

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

**DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REPUBLIC OF THE PHILIPPINES**

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

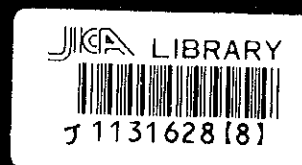
FINAL REPORT

VOLUME 4

DATA BOOK

FEBRUARY 1995

**CTI ENGINEERING CO., LTD.
IN ASSOCIATION WITH
PACIFIC CONSULTANTS INTERNATIONAL**



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1131628(8)

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DRAFT FINAL REPORT

VOLUME 4

DATA BOOK

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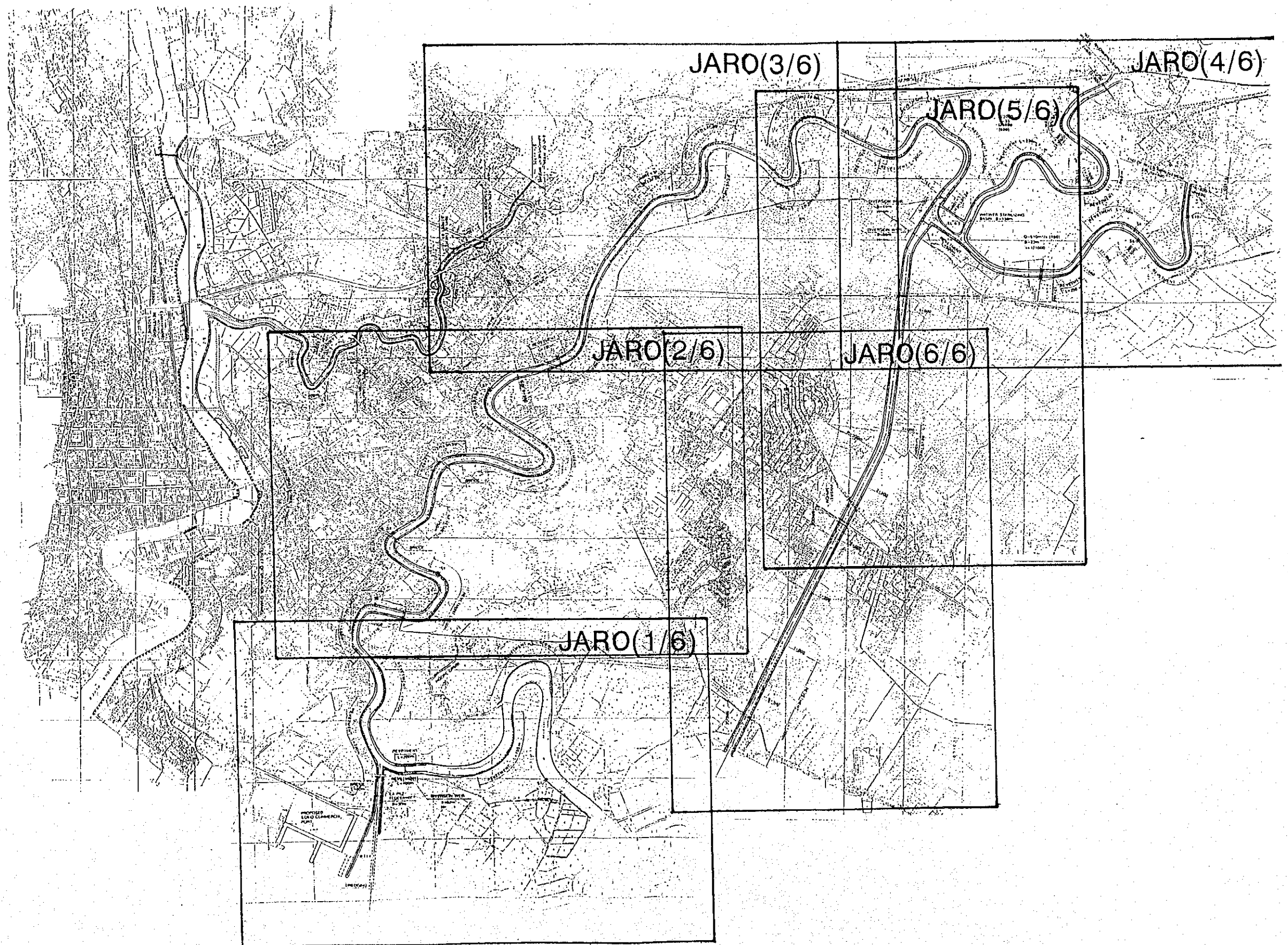
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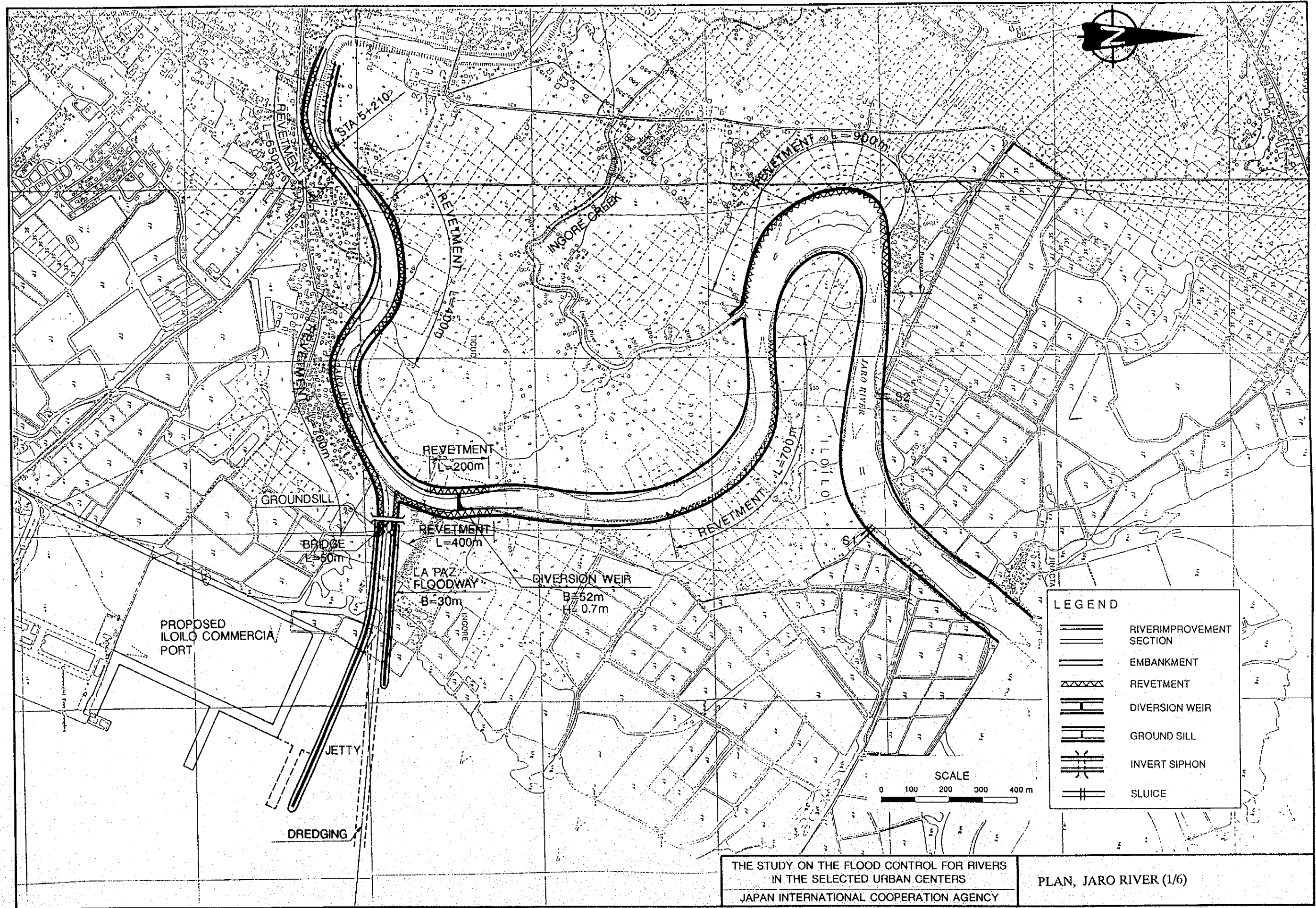
A. RIVER IMPROVEMENT PLAN

