	14.943	13.517	2.229	2.674	3.600	3.987	4.904	
3.985	-0.03	2,000.0	3.460	1.550	11,800	-0.27	10.421	32.073	2.253	2.708	3.694	4.111	2.336	
4.035	-0.26	2,000.0	2.780	1.680	11,600	-0.24	78.096	12.845	2.270	2.735	3.670	4.058	3.017	
4.090	0.20	2,000.0	5.300	3.500		-0.22	34.697	13.332	2.345	2.840	3.834	4.257	3.585	
4.140	-0.90	2,000.0	0.650	1.860	19,000	-0.17	5.705	14.158	2.410	2.965	3.754	4.119	3.871	
4.190	0.07	2,000.0	1.390	2.280	12,800	-0.14	10.860	17.170	2.397	2.942	3.			

Table 2.3 Existing River Conditions and Flow Capacity (BULACAO RIVER : CEBU CITY)

Station No.	Deepest Riverbed (EL. m)	Average Slope (1/s)	Dike Crown		River Width (m)	Flow Capacity			Water Level (EL. m)					Remarks
			Right (EL. m)	Left (EL. m)		Uniform Flow (m ³ /s)	Nonuniform		5m ³ /s	10m ³ /s	20m ³ /s	50m ³ /s	100m ³ /s	
							Right (m ³ /s)	Left (m ³ /s)						
0.000	0.02	220	1.60	1.60	6.0	10	10	10	1.40	1.60	2.20	3.30	4.50	
0.500	2.43	220	3.65	3.60	5.0	5	5	5	3.62	4.19	4.66	5.86	7.31	
1.000	4.93	220	6.75	7.60	7.5	21	17	35	5.97	6.26	6.95	8.30	10.03	
1.380	6.50	220	9.40	9.40	11.4	87	48	48	7.19	7.69	8.26	9.48	11.11	Bridge
1.500	7.84	140	10.55	10.70	17.5	56	62	69	8.55	8.88	9.40	10.29	11.38	
2.100	11.77	140	13.80	14.00	29.0	15	47		12.65	12.73	13.04	13.88	13.82	
2.500	14.37	140	17.90	17.90	28.5	143	130	130	14.81	15.05	15.43	16.27	17.29	
2.650	15.72	140	21.90	21.90	31.0	967	272	272	16.24	16.46	16.81	17.66	18.61	Bridge

Table 2-4 Existing River Conditions and Flow Capacity (Kinalumsan River)

Station No.	Deepest Riverbed (EL. m)	Average Slope (1/n)	Dike Crown		River Width (m)	Flow Capacity			Water Level (EL. m)					Remarks
			Right (EL. m)	Left (EL. m)		Uniform (m ³ /s)	Nonuniform		5m ³ /s	10m ³ /s	20m ³ /s	50m ³ /s	100m ³ /s	
							Right (m ³ /s)	Left (m ³ /s)						
0.000	-0.60	700	1.70	1.70	12.2	33	72	72	0.41	1.30	2.20	3.54	4.66	
0.300	-0.10	700	2.20	2.20	9.0	11	29	29	1.27	3.26	4.20	5.55	6.67	Bridge
0.450	0.15	700	3.60	3.60	12.0	78	52	52	1.44	3.56	4.77	6.62	8.17	Bridge
0.500	0.10	700	2.80	2.60	9.5	28	36	32	1.46	3.50	4.62	6.26	7.61	
0.680	1.55	200	4.00	4.00	11.2	62	51	51	2.26	3.99	5.27	7.15	8.68	Bridge
1.000	2.80	200	7.20	5.70	25.0	68	142	70	3.79	5.19	6.45	8.23	9.85	
1.200	3.60	200	7.79	7.79	18.9	198	138	138	4.70	6.21	7.28	8.64	10.09	Bridge
1.530	6.10	120	10.10	10.10	17.5	146	154	154	6.95	8.25	9.21	10.85	12.26	
1.750	8.15	120	10.80	10.80	7.5	68	63	63	8.96	10.40	11.97	14.21	16.08	Bridge
2.000	10.90	120	13.20	12.70	6.0	22	37	25	12.01	13.80	15.33	17.76	19.80	
2.430	14.50	120	17.05	17.05	19.2	203	70	70	14.90	16.47	17.93	20.52	22.83	Bridge
2.500	14.60	120	16.30	18.10	19.4	27	26	375	15.85	16.99	17.88	20.40	22.71	
3.000	20.60	85	27.10	28.00	46.5	239	427	540	21.53	22.74	23.77	25.30	26.10	
3.500	25.20	85	29.10	29.10	23.0	87	317	146	26.42	27.65	28.53	29.76	30.80	
3.970	31.30	85	33.50	33.50	11.5	74	132	67	31.92	33.14	34.23	35.75	37.00	Bridge

Table 2-5 Existing River Conditions and Flow Capacity (Guadalupe River)

Station No.	Deepest Riverbed (EL. m)	Average Slope (1/n)	Dike Crown		River Width (m)	Flow Capacity			Water Level (EL. m)					Remarks
			Right (EL. m)	Left (EL. m)		Uniform (m ³ /s)	Nonuniform		10m ³ /s	50m ³ /s	100m ³ /s	200m ³ /s	300m ³ /s	
							Right (m ³ /s)	Left (m ³ /s)						
(km)														
0.000	-0.97	350	2.00	2.00	23.0	144			0.11	0.53	0.92	1.84	2.60	
0.420	0.00	350	2.70	2.70	21.0	93	73	73	0.66	2.12	3.37	4.29	5.08	Bridge
0.500	0.50	350	3.80	3.80	16.5	72	117	117	1.61	2.74	3.61	4.71	5.61	
0.630	0.63	350	3.15	3.15	26.0	156	29	29	2.60	3.78	4.73	6.03	7.12	Bridge
0.920	2.00	350	6.10	6.10	14.0	155	186	186	2.85	4.05	4.99	6.28	7.27	Bridge
1.100	2.00	350	4.30	4.00	15.0	47	44	35	3.14	4.49	5.56	7.10	8.30	
1.210	2.66	200	6.80	6.80	9.8	101	154	154	3.42	4.70	5.69	7.75	9.33	Bridge
1.450	3.59	200	9.70	9.70	13.9	269	215	215	4.36	5.89	7.29	9.45	11.11	Bridge
1.500	3.90	200	10.30	10.20	13.5	408	259	253	4.62	5.87	7.18	9.33	10.98	
2.020	6.51	200	16.00	12.10	37.5	356	590	258	8.21	9.52	10.20	11.42	12.59	
2.500	10.80	130	17.30	15.50	39.0	774	863	529	11.45	12.18	12.86	13.73	14.27	
2.940	13.91	130	19.50	19.50	33.0	586	525	525	14.72	15.31	15.88	16.90	17.70	Bridge
3.000	13.90	130	17.50	22.50	34.5	185	192	766	14.85	15.76	16.50	17.59	18.46	
3.500	17.57	130	23.70	24.80	19.5	399	268	345	18.30	19.69	20.92	22.74	24.16	
3.760	19.37	130	22.90	25.00	10.5	174	110	252	20.41	21.62	22.73	24.39	25.57	
3.840	19.47	130	30.30	29.30	16.7	1,150	545	477	20.64	22.06	23.29	25.20	26.68	
4.000	21.60	130	31.80	31.80	14.9	752	617	617	22.02	22.88	23.83	25.63	27.11	Bridge
4.450	24.45	130	27.30	32.30	32.0	380	133	590	25.51	26.30	26.93	28.05	29.14	
5.000	28.40	130	48.00	45.00	91.0	7,681	2,539	2,110	29.06	30.04	30.80	31.63	32.33	
5.500	32.41	130	47.70	40.30	47.0	1,460	1,799	803	33.43	34.23	34.84	35.82	36.56	
6.000	37.75	130	52.80	62.20	53.0	5,156	2,045	3,469	38.31	39.19	39.80	40.63	41.29	

'Table 2.6 Existing River Conditions and Flow Capacity (Lahug River)

Station No. (km)	Deepest Riverbed (EL. m)	Average Slope (1/n)	Dike Crown		River Width (m)	Flow Capacity			Water Level (EL. m)					Remarks
			Right (EL. m)	Left (EL. m)		Uniform (m ³ /s)	Nonuniform		5m ³ /s	10m ³ /s	20m ³ /s	50m ³ /s	100m ³ /s	
							Right (m ³ /s)	Left (m ³ /s)						
0.000	-1.10	400	1.40	1.40	6.0	30			1.40	1.40	1.40	1.40	1.40	Boxculvert 6 x 2.5m
0.110	-0.59	400	1.50	1.50	10.0	26	12	12	1.42	1.46	1.62	2.61	6.37	Bridge
0.300	0.61	400	1.10	1.10	7.5	4	3	3	1.53	1.74	2.15	3.20	6.39	Bridge
0.570	0.66	400	2.45	2.60	6.5	19	12	14	1.85	2.33	3.02	4.26	6.71	
0.620	0.66	400	1.45	1.45	7.8	6	3	3	1.91	2.41	3.13	4.47	6.91	Bridge
1.000	1.34	400	2.50	3.50	7.0	12	7	19	2.28	2.81	3.57	5.02	7.29	
1.040	1.08	200	2.20	2.20	6.0	10	4	4	2.33	2.87	3.63	5.06	7.28	Bridge
1.300	2.43	200	3.80	3.80	8.0	15	14	14	3.15	3.53	4.21	5.69	7.85	Bridge
1.450	3.23	200	5.30	5.20	6.6	30	31	28	4.02	4.33	4.86	6.09	7.96	
1.560	3.67	200	5.10	5.10	6.5	20	12	12	4.54	4.97	5.57	6.78	8.43	Bridge
1.800	5.20	200	6.20	6.20	6.0	10	10	10	5.87	6.23	6.83	8.10	9.56	Bridge
2.000	6.22	200	8.75	8.80	6.0	37	34	35	7.19	7.56	8.16	9.44	10.89	
2.400	9.50	130	11.10	11.10	4.3	15	17	17	10.18	10.61	11.36	13.13	15.28	Bridge
2.560	10.33	130	13.60	13.60	8.8	102	37	37	11.30	11.75	12.54	14.37	16.69	Bridge
2.670	11.45	130	13.50	13.50	6.5	36	32	32	11.93	12.24	12.83	14.47	16.62	Bridge
2.730	12.64	80	14.00	14.00	8.0	36	28	28	13.05	13.30	13.72	14.77	16.83	Bridge
2.970	14.70	80	17.30	17.30	6.0	62	45	45	15.48	15.75	16.19	17.51	19.08	
3.490	21.27	80	26.30	26.30	14.0	475	264	264	21.55	21.72	21.98	22.62	23.48	Bridge
4.040	27.50	80	30.00	29.50	9.4	67	70	49	28.10	28.31	28.68	29.54	30.66	
4.500	33.84	80	36.30	35.85	7.0	53	52	40	34.35	34.64	35.11	36.24	37.67	
4.880	38.15	80	47.50	47.50	11.2	797	410	410	38.54	38.73	39.02	39.76	40.83	
5.000	40.17	80	44.20	44.60	12.0	202	128	145	40.75	41.07	41.52	42.44	43.57	Bridge
5.500	53.65	40	57.23	57.00	12.0	190	134	124	54.07	54.29	54.63	55.44	56.50	Bridge

Table 2.7 Existing River Conditions and Flow Capacity (Subang Daku River)

Station No. (km)	Deepest Riverbed (EL. m)	Average Slope (1/n)	Dike Crown		River Width (m)	Flow Capacity			Water Level (EL. m)					Remarks
			Right (EL. m)	Left (EL. m)		Uniform (m ³ /s)	Nonuniform		5m ³ /s	10m ³ /s	20m ³ /s	50m ³ /s	100m ³ /s	
							Right (m ³ /s)	Left (m ³ /s)						
-0.25	-1.50	600	2.70	2.60	51.0	949			0.00	0.00	0.00	0.00	0.00	
0.15	-0.20	600	0.40	0.40	46.2	46	12	12	0.26	0.38	0.52	0.83	1.31	Bridge
0.54	-0.20	600	2.25	2.50	16.5	33	61	83	0.75	1.06	1.45	2.13	2.70	
1.00	1.50	600	2.50	2.50	5.7	5	7	7	2.31	2.71	3.29	4.40	6.08	
1.35	1.50	600	2.10	2.10	7.6	2	2	2	3.43	3.93	4.72	6.43	8.21	Bridge
1.59	1.60	600	4.40	3.70	10.0	16	15	7	3.47	3.99	4.81	6.56	8.43	
2.12	2.70	600	4.50	6.40	41.5	11	10	43	3.95	4.50	5.16	6.80	8.74	
2.55	4.00	300	6.00	6.90	11.4	35	20	43	5.05	5.51	5.99	7.16	8.86	
2.64	5.00	300	7.50	7.50	13.7	87	54	54	5.48	5.83	6.30	7.37	9.01	Bridge
2.69	4.95	100	6.10	6.10	7.0	10	12	12	5.73	6.02	6.46	7.33	8.55	
2.99	6.60	100	7.50	7.50	6.0	11	9	9	7.09	7.61	8.22	9.61	11.58	Bridge
3.50	11.20	100	12.85	12.70	11.6	11	13	9	12.46	12.76	13.12	13.96	15.22	
3.75	13.90	100	15.00	15.00	6.2	14	4	4	15.41	15.66	16.10	17.11	18.40	Bridge
4.06	18.50	80	18.60	18.60	6.2	27	3	3	18.68	18.96	19.39	20.43	21.77	Bridge
4.50	24.15	80	25.90	25.40	17.5	24	66	35	24.60	24.83	25.13	25.68	26.35	
4.72	26.30	80	28.80	28.80	3.5	25	23	23	27.17	27.62	28.59	30.57	33.05	Bridge
4.84	28.00	80	32.10	32.10	13.5	213	58	58	28.45	28.81	29.60	31.64	34.36	Bridge
5.35	39.10	80	41.60	42.10	16.0	47	49	78	39.69	40.06	40.70	41.64	42.47	
5.54	41.65	50	46.30	48.70	27.5	558	234	410	42.30	42.69	43.17	43.78	44.47	

Table 2.8 Existing River Conditions and Flow Capacity (Anilao River)

Station No. (km)	Deepest Riverbed (EL. m)	Average Slope (1/x)	Dike Crown		River Width (m)	Average Riverbed (EL. m)	Flow Capacity Nonuniform Flow		Water Level (EL. m)					Remarks
			Left (EL. m)	Right (EL. m)			Left (m ³ /s)	Right (m ³ /s)	50m ³ /s	100m ³ /s	200m ³ /s	500m ³ /s	710m ³ /s	
0.000	-1.40	250	2.10	1.60	62.4	-1.50	781	44	2.00	2.00	2.00	2.00	2.00	
0.100	-0.32	250	2.48	2.86	62.1	-1.10	362	516	2.01	2.03	2.10	2.80	3.94	
0.153	0.80	250	2.50	2.70	54.5	-0.89	104	131	2.05	2.47	3.23	4.27	4.78	Airria Br.
0.200	0.51	250	2.51	4.19	65.5	-0.70	51	289	2.50	3.05	3.84	5.02	5.64	
0.300	0.35	250	4.20	4.80	55.8	-0.30	273	417	2.52	3.09	3.90	5.15	5.82	
0.400	0.26	250	4.88	4.74	45.0	0.10	436	402	2.52	3.09	3.90	5.15	5.82	
0.500	0.90	250	4.40	4.70	67.5	0.50	325	400	2.56	3.13	3.90	5.10	5.72	Spillway
0.600	1.14	250	4.22	5.10	39.0	0.90	240	467	2.64	3.23	4.07	5.23	5.79	
0.690	1.24	250	4.60	5.00	25.1	1.26	254	344	2.84	3.48	4.36	5.69	6.38	
0.800	1.79	250	6.80	7.46	25.8	1.70	752	838	2.99	3.60	4.36	5.85	6.48	
0.900	2.22	125	5.81	8.38	36.7	2.50	345	812	3.37	4.06	5.08	6.60	7.45	
1.040	3.47	125	8.70	8.70	58.8	3.62	796	796	3.84	4.53	5.58	7.55	7.87	Anilao Br.
1.100	4.20	125	10.20	7.70	41.9	4.10	857	440	4.95	5.41	6.28	8.06	8.62	
1.205	4.90	125	10.20	8.80	87.6	4.94	795	522	5.52	5.86	6.59	8.47	9.22	
1.300	5.93	125	11.30	10.20	54.0	5.70	870	777	6.47	6.92	7.60	8.89	9.41	
1.400	6.53	125	10.60	10.10	34.1	6.50	716	506	7.36	7.82	8.50	9.99	10.52	
1.500	8.30	125	11.40	16.80	43.7	7.30	722	1,097	7.87	8.48	9.35	10.76	11.22	
1.600	8.52	125	12.10	13.40	45.7	8.10	510	756	9.15	9.65	10.44	11.89	12.65	
1.700	8.94	90	14.10	14.00	105.0	9.21	716	711	10.01	10.49	11.31	13.04	13.99	
1.800	10.56	90	15.10	16.90	126.8	10.32	765	863	10.42	10.91	11.69	13.25	14.08	
1.900	11.61	90	16.00	15.60	127.9	11.43	752	732	11.51	11.87	13.70	14.66	15.16	
2.000	12.41	90	14.50	20.20	42.9	12.54	207	916	12.59	12.89	14.48	15.39	15.87	
2.100	12.51	90	14.90	22.90	76.4	13.66	300	1,037	13.51	13.98	14.60	15.50	15.99	
2.200	14.29	90	15.80	25.80	140.2	14.77	198	1,106	14.45	15.18	15.81	16.56	16.92	
2.300	15.66	90	17.70	19.40	95.4	15.88	507	778	15.60	16.21	16.81	17.46	17.79	
2.400	17.30	90	19.50	19.60	113.0	16.99	740	744	17.05	17.34	17.76	18.39	18.74	
2.500	18.60	90	56.80	22.20	113.0	18.10	2,076	789	18.19	18.51	18.91	19.64	20.07	

Table 2.9 Existing River Conditions and Flow Capacity (Malbasag River)

Station No. (km)	Deepest Riverbed (EL. m)	Average Slope (1/n)	Dike Crown		River Width (m)	Average Riverbed (EL. m)	Flow Capacity Nonuniform		Water Level (EL. m)					Remarks
			Left (EL. m)	Right (EL. m)			Left (m ³ /s)	Right (m ³ /s)	50m ³ /s	100m ³ /s	200m ³ /s	500m ³ /s	710m ³ /s	
0.000	0.20	-	2.60	2.90	29.4	-1.50	799	949	2.00	2.00	2.00	2.00	2.00	
0.100	0.17	200	3.25	2.70	25.5	-1.00	178	123	2.15	2.47	3.47	6.23	11.20	
0.200	0.23	200	3.07	2.30	13.9	-0.50	126	50	2.30	2.86	3.67	6.25	11.20	
0.230	0.40	200	4.30	4.30	12.7	-0.35	191	191	2.28	3.09	4.42	7.24	10.29	
0.300	0.38	200	2.78	3.09	34.4	-0.00	47	56	2.96	4.00	5.66	8.24	11.24	
0.400	0.97	200	1.39	2.04	26.2	0.50	15	25	3.56	4.39	5.90	8.35	11.29	
0.500	2.00	200	3.15	4.80	24.0	1.00	36	111	3.96	4.66	5.97	8.28	11.18	
0.600	1.95	200	3.05	4.87	14.2	1.50	27	84	4.37	5.10	6.23	8.30	11.10	
0.690	2.80	200	5.80	5.50	26.2	1.95	118	96	4.77	5.56	6.89	8.91	11.61	
0.800	3.36	200	4.66	6.26	89.7	2.50	36	104	5.46	6.21	7.38	9.22	11.83	
0.900	3.94	200	5.30	6.51	75.0	3.00	42	102	5.76	6.49	7.69	12.26	11.46	
1.000	4.70	200	6.40	7.30	65.1	3.50	46	93	6.65	7.40	8.64	12.53	12.24	
1.200	5.77	100	12.34	6.41	72.0	5.50	332	21	7.66	8.12	8.80	12.55	12.29	
1.205	6.76	100	7.93	8.89	149.5	5.55	39	79	8.60	9.09	9.45	12.60	12.40	
1.300	7.54	100	8.84	9.15	29.4	6.50	45	58	9.08	9.53	9.88	12.60	12.42	
1.400	8.52	100	9.69	10.26	47.0	7.50	43	83	10.05	10.37	10.79	12.66	12.55	
1.500	9.90	100	12.70	12.80	22.9	8.50	179	190	11.30	11.93	12.90	13.92	14.93	
1.600	10.32	100	12.14	14.76	126.4	9.50	49	279	12.20	12.91	14.03	15.31	16.59	
1.700	11.42	100	12.99	14.00	133.8	10.50	60	164	12.84	13.56	14.25	15.35	16.60	
1.800	12.33	100	17.01	17.11	129.5	11.50	511	514	13.76	14.36	15.32	16.18	16.68	
1.900	13.95	100	15.01	16.26	50.5	12.50	41	101	15.56	16.25	17.17	17.90	18.60	
2.000	13.30	100	16.40	16.60	29.3	13.50	50	63	16.41	17.17	18.08	18.71	19.27	
2.100	17.41	50	20.45	22.54	205.9	15.50	332	542	18.90	19.36	20.01	20.48	20.86	
2.200	19.46	50	23.29	23.82	182.1	17.50	521	534	20.69	21.15	21.65	22.08	22.38	
2.300	20.35	50	26.08	23.04	127.2	19.50	534	143	21.93	22.65	23.56	24.09	24.50	
2.400	22.22	50	28.44	24.00	123.3	21.50	542	55	23.93	24.69	25.46	25.92	26.30	
2.500	25.10	50	27.30	27.40	25.6	23.50	125	137	26.51	27.08	27.95	28.93	29.90	

Table 2.10 Coefficient of Roughness (Manning's)

City Name	River Name	Riverbed Materials (D50,mm)	Average Slope (1/n)	River Condition	Applied Coeff. of Roughness
Iloilo	Jaro/Aganan/ Mandurriao	0.140 (fine sand)	1/4500 to 1/1,500	meandering	0.035
	Iloilo	0.013 (silt)	1/4,000	straight, no rifts gentle stream	0.030
Cebu	All rivers	2.0 to 10.0 (coarse sand/ gravel)	1/600 to 1/100	mountain stream	0.040
Ormoc	All rivers	2.2 to 6.0 (gravel)	1/150 to 1/75	mountain stream	0.040
Tacloban	All channels	0.29 (fine sand)	1/3000 to 1/1000	Smooth, gentle slope	0.030

note : Chaw, Value of the Roughness Coefficient, P112,113, "Open Channel Hydraulics"

Table 2-11 (1/2) Existing Structures along Jaro River

Name of Structure	Type of Structure	Length (m)	Location
1. Right Bank Dike	concrete revetment	270.0	2+200-2+470
2. Right Bank Dike	concrete revetment	400.0	4+200-4+600
3. Ticud Bridge	reinforced concrete	66.0	5+000
4. Bridge Piers	concrete piles	---	without superstructure
5. Bridge	reinforced concrete	108.0	6+950
6. Right Bank Dike	concrete revetment	250.0	7+000-7+250
7. Left Bank Dike	concrete revetment	300.0	7+900-8+200
8. Right Bank Dike	concrete revetment	700.0	8+150-8+850
9. Left Bank Dike	concrete revetment	25.0	9+250-9+275
10. Jaro Bridge	reinforced concrete	108.9	9+285
11. Montinola Bridge	reinforced concrete	60.0	9+350
12. Right Bank Dike	concrete	700.0	9+900-10+600
13. Right Bank Dike	concrete	320.0	11+600-11+920
14. Water Intake	infiltration gallery		13+500
15. Private Water Intake	pumping intake		15+780
16. Tigum Bridge	reinforced concrete	60.0	18+500
17. Bridge	reinforced concrete		22+000
18. Railway Bridge	truss (out of use)		26+110
19. Bridge	reinforced concrete	77.5	26+330
20. Iloilo Irrigation Dam (SBIS,NIA)	fixed conc. weir	75.0 at crest	St. Barbara
21. Pumping Station (MIWD)			St. Barbara
22. Bridge	truss (under const.)		Tuburan
23. Bridge	reinforced concrete		Badon
24. Maasin Dam (MIWD)	gravity wa- ter system		Maasin

