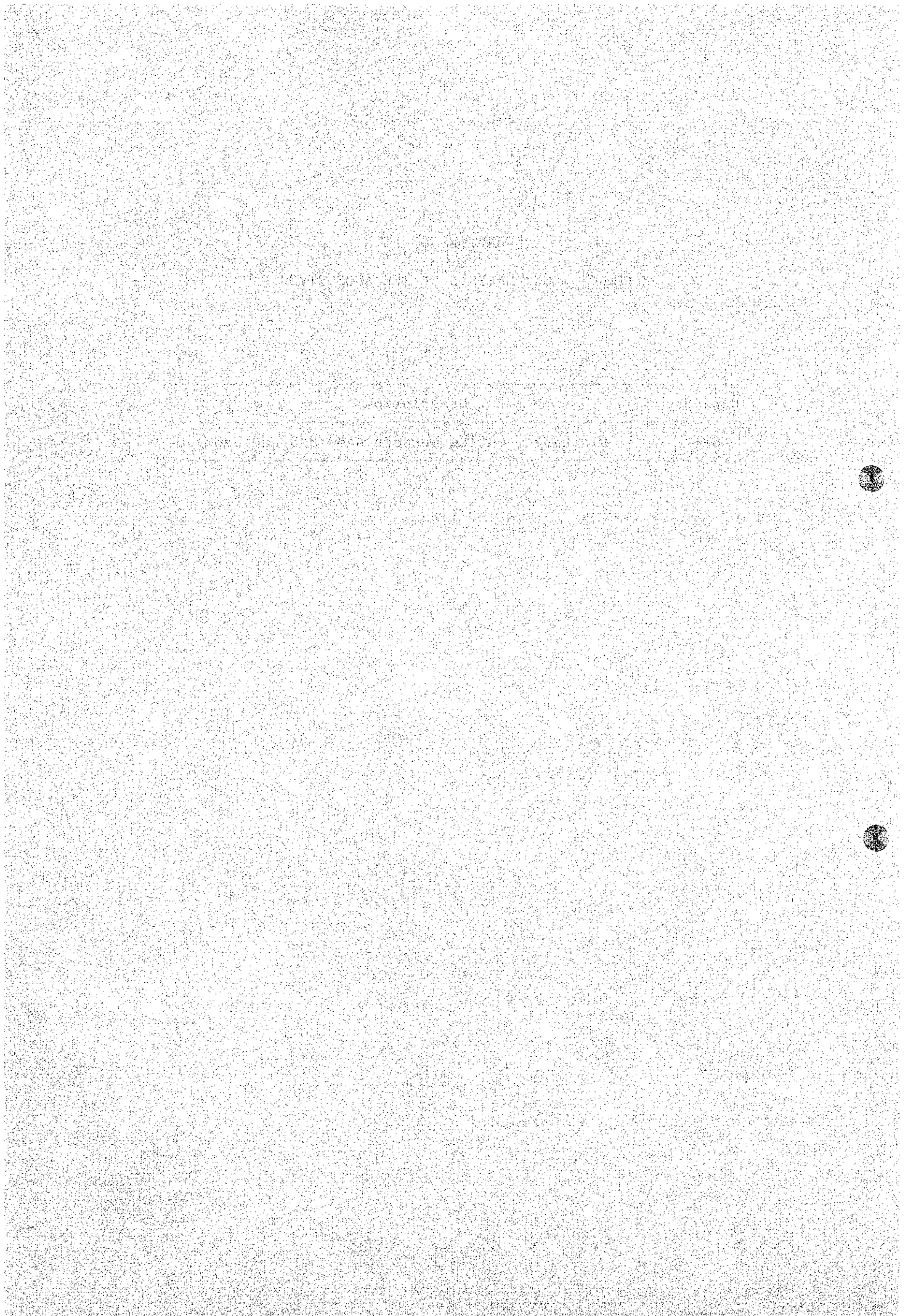


CHAPTER 6

UNSTEADY FLOW ANALYSIS OF THE AGOS RIVER

Case No.	Description
6-1	Discharge routing between Agos P/S and Banugao



C411 01 09-02=EU 14.362

AGOS RIVER		AGOS RIVER		AGOS RIVER		AGOS RIVER		AGOS RIVER	
Z	V	Z	V	Z	V	Z	V	Z	V
30	1.00	30	1.00	30	1.00	30	1.00	30	1.00
29	1.00	29	1.00	29	1.00	29	1.00	29	1.00
28	1.00	28	1.00	28	1.00	28	1.00	28	1.00
27	1.00	27	1.00	27	1.00	27	1.00	27	1.00
26	1.00	26	1.00	26	1.00	26	1.00	26	1.00
25	1.00	25	1.00	25	1.00	25	1.00	25	1.00
24	1.00	24	1.00	24	1.00	24	1.00	24	1.00
23	1.00	23	1.00	23	1.00	23	1.00	23	1.00
22	1.00	22	1.00	22	1.00	22	1.00	22	1.00
21	1.00	21	1.00	21	1.00	21	1.00	21	1.00
20	1.00	20	1.00	20	1.00	20	1.00	20	1.00
19	1.00	19	1.00	19	1.00	19	1.00	19	1.00
18	1.00	18	1.00	18	1.00	18	1.00	18	1.00
17	1.00	17	1.00	17	1.00	17	1.00	17	1.00
16	1.00	16	1.00	16	1.00	16	1.00	16	1.00
15	1.00	15	1.00	15	1.00	15	1.00	15	1.00
14	1.00	14	1.00	14	1.00	14	1.00	14	1.00
13	1.00	13	1.00	13	1.00	13	1.00	13	1.00
12	1.00	12	1.00	12	1.00	12	1.00	12	1.00
11	1.00	11	1.00	11	1.00	11	1.00	11	1.00
10	1.00	10	1.00	10	1.00	10	1.00	10	1.00
9	1.00	9	1.00	9	1.00	9	1.00	9	1.00
8	1.00	8	1.00	8	1.00	8	1.00	8	1.00
7	1.00	7	1.00	7	1.00	7	1.00	7	1.00
6	1.00	6	1.00	6	1.00	6	1.00	6	1.00
5	1.00	5	1.00	5	1.00	5	1.00	5	1.00
4	1.00	4	1.00	4	1.00	4	1.00	4	1.00
3	1.00	3	1.00	3	1.00	3	1.00	3	1.00
2	1.00	2	1.00	2	1.00	2	1.00	2	1.00
1	1.00	1	1.00	1	1.00	1	1.00	1	1.00

AGGS RIVER		AGGS RIVER		AGGS RIVER		AGGS RIVER		AGGS RIVER		AGGS RIVER	
Z	T	Z	T	Z	T	Z	T	Z	T	Z	T
30	35.951	30	35.951	30	35.951	30	35.951	30	35.951	30	35.951
29	34.976	29	34.976	29	34.976	29	34.976	29	34.976	29	34.976
28	33.996	28	33.996	28	33.996	28	33.996	28	33.996	28	33.996
27	33.016	27	33.016	27	33.016	27	33.016	27	33.016	27	33.016
26	32.036	26	32.036	26	32.036	26	32.036	26	32.036	26	32.036
25	31.056	25	31.056	25	31.056	25	31.056	25	31.056	25	31.056
24	30.076	24	30.076	24	30.076	24	30.076	24	30.076	24	30.076
23	29.095	23	29.095	23	29.095	23	29.095	23	29.095	23	29.095
22	28.115	22	28.115	22	28.115	22	28.115	22	28.115	22	28.115
21	27.135	21	27.135	21	27.135	21	27.135	21	27.135	21	27.135
20	26.155	20	26.155	20	26.155	20	26.155	20	26.155	20	26.155
19	25.176	19	25.176	19	25.176	19	25.176	19	25.176	19	25.176
18	24.196	18	24.196	18	24.196	18	24.196	18	24.196	18	24.196
17	23.216	17	23.216	17	23.216	17	23.216	17	23.216	17	23.216
16	22.236	16	22.236	16	22.236	16	22.236	16	22.236	16	22.236
15	21.256	15	21.256	15	21.256	15	21.256	15	21.256	15	21.256
14	20.276	14	20.276	14	20.276	14	20.276	14	20.276	14	20.276
13	19.296	13	19.296	13	19.296	13	19.296	13	19.296	13	19.296
12	18.316	12	18.316	12	18.316	12	18.316	12	18.316	12	18.316
11	17.336	11	17.336	11	17.336	11	17.336	11	17.336	11	17.336
10	16.356	10	16.356	10	16.356	10	16.356	10	16.356	10	16.356
9	15.376	9	15.376	9	15.376	9	15.376	9	15.376	9	15.376
8	14.396	8	14.396	8	14.396	8	14.396	8	14.396	8	14.396
7	13.416	7	13.416	7	13.416	7	13.416	7	13.416	7	13.416
6	12.436	6	12.436	6	12.436	6	12.436	6	12.436	6	12.436
5	11.456	5	11.456	5	11.456	5	11.456	5	11.456	5	11.456
4	10.476	4	10.476	4	10.476	4	10.476	4	10.476	4	10.476
3	9.496	3	9.496	3	9.496	3	9.496	3	9.496	3	9.496
2	8.516	2	8.516	2	8.516	2	8.516	2	8.516	2	8.516
1	7.536	1	7.536	1	7.536	1	7.536	1	7.536	1	7.536

** T = 2.40, 0 **		** T = 3.0, 0 **		** T = 5.30, 0 **			
Z	G	Z	G	Z	G		
30	35.951	163.00	106.15	30	34.940	1.00	5.00
29	34.776	161.86	106.64	29	33.998	2.57	8.81
28	33.596	161.94	106.62	28	33.117	9.12	18.75
27	33.416	161.93	106.60	27	32.249	18.61	29.89
26	32.236	161.93	106.58	26	31.386	32.17	41.59
25	31.056	161.93	106.57	25	30.519	47.64	52.88
24	30.876	161.93	106.56	24	29.646	64.97	63.62
23	29.695	161.93	106.55	23	28.762	82.36	73.23
22	28.515	161.93	106.54	22	27.867	99.57	81.74
21	27.335	161.93	106.54	21	26.958	115.17	88.83
20	26.155	161.93	106.53	20	26.034	128.47	94.41
19	25.976	161.93	106.53	19	25.107	149.43	98.71
18	24.796	161.93	106.52	18	24.148	147.79	101.83
17	23.616	161.93	106.51	17	23.189	153.66	103.92
16	22.436	161.93	106.51	16	22.222	157.46	105.22
15	21.256	161.93	106.51	15	21.249	159.66	105.94
14	20.076	161.93	106.50	14	20.273	160.87	106.29
13	18.896	161.93	106.50	13	19.294	161.48	106.45
12	17.716	161.93	106.50	12	18.315	161.75	106.51
11	16.536	161.93	106.50	11	17.335	161.87	106.53
10	15.355	161.93	106.50	10	16.355	161.91	106.54
9	14.175	161.93	106.50	9	15.375	161.93	106.54
8	13.000	161.93	106.50	8	14.395	161.93	106.55
7	11.820	161.93	106.50	7	13.416	161.93	106.55
6	10.640	161.93	106.50	6	12.436	161.94	106.55
5	9.460	161.93	106.50	5	11.456	161.93	106.58
4	8.280	161.93	106.50	4	10.476	161.96	106.58
3	7.100	161.93	106.50	3	9.495	161.84	106.56
2	5.920	161.93	106.50	2	8.518	162.32	106.56
1	4.740	161.92	106.50	1	7.533	162.32	105.12