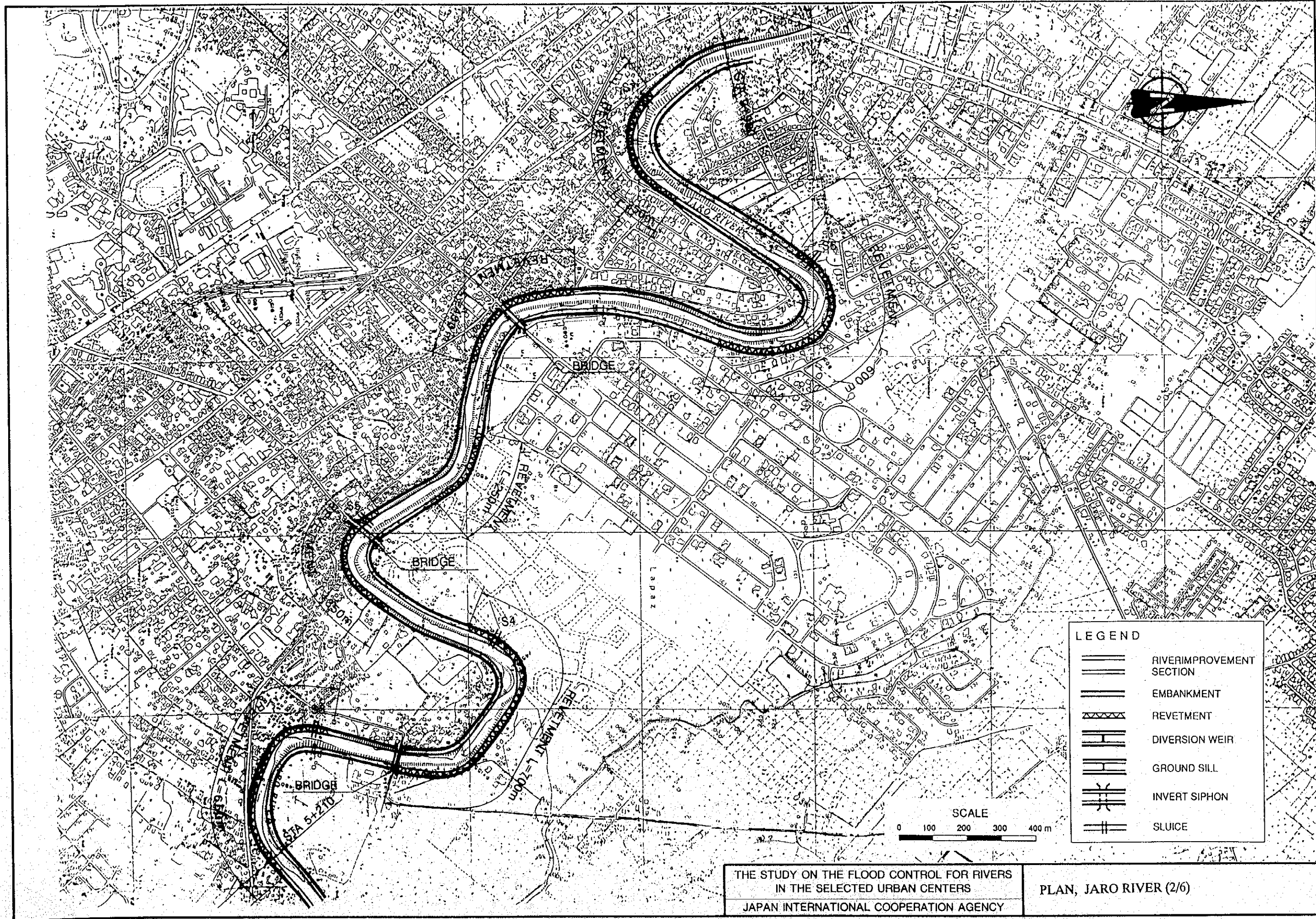
JARO RIVER IMPROVEMENT PLAN



THE STUDY ON THE FLOOD CONTROL FOR RIVERS
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 JAPAN INTERNATIONAL COOPERATION AGENCY