Table 2.11 (2/2) Existing Structures along Aganan River

Name of Structure	Type of Structure	Length (m)	Location
1. Railway Bridge	truss (out of use)	---	Pavia
1. Pavia Bridg (old)	reinforced concrete	50.0	2+40
2. Pavia Bridge (new)	reinforced concrete	40.0	2+608
3. Buyo Bridge	reinforced concrete	70.0	Jebao-an
4. San Miguel Bridge			8+720
5. Irrigation Dam	fixed conc. weir	77.0	San Miguel
6. Alimodian Bridge			Alimodian

Table 2-12 (1/2) Existing Structures along Iloilo River

Name of Structure	Type of Structure	Length (m)	Location
1. Quirino Lopez Bridge	reinforced concrete	108.0	Lapaz 2 + 970
2. Carpenters Bridge	reinforced concrete	54.0	Lapaz 3 + 400
3. Forbes Bridge	reinforced concrete	190.5	Lapaz 3 + 530
4. Iloilo Bridge	reinforced concrete	135.9	Molo 5 + 230
5. Mandurriao Bridge	reinforced concrete	100.0	Mandurriao 6 + 500
6. Looc Bridge	reinforced concrete	115.0	Looc 11 +200

Table 2-12 (2/2) Existing Structures along Mandurriao River

Name of Structure	Type of Structure	Length (m)	Location
1. Left Bank Dike	boulder concrete	---	Jaro
2. Bridge	reinforced concrete	55.0	1+830
3. Right Bank Dike	concrete	---	Jaro
4. Bridge	reinforced concrete	32.5	3+100
5. Bridge	reinforced concrete	39.0	3+500
6. Bridge	reinforced concrete	30.0	4+000
7. Bridge	reinforced concrete	18.0	4+600
8. Bridge	reinforced concrete	---	4+700 (Tributary)

Table 2-13 Existing Structures along Bulacao River

Name of Structure	Type of Structure	Length (m)	Location
1. Sea Wall for Reclamation	concrete wall		0+000
2. Concrete Dike		1,500.0	0+500-2+100
3. Bridge			1+380
4. Bridge	reinforced concrete		2+650
5. Channel Works	Wet masonry	---	3+000

Table 2-14 Existing Structures along Kinalumsan River

Name of Structure	Type of Structure	Length (m)	Location
1. Kinalumsan Bridge I	reinforced concrete	10.0	0+300
2. Kinalumsan Bridge II	reinforced concrete	24.0	0+450
3. Bridge	reinforced concrete	18.0	0+680
4. Bridge	reinforced concrete	20.0	1+200
5. Pacana Bridge II	reinforced concrete	8.5	1+750
6. Bridge	reinforced concrete	20.0	2+980
7. Bridge	wodden Br.	16.0	3+970

Table 2-15 Existing Structures along Guadalupe River

Name of Structure	Type of Structure	Length (m)	Location
1. Forbes Bridge	reinforced concrete	42.0	0+420
2. Ground Sill	fixed conc. weir	---	0+600
3. Colon Bridge	reinforced concrete	31.0	0+630
4. Sancianco Bridge	reinforced concrete	17.0	0+920
5. Guadalupe Bridge I	reinforced concrete	17.0	1+120
6. Left Bank Rivetment	concrete revetment	150.0	1+550-1+800
7. Right Bank Rivetment	concrete revetment	150.0	- do -
8. Guadalupe Bridge II	reinforced concrete	23.0	1+410
9. Left Bank Rivetment	concrete revetment	---	Provincial Capital
10. Right Bank Rivetment	concrete revetment	---	- do -
11. B. Rodriguez Bridge	reinforced concrete	34.0	2+940
12. M. Velez Bridge	reinforced concrete	30.0	4+000

Table 2-16 Existing Structures along Lahug River

Name of Structure	Type of Structure	Length (m)	Location
1. Culvert	box type	6 x 2.5	0+000
2. Partition Wall	wet masonry	---	0+950
3. Bridge		10.0	0+110
4. Mc Arthur Bridge	reinforced concrete	7.5	0+300
5. Tejero Bridge	reinforced concrete	7.8	0+620
6. Pipe Culvert 1.8 m	RCPC	6.0	1+040
7. Bridge	wooden	8.0	1+300
8. Gen. Maxilom Bridge	reinforced concrete	5.5	2+560
9. Armco Bridge	reinforced concrete	6.0	2+670
10. Bridge		6.5	2+730
11. Diversion Weir	fixed conc. weir	6.0	3+200
12. Camputhaw Bridge	conc. arc.	14.0	3+490
13. Bridge		45.5	4+880

Table 2-17 Existing Structures along Subang Daku River

Name of Structure	Type of Structure	Length (m)	Location
1. Wharf of Cebu Inter. Port	conc. wall	---	0-255
2. Bridge	reinforced concrete (under const.)	48.0	0+150
3. Bridge	wodden	---	0+450
4. Bridge	reinforced concrete	9.5	1+350
5. Bridge	wodden	15.5	2+688
6. Bridge	reinforced concrete	4.7	2+985
7. Revetment	concrete	---	
8. Revetment	concret	---	
9. Bridge	reinforced concrete	15.5	4+840

Table 2-18 Existing Structures along Anilao River

Name of Structure	Type of Structure	Length (m)	Location
1. Alegria Bridge	reinforced concrete	71.7	0+210
2. Spillway (temporal) (Osmana Br.)	D900 x 4pipes 1991 washed out	---	0+500
3. Left Bank Revetment	concrete	400.0	0+600-1+000
4. Righth Bank Revetment	concrete	250.0	0+750-1+000
5. Anilao Bridge	reinforced concrete	60.0	1+000
6. Left Bank Revetment	gabion matress	340.0	1+000-1+340
7. Right Bank Revetment	concrete	150.0	1+000-1+150

Table 2-19 Existing Structures along Malbasag River

Name of Structure	Type of Structure	Length (m)	Location
1. Left Bank Revetment	concrete	450.0	0+000-0+450
2. Righth Bank Revetment	concrete	1,450.0	0+000-1+450
3. Bridge	RC		0+250
4. Spillway	washed out in 1991	---	0+700
5. Revetment Right Bank	concrete	160.0	2+000-2+160
6. Irrigation Intake	channel w/o lining	---	2+600
7. Intake Weir for municipal Water Supply	conc. weir (out of use)	---	3+500

Table 3.1 (1/5) DESIGN FEATURES OF RIVER IMPROVEMENT WORKS (JARO RIVER)
(LA PAZ FLOODWAY - JARO RIVER - JARO FLOODWAY, (1/2))

Station No.	Existing Condition			Average Slope	Design Riverbed	Design Discharge	Design Channel Width	Calc. Water Level	Design High Water Level	Dike Crown	Note
	Deepest Riverbed	Dike Crown									
(km)	(EL. m)	Left (EL. m)	Right (EL. m)	(1/n)	(EL. m)	(m ³ /s)	(m)	(EL. m)	(EL. m)	(EL. m)	
0.000	-1.490	0.000	0.000	2,500.0	-1.400	400.000	30.000	1.805	2.50	3.30	
0.100	-0.810	0.500	0.500	2,500.0	-1.360	400.000	30.000	2.029	2.70	3.50	La Paz F.W.
0.300	-0.940	2.300	2.300	2,500.0	-1.280	400.000	30.000	2.362	3.10	3.90	
0.500	-2.040	2.300	2.910	2,500.0	-1.200	400.000	30.000	2.454	3.50	4.30	
4.020	-2.040	2.300	2.910	2,500.0	-1.200	550.000	36.000	2.454	4.80	5.80	Jaro River
4.250	-0.770	3.260	3.120	2,500.0	-1.108	550.000	36.000	2.741	4.89	5.89	(Existing)
4.490	-1.980	3.420	3.360	2,500.0	-1.012	550.000	36.000	3.234	4.99	5.99	
4.730	0.100	3.000	2.400	2,500.0	-0.916	550.000	36.000	3.546	5.08	6.08	
4.970	-0.460	3.710	3.110	2,500.0	-0.820	550.000	36.000	3.811	5.18	6.18	
5.210	-0.510	3.300	3.810	2,500.0	-0.724	550.000	36.000	4.136	5.28	6.28	
5.300	-0.200	3.800	4.400	2,500.0	-0.688	550.000	36.000	4.232	5.31	6.31	
5.450	-0.720	3.700	4.500	2,500.0	-0.628	550.000	36.000	4.323	5.37	6.37	
5.700	-0.060	4.800	4.400	2,500.0	-0.528	550.000	36.000	4.575	5.47	6.47	
5.940	-1.100	5.500	5.200	2,500.0	-0.432	550.000	36.000	4.728	5.57	6.57	Tikud Br.
6.155	-0.150	5.300	4.800	2,500.0	-0.346	550.000	36.000	4.873	5.65	6.65	
6.355	-1.050	6.020	5.270	2,500.0	-0.266	550.000	36.000	5.011	5.73	6.73	
6.455	0.300	5.400	5.100	2,500.0	-0.226	550.000	36.000	5.077	5.77	6.77	
6.555	-0.030	5.710	5.300	2,500.0	-0.186	550.000	36.000	5.142	5.81	6.81	
6.755	-0.620	5.600	5.510	2,500.0	-0.106	550.000	36.000	5.269	5.89	6.89	
6.955	-0.200	4.800	5.800	2,500.0	-0.026	550.000	36.000	5.391	5.97	6.97	
7.130	-1.670	3.940	3.920	2,500.0	0.044	550.000	36.000	5.509	6.04	7.04	Gustilo Br.
7.355	-0.230	5.730	5.400	2,500.0	0.134	550.000	36.000	5.624	6.13	7.13	
7.460	0.300	5.700	4.000	2,500.0	0.176	550.000	36.000	5.680	6.18	7.18	
7.565	0.000	5.000	6.200	2,500.0	0.218	550.000	36.000	5.736	6.22	7.22	
7.775	-0.350	6.000	6.300	2,500.0	0.302	550.000	36.000	5.845	6.30	7.30	
7.930	0.000	7.000	6.300	2,500.0	0.364	550.000	36.000	5.952	6.36	7.36	Ledaco Br.
8.085	0.100	6.000	7.200	2,500.0	0.426	550.000	36.000	6.057	6.43	7.43	
8.185	-1.360	5.200	7.420	2,500.0	0.466	550.000	36.000	6.109	6.47	7.47	
8.395	0.380	6.500	6.600	2,500.0	0.550	550.000	36.000	6.211	6.55	7.55	
8.445	0.800	6.300	7.200	2,500.0	0.570	550.000	36.000	6.211	6.57	7.57	
8.675	0.410	6.700	6.120	2,500.0	0.662	550.000	36.000	6.311	6.66	7.66	
8.805	0.380	7.240	6.300	2,500.0	0.714	550.000	36.000	6.410	6.71	7.71	
9.100	0.800	6.300	6.400	2,500.0	0.832	550.000	36.000	6.556	6.83	7.83	
9.200	-0.690	6.850	7.500	2,500.0	0.872	550.000	36.000	6.604	6.87	7.87	
9.400	0.300	6.040	8.220	2,500.0	0.952	550.000	36.000	6.700	6.95	7.95	
9.505	-3.200	7.000	7.700	2,500.0	0.994	550.000	36.000	6.747	6.99	7.99	
9.610	0.020	7.300	7.850	2,500.0	1.036	550.000	36.000	6.794	7.04	8.04	
9.870	-1.480	7.400	7.870	2,500.0	1.140	550.000	36.000	6.887	7.14	8.14	
9.990	0.700	7.700	6.800	2,500.0	1.188	550.000	36.000	6.980	7.19	8.19	
10.000				2,500.0	1.192	550.000	36.000	6.980	7.19	8.19	
10.285	0.600	7.800	11.100	1,500.0	1.382	550.000	27.000	7.087	7.38	8.38	Jaro Br.
10.350	1.300	7.100	6.300	1,500.0	1.425	550.000	27.000	7.087	7.43	8.43	Monticola Br.
10.500	1.200	7.700	6.100	1,500.0	1.525	550.000	27.000	7.165	7.53	8.53	
10.550	1.200	7.700	6.100	1,500.0	1.559	550.000	27.000	7.165	7.56	8.56	
10.780	0.630	8.000	7.800	1,500.0	1.712	550.000	27.000	7.385	7.71	8.71	
10.975	1.400	6.900	8.500	1,500.0	1.842	550.000	27.000	7.469	7.84	8.84	
11.155	-0.430	8.800	8.700	1,500.0	1.962	550.000	27.000	7.633	7.96	8.96	
11.335	0.650	8.800	8.700	1,500.0	2.082	550.000	27.000	7.794	8.08	9.08	
11.425	1.500	9.200	9.000	1,500.0	2.142	550.000	27.000	7.873	8.14	9.14	
11.515	1.350	9.220	9.040	1,500.0	2.202	550.000	27.000	7.951	8.20	9.20	
11.695	3.880	8.800	9.000	1,500.0	2.322	550.000	27.000	8.106	8.32	9.32	
11.875	1.700	9.200	9.100	1,500.0	2.442	550.000	27.000	8.182	8.44	9.44	
12.095	1.910	9.400	9.000	1,500.0	2.589	550.000	27.000	8.407	8.59	9.59	
12.295	1.790	9.700	9.800	1,500.0	2.722	550.000	27.000	8.556	8.72	9.72	
12.400	2.300	9.200	9.600	1,500.0	2.792	550.000	27.000	8.629	8.79	9.79	
12.505	2.230	9.210	10.200	1,500.0	2.862	550.000	27.000	8.702	8.86	9.86	
12.705	1.540	9.900	10.100	1,500.0	2.995	550.000	27.000	8.847	9.00	10.00	
12.905	2.800	10.000	10.000	1,500.0	3.129	550.000	27.000	8.991	9.13	10.13	
13.105	2.660	10.200	10.210	1,500.0	3.262	550.000	27.000	9.133	9.26	10.26	
13.305	2.640	10.510	10.210	1,500.0	3.395	550.000	27.000	9.275	9.40	10.40	
13.405	3.400	10.400	8.500	1,500.0	3.462	550.000	27.000	9.346	9.46	10.46	
13.505	3.040	10.500	7.900	1,500.0	3.529	550.000	27.000	9.416	9.53	10.53	
13.685	3.190	10.500	10.700	1,500.0	3.649	550.000	27.000	9.556	9.65	10.65	
13.865	3.600	10.900	10.700	1,500.0	3.769	550.000	27.000	9.626	9.77	10.77	
14.065	3.230	10.550	10.800	1,500.0	3.902	550.000	27.000	9.765	9.90	10.90	
14.265	3.880	10.800	13.200	1,500.0	4.035	550.000	27.000	9.903	10.04	11.04	
14.355	3.900	10.400	11.500	1,500.0	4.095	550.000	27.000	9.972	10.10	11.10	
14.445	3.800	11.200	11.100	1,500.0	4.155	550.000	27.000	10.041	10.16	11.16	
14.625	4.000	11.400	10.400	1,500.0	4.275	550.000	27.000	10.178	10.28	11.28	
14.845	4.000	11.500	10.000	1,500.0	4.422	550.000	27.000	10.315	10.42	11.42	
15.000				1,500.0	4.525	550.000	27.000	10.452	10.53	11.53	
15.040	3.800	11.000	11.300	1,500.0	4.552	550.000	27.000	10.452	10.55	11.55	
15.240	3.500	10.800	11.700	1,500.0	4.685	550.000	27.000	10.588	10.69	11.69	
15.355	4.300	11.100	11.700	1,500.0	4.762	550.000	27.000	10.657	10.76	11.76	
15.435	4.800	11.400	10.500	1,500.0	4.815	550.000	27.000	10.725	10.82	11.82	
15.635	5.400	11.100	12.800	1,500.0	4.949	550.000	27.000	10.860	10.95	11.95	
15.835	5.100	10.200	11.700	1,500.0	5.082	550.000	27.000	10.996	11.08	12.08	
16.050	4.300	12.700	12.200	1,500.0	5.225	550.000	27.000	11.131	11.23	12.23	
16.162				1,500.0	5.300	550.000	41.000		11.30	12.30	Diversion Weir
16.250	5.700	13.200	12.400	1,500.0	5.359	1,400.000	150.000	12.500	12.50	13.50	
16.355	5.300	12.800	12.500	1,500.0	5.429	1,400.000	150.000	12.500	12.50	13.50	
16.460	5.600	14.300	13.000	1,500.0	5.499	1,400.000	150.000	12.500	12.50	13.50	
16.660	6.900	14.400	13.900	1,500.0	5.632	1,400.000	150.000	12.500	12.50	13.50	Aganan River

Table 3.1 (2/5) Design Features of River Improvement Works of Jaro River
(River mouth - La Paz Floodway)

Station No.	Existing Condition			Average Slope	Design Riverbed	Design Discharge	Design Channel Width	Calc. Water Level	Design High Water Level	Dike Crowns	Note
	Deepest Riverbed	Dike Crowns									
		Left	Right								
(km)	(EL. m)	(EL. m)	(EL. m)	(1/s)	(EL. m)	(m ³ /s)	(m)	(EL. m)	(EL. m)	(EL. m)	
0.000	-0.900	2.000	0.200	5,000.0	-2.000	150	88.900	1.183	2.00	2.60	River Mouth
0.230	-1.870	1.000	1.100	5,000.0	-1.954	150	108.700	1.314	2.05	2.65	
0.460	-1.730	1.070	1.100	5,000.0	-1.908	150	121.000	1.360	2.09	2.69	
0.690	-1.250	1.650	1.200	5,000.0	-1.862	150	96.700	1.400	2.14	2.74	
0.920	-1.450	1.600	2.200	5,000.0	-1.816	150	116.500	1.450	2.18	2.78	
1.150	0.300	2.100	1.300	5,000.0	-1.770	150	121.900	1.509	2.23	2.83	
1.380	-1.560	2.800	1.740	5,000.0	-1.724	150	126.000	1.645	2.28	2.88	
1.610	-1.080	2.400	1.530	5,000.0	-1.678	150	85.200	1.728	2.32	2.92	
1.860	-1.520	2.300	1.100	5,000.0	-1.628	150	69.000	1.788	2.37	2.97	
2.090	-1.340	1.880	1.920	5,000.0	-1.582	150	122.900	1.897	2.42	3.02	
2.330	-1.080	1.800	1.650	5,000.0	-1.534	150	143.300	1.981	2.47	3.07	
2.590	-0.730	2.230	1.640	5,000.0	-1.482	150	93.000	2.046	2.52	3.12	
2.830	-1.720	1.820	2.360	5,000.0	-1.434	150	65.400	2.240	2.57	3.17	
3.060	-1.530	2.040	2.440	5,000.0	-1.388	150	83.300	2.344	2.61	3.21	
3.310	-1.490	1.520	2.600	5,000.0	-1.338	150	61.900	2.433	2.66	3.26	
3.550	-0.810	2.850	2.860	5,000.0	-1.290	150	68.700	2.488	2.71	3.31	
3.780	-0.940	3.000	2.800	5,000.0	-1.244	150	60.800	2.590	2.76	3.36	
4.020	-2.040	2.300	2.910	5,000.0	-1.196	150	50.900	2.764	2.80	3.40	Diversion Weir
5,000.00											

Table 3.1 (3/5) Design Features of River Improvement Works of Jaro River
(Tigum River)

Station No.	Existing Condition			Average Slope	Design Riverbed	Design Discharge	Design Channel Width	Calc. Water Level	Design High Water Level	Dike Crowns	Note
	Deepest Riverbed	Dike Crowns									
		Left	Right								
(km)	(EL. m)	(EL. m)	(EL. m)	(1/s)	(EL. m)	(m ³ /s)	(m)	(EL. m)	(EL. m)	(EL. m)	
16.660	6.900	14.400	13.900	1,000.0	5.632	600	23.000	12.819	12.50	13.50	
16.860	5.000	12.800	12.500	1,000.0	5.852	600	23.000	12.899	12.65	13.65	
17.060	5.700	13.200	13.700	1,000.0	6.032	600	23.000	12.985	12.81	13.81	
17.260	6.600	14.000	14.000	1,000.0	6.232	600	23.000	13.077	12.96	13.96	
17.360	6.300	13.700	13.200	1,000.0	6.332	600	23.000	13.126	13.04	14.04	
17.390	6.400	13.200	14.000	1,000.0	6.362	600	23.000	13.138	13.06	14.06	Pavia Bridge
17.460	6.800	14.000	14.200	1,000.0	6.432	600	23.000	13.176	13.12	14.12	
17.660	7.000	14.100	14.100	1,000.0	6.632	600	23.000	13.281	13.27	14.27	
17.860	6.300	12.900	13.600	1,000.0	6.832	600	23.000	13.394	13.42	14.42	
18.360	7.000	14.200	13.400	1,000.0	7.332	600	23.000	13.704	13.81	14.81	
18.860	7.600	12.500	14.500	1,000.0	7.832	600	23.000	---	14.19	15.19	
19.300	8.300	16.400	16.400	1,000.0	8.472	600	23.000	---	14.68	15.68	Bridge
1,300.00											

Table 3.1 (4/5) Design Features of River Improvement Works of Jaro River
(Aganan River)

Station No.	Existing Condition			Average Slope	Design Riverbed	Design Discharge	Design Channel Width	Calc. Water Level	Design High Water Level	Dike Crowns	Note
	Deepest Riverbed	Dike Crowns									
		Left	Right								
(km)	(EL. m)	(EL. m)	(EL. m)	(1/s)	(EL. m)	(m ³ /s)	(m)	(EL. m)	(EL. m)	(EL. m)	
0.050	5.400	12.300	11.900	1,000.0	5.632	800	35.000	0.600	12.50	13.10	Jaro River
0.300	6.000	12.200	12.800	1,000.0	6.082	800	35.000	12.980	12.82	13.42	
1.000	7.500	13.000	13.200	1,000.0	6.582	800	35.000	13.227	13.18	13.78	
1.600	8.200	14.200	13.700	1,000.0	7.182	800	35.000	13.592	13.61	14.21	
2.200	8.000	14.400	14.600	1,000.0	7.782	800	35.000	14.002	14.04	14.64	
2.500	7.900	14.900	17.400	1,000.0	8.082	800	35.000	14.226	14.25	14.85	Railway Bridge
2.700	8.200	15.700	15.700	1,000.0	8.282	800	35.000	14.382	14.39	14.99	Aganan Bridge
1,400.00											

Table 3.1 (5/5) Design Features of River Improvement Works of Jaro River
(Jaro Floodway)