** T = 4.30, 0.0 **		AGOS RIVER		** T = 5.0, 0.0 **		AGOS RIVER	
J0	Z	O	A	V	Z	O	A
30	34.940	1.00	5.00	0.20	34.940	1.00	5.00
29	33.960	1.10	5.01	0.22	33.960	1.15	5.18
28	32.980	1.16	5.01	0.21	32.980	1.15	5.28
27	32.002	1.13	5.16	0.20	31.999	0.94	4.89
26	31.027	1.14	6.69	0.27	31.016	0.96	4.61
25	30.057	1.17	9.73	0.36	30.043	1.38	5.34
24	29.149	5.88	13.90	0.42	29.083	2.28	7.27
23	28.207	8.22	17.71	0.47	28.153	3.74	10.34
22	27.254	10.55	20.35	0.50	27.188	5.67	13.84
21	26.306	13.11	22.62	0.56	26.233	7.18	16.54
20	25.368	17.37	27.78	0.63	25.268	8.34	17.82
19	24.431	22.90	32.13	0.68	24.309	10.10	19.83
18	23.489	28.17	35.91	0.73	23.357	12.60	22.66
17	22.548	31.09	39.77	0.78	22.411	15.78	26.14
16	21.612	36.97	44.18	0.84	21.464	18.94	29.39
15	20.677	43.30	48.68	0.89	20.509	21.59	31.85
14	19.738	49.47	52.81	0.94	19.555	24.51	34.51
13	18.799	56.10	56.92	0.99	18.603	28.71	37.11
12	17.863	63.41	61.30	1.03	17.653	33.18	41.26
11	16.927	71.01	65.67	1.08	16.716	37.62	44.60
10	15.987	78.37	69.70	1.12	15.785	41.82	47.52
9	15.046	85.82	73.55	1.17	14.846	46.53	50.82
8	14.105	93.55	77.45	1.21	13.910	51.80	54.04
7	13.163	101.55	81.29	1.25	12.976	57.43	57.58
6	12.218	108.65	84.85	1.28	12.049	63.34	60.88
5	11.270	115.83	89.94	1.32	11.081	68.34	63.93
4	10.320	122.60	95.61	1.35	10.111	74.09	67.09
3	9.360	128.65	99.61	1.38	9.186	80.43	70.66
2	8.411	133.22	99.45	1.40	8.261	85.77	73.66
1	7.445	139.59	99.49	1.43	7.289	94.16	79.85

** T = 5.30, 0 **

AGOS RIVER		AGOS RIVER		AGOS RIVER		AGOS RIVER	
Y	A	Q	Z	Y	A	Q	Z
30	5.00	1.00	34.940	0.20	5.00	1.00	34.940
29	5.20	1.16	33.962	0.22	5.19	1.16	33.962
28	5.45	1.32	32.984	0.24	5.40	1.32	32.984
27	5.59	1.42	32.006	0.25	5.56	1.42	32.006
26	4.59	1.16	31.021	0.23	4.27	1.16	31.024
25	4.18	0.94	30.035	0.23	4.00	0.94	30.038
24	4.75	1.20	29.050	0.23	4.51	1.20	29.051
23	6.07	1.71	28.075	0.24	6.10	1.71	28.077
22	8.18	2.62	27.104	0.26	8.29	2.62	27.094
21	11.21	4.08	26.139	0.29	11.49	4.08	26.120
20	13.84	5.48	25.185	0.33	14.07	5.48	25.151
19	15.22	6.32	24.241	0.38	15.11	6.32	24.226
18	16.22	7.28	23.291	0.41	16.11	7.28	23.265
17	17.64	8.45	22.321	0.44	17.11	8.45	22.294
16	19.18	10.13	21.321	0.46	18.17	10.13	21.294
15	22.51	12.51	20.352	0.49	20.35	12.51	20.324
14	25.16	15.04	19.388	0.52	22.51	15.04	19.353
13	27.48	17.91	18.435	0.55	24.85	17.91	18.381
12	29.16	20.90	17.480	0.57	26.50	20.90	17.418
11	31.23	24.31	16.527	0.60	28.25	24.31	16.464
10	33.18	27.20	15.570	0.63	29.99	27.20	15.500
9	36.16	31.62	14.585	0.65	32.72	31.62	14.535
8	39.16	36.94	13.622	0.68	35.44	36.94	13.565
7	41.00	41.19	12.688	0.71	38.15	41.19	12.590
6	43.07	46.77	11.753	0.74	40.84	46.77	11.600
5	49.22	61.83	9.784	0.79	47.54	61.83	10.675
4	53.44	71.99	8.839	0.82	50.24	71.99	9.747
3	55.28	81.85	7.845	0.85	52.04	81.85	8.757
2	62.19	107.00	6.970	0.89	59.04	107.00	7.757
1	62.19	107.00	6.970	0.92	59.04	107.00	6.963

** T = 6.0, 0 **

AGOS RIVER		AGOS RIVER		AGOS RIVER		AGOS RIVER	
Y	A	Q	Z	Y	A	Q	Z
30	5.00	1.00	34.940	0.20	5.00	1.00	34.940
29	5.20	1.16	33.962	0.22	5.19	1.16	33.962
28	5.45	1.32	32.984	0.24	5.40	1.32	32.984
27	5.59	1.42	32.006	0.25	5.56	1.42	32.004
26	4.59	1.16	31.021	0.23	4.27	1.16	31.024
25	4.18	0.94	30.035	0.23	4.00	0.94	30.038
24	4.75	1.20	29.050	0.23	4.51	1.20	29.051
23	6.07	1.71	28.075	0.24	6.10	1.71	28.077
22	8.18	2.62	27.104	0.26	8.29	2.62	27.094
21	11.21	4.08	26.139	0.29	11.49	4.08	26.120
20	13.84	5.48	25.185	0.33	14.07	5.48	25.151
19	15.22	6.32	24.241	0.38	15.11	6.32	24.226
18	16.22	7.28	23.291	0.41	16.11	7.28	23.265
17	17.64	8.45	22.321	0.44	17.11	8.45	22.294
16	19.18	10.13	21.321	0.46	18.17	10.13	21.294
15	22.51	12.51	20.352	0.49	20.35	12.51	20.324
14	25.16	15.04	19.388	0.52	22.51	15.04	19.353
13	27.48	17.91	18.435	0.55	24.85	17.91	18.381
12	29.16	20.90	17.480	0.57	26.50	20.90	17.418
11	31.23	24.31	16.527	0.60	28.25	24.31	16.464
10	33.18	27.20	15.570	0.63	29.99	27.20	15.500
9	36.16	31.62	14.585	0.65	32.72	31.62	14.535
8	39.16	36.94	13.622	0.68	35.44	36.94	13.565
7	41.00	41.19	12.688	0.71	38.15	41.19	12.590
6	43.07	46.77	11.753	0.74	40.84	46.77	11.600
5	49.22	61.83	9.784	0.79	47.54	61.83	10.675
4	53.44	71.99	8.839	0.82	50.24	71.99	9.747
3	55.28	81.85	7.845	0.85	52.04	81.85	8.757
2	62.19	107.00	6.970	0.89	59.04	107.00	7.757
1	62.19	107.00	6.970	0.92	59.04	107.00	6.963

** T = 6.30, 0 **

AGOS RIVER		AGOS RIVER		AGOS RIVER		AGOS RIVER	
Y	A	Q	Z	Y	A	Q	Z
30	5.00	1.00	34.940	0.20	5.00	1.00	34.940
29	5.20	1.16	33.962	0.22	5.19	1.16	33.962
28	5.45	1.32	32.984	0.24	5.40	1.32	32.984
27	5.59	1.42	32.006	0.25	5.56	1.42	32.004
26	4.59	1.16	31.021	0.23	4.27	1.16	31.024
25	4.18	0.94	30.035	0.23	4.00	0.94	30.038
24	4.75	1.20	29.050	0.23	4.51	1.20	29.051
23	6.07	1.71	28.075	0.24	6.10	1.71	28.077
22	8.18	2.62	27.104	0.26	8.29	2.62	27.094
21	11.21	4.08	26.139	0.29	11.49	4.08	26.120
20	13.84	5.48	25.185	0.33	14.07	5.48	25.151
19	15.22	6.32	24.241	0.38	15.11	6.32	24.226
18	16.22	7.28	23.291	0.41	16.11	7.28	23.265
17	17.64	8.45	22.321	0.44	17.11	8.45	22.294
16	19.18	10.13	21.321	0.46	18.17	10.13	21.294
15	22.51	12.51	20.352	0.49	20.35	12.51	20.324
14	25.16	15.04	19.388	0.52	22.51	15.04	19.353
13	27.48	17.91	18.435	0.55	24.85	17.91	18.381
12	29.16	20.90	17.480	0.57	26.50	20.90	17.418
11	31.23	24.31	16.527	0.60	28.25	24.31	16.464
10	33.18	27.20	15.570	0.63	29.99	27.20	15.500
9	36.16	31.62	14.585	0.65	32.72	31.62	14.535
8	39.16	36.94	13.622	0.68	35.44	36.94	13.565
7	41.00	41.19	12.688	0.71	38.15	41.19	12.590
6	43.07	46.77	11.753	0.74	40.84	46.77	11.600
5	49.22	61.83	9.784	0.79	47.54	61.83	10.675
4	53.44	71.99	8.839	0.82	50.24	71.99	9.747
3	55.28	81.85	7.845	0.85	52.04	81.85	8.757
2	62.19	107.00	6.970	0.89	59.04	107.00	7.757
1	62.19	107.00	6.970	0.92	59.04	107.00	6.963