GENERAL PLAN
 JARO RIVER IMPROVEMENT



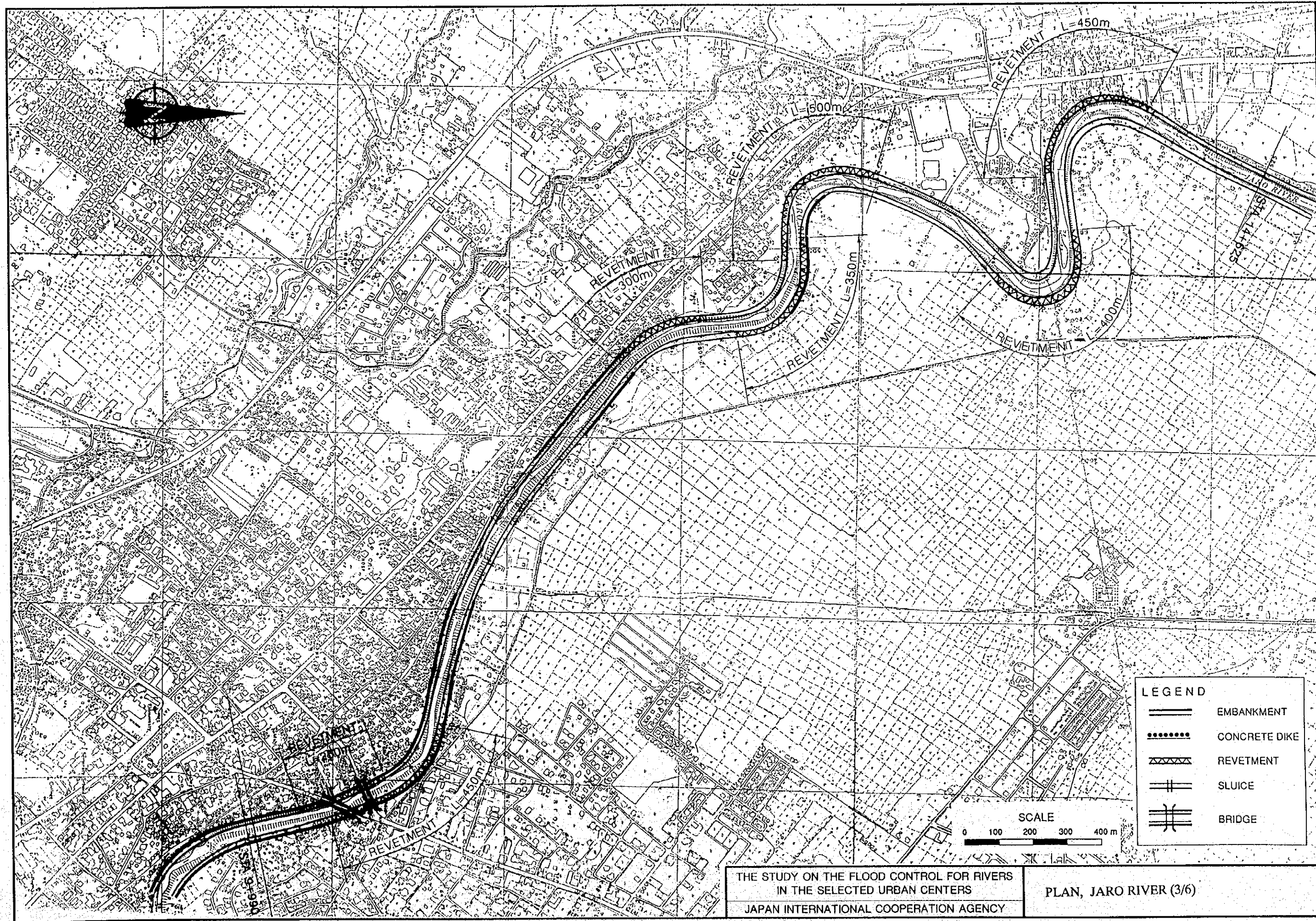


LEGEND

	RIVERIMPROVEMENT SECTION
	EMBANKMENT
	REVEMENT
	DIVERSION WEIR
	GROUND SILL
	INVERT SIPHON
	SLUICE

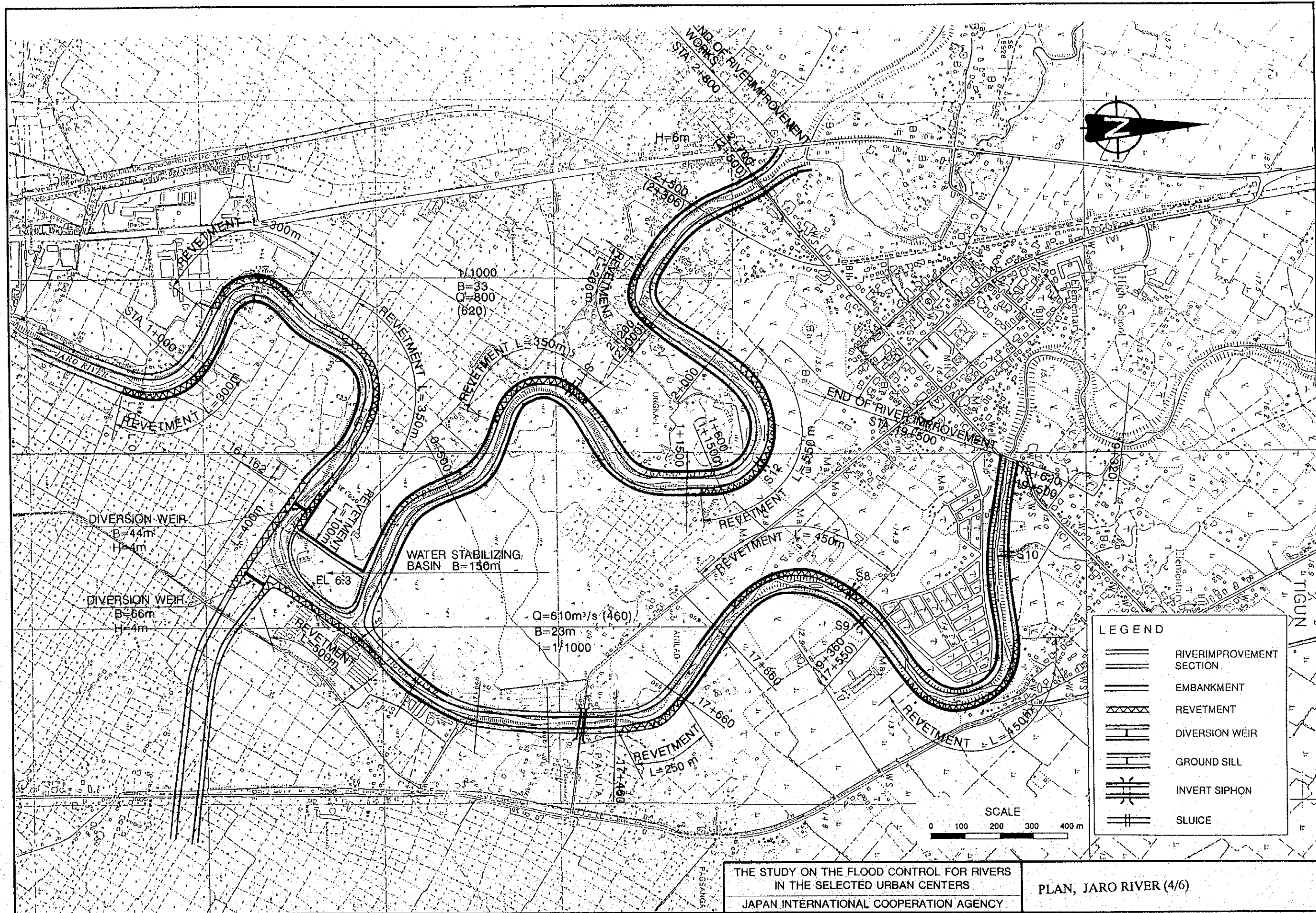
THE STUDY ON THE FLOOD CONTROL FOR RIVERS
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PLAN, JARO RIVER (2/6)