Station No.	Existing Condition			Average Slope	Design Riverbed	Design Discharge	Design Channel Width	Calc. Water Level	Design High Water Level	Dike Crowns	Note
	Deepest Riverbed	Dike Crowns									
		Left	Right								
(km)	(EL. m)	(EL. m)	(EL. m)	(1/s)	(EL. m)	(m ³ /s)	(m)	(EL. m)	(EL. m)	(EL. m)	
0.000	0.000	0.000	0.000	750.0	-1.100	850	55.000	2.111	3.70	4.70	
0.500	0.000	2.000	0.000	750.0	-0.433	850	55.000	3.748	4.37	5.37	
1.000	2.700	2.700	2.700	750.0	0.233	850	55.000	4.584	5.03	6.03	
1.500	4.500	4.500	4.500	750.0	0.900	850	55.000	5.175	5.70	6.70	
2.000	5.000	5.000	5.000	750.0	1.567	850	55.000	6.015	6.37	7.37	
2.500	9.000	9.000	8.900	750.0	2.233	850	55.000	6.560	7.03	8.03	
3.000	9.300	9.300	9.200	750.0	2.900	850	55.000	7.100	7.70	8.70	
3.500	9.800	9.800	9.700	750.0	3.567	850	55.000	7.905	8.37	9.37	
4.000	11.100	11.200	11.100	750.0	4.233	850	55.000	8.440	9.03	10.03	
4.500	12.100	12.000	12.100	750.0	4.900	850	55.000	9.241	9.70	10.70	
4.800	12.200	11.900	12.100	750.0	5.300	850	55.000	9.508	10.10	11.10	

Table 3.2 Design Features of River Improvement Works of Iloilo River (Iloilo River)

Station No. (km)	Existing Condition			Average Slope (1/n)	Design Riverbed (EL. m)	Design Channel Width (m)	Gradient of Water S.F (1/n)	Calc. Water Level (EL. m)	Design High Water Level (EL. m)	Dike Crown (EL. m)	Note
	Deepest Riverbed (EL. m)	Dike Crown									
		Left (EL. m)	Right (EL. m)								
0.000	-6.900	1.700	2.000		-6.750	100.000	---	1.062	1.200	2.200	River Mouth
0.175	-8.600	0.780	2.320		-6.750	100.000	---	1.063	1.200	2.200	
0.400	-6.900	1.360	2.370		-6.750	100.000	---	1.068	1.200	2.200	
0.600	-6.340	1.070	2.300	Dredging	-6.750	100.000	---	1.072	1.200	2.200	
0.800	-6.690	1.790	2.400	Area	-6.750	100.000	---	1.076	1.200	2.200	
1.000	-6.300	1.900	2.300	By	-5.750	100.000	---	1.077	1.200	2.200	
1.200	-7.920	1.830	1.700	PPA	-4.750	100.000	---	2.084	1.200	2.200	
1.360	-6.790	1.700	1.700		-4.750	100.000	---	1.078	1.200	2.200	
1.555	-6.420	1.710	1.740		-4.750	100.000	---	1.091	1.200	2.200	
1.800	-7.220	2.090	1.700		-4.750	100.000	---	1.104	1.200	2.200	
2.000	-7.200	1.500	1.800		-3.750	100.000	---	1.110	1.200	2.200	
2.180	-4.170	2.200	1.400		-3.750	100.000	---	1.122	1.200	2.200	
2.380	-4.280	2.300	1.400		-3.750	100.000	---	1.146	1.200	2.200	
2.577	-5.050	0.980	1.900	5,000.0	-3.711	80.000	5,000	1.200	1.239	2.239	
2.772	-4.590	1.700	2.100	5,000.0	-3.672	80.000	5,000	1.213	1.278	2.278	
2.927	-5.200	1.800	1.900	5,000.0	-3.641	80.000	5,000	1.221	1.309	2.309	Qurino-Lopez Br
3.200	-4.400	0.800	2.030	5,000.0	-3.586	80.000	5,000	1.256	1.364	2.364	
3.530	-4.200	2.100	2.430	5,000.0	-3.520	80.000	5,000	1.293	1.430	2.430	Forbes Br.
3.800	-2.100	1.900	1.900	5,000.0	-3.466	80.000	5,000	1.361	1.484	2.484	
4.000	-3.200	2.000	1.500	5,000.0	-3.426	80.000	5,000	1.415	1.524	2.524	
4.190	-1.400	1.910	1.900	5,000.0	-3.388	80.000	5,000	1.467	1.562	2.562	
4.200	-2.600	1.560	1.730	5,000.0	-3.386	80.000	5,000	1.469	1.564	2.564	
4.400	-4.500	1.620	1.700	5,000.0	-3.346	80.000	5,000	1.522	1.604	2.604	
4.600	-2.500	1.700	1.600	5,000.0	-3.306	80.000	5,000	1.574	1.644	2.644	
4.800	-2.700	1.550	1.480	5,000.0	-3.266	80.000	5,000	1.626	1.684	2.684	
4.890	-2.800	1.700	1.900	5,000.0	-3.248	80.000	5,000	1.656	1.702	2.702	
5.180	-3.900	1.980	2.070	5,000.0	-3.190	80.000	5,000	1.725	1.760	2.760	Manduriao River
5.230	-2.400	1.800	1.720	5,000.0	-3.180	80.000	3,000	1.782	1.777	2.777	Diversion Br.
5.400	-2.300	1.800	1.600	5,000.0	-3.146	80.000	3,000	1.816	1.833	2.833	
5.600	-2.400	1.880	0.980	5,000.0	-3.106	80.000	3,000	1.848	1.900	2.900	
5.800	-2.000	2.100	1.630	5,000.0	-3.066	80.000	3,000	1.880	1.967	2.967	
5.980	-1.300	1.800	1.700	5,000.0	-3.030	80.000	3,000	1.909	2.027	3.027	
6.000	-1.700	1.580	1.530	5,000.0	-3.026	80.000	3,000	1.913	2.033	3.033	
6.200	-2.200	1.700	1.710	5,000.0	-2.986	80.000	3,000	1.938	2.100	3.100	
6.500	-4.500	2.000	1.500	5,000.0	-2.926	60.000	3,000	1.975	2.200	3.200	Molo Br.
6.600	-1.700	2.100	1.600	500.0	-2.726	---	3,000	2.169	2.233	3.233	
6.800	-1.400	2.270	1.500	500.0	-2.326	---	3,000	2.213	2.300	3.300	
7.000	-0.740	1.390	0.780	500.0	-1.926	---	3,000	2.271	2.367	3.367	
7.200	-1.600	1.390	1.690	500.0	-1.526	---	3,000	2.352	2.433	3.433	
7.400	-1.800	2.000	1.900	500.0	-1.126	---	3,000	2.462	2.500	3.500	

Table 3.3 Design Features of River Improvement Works of Iloilo River (Mandurriao River)

Station No. (km)	Existing Condition			Average Slope (1/n)	Design Riverbed (EL. m)	Design Channel Width (m)	Gradient of Water S.F. (1/n)	Calc. Water Level (EL. m)	Design High Water Level (EL. m)	Dike Crown (EL. m)	Note
	Deepest Riverbed (EL. m)	Left Dike Crown (EL. m)	Right Dike Crown (EL. m)								
0.000	-1.10	1.800	2.500		-3.19	20.000	9.000	1.690	1.500	2.760	Confluence of
0.050	-1.21	1.760	1.770	1,300.0	-3.15	20.000	9.000	1.690	1.506	2.360	Iloilo River
0.100	-0.90	2.080	1.480	1,300.0	-3.11	20.000	9.000	1.693	1.511	2.360	
0.150	-0.88	1.700	1.840	1,300.0	-3.07	20.000	9.000	1.693	1.517	2.360	
0.200	-1.20	1.800	1.800	1,300.0	-3.04	20.000	9.000	1.696	1.522	2.360	
0.250	-0.74	1.590	2.140	1,300.0	-3.00	20.000	9.000	1.696	1.528	2.360	
0.300	-1.32	1.780	2.340	1,300.0	-2.96	20.000	9.000	1.699	1.533	2.360	
0.350	-1.32	2.130	2.230	1,300.0	-2.92	20.000	9.000	1.699	1.539	2.360	
0.400	-1.00	1.800	2.300	1,300.0	-2.88	20.000	9.000	1.702	1.544	2.360	
0.450	-0.95	1.890	2.410	1,300.0	-2.84	20.000	9.000	1.702	1.550	2.360	
0.500	-1.37	1.910	2.220	1,300.0	-2.81	20.000	9.000	1.706	1.556	2.360	
0.550	-1.04	1.630	2.040	1,300.0	-2.77	20.000	9.000	1.706	1.561	2.360	
0.600	-0.90	2.100	2.100	1,300.0	-2.73	20.000	9.000	1.710	1.567	2.360	
0.650	-0.65	1.570	2.120	1,300.0	-2.69	20.000	9.000	1.710	1.572	2.360	
0.700	-0.83	1.770	1.870	1,300.0	-2.65	20.000	9.000	1.714	1.578	2.360	
0.750	-0.80	1.580	1.700	1,300.0	-2.61	20.000	9.000	1.714	1.583	2.360	
0.800	-0.80	1.800	1.600	1,300.0	-2.57	20.000	9.000	1.718	1.589	2.360	
0.860	-1.11	1.820	1.770	1,300.0	-2.53	20.000	9.000	1.718	1.596	2.360	
0.920	-1.11	1.350	1.610	1,300.0	-2.48	20.000	9.000	1.723	1.602	2.360	
0.990	-1.16	0.900	1.560	1,300.0	-2.43	20.000	9.000	1.723	1.610	2.360	
1.060	-1.10	2.100	1.600	1,300.0	-2.37	20.000	9.000	1.728	1.618	2.360	
1.110	-0.92	1.880	1.260	1,300.0	-2.34	20.000	5.000	1.733	1.628	2.360	
1.160	-1.04	1.390	1.760	1,300.0	-2.30	20.000	5.000	1.733	1.638	2.360	
1.210	-1.09	1.110	1.570	1,300.0	-2.26	20.000	5.000	1.739	1.648	2.360	
1.260	-1.00	1.500	1.700	1,300.0	-2.22	20.000	5.000	1.739	1.658	2.360	
1.310	-1.04	1.390	1.520	1,300.0	-2.18	20.000	5.000	1.745	1.668	2.360	
1.360	-0.84	1.270	2.020	1,300.0	-2.14	20.000	5.000	1.745	1.678	2.360	
1.410	-1.05	1.550	1.320	1,300.0	-2.11	20.000	5.000	1.751	1.688	2.360	
1.460	-1.00	1.600	1.600	1,300.0	-2.07	20.000	5.000	1.751	1.698	2.360	
1.510	-1.46	1.890	1.790	1,300.0	-2.03	20.000	5.000	1.758	1.708	2.360	
1.560	-1.02	1.600	2.080	1,300.0	-1.99	20.000	5.000	1.758	1.718	2.360	
1.610	-0.99	1.130	1.360	1,300.0	-1.95	20.000	5.000	1.766	1.728	2.360	
1.660	-1.00	1.800	1.700	1,300.0	-1.91	20.000	5.000	1.766	1.738	2.360	
1.710	-1.42	1.190	1.350	1,300.0	-1.87	20.000	5.000	1.774	1.748	2.360	
1.760	-1.24	2.050	1.550	1,300.0	-1.84	20.000	5.000	1.774	1.758	2.360	
1.850	-1.10	1.800	1.600	1,300.0	-1.77	20.000	5.000	1.783	1.776	2.376	
1.880	-1.00	1.800	1.800	1,300.0	-1.74	20.000	5.000	1.783	1.782	2.382	Bullao Br.
1.900	-1.19	0.690	2.410	1,300.0	-1.73	20.000	3.000	1.783	1.788	2.388	
1.960	-1.56	1.310	2.400	1,300.0	-1.68	20.000	3.000	1.792	1.808	2.408	
2.020	-1.42	0.710	2.240	1,300.0	-1.64	20.000	3.000	1.802	1.828	2.428	
2.070	-1.40	1.300	2.200	1,300.0	-1.60	20.000	3.000	1.802	1.845	2.445	
2.120	-1.55	0.840	2.360	1,300.0	-1.56	20.000	3.000	1.813	1.862	2.462	
2.170	-1.00	1.750	1.740	1,300.0	-1.52	20.000	3.000	1.813	1.878	2.478	
2.215	-1.31	0.700	1.670	1,300.0	-1.49	20.000	3.000	1.825	1.893	2.493	
2.230	-1.10	2.100	2.200	1,300.0	-1.47	20.000	3.000	1.825	1.898	2.498	
2.250	-1.22	2.510	0.950	1,300.0	-1.46	20.000	3.000	1.825	1.905	2.505	
2.300	-0.43	0.990	2.110	1,300.0	-1.42	20.000	3.000	1.825	1.922	2.522	
2.350	-1.58	1.310	1.880	1,300.0	-1.38	20.000	3.000	1.838	1.938	2.538	
2.400	-0.80	0.800	2.400	1,300.0	-1.34	20.000	3.000	1.838	1.955	2.555	
2.450	-1.43	0.710	2.330	1,300.0	-1.31	20.000	3.000	1.851	1.972	2.572	
2.510	-1.04	1.790	2.060	1,300.0	-1.26	20.000	3.000	1.866	1.992	2.592	
2.580	-1.30	0.830	2.670	1,300.0	-1.21	20.000	3.000	1.866	2.015	2.615	
2.650	-0.90	2.300	2.800	1,300.0	-1.15	20.000	3.000	1.882	2.038	2.638	
2.710	-1.04	2.950	1.310	1,300.0	-1.11	20.000	3.000	1.899	2.058	2.658	
2.770	-1.00	0.680	0.640	1,300.0	-1.06	20.000	3.000	1.899	2.078	2.678	
2.830	-1.39	0.980	0.550	1,300.0	-1.01	20.000	3.000	1.918	2.098	2.698	
2.890	-0.80	2.800	1.500	1,300.0	-0.97	20.000	3.000	1.918	2.118	2.718	
2.940	-1.35	0.620	1.050	1,300.0	-0.93	20.000	3.000	1.938	2.135	2.735	
3.010	-0.60	2.300	2.000	1,300.0	-0.87	20.000	1.800	1.959	2.174	2.774	Seminario Br.
3.060	-1.32	0.920	0.850	1,300.0	-0.84	20.000	1.800	1.959	2.202	2.802	
3.110	-0.70	1.400	3.400	1,300.0	-0.80	20.000	1.800	1.982	2.230	2.830	
3.160	-0.87	1.010	2.560	1,300.0	-0.76	20.000	1.800	1.982	2.257	2.857	
3.210	-0.60	2.500	2.500	1,300.0	-0.72	20.000	1.800	2.007	2.285	2.885	Street Br.
3.260	-0.97	1.290	0.870	1,300.0	-0.68	20.000	1.800	2.007	2.313	2.913	
3.300	-1.00	2.600	1.300	1,300.0	-0.65	20.000	1.800	2.007	2.335	2.935	
3.365	-0.34	1.140	2.150	1,300.0	-0.60	20.000	1.800	2.034	2.371	2.971	
3.390	-0.51	1.170	1.630	1,300.0	-0.58	20.000	1.800	2.034	2.385	2.985	
3.430	-0.63	1.430	2.660	1,300.0	-0.55	20.000	1.800	2.063	2.407	3.007	
3.460	-0.60	2.300	1.400	1,300.0	-0.53	20.000	1.800	2.063	2.424	3.024	
3.510	-0.58	2.820	1.360	1,300.0	-0.49	20.000	1.800	2.094	2.452	3.052	
3.560	-0.40	1.900	1.800	1,300.0	-0.45	20.000	1.800	2.094	2.480	3.080	Calbhan Br.
3.610	-1.85	1.010	1.500	1,300.0	-0.41	20.000	1.800	2.127	2.507	3.107	
3.660	-0.90	1.900	1.500	1,300.0	-0.37	20.000	1.800	2.127	2.535	3.135	
3.720	-0.30	0.890	3.000	1,300.0	-0.33	20.000	1.800	2.162	2.568	3.168	
3.770	-1.18	1.150	3.170	1,300.0	-0.29	20.000	1.800	2.162	2.596	3.196	
3.820				1,300.0	-0.25	20.000	1.800	2.200	2.624	3.224	
3.880	0.40	1.800	1.600	1,300.0	-0.21	20.000	1.800	2.200	2.657	3.257	
3.930	0.21	1.190	2.590	1,300.0	-0.17	20.000	1.800	2.239	2.685	3.285	
3.985	-0.03	3.460	1.550	1,300.0	-0.12	20.000	1.800	2.239	2.716	3.316	
4.035	-0.26	2.780	1.680	1,300.0	-0.09	20.000	1.800	2.282	2.743	3.343	
4.090	0.20	2.800	2.900	1,300.0	-0.04	20.000	1.800	2.301	2.774	3.374	Santa Rose Br.
4.140	-2.44	0.650	1.860	650.0	0.03	10.000	1.000	2.320	2.824	3.424	
4.190	0.07	1.390	2.280	650.0	0.11	10.000	1.000	2.344	2.874	3.474	
4.240	-0.54	1.310	1.210	650.0	0.19	10.000	1.000	2.371	2.924	3.524	
4.290	-0.20	3.500	1.900	650.0	0.26	10.000	1.000	2.403	2.974	3.574	
4.360	-0.50	1.540	3.400	650.0	0.37	10.000	1.000	2.481	3.044	3.644	
4.415	0.09	2.370	1.500	650.0	0.46	10.000	1.000	2.528	3.099	3.699	
4.465	0.22	1.580	2.980	650.0	0.53	10.000	1.000	2.582	3.149	3.749	
4.520	0.20	1.400	3.500	650.0	0.62	10.000	1.000	2.642	3.204	3.804	
4.560	0.14	2.660	4.680	650.0	0.68	10.000	1.000	2.715	3.244	3.844	
4.615	0.96	1.780	3.090	650.0	0.76	10.000	650	0.000	3.329	3.929	
4.665	0.80	2.490	4.040	650.0	0.84	10.000	650	0.000	3.406	4.006	
4.720	1.20	3.800	3.000	650.0	0.93	10.000	650	0.000	3.490	4.090	Dongan Br.
4.770	1.23	2.820	2.620	650.0	1.00	10.000	650	0.000	3.567	4.167	
4.820	0.98	2.750	4.640	650.0	1.08	10.000	650	0.000	3.644	4.244	

Table 3.4 Design Features of River Improvement Works of Bulacao River

Station No. (km)	Existing Condition			Average Slope (1/n)	Design Riverbed (EL. m)	Design Slope (w/ Drops) (1/n)	Design Riverbed (EL. m)	Design Channel Width (m)	Design High Water Level (EL. m)	Dike Crown (EL. m)	Note
	Deepest Riverbed (EL. m)	Dike Crown Left (EL. m)	Dike Crown Right (EL. m)								
0.000	0.000	1.600	1.500	200	-1.200	400.000	-1.200	33.000	1.800	2.600	
0.400				200	0.800	400.000	-0.200	33.000	2.800	3.600	
0.400				200	0.800	400.000	0.800	33.000	3.800	4.600	Drop 1 (1m)
0.520	2.400	3.600	3.600	200	1.400	400.000	1.100	33.000	4.100	4.900	
0.800				200	2.800	400.000	1.800	33.000	4.800	5.600	
0.800				200	2.800	400.000	2.800	33.000	5.800	6.600	Drop 2 (1m)
1.000	4.400	7.500	6.700	200	3.800	400.000	3.300	33.000	6.300	7.100	
1.200				200	4.800	400.000	3.800	33.000	6.800	7.600	
1.200				200	4.800	400.000	4.800	33.000	7.800	8.600	Drop 3 (1m)
1.380	6.500	10.400	10.400	200	5.700	400.000	5.250	33.000	8.250	9.050	Bridge
1.400				200	5.800	400.000	5.300	33.000	8.300	9.100	
1.500	7.500	10.700	10.700	140	6.514	400.000	5.550	33.000	8.550	9.350	
1.540				140	6.800	400.000	5.650	33.000	8.650	9.450	
1.540				140	6.800	400.000	6.765	33.000	9.765	10.565	Drop 4 (1.115m)
1.820				140	8.800	280.000	7.765	27.000	10.765	11.565	
1.820				140	8.800	280.000	8.765	27.000	11.765	12.565	Drop 5 (1m)
2.100	11.700	13.500	13.800	140	10.800	280.000	9.765	27.000	12.765	13.565	
2.100				140	10.800	280.000	10.765	27.000	13.765	14.565	Drop 6 (1m)
2.380				140	12.800	280.000	11.765	27.000	14.765	15.565	
2.380				140	12.800	280.000	12.765	27.000	15.765	16.565	Drop 7 (1m)
2.500	14.400	16.900	17.900	140	13.657	280.000	13.194	27.000	16.194	16.994	
2.650	15.900	22.900	22.900	140	14.729	280.000	13.729	27.000	16.729	17.529	Bridge
2.650				140	14.729	280.000	14.729	27.000	17.729	18.529	Drop 8 (1m)

Table 3.5 Design Features of River Improvement Works of Kinalumsan River

Station No. (km)	Existing Condition			Average Slope (1/n)	Design Riverbed (EL. m)	Design Slope (w/ Drops) (1/n)	Design Riverbed (w/ Drops) (EL. m)	Design Channel Width (m)	Design High Water Level (EL. m)	Dike Crown (EL. m)	Note
	Deepest Riverbed (EL. m)	Dike Crown Left (EL. m)	Dike Crown Right (EL. m)								
0.000	-0.600	1.700	1.700	250	-0.600	250.000	-0.600	22.000	2.400	3.200	
0.300	-0.100	4.300	4.300	250	0.600	250.000	0.600	22.000	3.600	4.400	Bridge
0.450	0.150	5.900	5.900	250	1.200	250.000	1.200	22.000	4.200	5.000	Bridge
0.500	0.100	2.800	2.600	250	1.400	250.000	1.400	22.000	4.400	5.200	
0.680	1.550	6.520	6.520	250	2.120	250.000	2.120	22.000	5.120	5.920	Bridge
1.000	2.800	7.200	5.700	250	3.400	250.000	3.400	22.000	6.400	7.200	
1.200	3.600	9.690	9.690	250	4.200	250.000	4.200	22.000	7.200	8.000	Bridge
1.400				250	5.000	250.000	5.000	22.000	8.000	8.800	
1.530	6.100	10.100	10.100	100	6.300	200.000	5.650	12.000	8.650	9.450	
1.700				100	8.000	200.000	6.500	12.000	9.500	10.300	
1.700				100	8.000	200.000	8.000	12.000	11.000	11.800	Drop 1(h=1.5m)
1.750	8.150	12.340	12.340	100	8.500	200.000	8.250	12.000	11.250	12.050	Bridge
2.000	10.900	13.200	12.700	100	11.000	200.000	9.500	12.000	12.500	13.300	
2.000				100	11.000	200.000	11.000	12.000	14.000	14.800	Drop 2(h=1.5m)
2.300				100	14.000	200.000	12.500	12.000	15.500	16.300	
2.300				100	14.000	200.000	14.000	12.000	17.000	17.800	Drop 3(h=1.5m)
2.430	14.500	19.300	19.300	100	15.300	200.000	14.650	12.000	17.650	18.450	Bridge
2.500	14.600	16.300	18.100	100	16.000	200.000	15.000	12.000	18.000	18.800	
2.600				100	17.000	200.000	15.500	12.000	18.500	19.300	
2.600				100	17.000	200.000	17.000	12.000	20.000	20.800	Drop 4(h=1.5m)
2.900				100	20.000	200.000	18.500	12.000	21.500	22.300	
2.900				100	20.000	200.000	20.000	12.000	23.000	23.800	Drop 5(h=1.5m)
3.000	20.600	27.100	28.000	100	21.000	200.000	20.500	12.000	23.500	24.300	
3.200				100	23.000	200.000	21.500	12.000	24.500	25.300	
3.200				100	23.000	200.000	23.000	12.000	26.000	26.800	Drop 6(h=1.5m)
3.500	25.200	29.100	29.100	100	26.000	200.000	24.500	12.000	27.500	28.300	
3.500				100	26.000	200.000	26.000	12.000	29.000	29.800	Drop 7(h=1.5m)
3.800				100	29.000	200.000	27.500	12.000	30.500	31.300	
3.800				100	29.000	200.000	29.000	12.000	32.000	32.800	Drop 8(h=1.5m)
3.970	31.300	35.100	35.100	100	30.700	200.000	29.850	12.000	32.850	33.650	Bridge
3.970				100	30.700	200.000	30.700	12.000	33.700	34.500	Drop 9(h=0.85m)