** T = 7, 0, 0 **		AGOS RIVER		** T = 7, 30, 0 **		AGOS RIVER		** T = 9, 0, 0 **		AGOS RIVER	
Z	A	V	O	Z	A	V	O	Z	A	V	O
30	31.940	0.000	1.000	30	31.940	0.000	1.000	30	31.940	0.000	1.000
29	33.563	0.000	1.118	29	33.563	0.000	1.118	29	33.563	0.000	1.117
28	32.984	0.000	1.100	28	32.984	0.000	1.100	28	32.984	0.000	1.120
27	32.002	0.000	1.123	27	32.004	0.000	1.123	27	32.005	0.000	1.115
26	31.022	0.000	1.100	26	31.020	0.000	1.100	26	31.021	0.000	1.113
25	30.041	0.000	1.123	25	30.040	0.000	1.123	25	30.037	0.000	1.114
24	29.057	0.000	1.100	24	29.060	0.000	1.100	24	29.058	0.000	1.120
23	28.072	0.000	1.123	23	28.077	0.000	1.123	23	28.081	0.000	1.130
22	27.091	0.000	1.100	22	27.093	0.000	1.100	22	27.098	0.000	1.118
21	26.117	0.000	1.123	21	26.113	0.000	1.123	21	26.114	0.000	1.102
20	25.137	0.000	1.100	20	25.134	0.000	1.100	20	25.135	0.000	1.123
19	24.166	0.000	1.123	19	24.164	0.000	1.123	19	24.163	0.000	1.095
18	23.204	0.000	1.100	18	23.204	0.000	1.100	18	23.170	0.000	1.121
17	22.244	0.000	1.123	17	22.244	0.000	1.123	17	22.206	0.000	1.132
16	21.271	0.000	1.100	16	21.254	0.000	1.100	16	21.240	0.000	1.177
15	20.299	0.000	1.123	15	20.290	0.000	1.123	15	20.266	0.000	1.177
14	19.328	0.000	1.100	14	19.306	0.000	1.100	14	19.291	0.000	2.099
13	18.358	0.000	1.123	13	18.336	0.000	1.123	13	18.316	0.000	2.462
12	17.384	0.000	1.100	12	17.364	0.000	1.100	12	17.344	0.000	2.822
11	16.416	0.000	1.123	11	16.394	0.000	1.123	11	16.378	0.000	3.335
10	15.445	0.000	1.100	10	15.422	0.000	1.100	10	15.405	0.000	4.005
9	14.475	0.000	1.123	9	14.451	0.000	1.123	9	14.434	0.000	4.85
8	13.522	0.000	1.100	8	13.502	0.000	1.100	8	13.487	0.000	5.50
7	12.557	0.000	1.123	7	12.534	0.000	1.123	7	12.525	0.000	6.14
6	11.584	0.000	1.100	6	11.564	0.000	1.100	6	11.552	0.000	6.68
5	10.613	0.000	1.123	5	10.594	0.000	1.123	5	10.581	0.000	7.33
4	9.643	0.000	1.100	4	9.625	0.000	1.100	4	9.608	0.000	8.07
3	8.677	0.000	1.123	3	8.655	0.000	1.123	3	8.646	0.000	8.71
2	7.715	0.000	1.100	2	7.693	0.000	1.100	2	7.686	0.000	17.10
1	6.772	0.000	1.123	1	6.748	0.000	1.123	1	6.745	0.000	17.81

** T = 8.30, 0 **

AGOS RIVER		AGOS RIVER		AGOS RIVER		AGOS RIVER	
Z	G	Z	A	Z	A	Z	A
30	1.00	30	5.00	30	0.20	30	5.00
29	1.17	29	5.26	29	0.22	29	5.26
28	1.19	28	5.38	28	0.22	28	5.43
27	1.22	27	5.40	27	0.23	27	5.40
26	1.14	26	4.75	26	0.24	26	5.13
25	1.14	25	4.15	25	0.25	25	5.00
24	1.24	24	4.10	24	0.25	24	4.81
23	1.30	23	4.10	23	0.25	23	4.56
22	1.17	22	5.12	22	0.25	22	4.67
21	1.09	21	5.12	21	0.25	21	5.09
20	1.06	20	4.94	20	0.24	20	5.05
19	0.87	19	4.94	19	0.24	19	5.05
18	0.92	18	4.83	18	0.22	18	5.21
17	1.22	17	4.78	17	0.20	17	4.44
16	1.53	16	5.60	16	0.21	16	4.30
15	1.86	15	5.81	15	0.21	15	5.01
14	2.20	14	6.61	14	0.27	14	5.13
13	2.48	13	6.61	13	0.30	13	5.33
12	2.94	12	7.20	12	0.33	12	5.70
11	3.49	11	8.06	11	0.33	11	6.32
10	3.94	10	9.25	10	0.35	10	6.80
9	4.30	9	10.06	9	0.35	9	7.65
8	4.92	8	11.54	8	0.37	8	8.74
7	5.38	7	12.48	7	0.37	7	9.29
6	5.75	6	11.43	6	0.37	6	10.99
5	6.50	5	10.51	5	0.40	5	12.27
4	6.80	4	9.55	4	0.40	4	12.27
3	7.62	3	8.59	3	0.44	3	11.64
2	8.05	2	7.60	2	0.44	2	11.64
1	8.00	1	6.69	1	0.52	1	12.22

** T = 9.30, 0 **

AGOS RIVER		AGOS RIVER		AGOS RIVER		AGOS RIVER	
Z	G	Z	A	Z	A	Z	A
30	1.00	30	5.00	30	0.20	30	5.00
29	1.18	29	5.26	29	0.22	29	5.26
28	1.19	28	5.38	28	0.22	28	5.43
27	1.22	27	5.40	27	0.23	27	5.40
26	1.14	26	4.75	26	0.24	26	5.13
25	1.14	25	4.15	25	0.25	25	5.00
24	1.24	24	4.10	24	0.25	24	4.81
23	1.30	23	4.10	23	0.25	23	4.56
22	1.17	22	5.12	22	0.25	22	4.67
21	1.09	21	5.12	21	0.25	21	5.09
20	1.06	20	4.94	20	0.24	20	5.05
19	0.87	19	4.94	19	0.24	19	5.05
18	0.92	18	4.83	18	0.22	18	5.21
17	1.22	17	4.78	17	0.20	17	4.44
16	1.53	16	5.60	16	0.21	16	4.30
15	1.86	15	5.81	15	0.21	15	5.01
14	2.20	14	6.61	14	0.27	14	5.13
13	2.48	13	6.61	13	0.30	13	5.33
12	2.94	12	7.20	12	0.33	12	5.70
11	3.49	11	8.06	11	0.33	11	6.32
10	3.94	10	9.25	10	0.35	10	6.80
9	4.30	9	10.06	9	0.35	9	7.65
8	4.92	8	11.54	8	0.37	8	8.74
7	5.38	7	12.48	7	0.37	7	9.29
6	5.75	6	11.43	6	0.37	6	10.99
5	6.50	5	10.51	5	0.40	5	12.27
4	6.80	4	9.55	4	0.40	4	12.27
3	7.62	3	8.59	3	0.44	3	11.64
2	8.05	2	7.60	2	0.44	2	11.64
1	8.00	1	6.69	1	0.52	1	12.22

** T = 10, 0, 0 **				** T = 11, 0, 0 **			
AGOS RIVER	Z	A	V	AGOS RIVER	Z	A	V
30	34,940	5,100	0,200	30	34,940	5,100	0,200
29	33,962	5,125	0,222	29	33,962	5,125	0,222
28	32,984	5,147	0,222	28	32,984	5,147	0,222
27	32,005	5,170	0,222	27	32,005	5,170	0,222
26	31,026	5,192	0,222	26	31,026	5,192	0,222
25	30,048	5,215	0,222	25	30,048	5,215	0,222
24	29,069	5,237	0,222	24	29,069	5,237	0,222
23	28,090	5,260	0,222	23	28,090	5,260	0,222
22	27,111	5,282	0,222	22	27,111	5,282	0,222
21	26,132	5,305	0,222	21	26,132	5,305	0,222
20	25,153	5,327	0,222	20	25,153	5,327	0,222
19	24,174	5,350	0,222	19	24,174	5,350	0,222
18	23,195	5,372	0,222	18	23,195	5,372	0,222
17	22,216	5,395	0,222	17	22,216	5,395	0,222
16	21,237	5,417	0,222	16	21,237	5,417	0,222
15	20,258	5,440	0,222	15	20,258	5,440	0,222
14	19,279	5,462	0,222	14	19,279	5,462	0,222
13	18,300	5,485	0,222	13	18,300	5,485	0,222
12	17,321	5,507	0,222	12	17,321	5,507	0,222
11	16,342	5,530	0,222	11	16,342	5,530	0,222
10	15,363	5,552	0,222	10	15,363	5,552	0,222
9	14,384	5,575	0,222	9	14,384	5,575	0,222
8	13,405	5,597	0,222	8	13,405	5,597	0,222
7	12,426	5,620	0,222	7	12,426	5,620	0,222
6	11,447	5,642	0,222	6	11,447	5,642	0,222
5	10,468	5,665	0,222	5	10,468	5,665	0,222
4	9,489	5,687	0,222	4	9,489	5,687	0,222
3	8,510	5,710	0,222	3	8,510	5,710	0,222
2	7,531	5,732	0,222	2	7,531	5,732	0,222
1	6,552	5,755	0,222	1	6,552	5,755	0,222

AGOS RIVER		AGOS RIVER	
Z	Q	Z	Q
30	34.940	30	34.940
29	33.963	29	33.963
28	32.984	28	32.984
27	32.004	27	32.004
26	31.021	26	31.021
25	30.040	25	30.040
24	29.057	24	29.057
23	28.076	23	28.076
22	27.100	22	27.100
21	26.119	21	26.119
20	25.139	20	25.139
19	24.161	19	24.161
18	23.179	18	23.179
17	22.201	17	22.201
16	21.227	16	21.227
15	20.246	15	20.246
14	19.263	14	19.263
13	18.276	13	18.276
12	17.292	12	17.292
11	16.303	11	16.303
10	15.334	10	15.334
9	14.355	9	14.355
8	13.363	8	13.363
7	12.404	7	12.404
6	11.435	6	11.435
5	10.452	5	10.452
4	9.493	4	9.493
3	8.503	3	8.503
2	7.541	2	7.541
1	6.551	1	6.551

AGOS RIVER		AGOS RIVER	
Z	Q	Z	Q
30	34.940	30	34.940
29	33.963	29	33.963
28	32.984	28	32.984
27	32.004	27	32.004
26	31.021	26	31.021
25	30.040	25	30.040
24	29.057	24	29.057
23	28.076	23	28.076
22	27.100	22	27.100
21	26.119	21	26.119
20	25.139	20	25.139
19	24.161	19	24.161
18	23.179	18	23.179
17	22.201	17	22.201
16	21.227	16	21.227
15	20.246	15	20.246
14	19.263	14	19.263
13	18.276	13	18.276
12	17.292	12	17.292
11	16.303	11	16.303
10	15.334	10	15.334
9	14.355	9	14.355
8	13.363	8	13.363
7	12.404	7	12.404
6	11.435	6	11.435
5	10.452	5	10.452
4	9.493	4	9.493
3	8.503	3	8.503
2	7.541	2	7.541
1	6.551	1	6.551

AGOS RIVER		AGOS RIVER	
Z	Q	Z	Q
30	34.940	30	34.940
29	33.962	29	33.962
28	32.984	28	32.984
27	32.004	27	32.004
26	31.021	26	31.021
25	30.039	25	30.039
24	29.058	24	29.058
23	28.076	23	28.076
22	27.098	22	27.098
21	26.120	21	26.120
20	25.139	20	25.139
19	24.161	19	24.161
18	23.181	18	23.181
17	22.199	17	22.199
16	21.224	16	21.224
15	20.247	15	20.247
14	19.266	14	19.266
13	18.279	13	18.279
12	17.296	12	17.296
11	16.310	11	16.310
10	15.322	10	15.322
9	14.351	9	14.351
8	13.375	8	13.375
7	12.397	7	12.397
6	11.430	6	11.430
5	10.445	5	10.445
4	9.493	4	9.493
3	8.497	3	8.497
2	7.524	2	7.524
1	6.544	1	6.544

AGOS RIVER		AGOS RIVER	
Z	Q	Z	Q
30	34.940	30	34.940
29	33.963	29	33.963
28	32.984	28	32.984
27	32.004	27	32.004
26	31.022	26	31.022
25	30.040	25	30.040
24	29.057	24	29.057
23	28.076	23	28.076
22	27.100	22	27.100
21	26.119	21	26.119
20	25.139	20	25.139
19	24.161	19	24.161
18	23.179	18	23.179
17	22.201	17	22.201
16	21.227	16	21.227
15	20.246	15	20.246
14	19.263	14	19.263
13	18.276	13	18.276
12	17.292	12	17.292
11	16.303	11	16.303
10	15.334	10	15.334
9	14.355	9	14.355
8	13.363	8	13.363
7	12.404	7	12.404
6	11.435	6	11.435
5	10.452	5	10.452
4	9.493	4	9.493
3	8.503	3	8.503
2	7.541	2	7.541
1	6.551	1	6.551