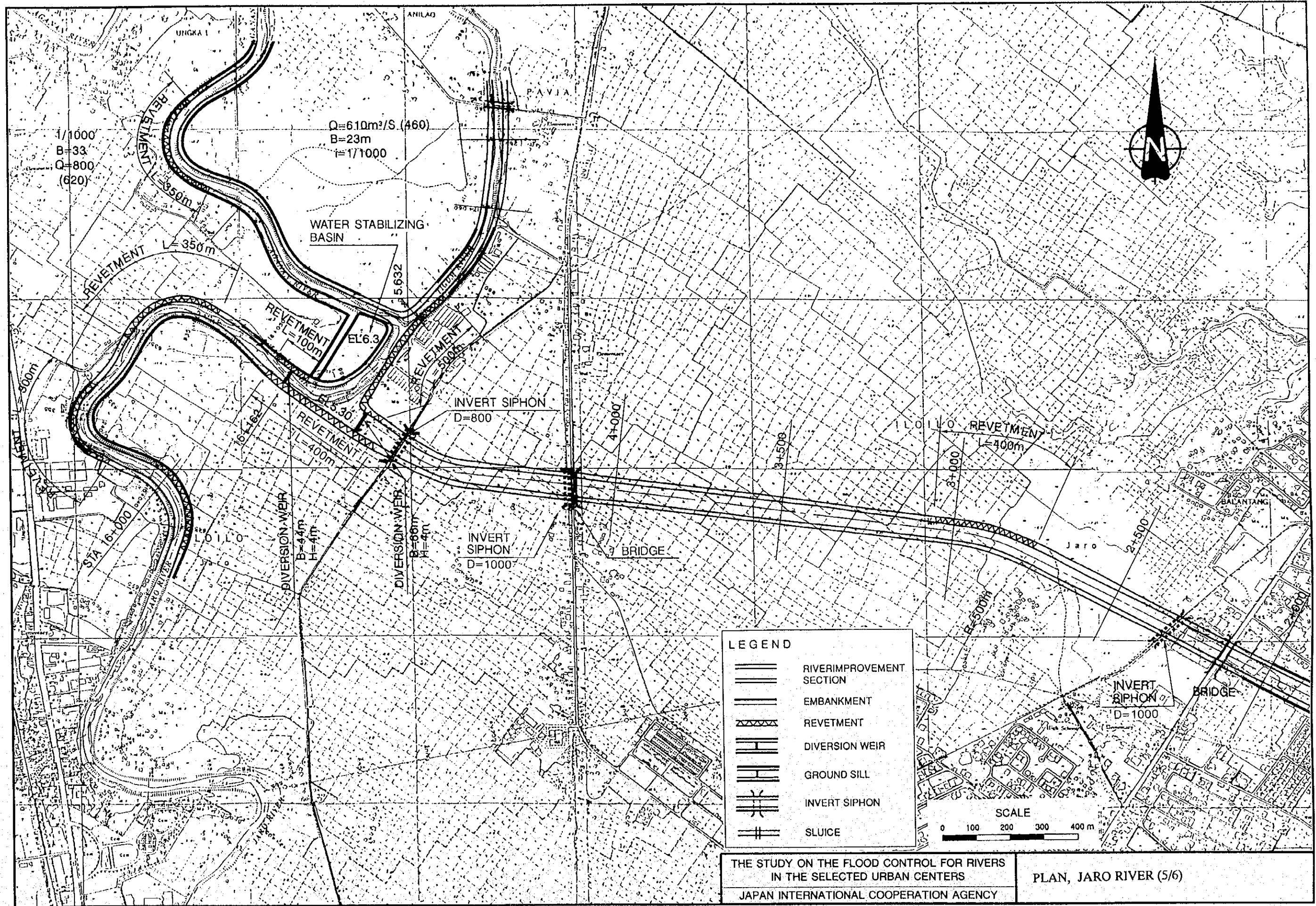
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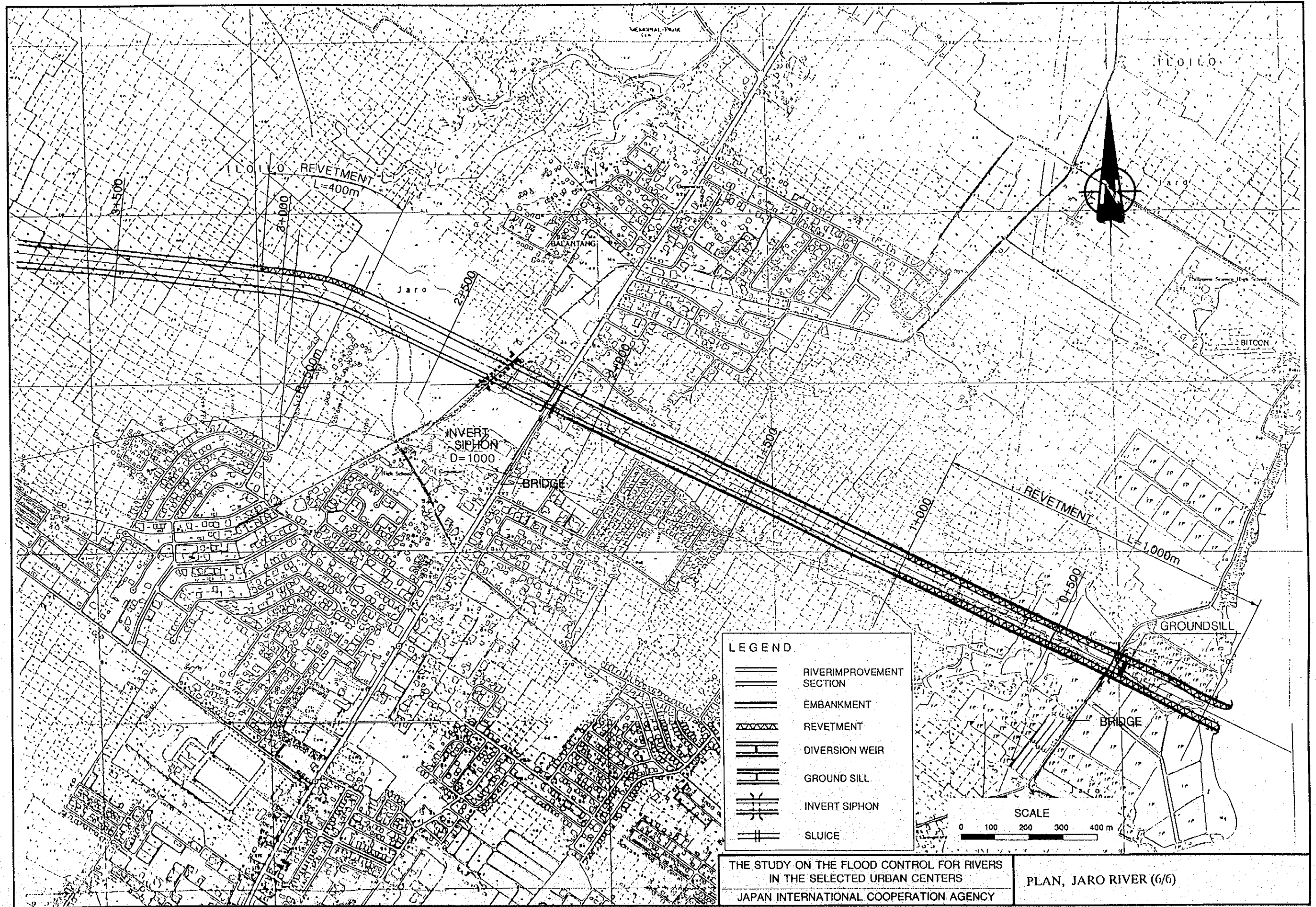
PLAN, JARO RIVER (3/6)



THE STUDY ON THE FLOOD CONTROL FOR RIVERS
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PLAN, JARO RIVER (4/6)