Table 3.6 Design Features of River Improvement Works of Guadalupe River

Station No. (km)	Existing Condition			Average Slope (1/n)	Design Riverbed (EL. m)	Design Slope (w/ Drops) (1/n)	Design Riverbed (w/ Drops) (EL. m)	Design Channel Width (m)	Design High Water Level (EL. m)	Dike Crown (EL. m)	Note
	Deepest Riverbed (EL. m)	Dike Crown									
		Left (EL. m)	Right (EL. m)								
0.000	-0.970	2.000	2.000	400	-1.000	400.000	-1.000	25.000	2.000	2.800	
0.420	0.000	2.700	2.700	400	0.050	400.000	0.050	25.000	3.050	3.850	Bridge
0.500	0.500	3.800	3.800	400	0.250	400.000	0.250	25.000	3.250	4.050	
0.630	0.630	3.150	3.150	400	0.575	400.000	0.575	25.000	3.575	4.375	Bridge
0.920	2.000	6.100	6.100	400	1.300	400.000	1.300	25.000	4.300	5.100	Bridge
1.000				400	1.500	400.000	1.500	25.000	4.500	5.300	
1.100	2.000	4.300	4.000	200	2.000	200.000	2.000	25.000	5.000	5.800	
1.210	2.660	6.800	6.800	200	2.550	200.000	2.550	25.000	5.550	6.350	Bridge
1.450	3.590	9.700	9.700	200	3.750	200.000	3.750	25.000	6.750	7.550	Bridge
1.500	3.900	10.300	10.200	200	4.000	200.000	4.000	25.000	7.000	7.800	
2.000				200	6.500	200.000	6.500	25.000	9.500	10.300	
2.020	6.510	16.000	12.100	140	6.643	200.000	6.600	18.000	9.600	10.400	
2.500	10.800	17.300	15.500	140	10.071	200.000	9.000	18.000	12.000	12.800	
2.700				140	11.500	200.000	10.000	18.000	13.000	13.800	
2.700				140	11.500	200.000	11.500	18.000	14.500	15.300	Drop 1(h=1.5m)
2.940	13.910	19.500	19.500	140	13.214	200.000	12.700	18.000	15.700	16.500	Bridge
3.000	13.900	17.500	22.500	140	13.643	200.000	13.000	18.000	16.000	16.800	
3.400				140	16.500	200.000	15.000	18.000	18.000	18.800	
3.400				140	16.500	200.000	16.500	18.000	19.500	20.300	Drop 2(h=1.5m)
3.500	17.570	23.700	24.800	140	17.214	200.000	17.000	18.000	20.000	20.800	
3.760	19.370	22.900	25.000	140	19.071	200.000	18.300	18.000	21.300	22.100	
3.840	19.470	30.300	29.300	140	19.643	200.000	18.700	18.000	21.700	22.500	
4.000	21.600	31.800	31.800	140	20.786	200.000	19.500	18.000	22.500	23.300	Bridge
4.200				140	22.214	200.000	20.500	18.000	23.500	24.300	
4.200				140	22.214	200.000	22.214	18.000	25.214	26.014	Drop 3(h=1.714m)

Table 3.7 Design Features of River Improvement Works of Lahug River

Station No. (km)	Existing Condition			Average Slope (1/n)	Design Riverbed (EL. m)	Design Slope (w/ Drops) (1/n)	Design Riverbed (w/ Drops) (EL. m)	Design Channel Width (m)	Design High Water Level (EL. m)	Dike Crown (EL. m)	Note
	Deepest Riverbed (EL. m)	Dike Crown									
		Left (EL. m)	Right (EL. m)								
0.000	-1.000	2.400	2.400	400	-0.600	400.000	-0.600	20	1.900	2.500	Bridge
0.110	-0.590	2.900	2.900	400	-0.325	400.000	(0.325)	20	2.175	2.775	Bridge
0.300	0.610	2.600	2.600	400	0.150	400.000	0.150	20	2.650	3.250	Bridge
0.570	0.660	2.400	2.600	400	0.825	400.000	0.825	20	3.325	3.925	
0.620	0.660	2.500	2.500	400	0.950	400.000	0.950	20	3.450	4.050	Bridge
1.000	1.340	2.500	3.500	400	1.900	400.000	1.900	20	4.400	5.000	
1.040	1.080	3.700	3.700	400	2.000	400.000	2.000	20	4.500	5.100	Bridge
1.100		5.800	5.800	400	2.150	400.000	2.150	20	4.650	5.250	
1.300	2.430	5.800	5.800	200	3.150	200.000	3.150	14	5.650	6.250	
1.450	3.230	5.400	5.200	200	3.900	200.000	3.900	14	6.400	7.000	
1.560	3.674	6.600	6.600	200	4.450	200.000	4.450	14	6.950	7.550	
1.800	5.200	8.200	8.200	200	5.650	200.000	5.650	14	8.150	8.750	Bridge
2.000	6.220	8.700	8.900	200	6.650	200.000	6.650	14	9.150	9.750	
2.400	9.500	13.000	13.000	120	9.983	120.000	9.983	11	12.483	13.083	Bridge
2.560	10.330	15.100	15.100	120	11.317	120.000	11.317	11	13.817	14.417	Bridge
2.670	11.450	15.400	15.400	120	12.233	120.000	12.233	11	14.733	15.333	Bridge
2.730	12.640	15.400	15.400	120	12.733	120.000	12.733	11	15.233	15.833	Bridge
2.970	14.700	17.400	17.300	120	14.733	120.000	14.733	11	17.233	17.833	
3.000		21.500	21.500	120	14.983	120.000	14.983	11	17.483	18.083	
3.200	16.700	21.500	21.500	80	17.483	120.000	16.650	11	19.150	19.750	
3.360				80	19.483	120.000	17.983	11	20.483	21.083	
3.360				80	19.483	120.000	19.483	11	21.983	22.583	Drop 1(h=1.5m)
3.490	21.200	27.700	27.700	80	21.108	120.000	20.567	11	23.067	23.667	Bridge
3.720				80	23.983	120.000	22.483	11	24.983	25.583	
3.720				80	23.983	120.000	23.983	11	26.483	27.083	
4.040	27.500	30.000	29.500	80	27.983	120.000	26.650	11	29.150	29.750	
4.080				80	28.483	120.000	26.983	11	29.483	30.083	
4.080				80	28.483	120.000	28.483	11	30.983	31.583	Drop 2(h=1.5m)
4.440				80	32.983	120.000	31.483	11	33.983	34.583	
4.440				80	32.983	120.000	32.983	11	35.483	36.083	Drop 3(h=1.5m)
4.500	33.840	38.800	35.300	80	33.733	120.000	33.483	11	35.983	36.583	
4.800				80	37.483	120.000	35.983	11	38.483	39.083	
4.800				80	37.483	120.000	37.483	11	39.983	40.583	Drop 4(h=1.5m)
4.880	38.150	47.500	47.500	80	38.483	120.000	38.150	11	40.650	41.250	
5.000	40.170	44.200	44.500	80	39.983	120.000	39.150	11	41.650	42.250	
5.160				80	41.983	120.000	40.483	11	42.983	43.583	
5.160				80	41.983	120.000	41.983	11	44.483	45.083	Drop 5(h=1.5m)
5.500	51.400	61.300	57.000	80	46.233	120.000	44.817	11	47.317	47.917	
5.500				80	46.233	120.000	46.234	11	48.734	49.334	Drop 6(h=1.417)

Table 3.8 Design Features of River Improvement Works of Subang Daku River

Station No. survey (km)	Station No. river plan (km)	Distance (m)	Existing Condition			Average Slope (1/n)	Design Riverbed (EL. m)	Design Slope (w/ Drops) (1/n)	Design Riverbed (w/ Drops) (EL. m)	Design Channel Width (m)	Design High Water Level (EL. m)	Dike Crown (EL. m)	Note
			Deepest Riverbed (EL. m)	Dike Crown									
				Left (EL. m)	Right (EL. m)								
-0.250	-0.250		-1.500	2.700	2.600	500	-1.500	500.000	-1.500	27	1.500	2.100	
0.150	0.150	400.000	-0.300	2.800	2.800	500	-0.700	500.000	-0.700	27	2.300	2.900	Bridge
0.300	0.300	150.000		2.500	2.700	500	-0.400	500.000	-0.400	27	2.600	3.200	
1.000	0.460	160.000	1.100	2.500	2.700	500	-0.080	500.000	-0.080	27	2.920	3.520	
1.350	0.810	350.000	1.500	4.210	4.210	500	0.620	500.000	0.620	27	3.620	4.220	Bridge
1.590	1.050	240.000	1.600	4.100	3.600	500	1.100	500.000	1.100	27	4.100	4.700	
2.000	1.460	410.000				500	1.920	500.000	1.920	27	4.920	5.520	
2.120	1.580	120.000	2.700	4.500	6.300	250	2.400	250.000	2.400	26	5.400	6.000	
2.550	2.010	430.000	4.000	6.000	6.900	250	4.120	250.000	4.120	26	6.620	7.220	
2.640	2.100	90.000	5.000	10.000	10.000	250	4.480	250.000	4.480	26	6.980	7.580	
2.688	2.148	48.000	5.000	8.000	8.000	250	4.672	250.000	4.672	26	7.172	7.772	
2.985	2.445	297.000	6.100	8.700	8.700	250	5.860	250.000	5.860	26	8.360	8.960	Bridge
3.000	2.460	15.000				250	5.920	250.000	5.920	26	8.420	9.020	
3.200	2.660	200.000				100	7.920	250.000	6.720	26	9.220	9.820	
3.200	2.660	0.000				100	7.920	250.000	7.920	26	10.420	11.020	Drop 1(h=1.2m)
3.400	2.860	200.000				100	9.920	200.000	8.920	16	11.420	12.020	
3.400	2.860	0.000				100	9.920	200.000	9.920	16	12.420	13.020	Drop 2(h=1m)
3.500	2.960	100.000	11.100	12.800	12.600	100	10.920	200.000	10.420	16	12.920	13.520	Bridge
3.600	3.060	100.000				100	11.920	200.000	10.920	16	13.420	14.020	
3.600	3.060	0.000				100	11.920	200.000	11.920	16	14.420	15.020	Drop 3(h=1m)
3.750	3.210	150.000	13.900	16.400	16.400	100	13.420	200.000	12.670	16	15.170	15.770	Bridge
3.800	3.260	50.000				100	13.920	200.000	12.920	16	15.420	16.020	
3.800	3.260	0.000				100	13.920	200.000	13.920	16	16.420	17.020	Drop 4(h=1m)
4.000	3.460	200.000				100	15.920	200.000	14.920	16	17.420	18.020	
4.000	3.460	0.000				100	15.920	200.000	15.920	16	18.420	19.020	Drop 5(h=1m)
4.060	3.520	60.000	16.900	20.000	20.000	100	16.520	200.000	16.220	16	18.720	19.320	Bridge
4.200	3.660	140.000				100	17.920	200.000	16.920	16	19.420	20.020	
4.200	3.660	0.000				100	17.920	200.000	17.920	16	20.420	21.020	Drop 6(h=1m)
4.400	3.860	200.000				100	19.920	200.000	18.920	16	21.420	22.020	
4.400	3.860	0.000				100	19.920	200.000	19.920	16	22.420	23.020	Drop 7(h=1m)
4.500	3.960	100.000	24.100	25.900	25.400	100	20.920	200.000	20.420	16	22.920	23.520	Bridge
4.550	4.010	50.000				50	21.920	200.000	20.670	16	22.870	23.470	
4.550	4.010	0.000				50	21.920	200.000	21.920	16	24.120	24.720	Drop 8(h=1.25m)
4.650	4.110	100.000				50	23.920	100.000	22.920	12	25.120	25.720	
4.650	4.110	0.000				50	23.920	100.000	23.920	12	26.120	26.720	Drop 9(h=1m)
4.720	4.180	70.000	26.300	30.400	30.400	50	25.320	100.000	24.620	12	26.820	27.420	
4.750	4.210	30.000				50	25.920	100.000	24.920	12	27.120	27.720	
4.750	4.210	0.000				50	25.920	100.000	25.920	12	28.120	28.720	Drop 10(h=1m)
4.840	4.300	90.000	28.900	36.200	36.200	50	27.720	100.000	26.820	12	29.020	29.620	
4.850	4.310	10.000				50	27.920	100.000	26.920	12	29.120	29.720	Bridge
4.850	4.310	0.000				50	27.920	100.000	27.920	12	30.120	30.720	Drop 11(h=1m)
4.950	4.410	100.000				50	29.920	100.000	28.920	12	31.120	31.720	
4.950	4.410	0.000				50	29.920	100.000	29.920	12	32.120	32.720	Drop 12(h=1m)
5.050	4.510	100.000				50	31.920	100.000	30.920	12	33.120	33.720	
5.050	4.510	0.000				50	31.920	100.000	31.920	12	34.120	34.720	Drop 13(h=1m)
5.150	4.610	100.000				50	33.920	100.000	32.920	12	35.120	35.720	
5.150	4.610	0.000				50	33.920	100.000	33.920	12	36.120	36.720	Drop 14(h=1m)
5.250	4.710	100.000				50	35.920	100.000	34.920	12	37.120	37.720	
5.250	4.710	0.000				50	35.920	100.000	35.920	12	38.120	38.720	Drop 15(h=1m)
5.350	4.810	100.000	39.100	41.600	42.000	50	37.920	100.000	36.920	12	39.120	39.720	
5.350	4.810	0.000				50	37.920	100.000	37.920	12	40.120	40.720	Drop 16(h=1m)
5.450	4.910	100.000				50	39.920	100.000	38.920	12	41.120	41.720	
5.450	4.910	0.000				50	39.920	100.000	39.920	12	42.120	42.720	Drop 17(h=1m)
5.540	5.000	90.000	41.800	46.400	48.400	50	41.720	100.000	40.820	12	43.020	43.620	
5.540	5.000	0.000	41.800	46.400	48.400	50	41.720	100.000	41.720	12	43.920	44.520	Drop 18(h=0.9m)

Table 3.9 Design Features of River Improvement Works of Anilao River

Station No. (Survey)	Station No. (River Plan)	Distance (km)	Existing Condition			Average Slope (1/n)	Design Riverbed (EL. m)	Design Slope (w/ Drops) (1/n)	Design Riverbed (w/ Drops) (EL. m)	Design Channel Width (m)	Design High Water Level (EL. m)	Dike Crown (EL. m)	Note
			Deepest Riverbed (EL. m)	Left Dike Crown (EL. m)	Right Dike Crown (EL. m)								
0.000	0.000	0.000	-1.400	2.100	1.600	250.0	-1.500	-1.500	45.000	2.500	3.500		
0.100	0.100	0.100	-0.320	2.480	2.860	250.0	-1.100	250.0	-1.100	45.000	2.900	3.900	
0.153	0.163	0.063	0.800	2.500	2.700	250.0	-0.888	250.0	-0.848	45.000	3.152	4.152	
0.200	0.200	0.037	0.510	2.510	4.190	250.0	-0.700	250.0	-0.700	45.000	3.300	4.300	Alegria Br.
0.300	0.300	0.100	0.350	4.200	4.800	250.0	-0.300	250.0	-0.300	45.000	3.700	4.700	
0.400	0.400	0.100	0.260	4.880	4.740	250.0	0.100	250.0	0.100	45.000	4.100	5.100	
0.500	0.480	0.080	0.900	4.400	4.700	250.0	0.500	250.0	0.420	45.000	4.420	5.420	Spillway
0.600	0.600	0.120	1.140	4.220	5.100	250.0	0.900	250.0	0.900	45.000	4.900	5.900	
0.690	0.700	0.100	1.240	4.600	5.000	250.0	1.260	250.0	1.300	45.000	5.300	6.300	
0.800	0.800	0.100	1.790	6.800	7.460	250.0	1.700	250.0	1.700	45.000	5.700	6.700	
0.900	0.900	0.100	2.220	5.810	8.380	125.0	2.500	250.0	2.100	45.000	6.100	7.100	
1.040	0.955	0.055	3.470	8.700	8.700	125.0	3.620	250.0	2.320	45.000	6.320	7.320	Drop
1.040	0.955	0.000				125.0	3.620	250.0	4.070	45.000	8.070	9.070	Anilao Br.
1.100	1.000	0.045	4.200	10.200	7.700	125.0	4.100	250.0	4.250	45.000	8.250	9.250	
1.205	1.100	0.100	4.900	10.200	8.800	125.0	4.940	250.0	4.650	45.000	8.650	9.650	
1.300	1.200	0.100	5.930	11.300	10.200	125.0	5.700	250.0	5.050	45.000	9.050	10.050	
1.400	1.200	0.100	6.530	10.600	10.100	125.0	6.500	250.0	5.450	45.000	9.450	10.450	
1.500	1.400	0.100	8.300	11.400	16.800	125.0	7.300	250.0	5.850	45.000	9.850	10.850	
1.550	1.445	0.045				125.0	7.700	250.0	6.030	45.000	10.030	11.030	
1.550	1.445	0.000				125.0	7.700	250.0	7.780	45.000	11.780	12.780	
1.600	1.495	0.050	8.520	12.100	13.400	90.0	8.256	180.0	8.058	45.000	12.058	13.058	
1.700	1.595	0.100	8.940	14.100	14.000	90.0	9.367	180.0	8.613	45.000	12.613	13.613	
1.800	1.695	0.100	10.560	15.100	16.900	90.0	10.478	180.0	9.169	45.000	13.169	14.169	
1.820	1.710	0.015				90.0	10.700	180.0	9.252	45.000	13.252	14.252	
1.820	1.710	0.000				90.0	10.700	180.0	10.752	45.000	14.752	15.752	Drop
1.900	1.795	0.085	11.610	16.000	15.600	90.0	11.589	180.0	11.224	45.000	15.224	16.224	
2.000	1.825	0.030	12.410	14.500	20.200	90.0	12.700	180.0	11.391	45.000	15.391	16.391	
2.090	2.090	0.265				90.0	13.700	180.0	12.863	45.000	16.863	17.863	
2.090	2.090	0.000				90.0	13.700	180.0	12.863	45.000	16.863	17.863	Drop
2.100	2.100	0.010	12.510	14.900	22.900	90.0	13.811	180.0	12.919	45.000	16.919	17.919	
2.200	2.200	0.100	14.290	15.800	25.800	90.0	14.922	180.0	13.474	45.000	17.474	18.474	
2.300	2.300	0.100	15.660	17.700	19.400	90.0	16.033	180.0	14.030	45.000	18.030	19.030	
2.360	2.360	0.060				90.0	16.700	180.0	14.363	45.000	18.363	19.363	
2.360	2.360	0.000				90.0	16.700	180.0	14.363	45.000	18.363	19.363	Drop
2.400	2.400	0.040	17.300	19.500	19.600	90.0	17.144	180.0	14.586	45.000	18.586	19.586	
2.500	2.500	0.100	18.600	56.800	22.200	90.0	18.256	180.0	15.141	45.000	19.141	20.141	

Table 3.10 Design Features of River Improvement Works of Malbasag River

Station No. (Survey)	Station No. (River Plan)	Distance (m)	Existing Condition			Average Slope (1/n)	Design Riverbed (EL. m)	Design Slope (w/ Drops) (1/n)	Design Riverbed (w/ Drops) (EL. m)	Design Channel Width (m)	Design High Water Level (EL. m)	Dike Crown (EL. m)	Note
			Deepest Riverbed (EL. m)	Dike Crown Left (EL. m)	Dike Crown Right (EL. m)								
0.000	0.000	0.000	0.200	2.600	2.900		-1.000		-1.000	35.000	2.000	2.800	
0.100	0.090	0.090	0.170	3.250	2.700	200.0	-0.500	200.0	-0.550	35.000	2.450	3.250	
0.200	0.183	0.093	0.230	3.070	2.300	200.0	0.000	200.0	-0.085	35.000	2.915	3.715	
0.230	0.237	0.054	0.400	4.300	4.300	200.0	0.150	200.0	0.185	35.000	3.185	3.985	Malbasag Br.
0.300	0.277	0.040	0.380	2.780	3.090	200.0	0.500	200.0	0.385	35.000	3.385	4.185	
0.400	0.377	0.100	0.970	1.390	2.040	200.0	1.000	200.0	0.885	35.000	3.885	4.685	
0.400	0.430	0.053				200.0	1.000	200.0	1.150	35.000	4.150	4.950	
0.500	0.496	0.066	2.000	3.150	4.800	200.0	1.500	200.0	1.480	35.000	4.480	5.280	Spillway
0.600	0.530	0.034	1.950	3.050	4.870	200.0	2.000	200.0	1.650	35.000	4.650	5.450	
0.690	0.640	0.110	2.800	5.800	5.500	200.0	2.450	200.0	2.200	35.000	5.200	6.000	
0.800	0.720	0.080	3.360	4.660	6.260	200.0	3.000	200.0	2.600	35.000	5.600	6.400	
0.900	0.820	0.100	3.940	5.300	6.510	200.0	3.500	200.0	3.100	35.000	6.100	6.900	
1.000	0.875	0.055	4.700	6.400	7.300	200.0	4.000	200.0	3.375	35.000	6.375	7.175	
1.000	0.875	0.000				200.0	4.000	200.0	4.375	35.000	7.375	8.175	Drop h=1.0m
1.200	0.970	0.095	5.770	12.340	6.410	100.0	6.000	200.0	4.850	33.000	7.850	8.650	
1.205	1.035	0.065	6.760	7.930	8.890	100.0	6.050	200.0	5.175	33.000	8.175	8.975	
1.300	1.110	0.075	7.540	8.840	9.150	100.0	7.000	200.0	5.550	33.000	8.550	9.350	
1.300	1.110	0.000				100.0	7.000	200.0	7.050	33.000	10.050	10.850	Drop h=1.5m
1.400	1.200	0.090	8.520	9.690	10.260	100.0	8.000	200.0	7.500	33.000	10.500	11.300	
1.500	1.296	0.096	9.900	12.700	12.800	100.0	9.000	200.0	7.980	33.000	10.980	11.780	
1.600	1.398	0.102	10.320	12.140	14.760	100.0	10.000	200.0	8.490	33.000	11.490	12.290	
1.600	1.398	0.000				100.0	10.000	200.0	9.990	33.000	12.990	13.790	Drop h=1.5m
1.700	1.498	0.100	11.420	12.990	14.000	100.0	11.000	200.0	10.490	33.000	13.490	14.290	
1.800	1.598	0.100	12.330	17.010	17.110	100.0	12.000	200.0	10.990	33.000	13.990	14.790	
1.900	1.700	0.102	13.950	15.010	16.260	100.0	13.000	200.0	11.500	33.000	14.500	15.300	
1.900	1.700	0.000				100.0	13.000	200.0	13.000	33.000	16.000	16.800	Drop h=1.5m
2.000	1.800	0.100	13.300	16.400	16.600	100.0	14.000	200.0	13.500	33.000	16.500	17.300	
2.100	1.900	0.100	17.410	20.450	22.540	50.0	16.000	200.0	14.000	30.000	17.000	17.800	