AGOS RIVER		AGOS RIVER	
Z	Q	Z	Q
30	34.940	30	34.940
29	33.963	29	33.963
28	32.984	28	32.984
27	32.004	27	32.004
26	31.022	26	31.022
25	30.040	25	30.040
24	29.057	24	29.057
23	28.076	23	28.076
22	27.100	22	27.100
21	26.119	21	26.119
20	25.139	20	25.139
19	24.161	19	24.161
18	23.179	18	23.179
17	22.201	17	22.201
16	21.227	16	21.227
15	20.246	15	20.246
14	19.263	14	19.263
13	18.276	13	18.276
12	17.292	12	17.292
11	16.303	11	16.303
10	15.334	10	15.334
9	14.355	9	14.355
8	13.363	8	13.363
7	12.404	7	12.404
6	11.435	6	11.435
5	10.452	5	10.452
4	9.493	4	9.493
3	8.503	3	8.503
2	7.541	2	7.541
1	6.551	1	6.551

CHAPTER 7

NON-UNIFORM FLOW ANALYSIS OF THE AGOS RIVER

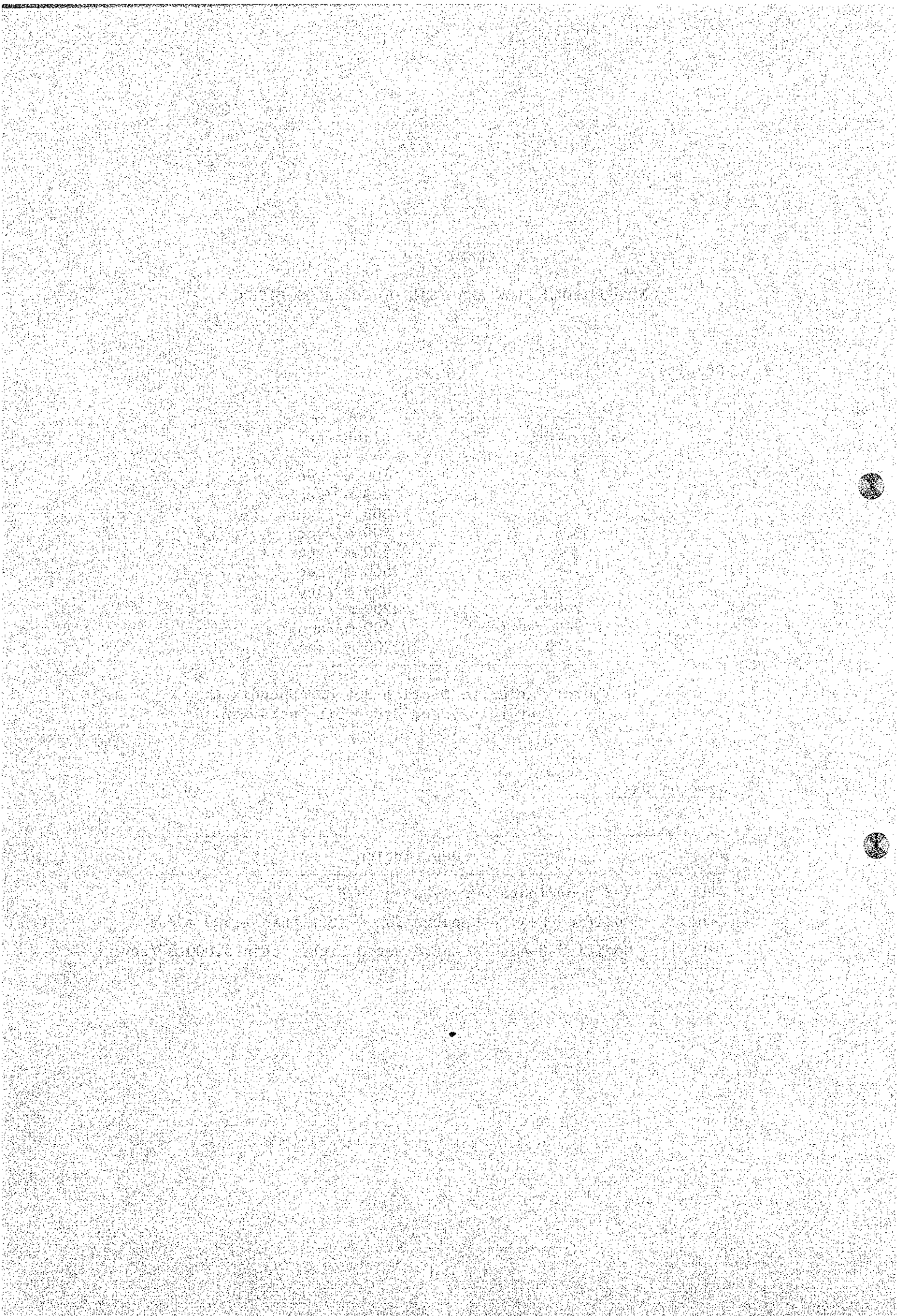
7.1 Results

Case No.	Discharge
7-1	100 m ³ /sec
7-2	200 m ³ /sec
7-3	300 m ³ /sec
7-4	400 m ³ /sec
7-5	500 m ³ /sec
7-6	1,500 m ³ /sec
7-7	3,000 m ³ /sec
7-8	5,200 m ³ /sec
7-9	7,000 m ³ /sec
7-10	10,200 m ³ /sec

Note: Refer to Section 8.5 of Appendix A:
Hydrology and Reservoir Operation.

7.2 Section Data

No.	Description
7-11	X-Y coordinate surveyed in 1979
7-12	Modified H-A, H-R curve for Q less than 1,500 m ³ /sec
7-13	Modified H-A, H-R curve for Q higher than 3,000 m ³ /sec



***** BACK WATER CALCULATION WATER SURFACE PROFILE *****

RIVER NAME *** CROSS SECTION DATA OF AGOS RIVER LUZON PHILIPPINES *** NIPPON KOEI

AT FIRST SECTION DISCHARGE 100.000 WATER LEVEL 0.000 COEFFICIENT OF ROUGHNESS 0.030

BETWEEN THE ESTUARY AND THE CONFLUENCE *** WATER SURFACE PROFILE OF AGOS RIVER ***

SEC. NO.	DISTANCE	EL. MIN.	DISCHARGE	N. VALUE	AREA	W.L.	VELOCITY	DEPTH	C.W.D.	F.B.D.
ADD-1	-5.000	100.000	100.000	0.030	2727.273	0.000	0.037	5.000	0.164	0.500
ADD-2	-4.000	100.000	100.000	0.030	1727.826	0.000	0.056	4.000	0.190	0.500
ADD-3	-3.000	100.000	100.000	0.030	1028.803	0.001	0.097	3.001	0.268	0.499
ADD-4	-2.500	100.000	100.000	0.030	580.159	0.003	0.172	2.503	0.298	0.997
	-2.100	100.000	100.000	0.030	245.770	0.033	0.410	2.133	0.985	1.867
	-1.900	100.000	100.000	0.030	112.052	0.334	0.892	2.254	1.291	3.836
3	4300.000	100.000	100.000	0.030	73.070	2.440	1.369	0.960	0.749	4.060
4	3500.000	100.000	100.000	0.030	123.244	4.761	0.811	1.413	0.709	3.739
5	6200.000	100.000	100.000	0.030	235.781	4.991	0.474	5.591	2.034	3.959
ADD-5	-0.600	100.000	100.000	0.030	68.928	6.650	1.450	0.800	0.412	2.350
6	7300.000	100.000	100.000	0.030	152.222	7.434	0.657	2.484	1.114	2.666
7	2800.000	100.000	100.000	0.030	50.129	9.049	1.995	1.049	1.009	3.931
8	9100.000	100.000	100.000	0.030	704.195	13.852	0.162	0.840	0.840	1.148
9	5900.000	100.000	100.000	0.030	323.510	13.871	0.389	2.471	0.809	3.129
10	1900.000	100.000	100.000	0.030	317.356	13.905	0.315	5.305	1.267	7.095
ADD-6	11.320	100.000	100.000	0.030	120.481	14.005	0.810	2.653	0.810	4.293
12	13200.000	100.000	100.000	0.030	37.668	17.035	2.669	3.185	3.008	10.765
13	13700.000	100.000	100.000	0.030	283.922	18.274	0.364	4.974	1.417	4.276
14 *	14000.000	100.000	100.000	0.030	41.160	19.693	2.430	1.493	1.444	4.307
14-A	14500.000	100.000	100.000	0.030	360.932	22.203	0.217	9.703	2.668	3.197
15	14900.000	100.000	100.000	0.030	188.979	22.212	0.529	3.012	1.550	5.088
15-A	15300.000	100.000	100.000	0.030	111.765	22.331	0.895	3.333	1.887	3.017
16	15900.000	100.000	100.000	0.030	69.118	22.598	1.447	2.398	1.734	6.202
17	16300.000	100.000	100.000	0.030	44.802	26.589	2.232	1.339	1.339	7.611
18	17300.000	100.000	100.000	0.030	813.574	30.533	0.123	6.733	1.384	3.547
19	12800.000	100.000	100.000	0.030	312.541	30.537	0.317	3.257	0.839	7.443
20	18000.000	100.000	100.000	0.030	357.795	30.564	0.279	5.314	2.128	2.236
21	18300.000	100.000	100.000	0.030	249.756	30.576	0.400	3.826	1.722	5.124
22	19000.000	100.000	100.000	0.030	133.230	30.619	0.751	4.919	2.551	8.481
23	19300.000	100.000	100.000	0.030	53.211	31.827	1.855	2.727	2.215	11.173
24	20300.000	100.000	100.000	0.030	43.450	34.793	2.290	1.293	1.293	1.807
ADD-7	2050.000	100.000	100.000	0.030	81.671	36.153	1.224	0.403	0.304	63.947
ADD-8	20340.000	100.000	100.000	0.030	45.422	37.851	2.202	0.851	0.851	4.449
27	20800.000	100.000	100.000	0.030	82.222	38.191	1.187	1.191	0.851	4.109
ADD-9	20620.000	100.000	100.000	0.030	48.049	38.130	2.081	1.130	1.108	4.170
ADD-10	20740.000	100.000	100.000	0.030	130.700	38.830	0.765	4.730	2.598	3.470
ADD-11	20760.000	100.000	100.000	0.030	131.183	38.836	0.760	4.736	2.598	-36.536 OVER
ADD-12	20740.000	100.000	100.000	0.030	131.661	38.842	0.760	4.742	2.598	-36.542 OVER
ADD-13	20800.000	100.000	100.000	0.030	132.136	38.848	0.757	4.748	2.598	-36.548 OVER
ADD-14	20910.000	100.000	100.000	0.030	135.346	38.888	0.739	4.788	2.528	-36.588 OVER
ADD-15	21140.000	100.000	100.000	0.030	139.941	38.941	0.716	4.841	2.598	18.359
ADD-16	21225.000	100.000	100.000	0.030	141.612	38.941	0.707	4.863	2.598	18.337
28	21310.000	100.000	100.000	0.030	125.512	38.970	0.797	4.176	2.028	5.974
ADD-17	21590.000	100.000	100.000	0.030	40.156	40.156	2.048	1.806	1.806	10.044
ADD-18	21610.000	100.000	100.000	0.030	68.988	40.350	1.450	2.000	1.806	9.890
ADD-19	21630.000	100.000	100.000	0.030	75.425	40.412	1.326	2.062	1.806	9.788
ADD-20	21650.000	100.000	100.000	0.030	80.436	40.459	1.242	2.109	1.806	9.741
ADD-21	21870.000	100.000	100.000	0.030	59.492	41.416	1.681	0.918	0.834	53.584
ADD-22	22200.000	100.000	100.000	0.030	372.297	44.778	0.269	6.278	2.163	6.422