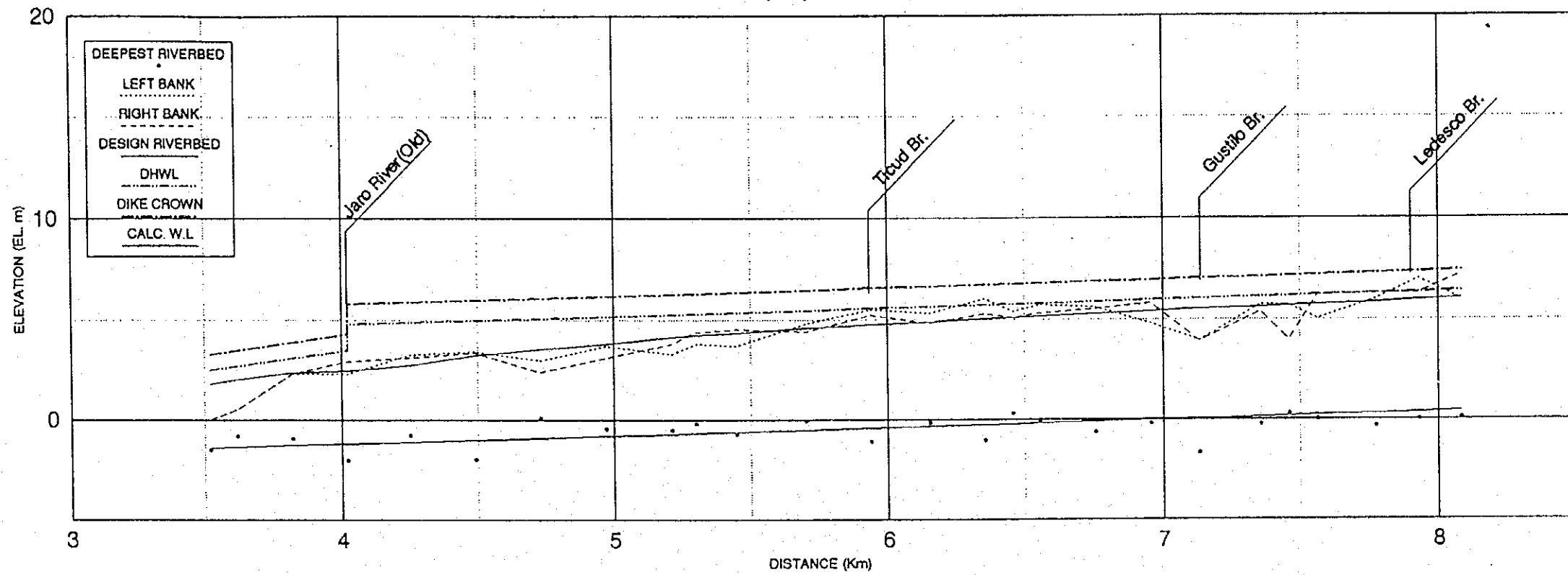


LEGEND	
	RIVERIMPROVEMENT SECTION
	EMBANKMENT
	REVETMENT
	DIVERSION WEIR
	GROUND SILL
	INVERT SIPHON
	SLUICE

THE STUDY ON THE FLOOD CONTROL FOR RIVERS
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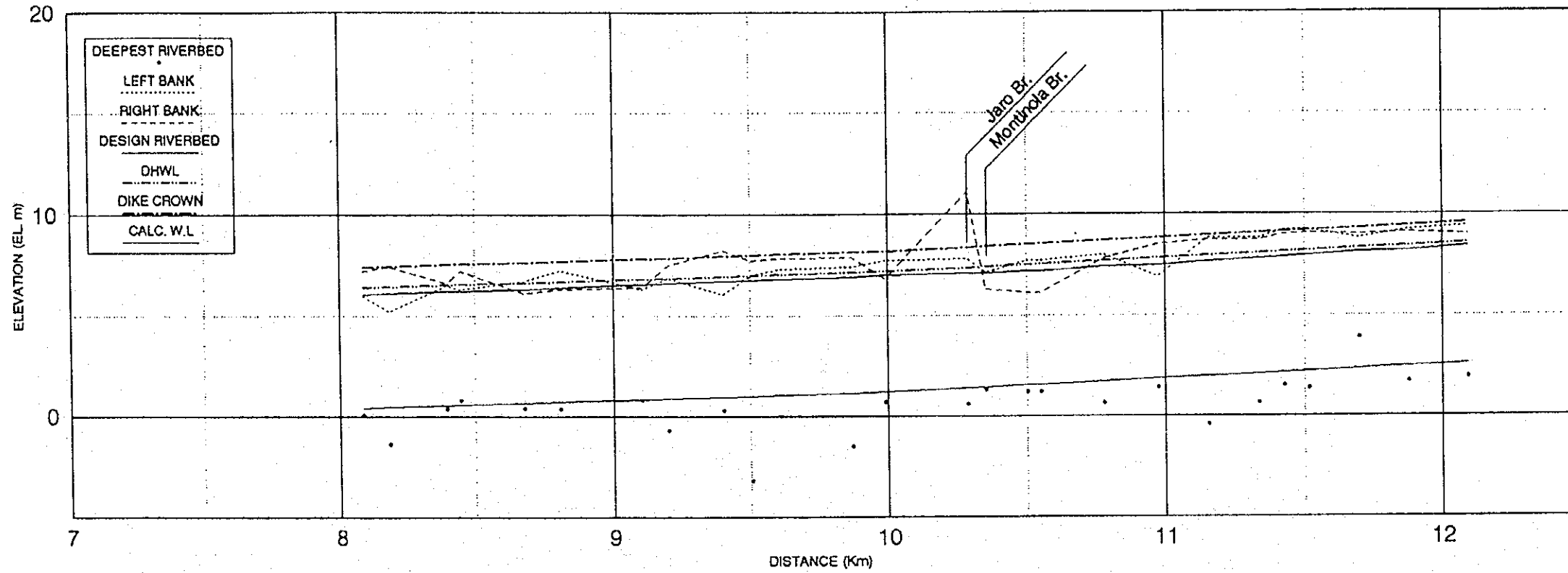
PLAN, JARO RIVER (6/6)

LONGITUDINAL PROFILE JARO RIVER (1/3), ILOILO CITY



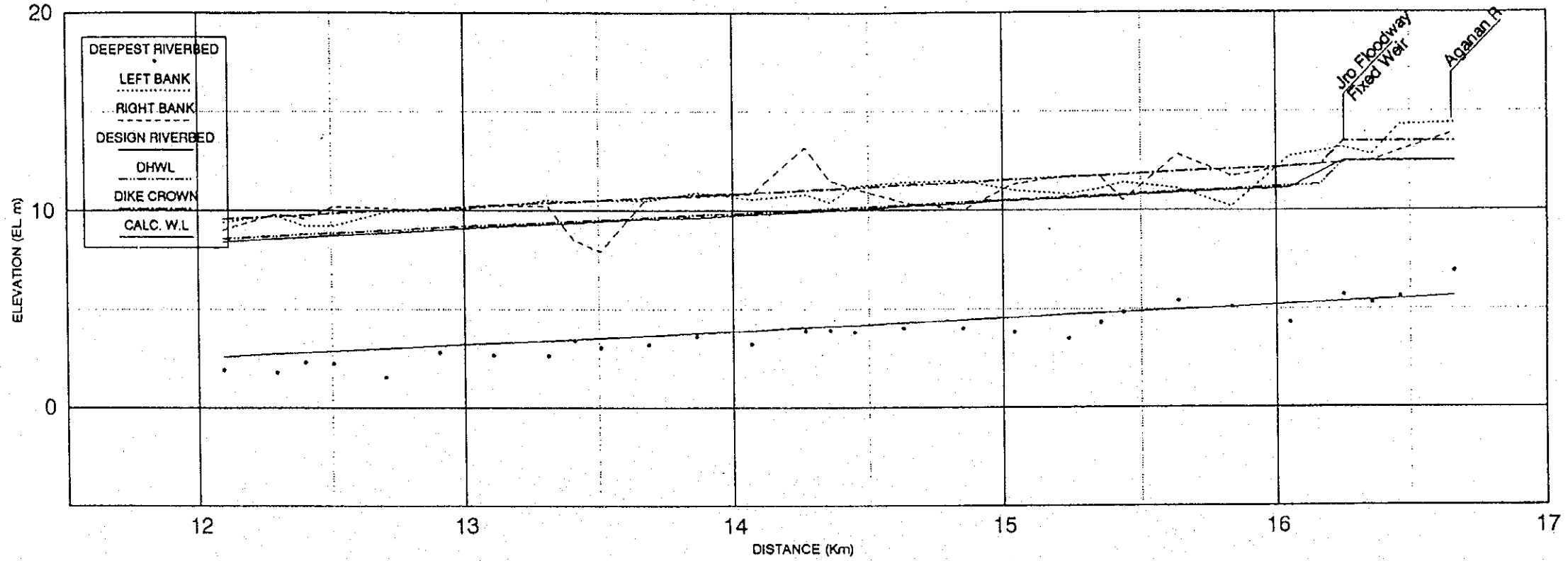
GRADIENT OF RIVERBED	1/2,500																									
DIKE CROWN	3.30	3.50	3.90	4.30	5.89	5.89	6.08	6.18	6.28	6.31	6.37	6.47	6.57	6.65	6.73	6.77	6.81	6.89	6.97	7.04	7.13	7.18	7.22	7.30	7.36	7.43
DESIGN HWL	2.50	2.70	3.10	3.50	4.89	4.99	5.05	5.18	5.28	5.31	5.37	5.47	5.57	5.65	5.73	5.77	5.81	5.89	5.97	6.04	6.13	6.18	6.22	6.30	6.36	6.43
DESIGN RIVERBED	-1.400	-1.360	-1.280	-1.200	-1.108	-1.012	-0.916	-0.820	-0.724	-0.688	-0.628	-0.528	-0.432	-0.346	-0.266	-0.226	-0.186	-0.106	-0.026	0.044	0.134	0.176	0.218	0.302	0.364	0.428
DEEPEST RIVERBED	-1.49	-0.81	-0.94	-2.04	-0.77	-1.98	0.10	-0.46	-0.51	-0.20	-0.72	-0.06	-1.10	-0.15	-1.05	0.30	-0.03	-0.62	-0.20	-1.67	-0.23	0.30	0.00	-0.35	0.00	0.10
LEFT BANK	0.00	0.50	2.30	2.91	3.12	3.36	2.40	3.11	3.81	4.40	4.50	4.40	5.20	4.80	5.27	5.10	5.30	5.51	5.80	3.92	5.40	4.00	6.20	6.30	6.30	7.20
RIGHT BANK	0.00	0.50	2.30	2.30	3.26	3.42	3.00	3.71	3.30	3.80	3.70	4.80	5.50	5.30	6.02	5.40	5.71	5.60	4.80	3.94	5.73	5.70	5.00	6.00	7.00	6.00
STATION No.	3.520	3.620	3.820	4.020	4.250	4.490	4.730	4.970	5.210	5.300	5.450	5.700	5.940	6.155	6.355	6.455	6.555	6.755	6.955	7.130	7.355	7.460	7.565	7.775	7.930	8.085