Table 3.11 Basic Dimensions of Alternatives of Jaro Floodway Diversion Discharge

	Unit	Case 1	Case 2	Case 3	Case 4	Case 5
Planning Condition						
Design Discharge						
River M.-L.P. FW	m3/s	150.000	150.000	150.000	150.000	150.000
La Paz Floodway	m3/s	1,250.000	920.000	650.000	400.000	150.000
L.P.FW - STA 10.000	m3/s	1,400.000	1,070.000	800.000	550.000	300.000
STA 10 - STA 16.162	m3/s	1,400.000	1,070.000	800.000	550.000	300.000
Tigum River	m3/s	610.000	610.000	610.000	610.000	610.000
Aganan River	m3/s	800.000	800.000	800.000	800.000	800.000
Jaro Floodway	m3/s	0.000	330.000	600.000	850.000	1,100.000
River-Bed Slope						
River M.-L.P. FW	1/n	5,000.000	5,000.000	5,000.000	5,000.000	5,000.000
La Paz Floodway	1/n	2,500.000	2,500.000	2,500.000	2,500.000	2,500.000
L.P.FW - STA 10.000	1/n	2,500.000	2,500.000	2,500.000	2,500.000	2,500.000
STA 10.000 - STA 16.162	1/n	1,500.000	1,500.000	1,500.000	1,500.000	1,500.000
Tigum River	1/n	1,000.000	1,000.000	1,000.000	1,000.000	1,000.000
Aganan River	1/n	1,000.000	1,000.000	1,000.000	1,000.000	1,000.000
Jaro Floodway	1/n	--	750.000	750.000	750.000	750.000
Channel Width						
River M.-L.P. FW	m	--	--	--	--	--
La Paz Floodway	m	130.000	95.000	55.000	30.000	25.000
L.P.FW - STA 10.000	m	102.000	77.000	56.000	36.000	20.000
STA 10.000 - STA 16.162	m	78.000	58.000	42.000	27.000	11.000
Tigum River	m	23.000	23.000	23.000	23.000	23.000
Aganan River	m	33.000	33.000	33.000	33.000	33.000
Jaro Floodway	m	--	12.000	36.000	50.000	70.000
Water Depth						
River M.-L.P. FW	m					
La Paz Floodway	m	5.00	5.00	5.00	5.00	5.00
L.P.FW - STA 10.000	m	6.00	6.00	6.00	6.00	6.00
STA 10.000 - STA 16.162	m	6.00	6.00	6.00	6.00	6.00
Tigum River	m	6.00	6.00	6.00	6.00	6.00
Aganan River	m	6.00	6.00	6.00	6.00	6.00
Jaro Floodway	m	--	5.00	5.00	4.80	4.50

Table 3.12 Comparison of Construction Cost of Alternatives on Jaro FW Diversion Discharge

Work Items	Unit	Unit Cost (Pence)	Case 1		Case 2		Case 3		Case 4		Case 5	
			Quantity	Amount (1000 P)	Quantity	Amount (1000 P)	Quantity	Amount (1000 P)	Quantity	Amount (1000 P)	Quantity	Amount (1000 P)
I. Main Construction Cost				1,254,979	1,154,213	1,066,715	912,137	965,779				
1. Preparatory Works				103,717	96,389	86,158	75,385	79,816				
2. Main Work				1,037,373	953,893	881,563	733,848	796,165				
(1) Excavation	m3	83	6,487,000	538,421	5,183,000	4,449,000	3,069,000	254,727	3,460,750			
(2) Embankment	m3	132	323,000	42,636	479,000	479,000	463,000	61,116	452,000			
(3) Backfill	m3	73	0	0	0	0	0	0	0			
(4) Drilling	m3	71	0	0	0	0	0	0	0			
(5) Revestment	m3	55	32,500	1,786	45,750	35,750	32,000	1,760	39,133			
(6) MFC Protection	m	17,500	10,900	190,750	10,900	190,750	10,900	190,750	10,900			
(7) Sodding	m	19,400	1,000	19,400	1,000	19,400	1,000	19,400	1,000			
(8) Gravel Pavement	m	27,800	1,600	44,480	1,600	44,480	1,600	44,480	1,600			
(9) Concrete Dike	m	29,400	0	0	0	0	0	0	0			
(10) Diversion Works	m2	150	275,000	41,250	275,000	275,000	275,000	41,250	275,000			
a. Lapaz Floodway	m2	19	197,000	3,743	252,000	252,000	252,000	4,788	4,788			
b. Jaro Floodway	m2	105	123,100	12,926	152,000	152,000	152,000	15,960	15,960			
(11) Sluice	m	20,000	0	0	0	0	0	0	0			
(12) Jetty	m	40,600	52	3,151	52	3,151	52	3,151	52			
(13) Jetty Siphon	m	27,100	130	3,523	93	1,491	2,575	55	1,355			
(14) Bridge	m	118,000	44	5,192	66	10,102	64	5,664	5,192			
(15) Bridge Protection	m	249,700	2	1,473	2	1,473	2	1,473	2			
3. Miscellaneous Works	m	249,700	10	2,497	10	2,497	10	2,497	10			
(1) Land Acquisition	m2	5,900	5,900	2,950	5,900	5,900	5,900	2,950	5,900			
(2) House Compensation	m2	898,100	0	0	0	0	0	0	0			
(3) Administration Cost	m2	979,400	0	0	0	0	0	0	0			
(4) Physical Contingency	m2	22,989	5,350	122,991	4,990	114,715	4,500	103,451	2,068	3,154		
(5) Engineering Services	m2	5,130	0	0	0	0	0	0	91,956	4,010		
(6) Miscellaneous Works	m2	114,089	0	0	0	0	0	0	82,923	0		
(7) Land Acquisition	m2	892,913	0	0	0	0	0	0	457,553	0		
(8) Physical Contingency	m2	776,586	738,200	776,586	604,858	490,680	370,000	389,240	334,400			
(9) Engineering Services	m2	14,904	373,600	21,107	22,850	21,107	22,850	21,107	21,664			
(10) House Compensation	m2	3,150	63,000	4,803	91,800	4,950	94,000	4,700	5,105			
(11) Administration Cost	m2	1,111	222,200	178,300	894	150,500	123,000	625	107,900			
(12) Physical Contingency	m2	848	848	74,873	516	516	362	40,508	271			
(13) Engineering Services	m2	107,395	107,395	93,027	83,444	83,444	68,485	68,485	68,485			
(14) Physical Contingency	m2	338,200	338,200	293,056	262,848	262,848	215,729	215,729	216,934			
(15) Engineering Services	m2	2,593,379	2,593,379	2,246,611	2,015,168	2,015,168	1,653,994	1,653,994	1,603,103			
(16) Administration Cost	m2	300,797	300,797	184,674	179,674	179,674	145,945	145,945	145,945			
(17) Physical Contingency	m2	2,794,376	2,794,376	2,431,285	2,185,842	2,185,842	1,799,869	1,799,869	1,717,487			
Grand Total												

Table 3.13 Cost Comparison of Construction cost for Alternative Plans on Diversion Points

	Unit	Unit Cost	CASE 1		CASE 2		CASE 3	
			Quantity	Amount	Quantity	Amount	Quantity	Amount
River Improvement				72,140		156,404		211,880
Excava STA.13+505-	m3	83	14,000	1,165	462,000	38,429	462,000	38,429
STA.15+040-	m3	83	49,000	4,076	49,000	4,076	396,000	32,939
STA.16+250-	m3	83	130,000	10,813	130,000	10,813	130,000	10,813
TOTAL	m3	83	193,000	16,054	641,000	53,318	988,000	82,182
Embankment	m3	132	157,000	20,782	138,000	18,267	121,000	16,017
Revetm h=6m	m	17,500	1,100	19,250	1,800	31,500	1,800	31,500
Compensation				4,260		16,194		28,500
Residential	m2	1,052	1,854	1,950	8,509	8,951	16,951	17,833
Farm Lnad	m2	40	9,268	371	42,543	1,702	84,756	3,390
Fishpond	m2	50	0	0	0	0	0	0
Other house	m2	5	7,414	37	34,034	170	67,804	339
	no.	111,900	17	1,902	48	5,371	62	6,938
				76,400		172,598		240,380
Floodway				207,314		187,019		157,464
Excava Floodway		83	1,475,000	122,425	1,603,000	133,049	1,150,000	95,450
W.S. Basin		83	200,000	16,600	0	0	0	0
Embankment		132	140,000	18,480	160,000	21,120	270,000	35,640
Revetm h=4.8m		1,427	2,000	2,854	0	0	0	0
h=5.5m		1,615	0	0	2,000	3,231	0	0
h=6m		1,750	0	0	300	525	2,300	4,025
h=7.2m		1,940	1,000	1,940	0	0	0	0
Bridge		22,989	1,200	27,587	960	22,069	720	16,552
Invert D=0.8m		898,100	1	898	1	862	1	647
D=1.0m		979,400	2	1,959	2	1,880	1	1,410
Groundsill		27,100	50	1,355	158	4,282	138	3,740
Fixed weir		118,000	112	13,216	0	0	0	0
Compensation				79,468		71,446		67,289
residential		1,052	53,000	55,756	46,113	48,510	43,400	45,657
paddy		40	400,000	16,000	394,400	15,776	371,200	14,848
Fish Pond		50	58,000	2,900	51,425	2,571	48,400	2,420
house		111,900	43	4,812	41	4,588	39	4,364
				286,781		258,464		224,753
				363,181		431,062		465,133

Table 3.14 Project Cost of River Improvement Works for Iloilo City (Alternative Plan, La Paz Floodway)

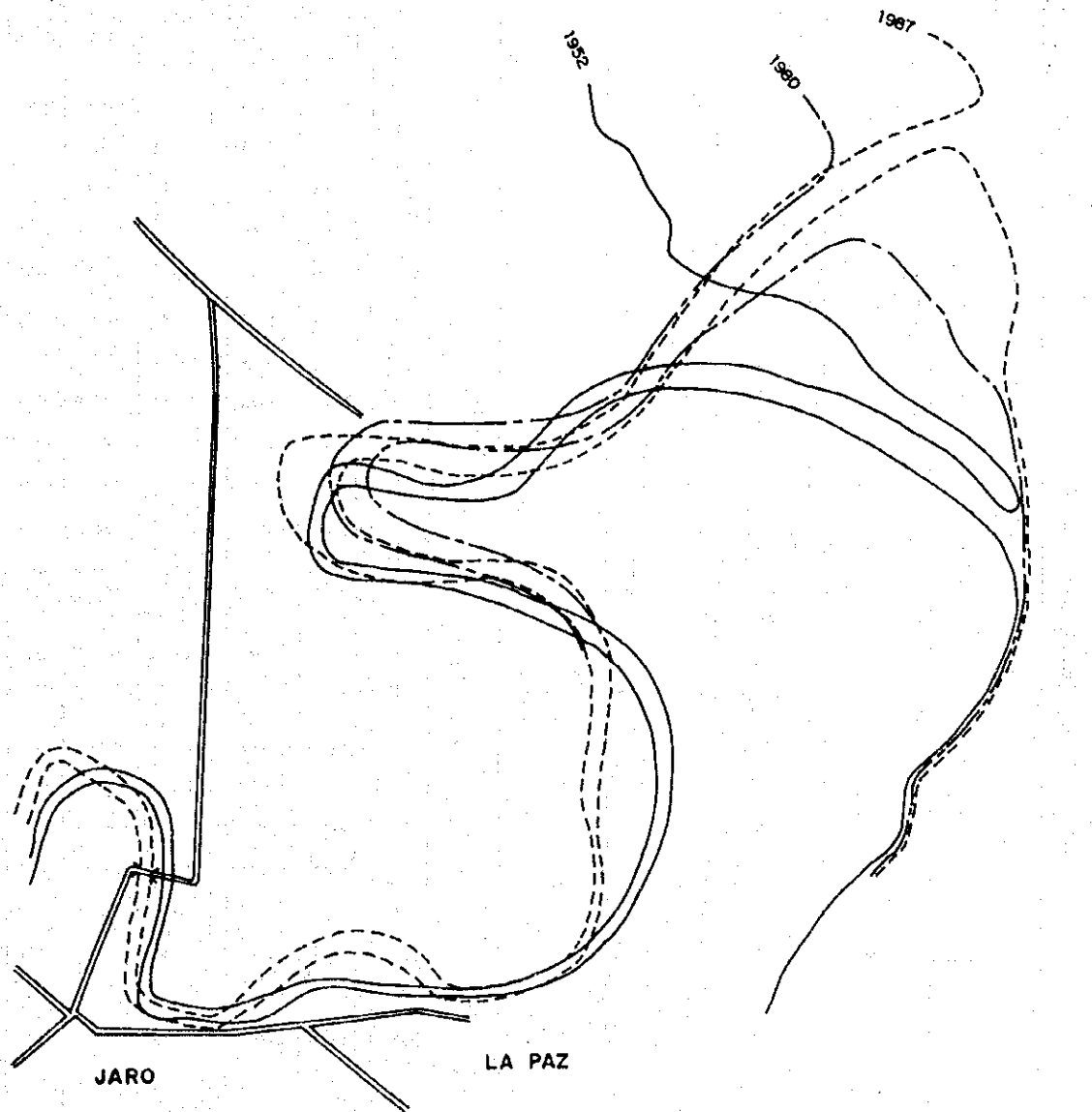
Work Items	WITH FLOODWAY					WITHOUT FW				
	Unit	Unit Cost (Pesos)	River Mouth		TOTAL	La Paz Floodway		TOTAL	River Mouth	
			Quantity	Amount (1000 P)		Quantity	Amount (1000 P)		Quantity	Amount (1000 P)
I. Main Construction Cost					66,139	25,619	91,757			124,430
1. Preparatory Works					5,466	2,117	7,583			10,283
2. Main Work					54,660	21,172	75,832			102,835
(1) Excavation	m3	83	0	64,000	5,312	0	5,312	0	0	0
(2) Embankment	m3	132	5,000	22,000	2,904	0	2,904	69,300	9,148	9,148
Dredging	m3	55	0	10,000	550	0	550	780,000	42,900	42,900
(3) Revetment	m	27,800	1,600	44,480	0	0	0	44,480	0	0
Revetment	m	29,400	0	0	0	0	0	0	0	0
(4) Sodding	m2	19	21,600	8,400	160	0	160	30,000	570	47,040
(5) Gravel Pavement	m2	105	14,600	3,800	399	0	399	18,400	739	739
(6) Diversion Works					1,533	0	1,533	0	0	1,533
a. La Paz Floodway										
Conc. Weir H=0.7m (River)	m	60,600	52	3,151	0	0	0	52	3,151	0
Groundsill (FW)	m	27,100	0	30	813	0	813	30	0	0
Type 1(1x1x1, L=12m)	nos.	737,700	2	1,475	0	0	0	2	1,475	2
(7) Sluice	m3	500	5,900	2,950	0	0	0	5,900	2,950	0
(8) Jetty	m2	22,989	0	480	11,035	0	11,035	480	11,035	0
(9) Bridge					6,013	2,329	8,342	0	0	11,312
3. Miscellaneous Works					960	2,372	3,332	0	0	1,728
II. Compensation Cost										
(1) Land Acquisition										
Residential 1	m2	1,052	0	0	0	0	0	0	0	0
Farmland	m2	40	5,000	200	0	0	0	5,000	200	360
Fishpond	m2	50	11,000	550	25,000	1,250	1,800	36,000	1,800	990
Other	m2	5	42,000	210	23,000	115	65,000	325	75,600	378
(2) House Compensation	nos.	111,900	0	9	1,007	9	1,007	9	1,007	0
III. Administration Cost (5% of I+2)					3,355	1,400	4,754	0	0	6,308
IV. Physical Contingency (15% of I+II+III)					10,568	4,409	14,977	0	0	19,870
Total of I to IV					81,022	33,799	114,820	0	0	152,336
V. Engineering Services (16% of I to IV)					10,582	4,099	14,681	0	0	19,909
Grand Total					91,604	37,898	129,501	0	0	172,245

Table 3-15 Project Cost of River Improvement Works (Anilao Bridge Short cut)

Work Items	Unit	Unit Cost (Pesos)	Existing River C.		Short-Cut Channel	
			Quantity	Amount (1000 P)	Quantity	Amount (1000 P)
I. Main Construction Cost				49,611		43,289
1. Preparatory Works				4,100		3,578
2. Main Work				41,001		35,776
(1) Excavation	m3	81	62,000	5,022	67,000	5,427
(2) Embankment	m3	108	9,000	972	14,300	1,544
(3) Backfill	m3	71	0	0	40,000	2,840
(4) Revetment						
(H=4m)	m	12,400	430	5,332	800	9,920
(H=6.5m)	m	17,300	530	9,169	0	0
(5) MFC Protection	m2	148	0	0	5,600	829
(6) River bed protection	t=20cm	2,915	1,800	5,247	0	0
(7) Sodding	m2	16	4,293	69	3,578	57
(8) Gravel Pavement	m2	66	2,880	190	2,400	158
(9) Drops	H=1.0m	48,300	40	1,932	40	1,932
(10) Sluice	1.2x1.2x2, L=16m	1,834,500	1	1,835	1	1,835
(11) Bridge	m2	23,403	480	11,233	480	11,233
3. Miscellaneous Works				4,510		3,935
II. Compensation Cost				6,073		9,059
(1) Land Acquisition	Residential 2	280	10,200	2,856	16,600	4,648
(2) House Evacuation		91,900	35	3,217	48	4,411
Grand Total				55,683		52,348

FIGURES

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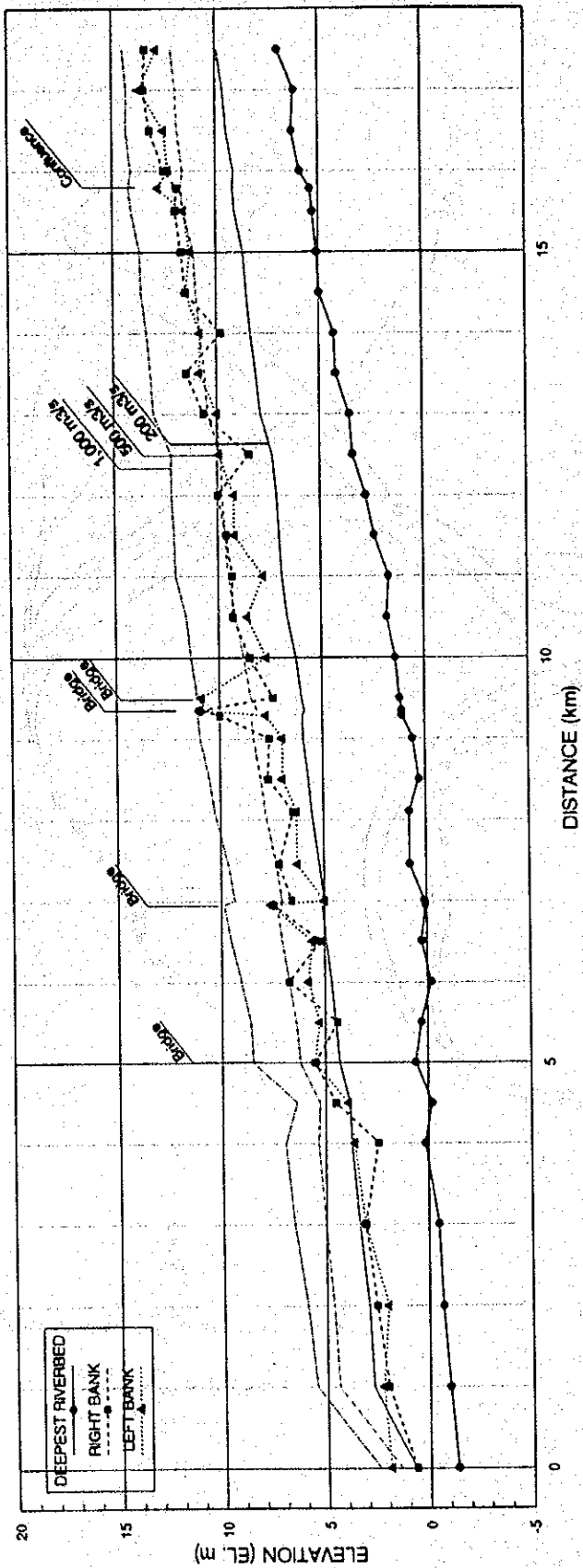
LEGEND :

- 1952
- - - 1980
- · - · 1987

THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.1
Change of River Mouth of Jaro River