NO. MARK SUB-CRITICAL FLOW
 * MARK SUPER-CRITICAL FLOW
 C. MARK CONTROL SECTION

***** WATER SURFACE PROFILE *****
 RIVER NAME *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI
 AT FIRST SECTIONAL DISCHARGE 200.000 WATER LEVEL 0. (GIVEN) COEFFICIENT OF ROUGHNESS 0.030
 BETWEEN THE ESTIMARY AND THE CORRELANCE *** WATER SURFACE PROFILE OF AGOS RIVER ***

SEC. NO.	DISTANCE	EL. MIN.	DISCHARGE	N. VALUE	AREA	W.L.	VELOCITY	DEPTH	C.W.D.	F.B.D.
ADD-1	0.	-5.000	200.000	0.030	2727.273	0.	0.073	5.000	0.260	0.500
ADD-2	600.000	-4.000	200.000	0.030	1772.972	0.000	0.112	4.000	0.201	0.250
ADD-3	1200.000	-3.000	200.000	0.030	1029.494	0.002	0.194	3.002	0.362	0.458
ADD-4	1800.000	-2.500	200.000	0.030	582.508	0.012	0.343	2.512	0.472	0.988
1	2300.000	-2.100	200.000	0.030	262.579	0.109	0.762	2.209	1.332	1.791
2	3200.000	-1.500	200.000	0.030	140.755	0.273	1.244	2.623	1.760	3.422
3	4300.000	-1.480	200.000	0.030	120.713	2.824	1.657	1.544	1.015	3.616
4	5500.000	-1.350	200.000	0.030	151.742	1.236	1.682	1.236	0.988	3.412
5	6200.000	-0.800	200.000	0.030	275.664	5.509	0.726	6.109	2.640	3.441
ADD-5	7000.000	-0.850	200.000	0.030	111.518	6.826	1.733	0.826	0.712	2.024
6	7300.000	-0.950	200.000	0.030	184.049	7.855	1.087	2.805	1.487	2.345
7	7800.000	-0.800	200.000	0.030	60.853	9.393	2.474	1.393	1.314	3.607
8	9100.000	-0.250	200.000	0.030	835.143	14.406	0.239	5.156	1.085	0.594
9	9200.000	-1.400	200.000	0.030	545.819	14.432	0.440	3.072	1.081	2.588
10	10900.000	-0.600	200.000	0.030	562.664	14.483	0.351	3.683	1.728	0.517
ADD-6	12100.000	-1.350	200.000	0.030	154.784	14.661	1.292	3.431	1.275	4.339
12	13200.000	-1.850	200.000	0.030	65.239	17.685	3.066	3.835	3.738	10.115
13	13700.000	-1.400	200.000	0.030	358.928	19.682	0.557	5.682	1.894	3.518
14 *	14000.000	-1.800	200.000	0.030	69.688	20.203	2.870	2.003	1.935	2.777
14A	14600.000	-1.300	200.000	0.030	328.298	22.384	0.304	2.081	2.604	2.819
15	14900.000	-1.900	200.000	0.030	236.775	22.601	0.845	3.404	1.909	4.696
15A	15200.000	-1.900	200.000	0.030	157.840	22.843	1.267	3.843	2.748	2.507
16	15900.000	-1.900	200.000	0.030	107.897	23.228	1.854	3.228	2.570	2.552
17	16500.000	-2.500	200.000	0.030	81.431	23.831	2.436	1.781	1.816	2.187
18	17300.000	-2.300	200.000	0.030	735.576	30.214	0.272	6.414	1.958	3.886
19	17800.000	-2.300	200.000	0.030	274.164	30.237	0.730	2.927	1.153	2.783
20	18000.000	-2.500	200.000	0.030	522.252	30.272	0.621	2.222	2.653	2.528
21	18500.000	-2.000	200.000	0.030	223.443	30.347	0.835	2.397	2.139	3.393
22	19000.000	-2.500	200.000	0.030	129.086	30.558	1.549	4.858	3.481	8.542
23	19200.000	-2.900	200.000	0.030	82.224	32.351	2.432	3.251	2.845	10.609
24	20300.000	-3.500	200.000	0.030	81.756	35.189	2.446	1.689	1.689	1.441
ADD-7	20450.000	-3.500	200.000	0.030	128.761	36.383	1.533	0.633	0.479	0.617
ADD-8	20550.000	-3.700	200.000	0.030	85.270	38.198	2.345	1.198	1.198	4.102
27	20600.000	-3.700	200.000	0.030	125.586	38.490	1.591	1.490	1.198	3.810
ADD-9	20620.000	-3.700	200.000	0.030	73.450	38.418	2.730	1.418	1.418	3.882
ADD-10	20740.000	-3.400	200.000	0.030	184.607	39.413	1.683	2.313	1.418	2.887
ADD-11	20760.000	-3.400	200.000	0.030	185.623	39.423	1.077	5.323	3.671	37.123 OVER
ADD-12	20780.000	-3.400	200.000	0.030	186.623	39.433	1.072	5.333	3.671	37.123 OVER
ADD-13	20800.000	-3.400	200.000	0.030	187.609	39.443	1.066	5.343	3.671	37.123 OVER
ADD-14	20920.000	-3.400	200.000	0.030	194.618	39.510	1.030	3.710	3.671	37.123 OVER
ADD-15	21160.000	-3.400	200.000	0.030	203.301	39.595	0.984	5.495	3.671	37.123 OVER
ADD-15	2125.000	-3.400	200.000	0.030	206.786	39.628	0.967	5.528	3.671	17.682
28	21310.000	-3.800	200.000	0.030	171.738	39.637	1.165	4.637	2.646	5.335
ADD-16	21500.000	-3.800	200.000	0.030	77.926	40.432	2.580	2.082	2.082	9.768
ADD-17	21610.000	-3.850	200.000	0.030	118.186	40.743	1.692	2.395	2.082	9.477
ADD-18	21630.000	-3.850	200.000	0.030	128.088	40.816	1.561	2.082	2.082	9.368
29	21650.000	-3.850	200.000	0.030	132.704	40.862	1.424	2.424	2.082	9.368
C-LINE	21870.000	-4.000	200.000	0.030	97.578	41.692	2.050	1.192	1.124	53.308
30	22700.000	-3.800	200.000	0.030	362.341	44.710	0.552	6.210	2.957	6.430

NO MARK SUB CRITICAL FLOW
 * MARK SUPER CRITICAL FLOW
 C. MARK CONTROL SECTION

***** BACK WATER CALCULATION WATER SURFACE PROFILES *****

RIVER NAME *** CROSS SECTION DATA DE AGOS RIVER LUZON PHILIPPINES *** NIPPON KOEI

AT FIRST SECTION DISCHARGE 300.000 WATER LEVEL 0. (GIVEN) COEFFICIENT OF ROUGHNESS 0.030

BETWEEN THE ESTUARY AND THE CONFLUENCE *** WATER SURFACE PROFILE OF AGOS RIVER ***

SEC. NO.	DISTANCE	EL. MIN.	DISCHARGE	N. VALUE	AREA	W.L.	VELOCITY	DEPTH	C.W.D.	F.S.D.
ADD-1	0.	-5.000	300.000	0.030	2727.273	0.	0.110	5.000	0.341	0.500
ADD-2	600.000	-4.000	300.000	0.030	1228.214	0.001	0.169	4.001	0.395	0.499
ADD-3	1200.000	-3.000	300.000	0.030	1030.039	0.005	0.291	3.005	0.475	0.495
ADD-4	1800.000	-2.500	300.000	0.030	585.308	0.024	0.512	2.526	0.624	0.974
1	2300.000	-2.100	300.000	0.030	285.283	0.200	1.052	2.300	1.507	1.700
2	3200.000	-1.900	300.000	0.030	211.314	1.114	1.420	3.014	2.143	3.086
3	4300.000	-1.480	300.000	0.030	161.130	3.131	1.862	1.651	1.268	3.349
4	5500.000	-1.350	300.000	0.030	200.801	5.322	1.524	2.052	1.529	3.108
5	6200.000	-0.800	300.000	0.030	310.568	5.930	0.966	6.550	3.037	3.020
ADD-5	7000.000	6.050	300.000	0.030	151.598	7.244	1.979	1.194	0.954	1.756
6	7300.000	4.850	300.000	0.030	207.889	7.991	1.444	3.041	1.829	1.709
7	7800.000	4.000	300.000	0.030	108.389	9.458	1.268	1.658	1.828	3.342
8	9100.000	9.250	300.000	0.030	927.051	14.760	0.324	5.510	1.319	0.240
9	9900.000	11.400	300.000	0.030	543.037	14.794	0.552	3.394	1.330	2.206
10	10900.000	8.000	300.000	0.030	392.940	14.800	0.763	6.260	2.076	6.140
ADD-6	12100.000	11.350	300.000	0.030	172.280	15.112	1.673	3.762	1.724	3.888
12	13200.000	13.850	300.000	0.030	86.925	18.111	3.451	4.261	4.119	9.689
13	13700.000	14.000	300.000	0.030	411.083	20.223	0.730	6.223	2.255	2.977
14 *	14000.000	18.200	300.000	0.030	97.395	20.616	3.080	2.416	2.261	3.384
14-B	14000.000	18.200	300.000	0.030	531.892	22.211	0.923	4.511	2.202	2.489
15	14900.000	19.200	300.000	0.030	287.749	22.952	1.043	3.752	2.153	4.348
15-A	15500.000	12.000	300.000	0.030	198.017	23.264	1.515	4.264	3.150	2.086
16	15900.000	20.000	300.000	0.030	146.092	23.716	2.054	3.716	2.862	5.084
17	16500.000	23.250	300.000	0.030	106.703	27.241	1.891	1.891	1.921	6.959
18	17300.000	23.800	300.000	0.030	896.461	30.897	0.535	7.097	2.481	3.203
19	17800.000	27.300	300.000	0.030	369.164	30.917	0.813	3.617	1.441	7.083
20	18000.000	25.950	300.000	0.030	410.978	30.954	0.730	3.904	3.026	1.846
21	18300.000	24.720	300.000	0.030	302.026	31.023	0.923	4.273	2.485	1.977
22	19000.000	25.700	300.000	0.030	174.449	31.199	1.720	5.499	4.066	7.901
23	19900.000	29.100	300.000	0.030	111.523	32.823	2.690	3.223	3.273	10.177
24	20300.000	33.500	300.000	0.030	110.745	35.427	2.709	1.927	1.897	1.173
ADD-7	20420.000	33.750	300.000	0.030	322.203	35.641	1.944	0.821	0.924	8.339
ADD-8	20580.000	37.000	300.000	0.030	111.755	38.390	2.685	1.390	1.390	3.910
27	20600.000	37.000	300.000	0.030	170.133	38.750	1.763	1.750	1.390	3.550
ADD-9	20620.000	37.000	300.000	0.030	103.321	38.710	2.601	1.710	1.710	3.590
ADD-10	20740.000	34.100	300.000	0.030	204.184	39.603	1.459	3.503	4.158	2.697
ADD-11	20760.000	34.100	300.000	0.030	206.173	39.622	1.455	5.522	4.158	-37.322 OVER
ADD-12	20780.000	34.100	300.000	0.030	208.097	39.640	1.442	5.540	4.158	-37.350 OVER
ADD-13	20800.000	34.100	300.000	0.030	209.963	39.657	1.439	5.557	4.158	-37.357 OVER
ADD-14	20940.000	34.100	300.000	0.030	221.716	39.677	1.433	5.697	4.158	-37.407 OVER
G.S.	21140.000	34.100	300.000	0.030	255.568	39.897	1.274	5.797	4.158	17.603
ADD-15	21220.000	34.100	300.000	0.030	240.886	39.944	1.246	5.844	4.158	16.536
28	2131.000	34.800	300.000	0.030	196.384	39.951	1.527	5.151	3.344	6.999
ADD-16	21590.000	38.350	300.000	0.030	112.346	40.702	2.666	2.352	2.347	9.498
ADD-17	21610.000	38.350	300.000	0.030	150.566	40.976	1.992	2.626	2.347	9.224
ADD-18	21630.000	38.350	300.000	0.030	163.528	41.068	1.835	2.718	2.347	9.132
29	21650.000	38.350	300.000	0.030	172.923	41.134	1.834	2.784	2.347	9.066
C-LINE	21870.000	40.500	300.000	0.030	128.361	41.899	2.337	1.399	1.306	32.101
30	22700.000	38.500	300.000	0.030	372.212	44.778	0.806	6.278	3.733	6.422