LONGITUDINAL PROFILE
JARO RIVER (2/3), ILOILO CITY



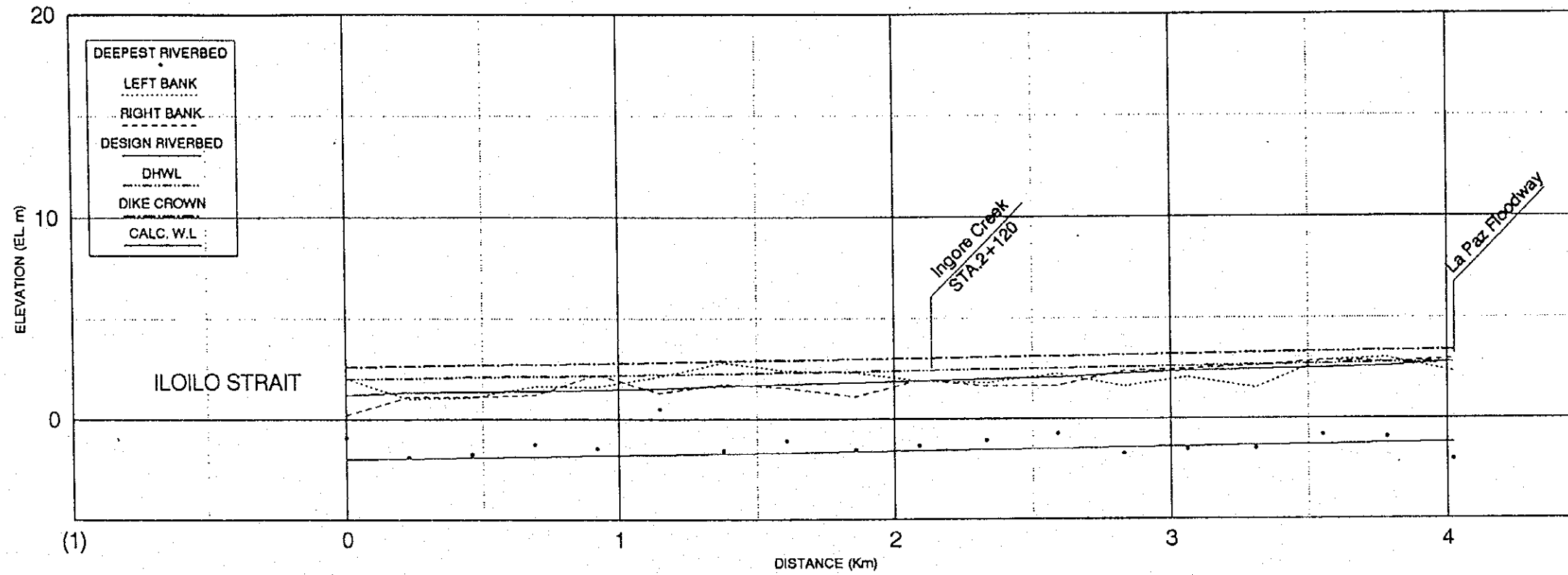
GRADIENT OF RIVERBED	1/2,500															1/1,500														
DIKE CROWN		7.43	7.47	7.55	7.57	7.66	7.71	7.83	7.87	7.95	7.99	8.04	8.14	8.19	8.19	8.38	8.43	8.53	8.56	8.71	8.84	8.96	9.08	9.14	9.20	9.32	9.44	9.59		
DESIGN HWL		6.43	6.47	6.55	6.57	6.66	6.71	6.83	6.87	6.95	6.99	7.04	7.14	7.19	7.19	7.38	7.43	7.53	7.56	7.71	7.84	7.96	8.08	8.14	8.20	8.32	8.44	8.59		
DESIGN RIVERBED		0.426	0.466	0.550	0.570	0.662	0.714	0.832	0.872	0.952	0.994	1.036	1.140	1.188	1.192	1.382	1.425	1.525	1.559	1.712	1.842	1.962	2.082	2.142	2.202	2.322	2.442	2.589		
DEEPEST RIVERBED		0.10	-1.36	0.38	0.80	0.41	0.36	0.80	-0.69	0.30	-3.20	0.02	-1.48	0.70	0.60	1.30	1.20	1.20	0.63	1.40	-0.43	0.65	1.50	1.35	3.88	1.70	1.91			
LEFT BANK		7.20	7.42	6.60	7.20	6.12	6.30	6.40	7.50	8.22	7.70	7.85	7.87	6.80	11.10	6.30	6.10	6.10	7.80	8.50	8.70	8.70	9.00	9.04	9.00	9.10	9.00			
RIGHT BANK		6.00	5.20	6.50	6.30	6.70	7.24	6.30	6.85	6.04	7.00	7.30	7.40	7.70	7.80	7.10	7.70	8.00	6.90	8.60	8.60	8.80	8.80	9.22	8.80	9.20	9.40			
STATION No.		8.085	8.185	8.395	8.445	8.675	8.805	9.100	9.200	9.400	9.505	9.810	9.870	9.960	10.000	10.285	10.350	10.500	10.550	10.760	10.875	11.155	11.335	11.425	11.515	11.695	11.875	12.096		