LONGITUDINAL PROFILE
JARO RIVER (LOWER), ILOILO CITY

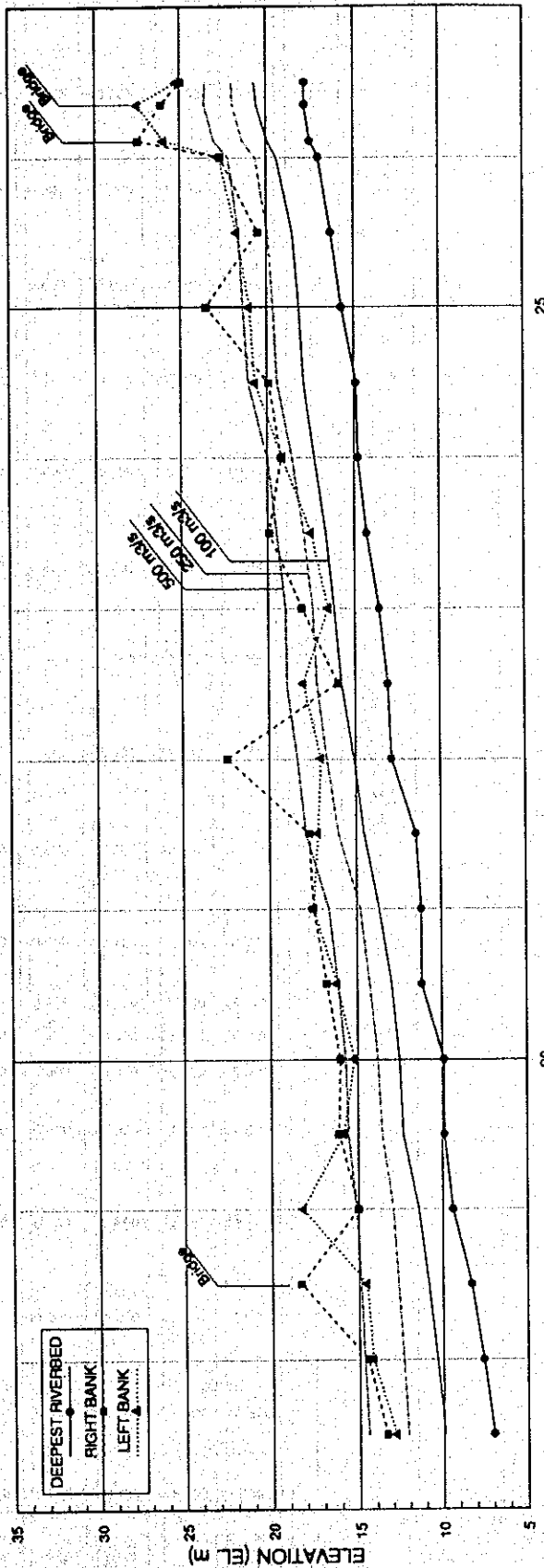


STATION No.	DISTANCE	DEEPEST RIVERBED	RIGHT BANK	LEFT BANK	AVERAGE SLOPE
0.000	0.000	1.350	0.850	1.900	
1.000	1.000	1.000	2.000	2.250	
2.000	1.000	10.700	2.550	2.000	
3.000	1.000	10.500	3.100	3.100	
4.000	1.000	0.150	2.450	3.800	
5.000	0.800	0.600	5.500	5.500	
5.500	0.900	0.300	4.400	5.300	
6.000	0.500	0.200	8.750	5.800	
6.500	0.500	0.250	8.200	6.600	
7.000	0.450	0.050	7.500	7.600	
7.500	0.450	0.050	6.800	7.900	
8.000	0.400	0.300	7.700	7.000	
8.100	0.650	0.800	6.500	6.300	
8.500	0.450	0.800	7.200	6.300	
8.800	0.500	1.800	9.300	8.800	
9.000	0.500	1.400	8.500	7.700	
9.200	0.500	2.400	8.800	8.200	
9.300	0.500	2.800	10.000	8.200	
9.400	0.500	3.400	8.450	8.900	
9.500	0.500	3.550	10.850	10.000	
9.600	0.500	4.200	11.500	10.850	
9.700	0.500	4.300	8.800	10.800	
9.800	0.500	5.000	11.500	11.500	
9.900	0.500	5.100	11.700	11.300	
10.000	0.500	5.300	12.000	11.800	
10.100	0.220	5.400	12.300	12.300	
10.200	0.220	5.800	12.500	12.500	
10.300	0.500	6.300	13.200	12.500	
10.400	0.500	6.200	13.500	13.700	
10.500	0.500	6.300	13.200	12.850	
10.600	0.500	7.000	13.400	12.850	
10.700	0.500	7.280	13.500	12.850	
10.800	0.500	7.500	13.700	12.850	
10.900	0.500	7.750	13.900	12.850	
11.000	0.500	8.000	14.100	12.850	
11.100	0.500	8.250	14.300	12.850	
11.200	0.500	8.500	14.500	12.850	
11.300	0.500	8.750	14.700	12.850	
11.400	0.500	9.000	14.900	12.850	
11.500	0.500	9.250	15.100	12.850	
11.600	0.500	9.500	15.300	12.850	
11.700	0.500	9.750	15.500	12.850	
11.800	0.500	10.000	15.700	12.850	
11.900	0.500	10.250	15.900	12.850	
12.000	0.500	10.500	16.100	12.850	
12.100	0.500	10.750	16.300	12.850	
12.200	0.500	11.000	16.500	12.850	
12.300	0.500	11.250	16.700	12.850	
12.400	0.500	11.500	16.900	12.850	
12.500	0.500	11.750	17.100	12.850	
12.600	0.500	12.000	17.300	12.850	
12.700	0.500	12.250	17.500	12.850	
12.800	0.500	12.500	17.700	12.850	
12.900	0.500	12.750	17.900	12.850	
13.000	0.500	13.000	18.100	12.850	
13.100	0.500	13.250	18.300	12.850	
13.200	0.500	13.500	18.500	12.850	
13.300	0.500	13.750	18.700	12.850	
13.400	0.500	14.000	18.900	12.850	
13.500	0.500	14.250	19.100	12.850	
13.600	0.500	14.500	19.300	12.850	
13.700	0.500	14.750	19.500	12.850	
13.800	0.500	15.000	19.700	12.850	
13.900	0.500	15.250	19.900	12.850	
14.000	0.500	15.500	20.100	12.850	
14.100	0.500	15.750	20.300	12.850	
14.200	0.500	16.000	20.500	12.850	
14.300	0.500	16.250	20.700	12.850	
14.400	0.500	16.500	20.900	12.850	
14.500	0.500	16.750	21.100	12.850	
14.600	0.500	17.000	21.300	12.850	
14.700	0.500	17.250	21.500	12.850	
14.800	0.500	17.500	21.700	12.850	
14.900	0.500	17.750	21.900	12.850	
15.000	0.500	18.000	22.100	12.850	

THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.2(1/3)
Longitudinal Profile of Jaro River (Jaro)

**LONGITUDINAL PROFILE
JARO RIVER (UPPER), ILOILO CITY**

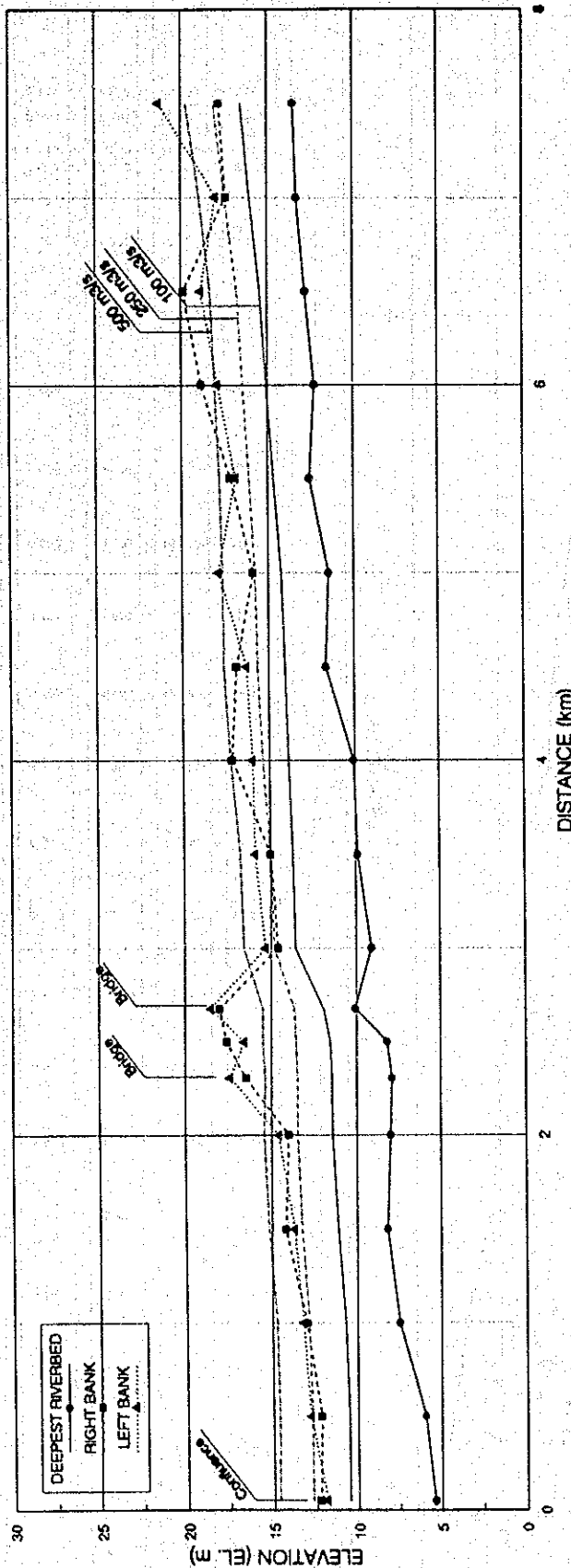


STATION No.	DISTANCE	DEEPEST RIVERBED	RIGHT BANK	LEFT BANK	AVERAGE SLOPE
17.500	0.500	7.000	13.400	12.850	
18.000	0.500	7.800	14.500	14.200	
18.500	0.500	8.300	18.300	14.550	
19.000	0.500	9.400	15.000	18.200	
19.500	0.500	8.900	16.100	15.800	
20.000	0.500	9.900	16.000	15.200	
20.500	0.500	11.200	16.750	16.150	
21.000	0.500	11.200	17.500	17.500	
21.500	0.500	11.500	17.700	17.200	
22.000	0.500	12.900	22.400	17.000	
22.500	0.500	13.100	16.000	18.000	
23.000	0.500	13.600	18.050	18.500	
23.500	0.500	14.300	19.900	17.500	
24.000	0.500	14.800	19.200	18.150	
24.500	0.500	14.900	18.900	20.700	
25.000	0.500	15.700	23.500	21.000	
25.500	0.500	16.300	20.900	21.700	
26.000	0.500	17.000	22.850	22.700	
26.110	0.110	17.500	25.850	25.850	
26.350	0.240	17.900	28.100	27.500	
26.500	0.150	17.900	25.000	25.200	

THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.2(2/3)
Longitudinal Profile of Jaro River (Jaro - Tigum)

**LONGITUDINAL PROFILE
AGANAN RIVER, ILOILO CITY**

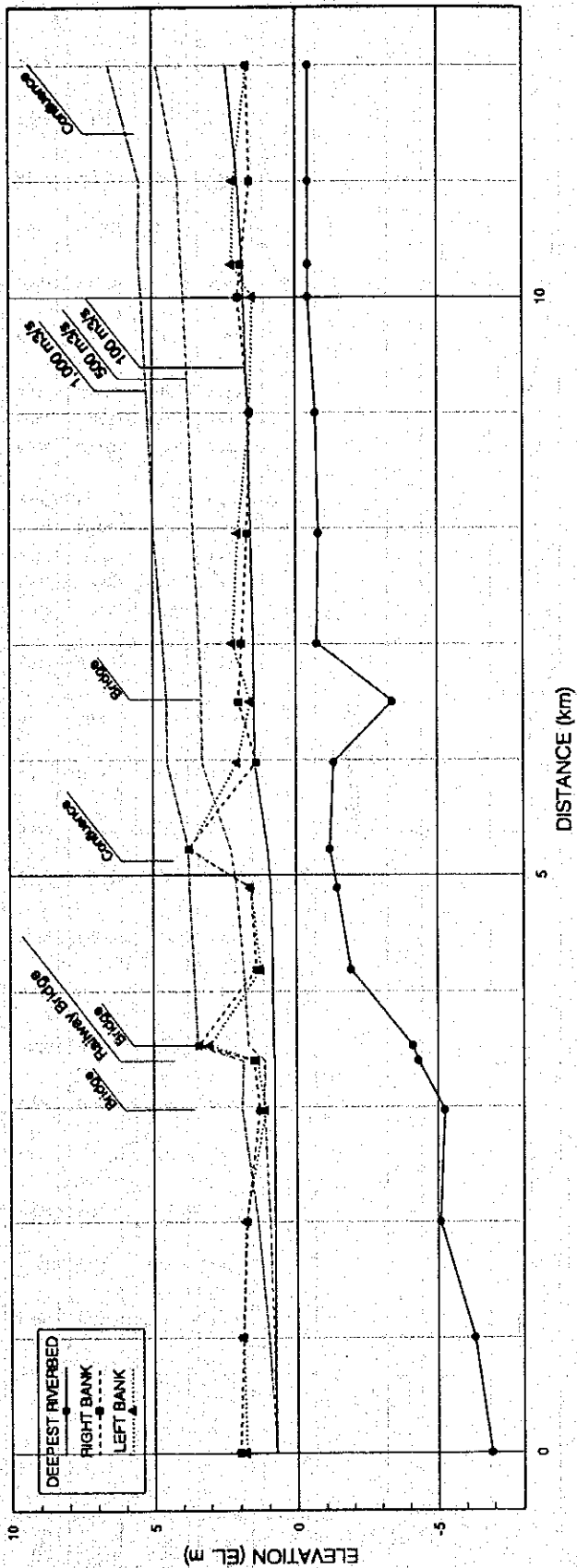


AVERAGE SLOPE	LEFT BANK	RIGHT BANK	DEEPEST RIVERBED	DISTANCE	STATION No.
			5.400	0.050	0.050
			12.300	0.500	0.500
			12.200	0.450	0.500
			13.000	0.500	1.000
			13.200	0.500	1.500
			14.200	0.500	2.000
			14.600	0.500	2.500
			16.500	0.306	2.306
			17.400	0.306	2.500
			16.500	0.194	2.500
			18.000	0.178	2.678
			18.500	0.178	3.000
			14.600	0.322	3.000
			15.300	0.322	3.500
			15.000	0.500	4.000
			17.200	0.500	4.500
			16.300	0.500	5.000
			15.900	0.500	5.500
			17.900	0.500	6.000
			18.900	0.500	6.500
			18.000	0.500	7.000
			17.400	0.500	7.500
			17.800	0.500	8.000
			21.300	0.500	8.500

THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.2(3/3)
Longitudinal Profile of Jaro River (Aganan)

LONGITUDINAL PROFILE
ILOILO RIVER, ILOILO CITY

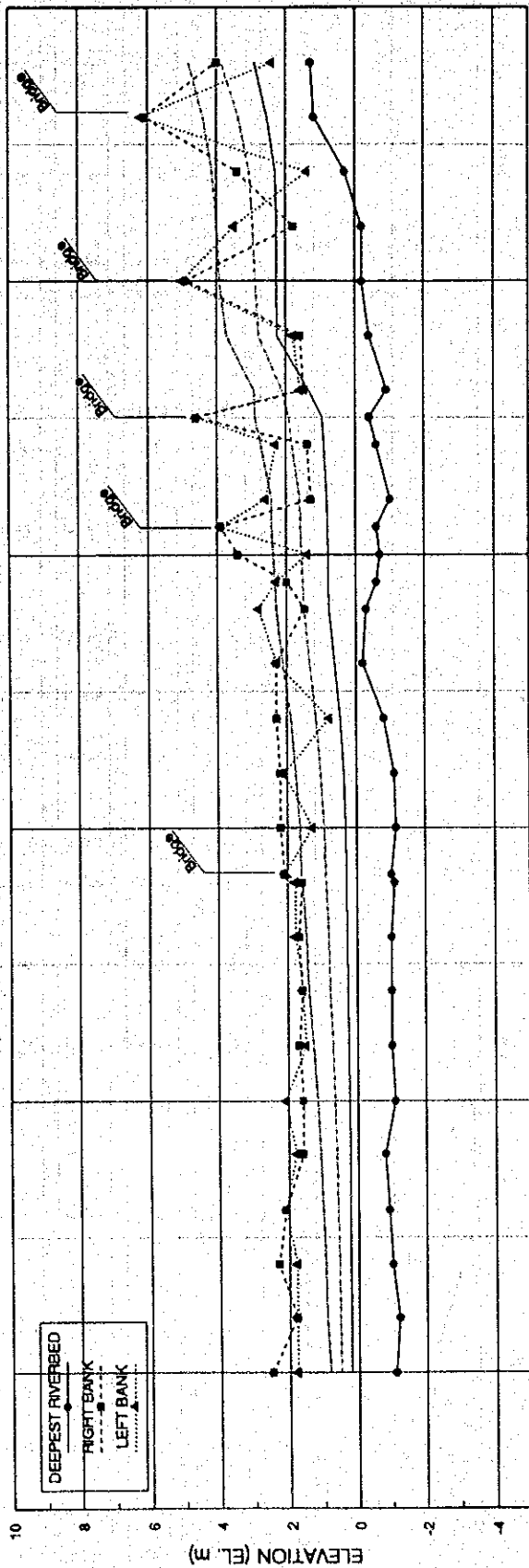


STATION No.	DISTANCE	DEEPEST RIVERBED	RIGHT BANK	LEFT BANK	AVERAGE SLOPE
0.000	0.000	(5.90)	2.000	1.900	
1.000	(0.80)	(6.30)	1.900	1.800	
2.000	0.100	(5.08)	1.750	1.800	
2.970	1.170	(5.23)	1.900	1.100	
3.400	2.300	(4.30)	1.500	1.400	
3.530	2.130	(4.10)	3.400	3.000	
4.190	1.190	(1.90)	1.400	1.250	
4.890	3.840	(1.41)	1.800	1.600	
5.230	3.630	(1.18)	3.750	3.700	
5.980	2.280	(1.90)	1.400	2.050	
6.500	4.450	(3.40)	2.000	1.600	
7.000	5.400	(0.74)	1.900	2.200	
7.950	5.750	(0.80)	1.700	2.000	
9.000	7.000	(0.70)	1.800	1.600	
10.000	8.400	(0.45)	2.000	1.500	
10.250	8.780	(0.45)	1.900	2.200	
11.000	8.800	(0.45)	1.800	2.150	
12.000	9.850	(0.45)	1.700	1.700	

THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.3(1/2)
Longitudinal Profile of Iloilo River (Iloilo)

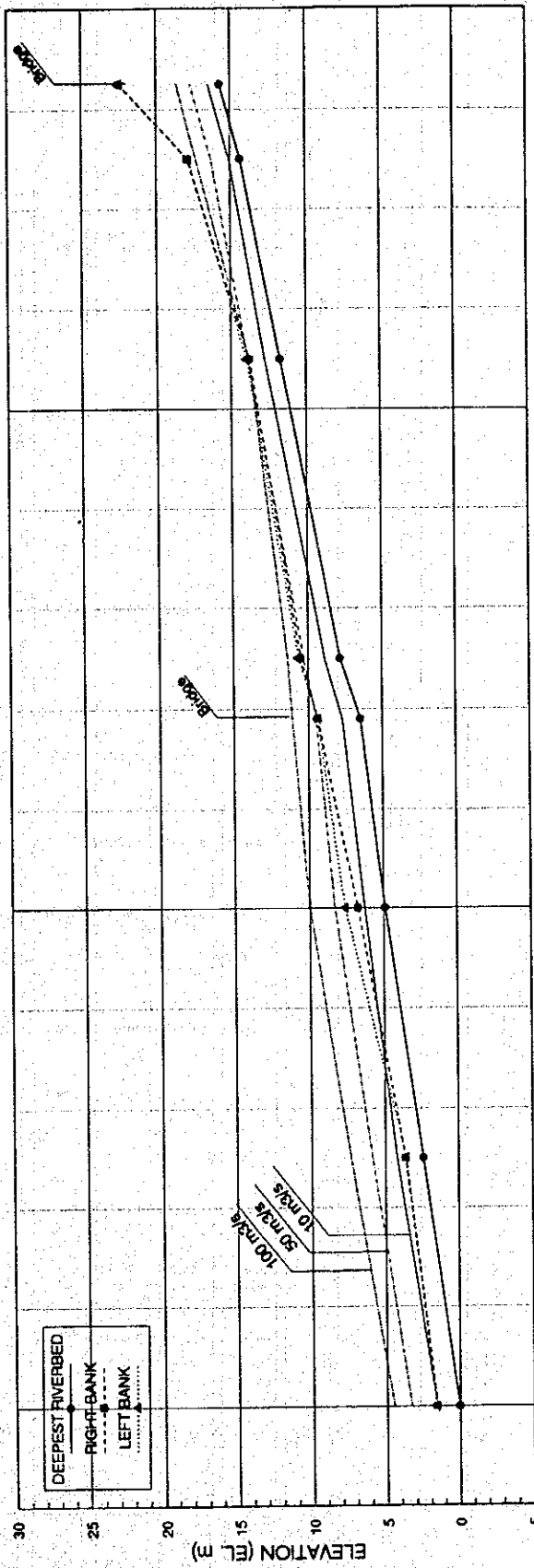
**LONGITUDINAL PROFILE
MANDURIAO RIVER, ILOILO CITY**



AVERAGE SLOPE	LEFT BANK	RIGHT BANK	DEEPEST RIVERBED	DISTANCE	STATION No.
1/20,000	1.800	1.700	1.800	0.000	1.800
	1.800	1.700	1.800	0.200	1.800
	1.800	1.700	1.800	0.400	1.800
	1.800	1.700	1.800	0.600	1.800
	1.800	1.700	1.800	0.800	1.800
	1.800	1.700	1.800	1.000	1.800
	1.800	1.700	1.800	1.200	1.800
	1.800	1.700	1.800	1.400	1.800
	1.800	1.700	1.800	1.600	1.800
	1.800	1.700	1.800	1.800	1.800
	1.800	1.700	1.800	2.000	1.800
	1.800	1.700	1.800	2.200	1.800
	1.800	1.700	1.800	2.400	1.800
	1.800	1.700	1.800	2.600	1.800
	1.800	1.700	1.800	2.800	1.800
	1.800	1.700	1.800	3.000	1.800
	1.800	1.700	1.800	3.200	1.800
	1.800	1.700	1.800	3.400	1.800
	1.800	1.700	1.800	3.600	1.800
	1.800	1.700	1.800	3.800	1.800
	1.800	1.700	1.800	4.000	1.800
	1.800	1.700	1.800	4.200	1.800
	1.800	1.700	1.800	4.400	1.800
	1.800	1.700	1.800	4.600	1.800
	1.800	1.700	1.800	4.800	1.800

Fig. 2.3(2/2)
Longitudinal Profile of Iloilo River (Manduriao)

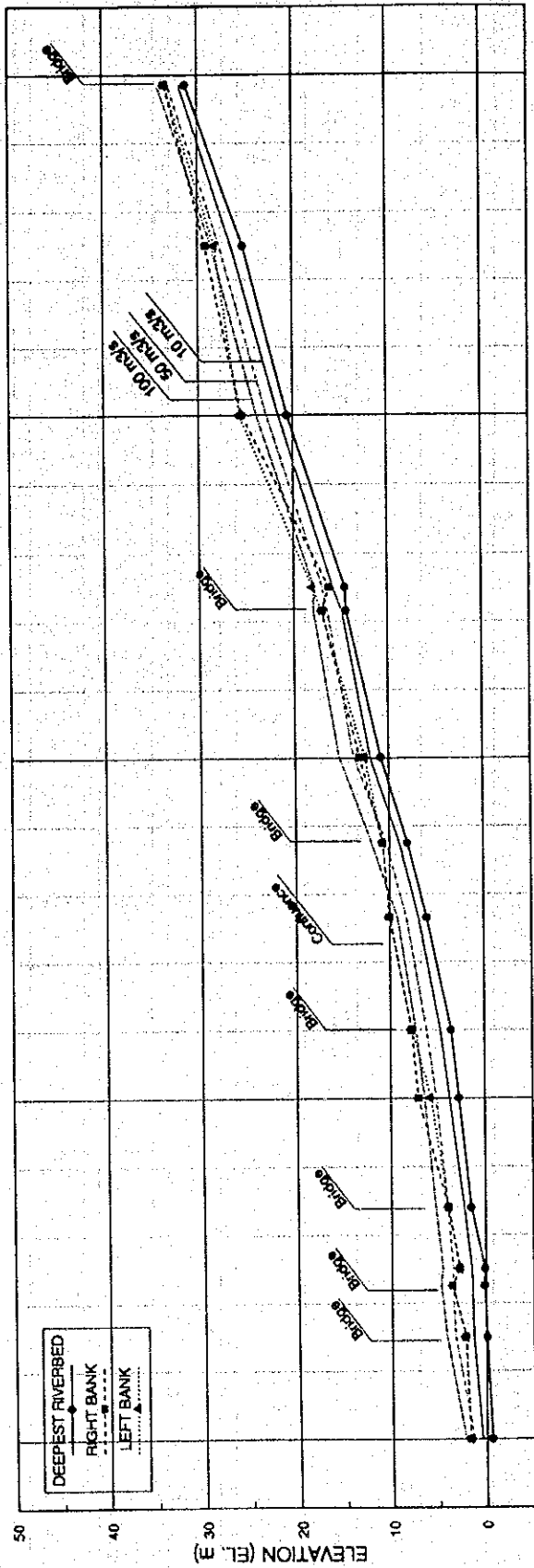
**LONGITUDINAL PROFILE
BLACAO RIVER, CEBU CITY**



STATION No.	DISTANCE	DEEPEST RIVERBED	RIGHT BANK	LEFT BANK	AVERAGE SLOPE
0.000	0.000	0.020	1.600	1.600	
0.500	0.500	2.430	3.650	3.600	1/220
1.000	0.500	4.930	6.750	7.600	
1.960	0.960	6.500	8.400	9.400	1/140
1.500	0.120	7.840	10.550	10.700	
2.100	0.600	11.770	13.800	14.000	
2.500	0.400	14.370	17.900	17.800	
2.650	0.150	15.720	22.500	22.500	