NO. MARK SUB-CRITICAL FLOW
* MARK SUPER-CRITICAL FLOW
C MARK CONTROL SECTION

***** BACK WATER CALCULATION WATER SURFACE PROFILE *****

RIVER NAME: *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIREON KOEI

AT FIRST SECTION DISCHARGE 400.000 WATER LEVEL 0. (GIVEN) COEFFICIENT OF ROUGHNESS 0.030.1

BETWEEN THE ESTUARY AND THE CONFLUENCE *** WATER SURFACE PROFILE OF AGOS RIVER ***

SEC. NO.	DISTANCE	EL. MIN.	DISCHARGE	N VALUE	AREA	W.L.	VELOCITY	DEPTH	C.W.D.	F.B.D.
ADD-1	0.	-5.000	400.000	0.030	2727.273	0.	0.147	5.000	0.413	0.500
ADD-2	600.000	-4.000	400.000	0.030	1728.553	0.002	0.225	4.002	0.478	0.498
ADD-3	1200.000	-3.000	400.000	0.030	1032.232	0.009	0.388	3.009	0.580	0.491
ADD-4	1800.000	-2.500	400.000	0.030	531.327	0.045	0.824	2.543	0.720	0.952
1	2300.000	-2.100	400.000	0.030	308.976	0.296	1.295	2.596	1.111	1.604
2	3200.000	-1.900	400.000	0.030	262.869	1.390	1.522	3.296	1.356	2.810
3	4300.000	-1.480	400.000	0.030	195.085	3.378	2.050	1.898	1.629	3.122
4	5500.000	-3.350	400.000	0.030	245.016	5.880	1.512	2.310	1.494	2.820
5	6200.000	-0.600	400.000	0.030	341.682	6.270	1.171	6.870	3.428	2.680
ADD-5	7000.000	-6.050	400.000	0.030	188.403	7.488	2.123	1.438	1.115	1.512
6	7300.000	-6.950	400.000	0.030	230.681	8.211	1.734	3.261	2.128	6.889
7	7800.000	-8.000	400.000	0.030	315.016	2.802	2.263	1.822	1.821	3.108
8	9100.000	-9.250	400.000	0.030	979.170	14.956	0.409	1.887	1.887	0.044
9	9900.000	-11.400	400.000	0.030	583.420	15.001	0.474	3.601	1.992	1.999
10	10900.000	-8.600	400.000	0.030	411.921	15.090	0.971	6.490	2.358	5.910
ADD-6	12100.000	-11.350	400.000	0.030	196.874	15.627	2.032	4.077	2.169	3.573
12	13200.000	-13.850	400.000	0.030	106.673	18.468	3.750	4.618	4.494	3.532
13	13700.000	-14.000	400.000	0.030	426.474	20.684	0.876	6.884	2.478	2.516
14 *	14000.000	-18.200	400.000	0.030	331.396	21.035	3.047	2.835	2.607	2.965
14-A	14600.000	-13.500	400.000	0.030	464.688	23.175	0.861	9.675	4.642	2.225
15	14900.000	-19.200	400.000	0.030	359.127	23.634	1.180	4.054	2.595	4.066
15-A	15500.000	-12.000	400.000	0.030	272.728	22.801	1.718	4.901	3.593	1.749
16	15900.000	-20.500	400.000	0.030	184.956	24.116	2.163	4.116	3.236	4.684
17	16500.000	-25.250	400.000	0.030	129.264	27.429	3.094	2.179	2.179	6.771
18	17300.000	-23.800	400.000	0.030	1034.948	31.418	0.397	7.618	2.037	2.682
19	17800.000	-27.300	400.000	0.030	480.952	31.434	0.888	4.134	1.645	9.586
20	18000.000	-25.050	400.000	0.030	825.354	31.471	0.824	6.421	3.269	1.329
21	18500.000	-24.250	400.000	0.030	323.61	31.526	1.100	4.786	2.692	4.164
22	19000.000	-25.700	400.000	0.030	215.328	31.709	1.856	6.009	4.460	7.391
23	19900.000	-29.100	400.000	0.030	139.353	33.234	2.870	4.134	3.618	9.766
24	20300.000	-33.500	400.000	0.030	143.288	35.644	2.792	2.144	2.144	0.956
ADD-7	20450.000	-35.750	400.000	0.030	204.282	36.755	1.939	1.005	0.764	61.245
ADD-8	20580.000	-37.000	400.000	0.030	143.345	38.670	2.743	1.870	1.610	3.960
27	20620.000	-37.000	400.000	0.030	199.827	38.920	2.905	1.920	1.810	3.380
ADD-9	20740.000	-34.100	400.000	0.030	125.286	38.909	3.193	1.909	1.909	3.391
ADD-10	20760.000	-34.100	400.000	0.030	231.288	39.857	1.729	5.757	4.513	2.443
ADD-11	20760.000	-34.100	400.000	0.030	233.287	39.880	1.711	5.780	4.513	-3.580 OVER
ADD-12	20780.000	-34.100	400.000	0.030	236.374	39.902	1.694	5.802	4.513	-3.602 OVER
ADD-13	20800.000	-34.100	400.000	0.030	238.516	39.924	1.677	5.824	4.513	-3.624 OVER
ADD-14	20940.000	-34.100	400.000	0.030	253.362	40.060	1.579	5.960	4.513	-3.760 OVER
6.S.	21140.000	-34.100	400.000	0.030	271.028	40.216	1.476	6.116	4.513	-3.784 OVER
ADD-15	21225.000	-34.100	400.000	0.030	277.232	40.273	1.442	6.173	4.513	-3.827 OVER
28	21310.000	-34.800	400.000	0.030	224.746	40.273	1.780	5.473	3.676	4.677
ADD-16	21590.000	-38.350	400.000	0.030	150.645	40.977	2.655	2.627	2.518	9.223
ADD-17	21610.000	-38.350	400.000	0.030	180.862	41.187	2.215	2.837	2.518	9.013
ADD-18	21630.000	-38.350	400.000	0.030	194.215	41.282	2.215	2.932	2.518	8.918
29	21650.000	-38.350	400.000	0.030	204.247	41.352	1.958	3.002	2.518	8.848
C-LINE	21870.000	-40.500	400.000	0.030	155.411	42.078	2.574	1.578	1.569	52.922
30	22200.000	-38.500	400.000	0.030	321.443	44.924	1.4012	4.424	4.424	6.274

NO. MARK SUB CRITICAL FLOW
 * MARK SUPER CRITICAL FLOW
 C MARK CONTROL SECTION

***** BACK WATER CALCULATION ***** WATER SURFACE PROFILE *****
 RIVER NAME *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI
 AT FIRST SECTION DISCHARGE 500.000 WATER LEVEL 0.000 (GIVEN) COEFFICIENT OF ROUGHNESS 0.050
 BETWEEN THE ESTUARY AND THE CONFLUENCE *** WATER SURFACE PROFILE OF AGOS RIVER ***