LONGITUDINAL PROFILE JARO RIVER (3/3), ILOILO CITY



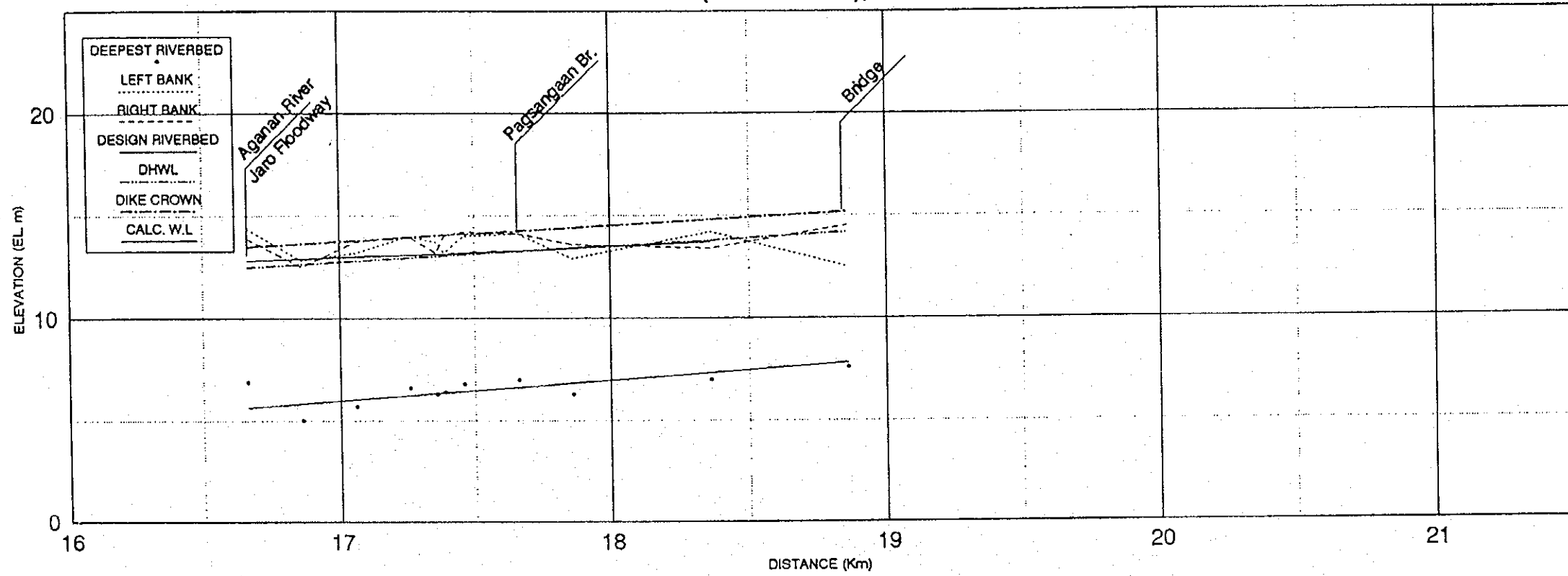
GRADIENT OF RIVERBED																																
DIKE CROWN	9.59	9.72	9.79	9.86	10.00	10.13	10.26	10.40	10.46	10.53	10.65	10.77	10.90	11.04	11.10	11.16	11.28	11.42	11.53	11.55	11.69	11.76	11.82	11.95	12.08	12.23	12.30	12.30	12.50	12.50	12.50	13.50
DESIGN HWL	8.59	8.72	8.79	8.86	9.00	9.13	9.26	9.40	9.46	9.53	9.65	9.77	9.90	10.04	10.10	10.16	10.28	10.42	10.53	10.55	10.69	10.76	10.82	10.95	11.08	11.23	11.30	12.50	12.50	12.50	12.50	
DESIGN RIVERBED	2.589	2.722	2.792	2.862	2.995	3.129	3.262	3.395	3.462	3.528	3.649	3.769	3.902	4.035	4.095	4.155	4.275	4.422	4.525	4.552	4.685	4.762	4.815	4.949	5.082	5.225	5.300	5.359	5.429	5.499	5.632	
DEEPEST RIVERBED	1.91	1.79	2.30	2.23	1.54	2.60	2.66	2.64	3.40	3.04	3.19	3.60	3.23	3.68	3.90	3.80	4.00	4.00	3.80	3.50	4.30	4.80	5.40	5.10	4.30	5.70	5.30	5.60	6.90			
LEFT BANK	9.00	9.60	9.60	10.20	10.10	10.00	10.21	10.21	8.50	7.90	10.70	10.70	10.80	13.20	11.50	11.10	10.40	10.00	11.30	11.70	11.70	10.50	12.80	11.70	12.20	12.40	12.50	13.00	13.90			
RIGHT BANK	9.40	9.70	9.20	9.21	8.90	10.00	10.20	10.51	10.40	10.50	10.50	10.90	10.55	10.80	10.40	11.20	11.40	11.50	11.00	10.80	11.10	11.40	11.10	10.20	12.70	13.20	12.60	14.30	14.40			
STATION No.	12.095	12.295	12.400	12.505	12.705	12.905	13.105	13.305	13.405	13.505	13.695	13.895	14.095	14.295	14.355	14.445	14.625	14.845	15.000	15.040	15.240	15.355	15.435	15.635	15.835	16.050	16.162	16.250	16.355	16.460	16.660	

LONGITUDINAL PROFILE
JARO RIVER (RIVER MOUSE-LA PAZ FW), ILOILO CITY



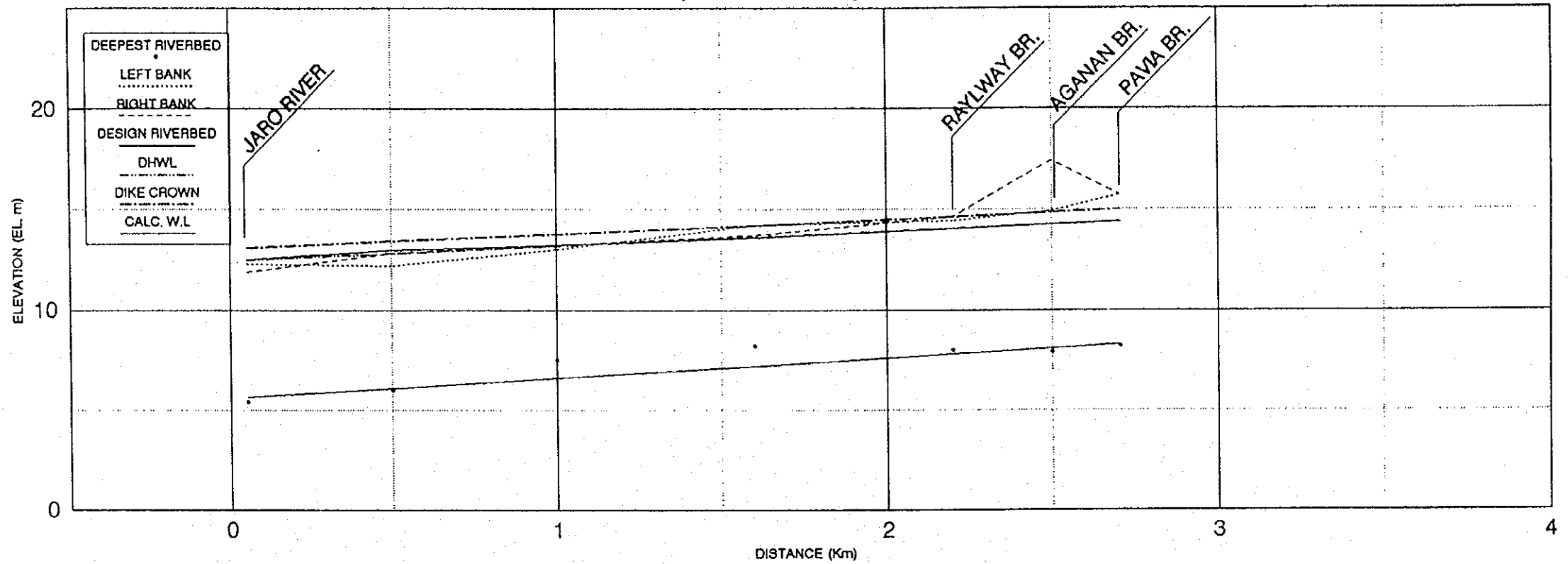
GRADIENT OF RIVERBED	1/5,000																	
DIKE CROWN	2.60	2.65	2.69	2.74	2.78	2.83	2.88	2.92	2.97	3.02	3.07	3.12	3.17	3.21	3.26	3.31	3.36	3.40
DESIGN HWL	2.00	2.05	2.09	2.14	2.18	2.23	2.28	2.32	2.37	2.42	2.47	2.52	2.57	2.61	2.66	2.71	2.76	2.80
DESIGN RIVERBED	-2.000	-1.954	-1.908	-1.862	-1.816	-1.770	-1.724	-1.678	-1.632	-1.586	-1.540	-1.494	-1.448	-1.402	-1.356	-1.310	-1.264	-1.218
DEEPEST RIVERBED	-0.90	-1.87	-1.73	-1.25	-1.45	0.50	-1.56	-1.08	-1.52	-1.34	-1.08	-0.73	-1.72	-1.53	-1.49	-0.81	-0.84	-2.04
LEFT BANK	0.20	1.10	1.10	1.20	2.20	1.30	1.74	1.53	1.10	1.92	1.65	1.64	2.36	2.44	2.60	2.86	2.80	2.81
RIGHT BANK	2.00	1.00	1.07	1.65	1.60	2.10	2.80	2.40	2.30	1.88	1.80	2.23	1.62	2.04	1.52	2.85	3.00	2.30
STATION No.	0.00	0.23	0.46	0.69	0.92	1.15	1.38	1.61	1.86	2.09	2.33	2.59	2.83	3.06	3.31	3.55	3.78	4.02