Fig. 2.4
Longitudinal Profile of Bulacao River

**LONGITUDINAL PROFILE
KINALUMSAN RIVER, CEBU CITY**

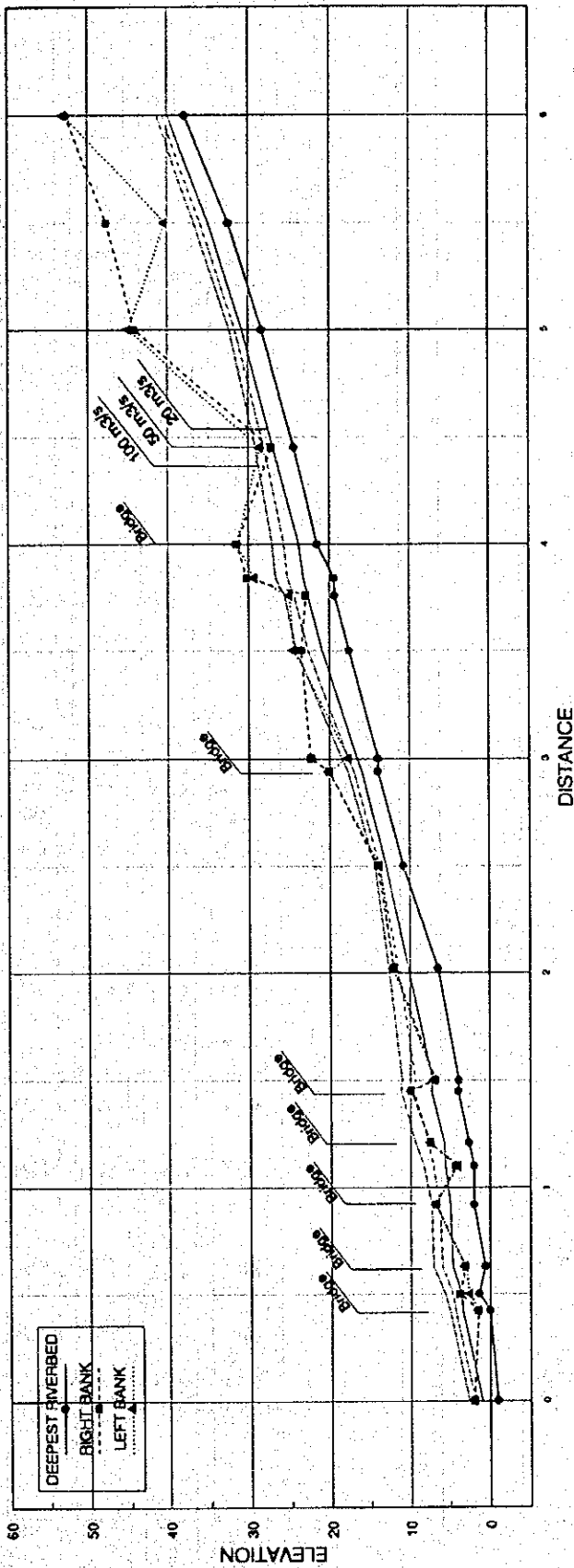


AVERAGE SLOPE	LEFT BANK	RIGHT BANK	DEEPEST RIVERBED	DISTANCE	STATION No.
1/700	2,200	2,200	0,100	0,300	0,000
	3,600	3,600	0,150	0,450	0,300
	2,800	2,800	0,100	0,500	0,450
	4,000	4,000	1,500	0,680	0,500
1/200	7,100	7,100	2,800	0,820	0,680
	5,800	5,800	2,800	1,000	0,820
	7,790	7,790	3,600	1,200	1,000
	10,100	10,100	6,100	1,530	1,200
	10,800	10,800	8,150	1,750	1,530
1/120	12,700	12,700	10,900	2,000	1,750
	17,050	17,050	14,500	2,430	2,000
	25,600	25,400	20,800	3,000	2,430
	28,250	28,200	25,200	3,500	3,000
1/85	33,500	33,500	31,300	3,970	3,500

THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.5
Longitudinal Profile of Kinalumsan River

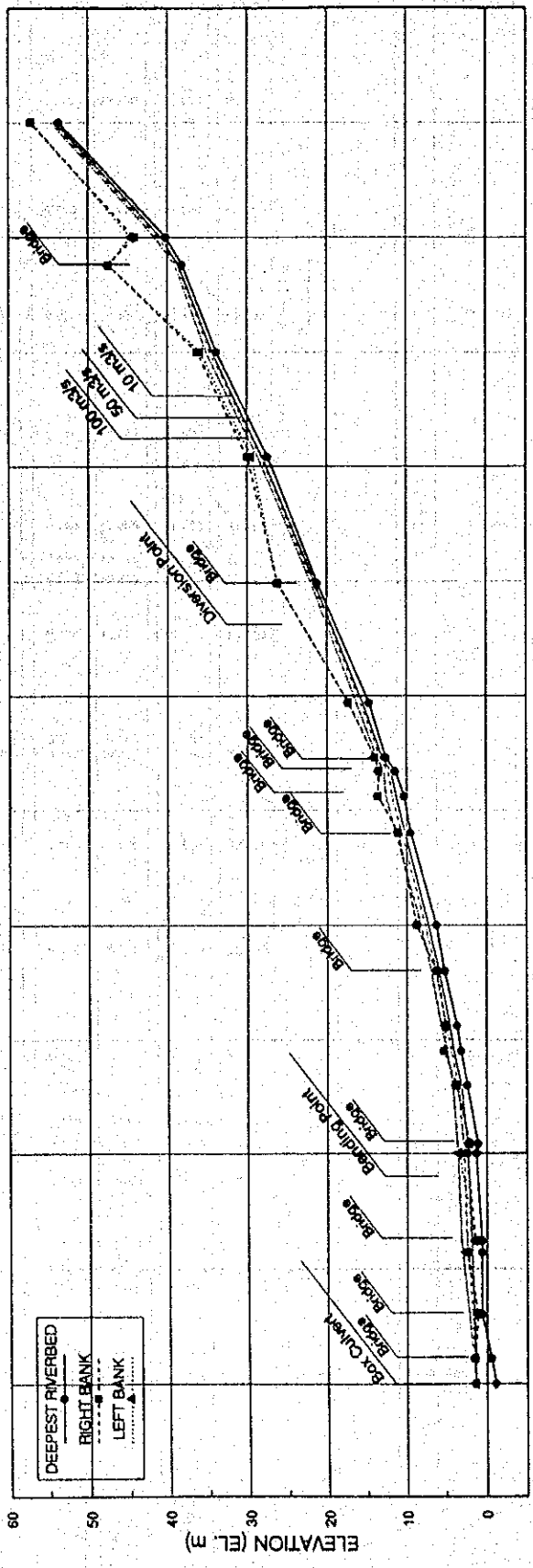
**LONGITUDINAL PROFILE
GUADALUPE RIVER, CEBU**



AVERAGE SLOPE	LEFT BANK	RIGHT BANK	DEEPEST RIVERBED	DISTANCE	STATION No.
1/550	2,000	1,500	0,000	0,000	0,000
	2,800	3,800	0,000	0,500	0,420
	3,150	3,150	0,630	0,530	0,500
	6,800	6,800	2,000	0,920	0,420
	4,300	4,300	2,000	1,100	0,500
	7,500	7,500	2,650	1,210	0,420
	9,900	9,900	3,900	1,450	0,500
	7,000	8,850	3,900	1,500	0,420
1/200	12,100	12,000	6,510	2,020	0,500
	14,000	14,000	10,800	2,500	0,420
	20,100	20,100	19,910	2,940	0,500
	17,600	22,400	19,900	3,000	0,440
	24,500	23,600	17,570	3,500	0,500
	25,000	23,000	19,370	3,760	0,250
	29,300	30,300	19,470	3,840	0,080
	31,500	31,500	21,600	4,000	0,160
	28,800	27,200	24,450	4,450	0,450
	45,000	44,300	28,400	5,000	0,550
	40,300	47,700	32,410	5,500	0,500
	53,000	52,800	37,750	6,000	0,500

Fig. 2.6
Longitudinal Profile of Guadalupe River

LONGITUDINAL PROFILE
LAHUG RIVER, CEBU CITY

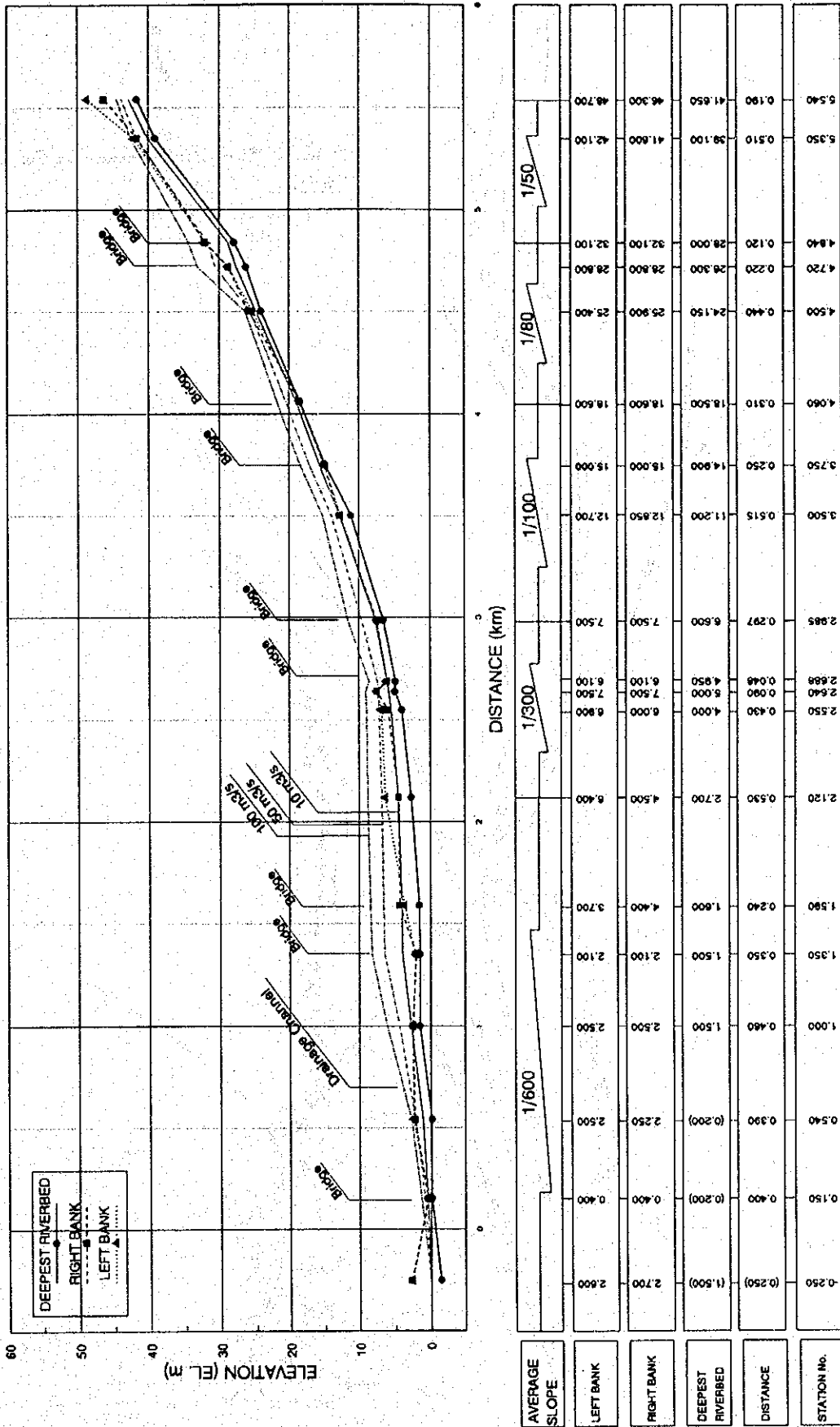


STATION No.	DISTANCE	DEEPEST RIVERBED	RIGHT BANK	LEFT BANK	AVERAGE
0.000	1.100	1.100	1.400	1.400	1.400
0.110	0.590	0.590	1.500	1.500	1.500
0.190	0.610	0.610	1.100	1.100	1.100
0.270	0.610	0.610	1.100	1.100	1.100
0.350	0.610	0.610	1.100	1.100	1.100
0.430	0.610	0.610	1.100	1.100	1.100
0.510	0.610	0.610	1.100	1.100	1.100
0.590	0.610	0.610	1.100	1.100	1.100
0.670	0.610	0.610	1.100	1.100	1.100
0.750	0.610	0.610	1.100	1.100	1.100
0.830	0.610	0.610	1.100	1.100	1.100
0.910	0.610	0.610	1.100	1.100	1.100
1.000	0.600	0.600	9.500	11.100	11.100
1.090	0.330	0.330	13.600	13.600	13.600
1.180	0.110	0.110	13.500	13.500	13.500
1.270	0.060	0.060	12.940	14.900	14.900
1.360	0.240	0.240	17.300	17.300	17.300
1.450	0.520	0.520	26.300	26.300	26.300
1.540	0.550	0.550	27.500	30.000	28.500
1.630	0.460	0.460	33.840	36.300	35.850
1.720	0.380	0.380	38.150	47.500	47.500
1.810	0.120	0.120	40.170	44.200	44.800
1.900	0.500	0.500	53.650	57.230	57.000

THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

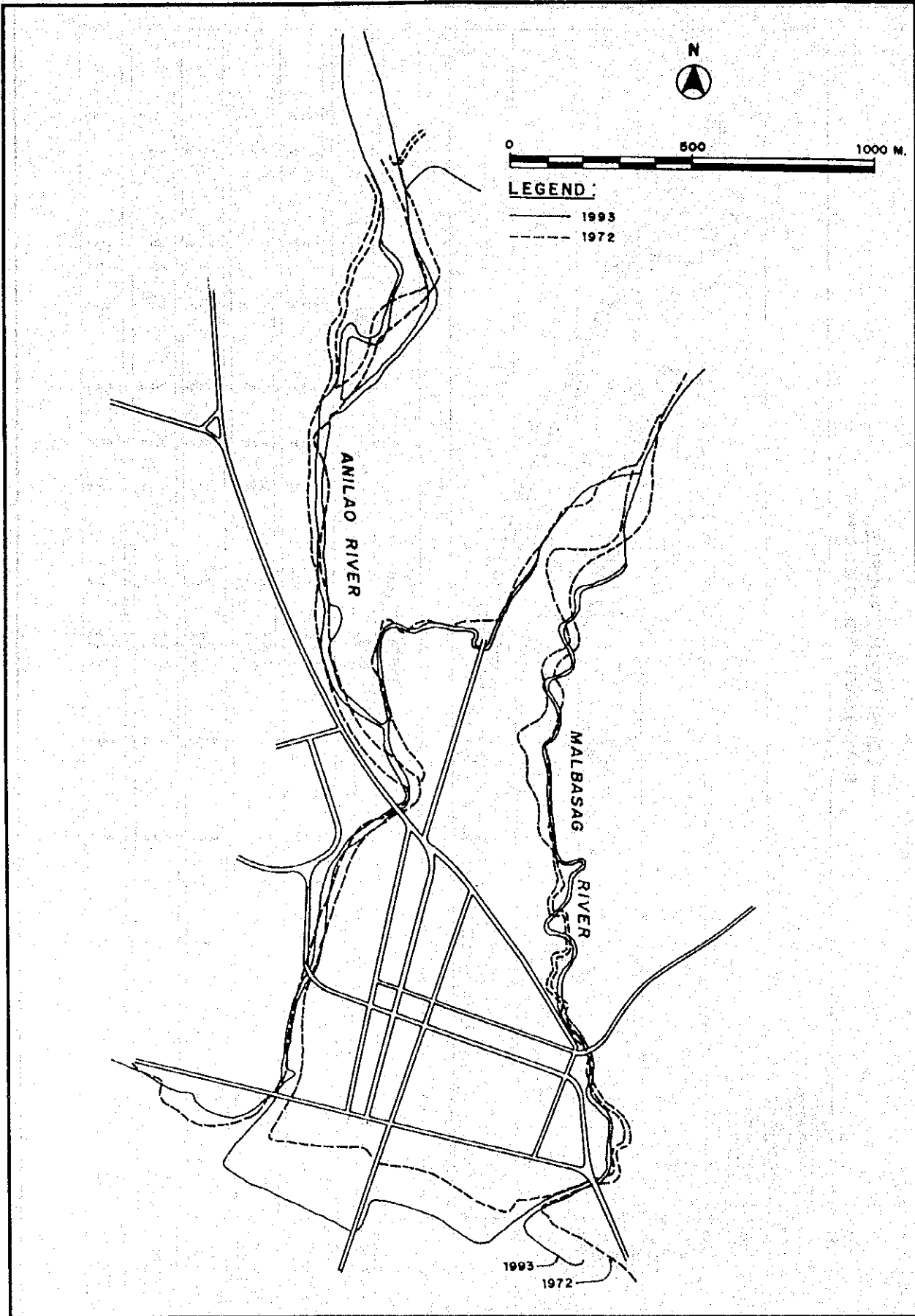
Fig. 2.7
Longitudinal Profile of Lahug River

**LONGITUDINAL PROFILE
SUBANG DAKU RIVER, CEBU CITY**



THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

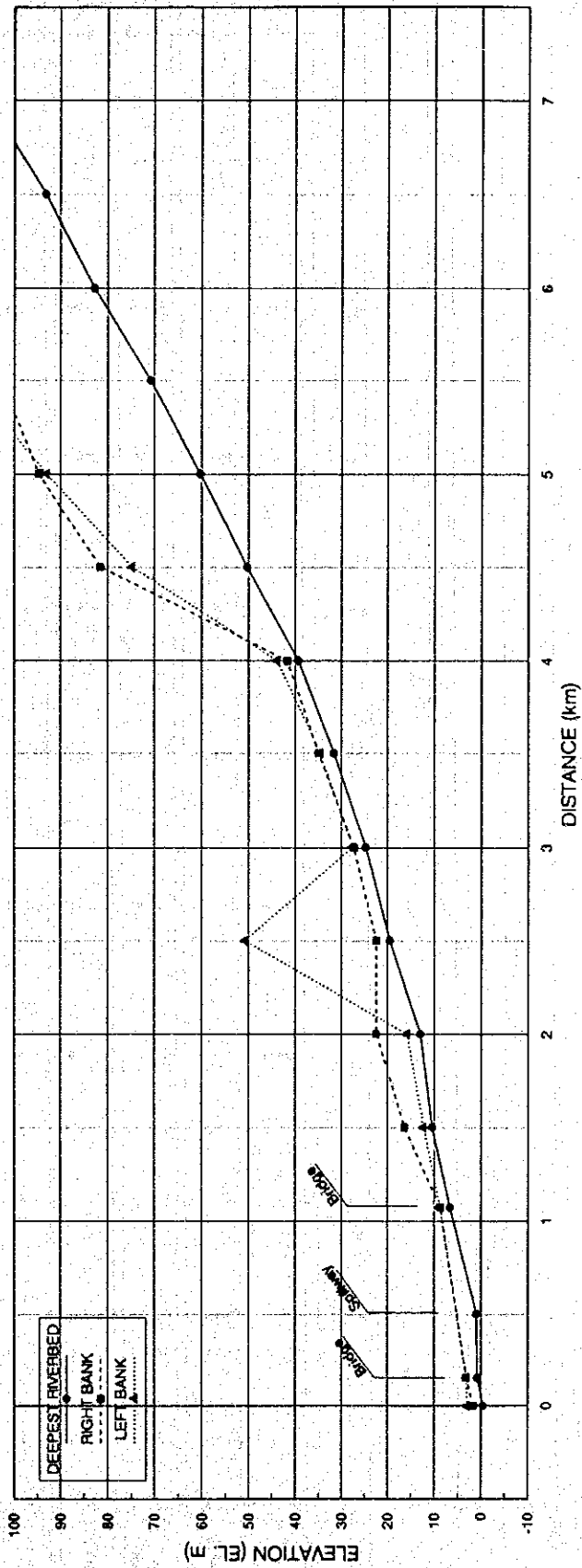
Fig. 2.8
Longitudinal Profile of Subang Daku River



THE STUDY ON THE FLOOD CONTROL FOR RIVERS
 IN THE SELECTED URBAN CENTERS
 JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.9
 Change of River Course (Anilao and Malbasag River)

**LONGITUDINAL PROFILE
ANILAO RIVER, ORMOC CITY**

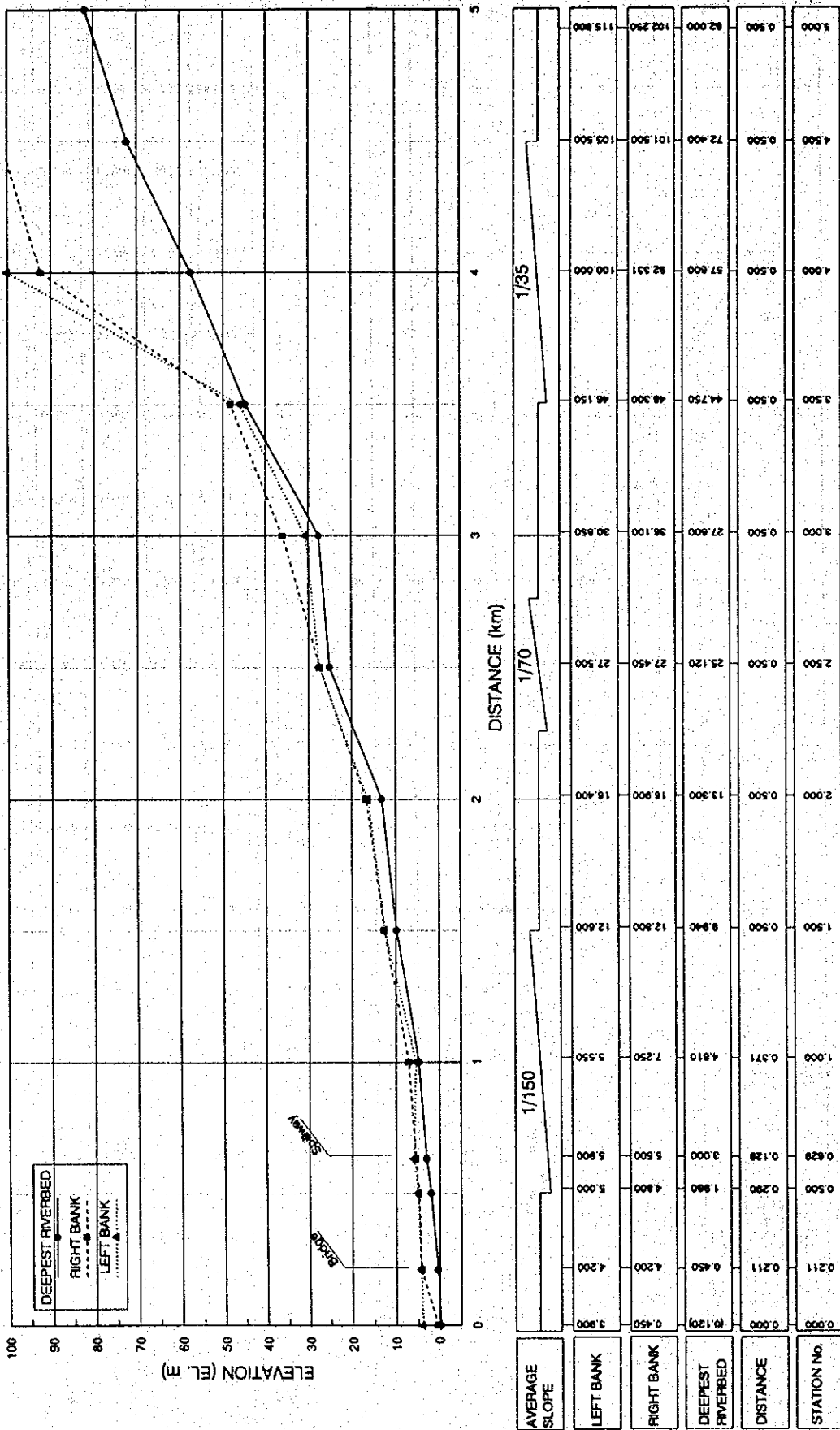


STATION No.	DISTANCE	DEEPEST RIVERBED	RIGHT BANK	LEFT BANK	AVERAGE SLOPE
0.000	0.000	0.450	1.633	3.000	
0.153	0.153	0.850	3.150	3.150	
0.347	0.347	1.000		0.000	
0.573	0.573	6.672	8.800	8.800	1/150
1.073	1.073	6.672	8.800	8.800	
1.460	1.460	0.460	6.300	2.300	
1.500	0.427	0.460	6.300	2.300	
1.5850	0.500	2.940	22.500	15.850	
1.9500	0.500	19.500	22.450	50.750	1/75
2.4740	0.500	24.740	27.350	27.600	
2.740	0.500	27.400	27.350	27.600	
3.1610	0.500	31.610	35.000	34.600	
3.340	0.500	39.340	41.700	39.900	
3.310	0.500	50.310	41.800	44.800	
3.340	0.500	60.340	44.750	33.000	
4.000	0.500	0.820	40.000	40.000	
4.2870	0.500	42.870	47.900	43.200	
4.300	0.500	43.000	48.000	48.000	
4.500	0.500	45.000	50.310	41.800	
5.000	0.500	50.000	50.000	50.000	1/45
5.500	0.500	55.000	55.000	55.000	
6.000	0.500	60.000	60.000	60.000	
6.500	0.500	65.000	65.000	65.000	
7.000	0.500	70.000	70.000	70.000	

THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.10
Longitudinal Profile of Anilao River

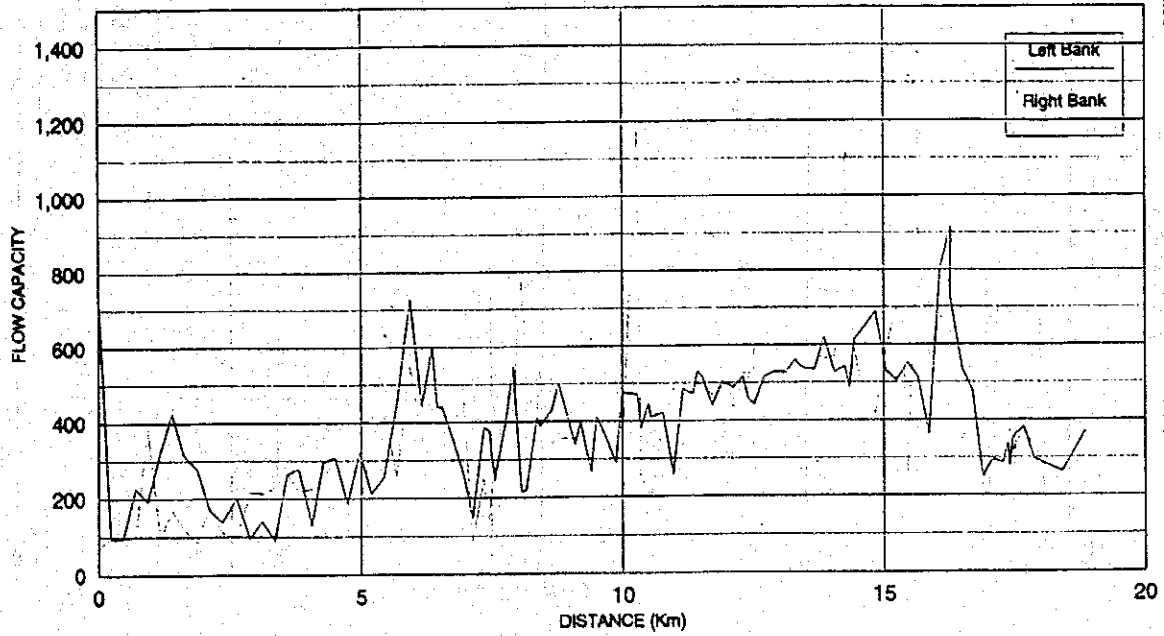
**LONGITUDINAL PROFILE
MALBASAG RIVER, ORMOC CITY**



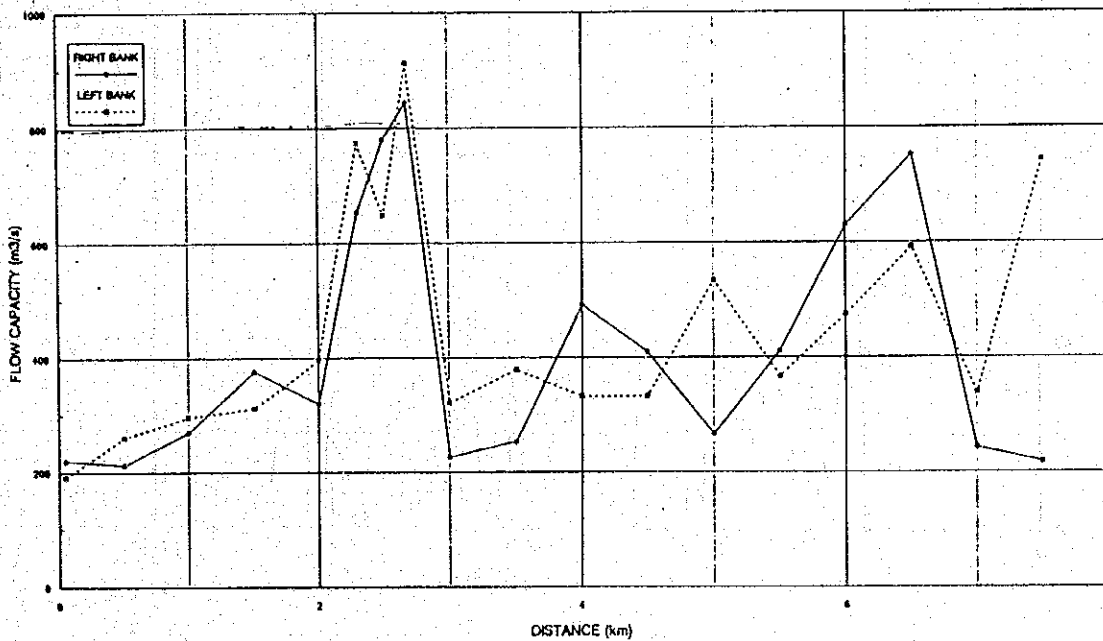
THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.11
Longitudinal Profile of Malbasag River

FLOW CAPACITY JARO RIVER, ILOILO CITY



FLOW CAPACITY AGANAN RIVER, ILOILO CITY



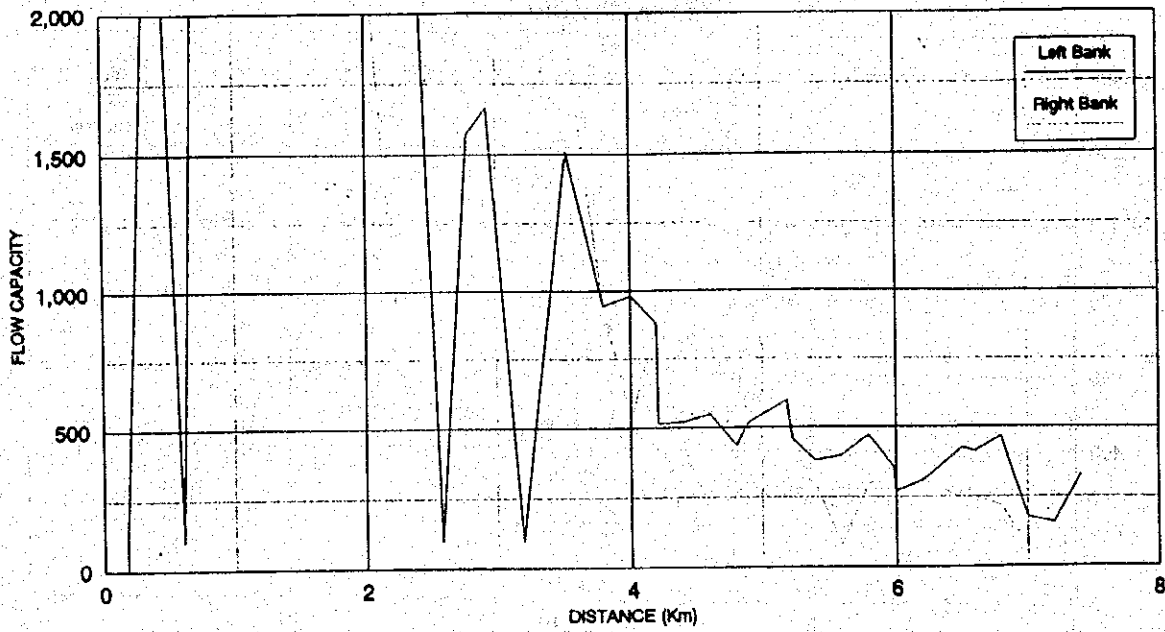
THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS

JAPAN INTERNATIONAL COOPERATION AGENCY

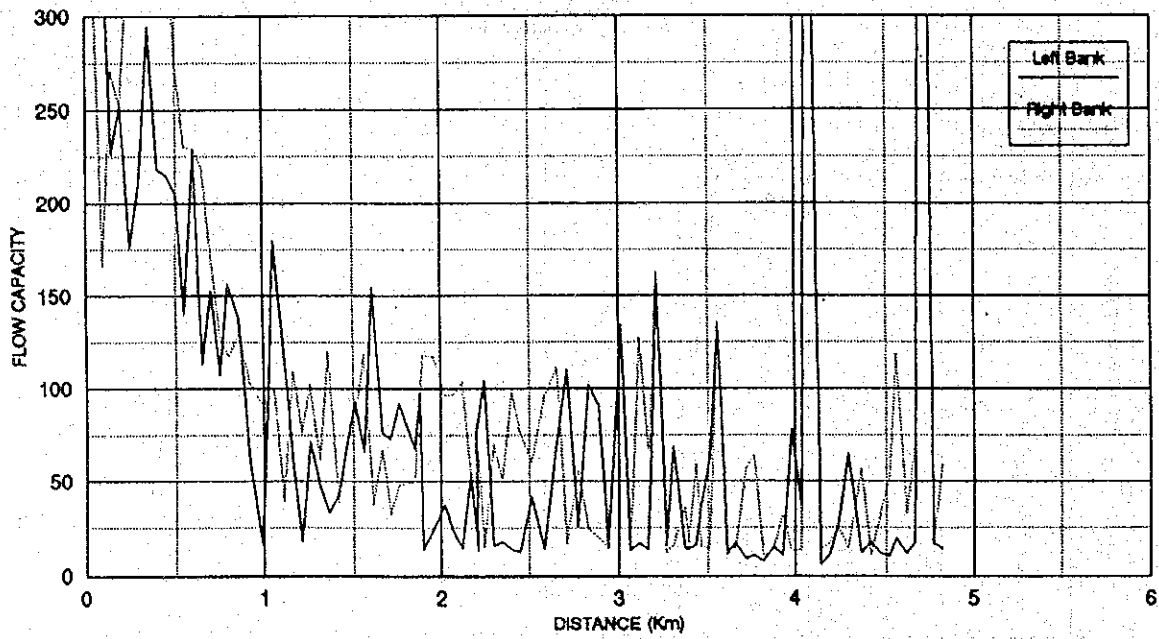
Fig. 2.12(1/6)

Flow Capacity (Jaro - Tigum - Aganan River)

FLOW CAPACITY
ILOILO RIVER, ILOILO CITY



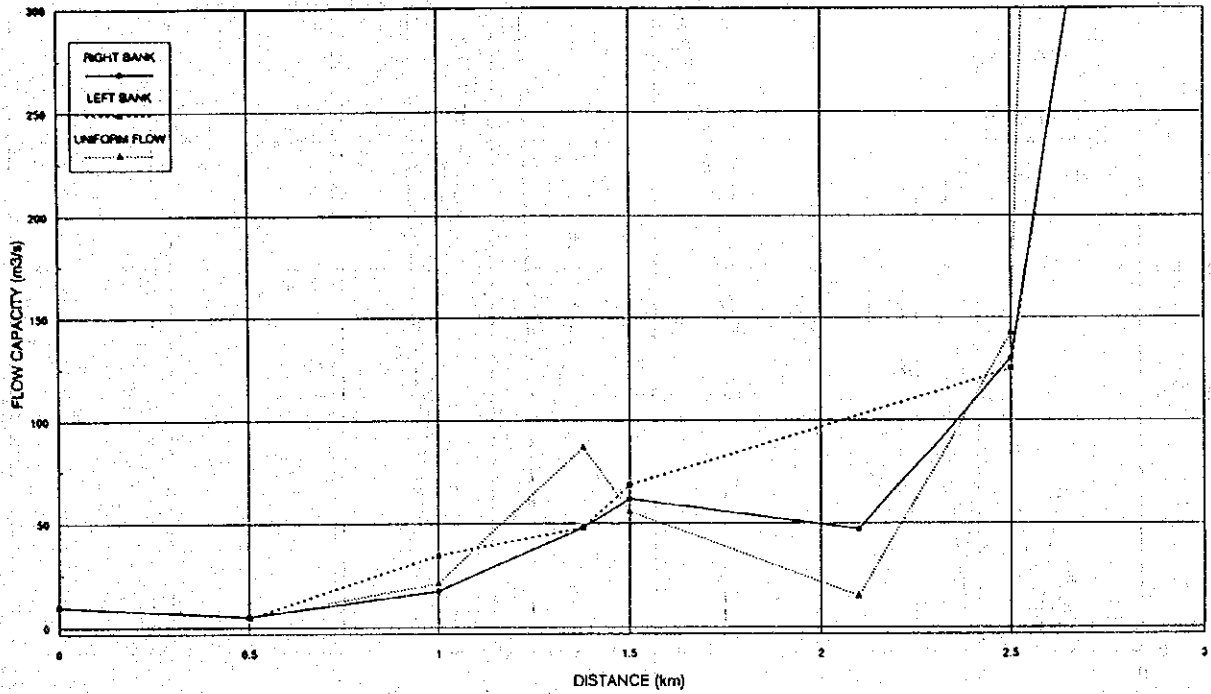
FLOW CAPACITY
MANDURIAO RIVER, ILOILO CITY



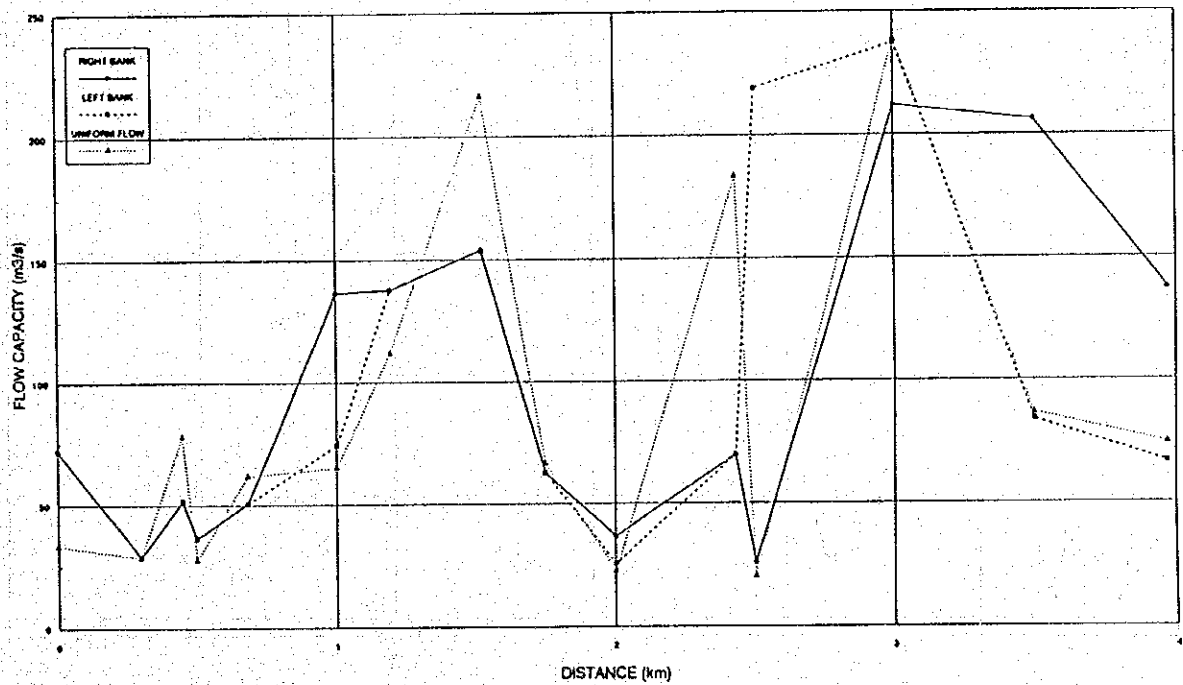
THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.12(25)
Flow Capacity (Iloilo - Manduriao River)

FLOW CAPACITY
BULACAO RIVER, CEBU CITY



FLOW CAPACITY
KINALUMSAN RIVER, CEBU CITY

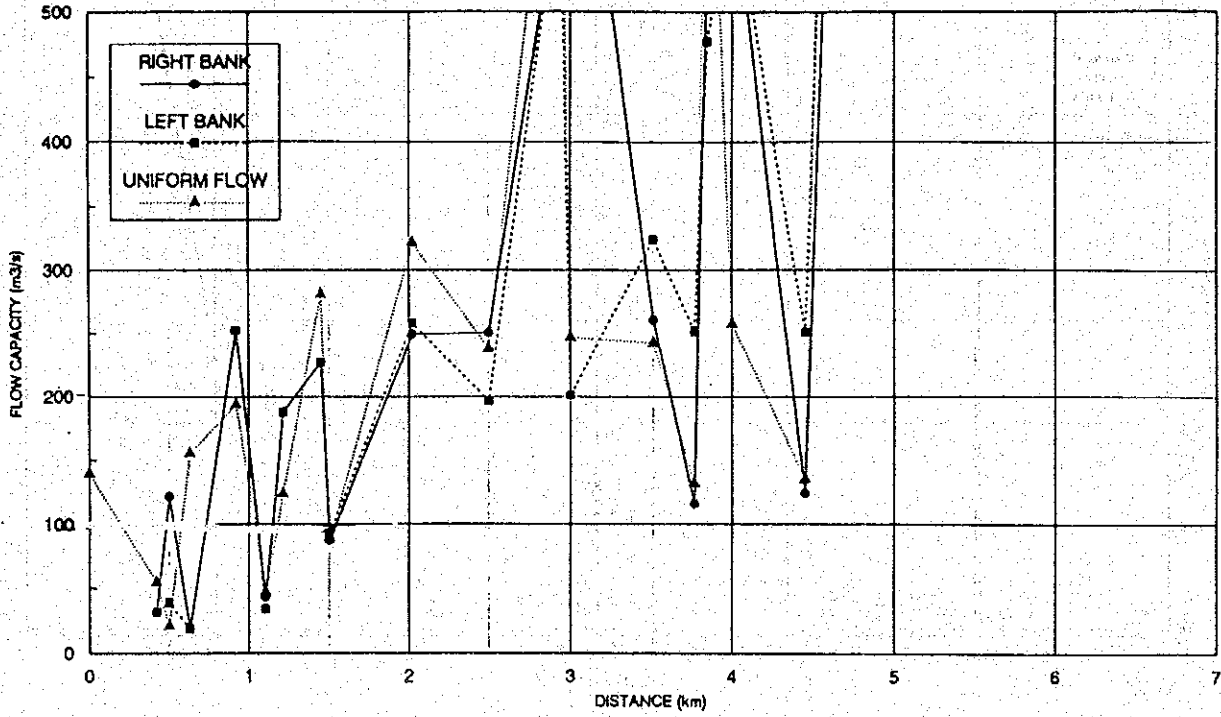


THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 2.12(36)
Flow Capacity (Bulacao River and Kinalumsan River)

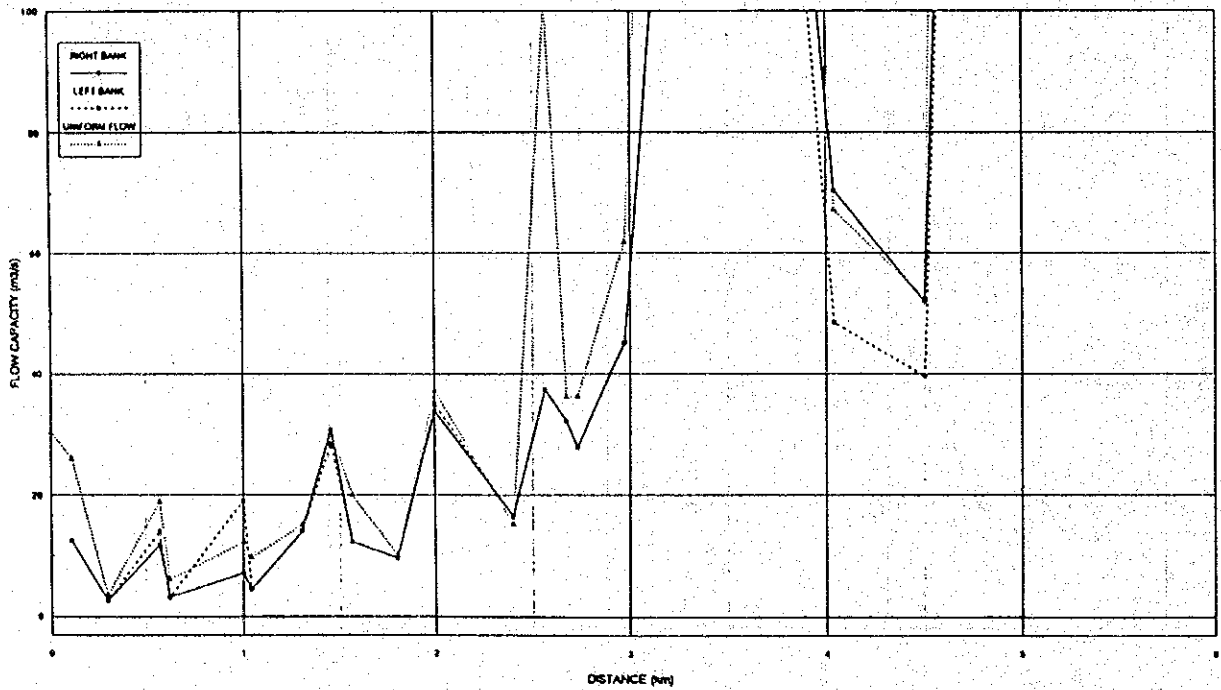
FLOW CAPACITY

GUADALUPE RIVER, CEBU CITY



FLOW CAPACITY

LAHUG RIVER, CEBU CITY



THE STUDY ON THE FLOOD CONTROL FOR RIVERS
IN THE SELECTED URBAN CENTERS
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Fig. 2.12(4/6)
Flow Capacity (Guadalupe River and Lahug River)