SEC. NO.	DISTANCE	EL. MIN.	DISCHARGE	N VALUE	AREA	W.L.	VELOCITY	DEPTH	C.W.D.	F.B.D.
ADD-1	0.	-5.000	500.000	0.050	2727.273	0.	0.183	5.000	0.479	0.500
ADD-2	500.000	-4.000	500.000	0.050	1723.958	0.002	0.281	4.002	0.528	0.498
ADD-3	1200.000	-3.000	500.000	0.050	1034.264	0.014	0.483	3.014	0.670	0.486
ADD-4	1800.000	-2.500	500.000	0.050	528.075	0.049	0.865	2.569	0.845	0.931
1	2300.000	-2.100	500.000	0.050	332.739	0.392	1.503	2.492	1.831	1.508
2	3200.000	-1.900	500.000	0.050	310.047	1.627	1.613	3.527	2.617	2.573
3	4300.000	-1.480	500.000	0.050	225.908	3.596	2.213	2.116	1.620	2.904
4	5300.000	-1.350	500.000	0.050	221.268	5.952	1.717	2.602	1.622	2.548
5	6200.000	-0.600	500.000	0.050	370.845	6.567	1.348	7.167	3.776	2.383
ADD-5	7000.000	0.050	500.000	0.050	225.622	7.710	2.216	1.890	1.283	1.290
6	7300.000	4.950	500.000	0.050	250.410	8.400	1.997	3.450	2.332	6.700
7	7800.000	8.000	500.000	0.050	143.511	10.107	3.058	2.107	2.058	2.895
8	9100.000	9.250	500.000	0.050	100.922	15.046	0.497	5.796	1.641	-0.046 OVER
9	9200.000	11.400	500.000	0.050	82.019	15.108	0.508	3.108	1.651	1.892
10	10900.000	8.600	500.000	0.050	423.926	15.230	1.179	6.630	2.629	5.770
ADD-6	12100.000	11.350	500.000	0.050	210.499	15.665	2.375	4.315	2.479	3.335
12	13200.000	13.850	500.000	0.050	125.234	18.174	3.992	4.924	4.355	9.026
13	13700.000	14.000	500.000	0.050	493.804	21.073	1.008	7.023	1.008	2.127
14 *	14000.000	16.200	500.000	0.050	140.987	21.329	3.106	3.129	2.935	2.671
14-A	14600.000	13.500	500.000	0.050	482.182	23.303	1.803	9.016	0.037	3.097
15	14900.000	19.200	500.000	0.050	368.123	23.387	1.358	4.187	2.585	3.913
15-A	15000.000	19.000	500.000	0.050	282.151	23.633	1.587	4.827	3.617	1.597
16	15900.000	20.000	500.000	0.050	223.653	24.438	2.236	4.438	3.481	4.362
17	16250.000	25.250	500.000	0.050	145.841	27.672	3.015	2.422	2.422	6.528
18	17300.000	23.800	500.000	0.050	94.939	31.084	0.531	7.684	3.022	3.016
19	17800.000	22.300	500.000	0.050	501.221	31.124	1.246	3.824	1.246	6.876
20	18000.000	25.050	500.000	0.050	447.039	31.206	1.118	6.156	3.586	1.594
21	18500.000	24.750	500.000	0.050	340.351	31.341	1.569	4.591	2.898	4.359
22	19000.000	23.700	500.000	0.050	210.920	31.657	2.371	5.957	4.727	7.443
23	19900.000	29.100	500.000	0.050	141.030	33.340	3.103	4.340	3.880	9.460
24	20300.000	33.500	500.000	0.050	168.216	35.797	2.972	2.997	2.285	0.803
ADD-7	20450.000	35.750	500.000	0.050	236.193	36.897	2.117	1.147	0.882	65.103
ADD-8	20580.000	37.000	500.000	0.050	189.238	38.745	2.954	1.745	1.745	3.555
27	20800.000	37.000	500.000	0.050	288.402	39.080	2.189	2.880	1.232	3.220
ADD-9	20620.000	37.000	500.000	0.050	149.795	39.122	3.359	2.122	2.122	3.178
ADD-10	20740.000	34.100	500.000	0.050	250.600	40.935	1.995	4.238	2.265	2.265
ADD-11	20780.000	34.100	500.000	0.050	284.003	40.665	1.968	5.945	4.738	-37.765 OVER
ADD-12	20780.000	34.100	500.000	0.050	287.282	40.924	1.244	5.924	4.738	-37.794 OVER
ADD-13	20800.000	34.100	500.000	0.050	260.345	40.121	1.921	6.021	4.738	-37.821 OVER
ADD-14	20940.000	34.100	500.000	0.050	279.147	40.288	1.791	6.188	4.738	-37.988 OVER
C.S.	21140.000	34.100	500.000	0.050	340.056	40.773	1.666	6.373	4.738	17.027
ADD-15	21223.000	34.100	500.000	0.050	307.775	40.340	1.625	6.440	4.738	16.960
28	21310.000	34.800	500.000	0.050	248.254	40.532	1.075	6.732	4.046	4.418
ADD-16	21590.000	38.350	500.000	0.050	180.260	41.185	2.774	2.835	2.885	9.015
ADD-17	21610.000	38.350	500.000	0.050	267.188	41.233	2.613	3.033	2.685	8.827
ADD-18	21630.000	38.350	500.000	0.050	221.359	41.472	2.959	3.122	2.885	8.728
29	21650.000	38.350	500.000	0.050	232.216	41.547	2.153	3.122	2.485	8.653
C-LTNE	21870.000	40.500	500.000	0.050	160.822	42.343	2.765	1.743	1.628	52.757
30	22700.000	44.500	500.000	0.050	414.424	45.044	1.206	0.584	4.384	0.134

NO. MARK SUB CRITICAL FLOW
 * MARK SUPER CRITICAL FLOW
 C MARK CONTROL SECTION

***** BACK WATER CALCULATION WATER SURFACE PROFILE *****
 RIVER NAME *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI
 AT FIRST SECTION DISCHARGE 1500.000 WATER LEVEL 0. (GIVEN) COEFFICIENT OF ROUGHNESS 0.030

***** WATER SURFACE PROFILE OF AGOS RIVER *****
 BETWEEN THE ESTUARY AND THE CONFLUENCE *** WATER SURFACE PROFILE OF AGOS RIVER ***

SEC. NO.	DISTANCE	ELEV. MIN.	DISCHARGE	N. VALUE	AREA	W. L.	VELOCITY	DEPTH	C. H. D.	F. B. D.
ADD-1	0.	-5.000	1500.000	0.030	2727.273	0.	0.550	5.000	1.000	0.500
ADD-2	600.000	-4.000	1500.000	0.030	1788.589	0.022	0.839	4.022	1.152	0.428
ADD-3	1200.000	-3.000	1500.000	0.030	1076.293	0.121	1.394	3.121	1.372	0.379
ADD-4	1800.000	-2.500	1500.000	0.030	704.041	0.462	2.131	2.962	1.773	0.518
1	2300.000	-2.100	1500.000	0.030	552.245	1.229	2.716	3.529	2.774	0.871
2	3200.000	-1.900	1500.000	0.030	412.588	3.079	3.371	4.979	3.839	1.171
3	4300.000	-1.700	1500.000	0.030	352.680	5.183	2.714	3.703	2.931	1.377
4	5800.000	-1.550	1500.000	0.030	294.604	7.428	2.523	4.278	2.957	0.872
5	6200.000	-0.400	1500.000	0.030	629.395	8.435	2.583	9.035	8.021	0.515
ADD-5	7000.000	6.050	1500.000	0.030	555.529	9.418	2.700	3.568	2.414	OVER
6	7300.000	4.950	1500.000	0.030	592.345	10.030	2.532	5.080	4.294	5.070
7	7800.000	8.000	1500.000	0.030	431.170	11.621	3.477	3.421	3.246	1.579
8	9100.000	9.250	1500.000	0.030	1115.375	15.381	7.345	6.131	2.867	OVER
9	9900.000	11.400	1500.000	0.030	766.441	15.866	1.957	5.256	2.778	1.304
10	10900.000	8.600	1500.000	0.030	527.403	16.289	2.844	7.669	4.661	4.711
ADD-6	12100.000	11.350	1500.000	0.030	341.129	17.662	4.397	6.312	4.941	1.338
12	13200.000	13.850	1500.000	0.030	320.684	21.270	4.675	7.420	7.044	6.550
13	13700.000	14.000	1500.000	0.030	823.154	23.469	1.822	9.169	4.836	OVER
14 *	14000.000	18.200	1500.000	0.030	621.850	25.396	3.556	5.196	4.491	0.604
15-A	14800.000	13.300	1500.000	0.030	765.866	24.807	1.959	11.367	7.519	0.533
15	14900.000	19.200	1500.000	0.030	800.849	25.079	1.873	5.879	4.160	2.281
15-A	15500.000	19.000	1500.000	0.030	282.822	25.528	2.842	6.428	5.294	OVER
16	15900.000	20.000	1500.000	0.030	454.086	26.120	3.303	6.120	5.210	2.680
17	16500.000	25.250	1500.000	0.030	361.899	28.774	4.145	3.524	3.524	5.426
18	17300.000	23.600	1500.000	0.030	1257.144	32.327	1.793	8.527	4.446	1.775
19	17800.000	27.100	1500.000	0.030	618.728	32.321	2.424	3.382	3.382	5.092
20	18000.000	25.050	1500.000	0.030	663.896	32.614	2.259	7.564	5.120	0.186
21	18500.000	24.750	1500.000	0.030	532.183	32.898	2.819	4.148	4.353	2.802
22	19000.000	25.700	1500.000	0.030	395.893	35.439	3.789	7.739	6.904	5.681
23	19900.000	29.100	1500.000	0.030	373.062	37.820	4.021	8.470	8.048	7.130
24	20300.000	35.750	1500.000	0.030	453.181	37.394	3.310	3.894	3.377	OVER
ADD-8	20450.000	37.000	1500.000	0.030	455.652	37.911	3.292	2.161	1.824	62.089
ADD-8	20580.000	37.000	1500.000	0.030	372.669	39.817	4.025	2.817	2.817	2.433
27	20600.000	37.000	1500.000	0.030	593.251	40.240	3.238	3.240	2.817	2.089
ADD-9	20620.000	37.000	1500.000	0.030	328.308	40.487	4.369	3.487	3.487	1.813
ADD-10	20740.000	34.100	1500.000	0.030	415.459	41.448	3.610	7.348	6.454	0.832
ADD-11	20760.000	34.100	1500.000	0.030	624.707	41.524	3.532	7.424	6.454	OVER
ADD-12	20780.000	34.100	1500.000	0.030	533.222	41.524	3.482	7.424	6.454	OVER
ADD-13	20800.000	34.100	1500.000	0.030	440.982	41.657	3.401	7.557	6.454	OVER
ADD-14	20940.000	34.100	1500.000	0.030	483.445	42.004	3.103	7.904	6.454	OVER
G.S	21740.000	34.100	1500.000	0.030	526.211	42.346	2.851	8.246	6.454	OVER
ADD-15	21225.000	34.100	1500.000	0.030	540.663	42.461	2.774	8.361	6.454	OVER
28	21310.000	34.800	1500.000	0.030	456.095	42.401	3.289	7.601	6.281	2.549
ADD-16	21590.000	38.350	1500.000	0.030	444.803	42.960	3.372	4.610	3.899	7.240
ADD-17	21610.000	38.350	1500.000	0.030	557.675	43.045	3.275	4.695	3.899	7.145
ADD-18	21650.000	38.350	1500.000	0.030	469.553	43.119	3.195	4.769	3.899	7.081
29	21650.000	38.350	1500.000	0.030	429.841	43.185	3.126	4.889	3.899	7.015
G-LINE	21870.000	40.500	1500.000	0.030	403.303	43.612	3.719	3.112	2.781	51.358
30	22700.000	38.500	1500.000	0.030	586.024	44.134	2.540	7.634	6.000	5.066

NO. MARK SUB-CRITICAL FLOW
 * MARK SUPER-CRITICAL FLOW
 C. MARK CONTROL SECTION

***** BACK WATER CALCULATION WATER SURFACE PROFILE *****
 RIVER NAME *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI
 AT FIRST SECTION: DISCHARGE 3000.000 WATER LEVEL 0.000 GIVEN 2.000 COEFFICIENT OF ROUGHNESS 0.030
 BETWEEN THE ESTUARY AND THE CONFLUENCE *** WATER SURFACE PROFILE OF AGOS RIVER ***