LONGITUDINAL PROFILE
JARO RIVER (TIGUM RIVER), ILOILO CITY



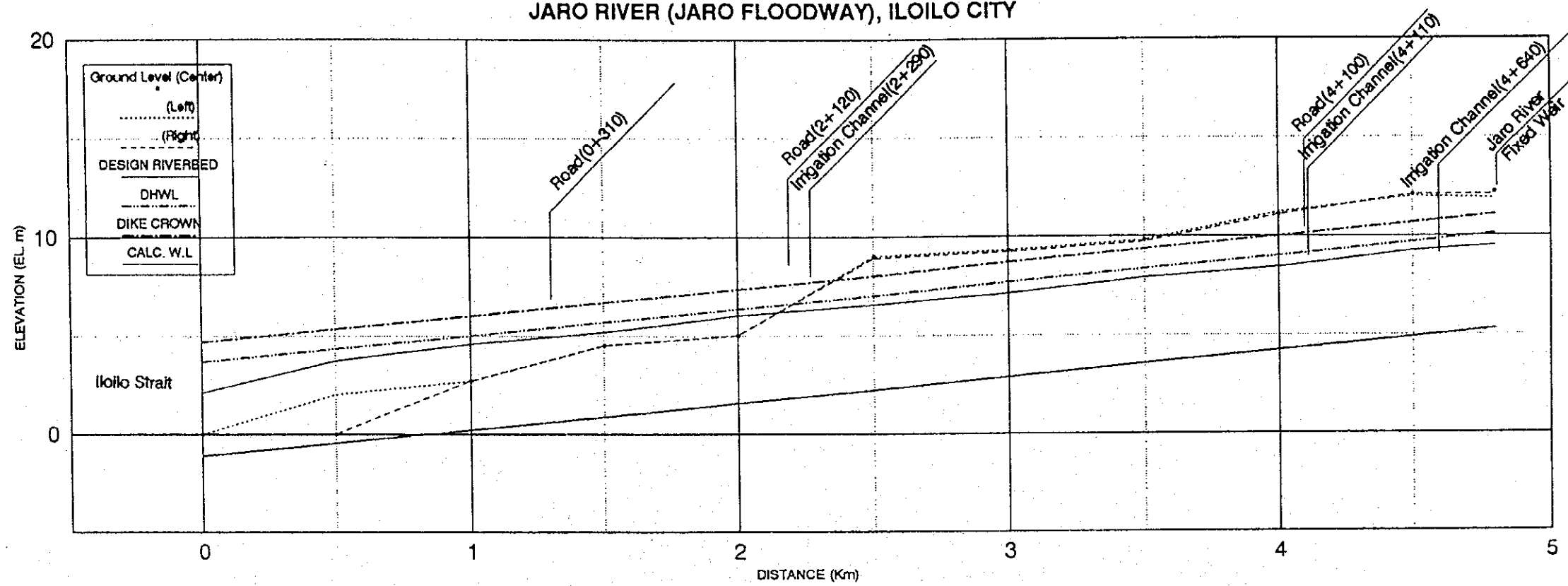
GRADIENT OF RIVERBED	1/1,000										
DIKE CROWN	13.50	13.65	13.81	13.96	14.04	14.06	14.12	14.27	14.42	14.81	15.19
DESIGN HWL	12.50	12.65	12.81	12.96	13.04	13.06	13.12	13.27	13.42	13.81	14.19
DESIGN RIVERBED	5.832	5.832	6.032	6.232	6.332	6.362	6.432	6.832	6.832	7.332	7.832
DEEPEST RIVERBED	6.9	5.0	5.7	6.6	6.3	6.4	6.8	7.0	6.3	7.0	7.6
LEFT BANK	13.9	12.5	13.7	14.0	13.2	14.0	14.2	14.1	13.6	13.4	14.5
RIGHT BANK	14.4	12.8	13.2	14.0	13.7	13.2	14.0	14.1	12.9	14.2	12.5
STATION No.	16.66	16.86	17.06	17.26	17.36	17.39	17.46	17.66	17.86	18.36	18.86

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



GRADIENT OF RIVERBED							
DIKE CROWN	13.10	13.42	13.78	14.21	14.84	14.85	14.89
DESIGN HWL	12.50	12.82	13.18	13.61	14.04	14.25	14.39
DESIGN RIVERBED	5.632	6.082	6.582	7.182	7.782	8.082	8.282
DEEPEST RIVERBED	5.4	6.0	7.5	8.2	8.0	7.9	8.2
LEFT BANK	11.9	12.8	13.2	13.7	14.6	17.4	15.7
RIGHT BANK	12.3	12.2	13.0	14.2	14.4	14.9	15.7
STATION No.	0.05	0.50	1.00	1.60	2.20	2.50	2.70

LONGITUDINAL PROFILE JARO RIVER (JARO FLOODWAY), ILOILO CITY



GRADIENT OF RIVERBED	1/750										
DIKE CROWN	4.600	5.287	5.933	6.600	7.287	7.933	8.600	9.287	9.933	10.600	11.000
DESIGN HWL	3.600	4.267	4.933	5.600	6.267	6.933	7.600	8.267	8.933	9.600	10.000
DESIGN RIVERBED	1.200	0.533	0.133	0.800	1.467	2.133	2.800	3.467	4.133	4.800	5.200
GROUND LEVEL CENTER	0.000	0.000	2.700	4.500	5.000	9.000	9.300	9.800	11.100	12.100	12.200
GROUND LEVEL RIGHT	0.000	0.000	2.700	4.500	5.000	8.900	9.200	9.700	11.100	12.100	12.100
GROUND LEVEL Left	0.000	2.000	2.700	4.500	5.000	9.000	9.300	9.800	11.200	12.000	11.900
STATION No.	0.000	0.500	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	4.800