SEC. NO.	DISTANCE	EL. MIN.	DISCHARGE	N. VALUE	AREA	W.L.	VELOCITY	DEPTH	C.W.D.	F.B.D.
ADD-1	0.	-5.000	3000.000	0.030	2727.273	0.086	1.100	5.000	1.580	0.500
ADD-2	600.000	-4.000	3000.000	0.030	1820.266	0.086	1.648	4.086	1.813	0.174
ADD-3	1200.000	-3.000	3000.000	0.030	1189.008	0.408	2.523	3.408	2.163	0.092
ADD-4	1800.000	-2.500	3000.000	0.030	937.758	1.232	3.199	3.732	2.756	OVER
ADD-1	2300.000	-2.100	3000.000	0.030	990.805	2.432	3.028	4.532	3.785	OVER
ADD-2	3200.000	-1.900	3000.000	0.030	984.098	4.304	3.048	4.938	4.038	OVER
ADD-3	4500.000	-1.480	3000.000	0.030	955.605	6.491	3.139	5.011	4.085	0.009
ADD-4	5500.000	-0.500	3000.000	0.030	1060.845	8.967	2.828	5.617	4.272	0.467
ADD-5	6200.000	-0.500	3000.000	0.030	1075.082	9.961	2.790	5.617	4.415	0.011
ADD-6	7000.000	-0.500	3000.000	0.030	858.906	10.863	3.493	4.813	3.563	0.863
ADD-7	7500.000	-0.500	3000.000	0.030	985.671	11.517	3.044	5.567	3.263	0.583
ADD-8	8000.000	-0.500	3000.000	0.030	676.851	12.452	4.432	4.452	4.230	0.549
ADD-9	9100.000	-0.500	3000.000	0.030	1535.546	16.605	1.954	7.355	4.124	0.605
ADD-10	9900.000	-0.500	3000.000	0.030	1131.240	17.042	2.652	5.642	3.749	0.642
ADD-11	10900.000	-0.500	3000.000	0.030	722.319	17.892	4.153	9.292	6.845	0.108
ADD-12	12100.000	-0.500	3000.000	0.030	676.664	20.316	4.434	9.966	8.870	0.316
ADD-13	13200.000	-0.500	3000.000	0.030	573.932	23.297	5.227	9.647	8.982	0.503
ADD-14	14000.000	-0.500	3000.000	0.030	1306.248	28.621	1.222	11.621	6.780	0.411
ADD-15	14600.000	-0.500	3000.000	0.030	919.913	25.596	3.261	7.396	6.208	0.586
ADD-16	15500.000	-0.500	3000.000	0.030	1458.676	26.728	2.057	13.228	10.211	0.328
ADD-17	16500.000	-0.500	3000.000	0.030	1593.892	28.849	2.319	7.649	5.291	0.451
ADD-18	17300.000	-0.500	3000.000	0.030	794.386	27.079	3.777	8.079	6.692	0.729
ADD-19	18000.000	-0.500	3000.000	0.030	679.914	27.636	4.412	7.636	6.646	0.184
ADD-20	19000.000	-0.500	3000.000	0.030	583.335	29.922	5.145	6.811	4.972	0.228
ADD-21	20000.000	-0.500	3000.000	0.030	1613.498	33.611	1.850	9.811	5.771	0.489
ADD-22	21400.000	-0.500	3000.000	0.030	882.406	33.562	3.599	6.562	4.830	0.323
ADD-23	23000.000	-0.500	3000.000	0.030	1037.243	34.304	4.206	9.073	5.912	0.396
ADD-24	25000.000	-0.500	3000.000	0.030	713.358	34.504	4.206	7.554	8.418	0.954
ADD-25	26750.000	-0.500	3000.000	0.030	610.000	35.146	4.910	8.867	7.646	0.768
ADD-26	29000.000	-0.500	3000.000	0.030	647.263	37.967	3.630	8.867	4.866	0.509
ADD-27	33500.000	-0.500	3000.000	0.030	838.328	39.368	3.579	8.867	4.866	0.393
ADD-28	35750.000	-0.500	3000.000	0.030	866.034	39.691	3.464	3.923	3.923	0.744
ADD-29	20450.000	-0.500	3000.000	0.030	821.003	40.923	4.830	4.403	3.223	0.897
ADD-30	20580.000	-0.500	3000.000	0.030	739.002	41.403	4.060	4.403	3.223	0.744
ADD-31	20620.000	-0.500	3000.000	0.030	777.192	41.556	3.860	4.403	3.223	0.744
ADD-32	20748.000	-0.500	3000.000	0.030	512.319	41.907	5.856	7.807	7.807	0.393
ADD-33	20760.000	-0.500	3000.000	0.030	564.992	42.644	5.728	6.344	7.807	0.144
ADD-34	20780.000	-0.500	3000.000	0.030	611.127	42.633	4.509	8.533	7.807	0.333
ADD-35	20800.000	-0.500	3000.000	0.030	650.789	42.775	4.756	7.807	7.807	0.475
ADD-36	20840.000	-0.500	3000.000	0.030	722.233	43.607	4.154	9.207	7.807	0.475
ADD-37	20940.000	-0.500	3000.000	0.030	795.767	43.607	3.756	9.207	7.807	0.107
ADD-38	21140.000	-0.500	3000.000	0.030	823.730	44.080	3.495	9.207	7.807	0.320
ADD-39	21225.000	-0.500	3000.000	0.030	612.518	43.652	4.498	8.852	7.807	1.298
ADD-40	21310.000	-0.500	3000.000	0.030	729.012	44.734	4.115	6.344	5.466	0.466
ADD-41	21590.000	-0.500	3000.000	0.030	741.004	44.807	4.049	6.457	5.466	0.393
ADD-42	3000.000	-0.500	3000.000	0.030	741.004	44.807	4.049	6.457	5.466	0.393
ADD-43	21630.000	-0.500	3000.000	0.030	732.067	44.873	3.889	6.523	5.466	0.327
ADD-44	21650.000	-0.500	3000.000	0.030	762.366	44.936	3.355	6.860	5.466	0.264
ADD-45	21870.000	-0.500	3000.000	0.030	700.044	45.285	4.285	4.785	4.044	0.715
ADD-46	22700.000	-0.500	3000.000	0.030	803.437	47.331	3.231	8.891	7.405	0.809

NO. MARK SUB CRITICAL FLOW
 * MARK SUPER CRITICAL FLOW
 C MARK CONTROL SECTION

***** BACK WATER CALCULATION WATER SURFACE PROFILE *****
 RIVER NAME *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI
 AT FIRST SECTION(DISCHARGE) 5200.000 WATER LEVEL 0. (GIVEN) COEFFICIENT OF ROUGHNESS 0.030)

SEC. NO.	DISTANCE	EL. MIN.	DISCHARGE	N. VALUE	AREA	W. L.	VELOCITY	DEPTH	C. W. D.	F. B. D.
ADD-1	0.	-5.000	5200.000	0.030	2737.273	0.	1.907	5.000	2.265	0.500
ADD-2	600.000	-4.000	5200.000	0.030	1900.431	0.248	2.736	4.248	2.607	0.252
ADD-3	1200.000	-3.000	5200.000	0.030	1589.779	1.040	3.444	4.040	3.081	-0.540 OVER
ADD-4	1800.000	-2.500	5200.000	0.030	1572.385	2.432	3.307	4.932	4.404	-1.432 OVER
1	2300.000	-2.100	5200.000	0.030	1648.801	3.583	3.154	5.883	5.012	-1.683 OVER
2	3200.000	-1.900	5200.000	0.030	1541.974	5.434	3.129	7.334	6.597	-1.234 OVER
3	4300.000	-1.480	5200.000	0.030	1656.670	7.705	3.143	6.325	5.666	-1.205 OVER
4	5500.000	-1.330	5200.000	0.030	1639.160	10.090	3.134	6.740	5.830	-1.590 OVER
5	6200.000	-0.650	5200.000	0.030	1521.523	11.217	3.418	11.817	10.421	-2.267 OVER
6	7000.000	4.950	5200.000	0.030	1131.199	12.158	4.597	6.108	4.821	-3.158 OVER
7	7800.000	8.000	5200.000	0.030	142.660	13.144	3.604	8.194	6.377	1.956
8	9100.000	9.250	5200.000	0.030	138.977	14.139	3.884	6.139	5.573	-1.139 OVER
9	9900.000	11.400	5200.000	0.030	171.205	17.109	3.039	7.859	5.527	-2.109 OVER
10	10900.000	8.600	5200.000	0.030	157.667	18.036	3.382	6.936	4.905	-1.036 OVER
ADD-6	12100.000	11.350	5200.000	0.030	91.715	18.036	5.704	10.931	9.921	1.869
12	13200.000	13.850	5200.000	0.030	1079.598	22.095	4.817	11.345	9.720	-3.695 OVER
13	13700.000	14.000	5200.000	0.030	826.036	25.039	6.295	11.899	10.811	2.761
14	14000.000	18.200	5200.000	0.030	2272.541	28.015	2.288	14.015	8.979	-4.815 OVER
14-A	14600.000	13.500	5200.000	0.030	1450.112	27.671	3.210	19.741	7.569	-3.941 OVER
15	14900.000	19.200	5200.000	0.030	2287.202	28.093	2.864	15.953	12.337	-3.293 OVER
15-A	15500.000	19.000	5200.000	0.030	1840.607	28.704	2.825	9.204	6.400	-1.404 OVER
16	15900.000	20.000	5200.000	0.030	1232.815	29.760	4.218	9.760	8.345	-0.960 OVER
17	16500.000	23.250	5200.000	0.030	835.768	31.870	6.077	6.020	6.020	2.930 OVER
18	17300.000	23.800	5200.000	0.030	2070.736	35.188	2.511	41.188	7.116	-1.088 OVER
19	17800.000	23.300	5200.000	0.030	1231.271	35.121	4.223	7.821	6.377	2.879
20	18000.000	23.050	5200.000	0.030	1466.001	35.725	3.552	10.875	8.651	-2.925 OVER
21	18500.000	26.750	5200.000	0.030	839.466	35.403	6.050	8.653	7.523	0.297
22	19000.000	25.700	5200.000	0.030	897.703	37.057	5.983	11.357	10.548	2.043
23	19800.000	29.100	5200.000	0.030	1023.259	40.016	5.082	10.916	9.866	2.981
24	20300.000	33.500	5200.000	0.030	1231.897	41.362	4.082	17.812	5.919	-4.762 OVER
ADD-7	20500.000	35.750	5200.000	0.030	1371.516	41.716	3.891	5.866	4.081	58.284
ADD-8	20580.000	37.000	5200.000	0.030	976.983	42.286	5.223	5.286	5.286	0.014
27	20600.000	37.000	5200.000	0.030	1115.652	42.737	4.661	5.237	5.286	-0.437 OVER
ADD-9	20620.000	37.000	5200.000	0.030	1168.245	42.907	4.451	5.907	5.286	-0.607 OVER
ADD-10	20740.000	34.100	5200.000	0.030	789.880	43.722	6.740	9.522	9.522	-1.622 OVER
ADD-11	20760.000	34.100	5200.000	0.030	836.830	44.300	6.070	10.200	9.621	-2.000 OVER
ADD-12	20800.000	34.100	5200.000	0.030	888.905	44.513	5.850	10.513	9.621	-0.437 OVER
ADD-13	20800.000	34.100	5200.000	0.030	913.814	44.675	5.690	10.575	9.621	-42.375 OVER
ADD-14	20940.000	34.100	5200.000	0.030	1022.312	45.375	5.087	11.275	9.621	-43.075 OVER
G.S.	21140.000	34.100	5200.000	0.030	1113.308	45.954	4.671	11.954	9.621	11.546
ADD-15	21225.000	34.100	5200.000	0.030	1145.186	46.141	4.671	12.041	9.621	1.359
28	21310.000	34.800	5200.000	0.030	817.382	45.384	6.137	10.584	9.861	-0.433 OVER
ADD-16	21390.000	38.350	5200.000	0.030	1116.450	46.971	4.658	8.621	6.816	3.229
ADD-17	21610.000	38.350	5200.000	0.030	1126.578	47.027	4.616	8.677	6.816	5.173
ADD-18	21630.000	38.350	5200.000	0.030	1136.399	47.081	4.576	8.231	6.816	3.119
29	21650.000	40.500	5200.000	0.030	1145.823	47.333	4.338	8.283	6.816	3.067
C-LINE	21870.000	40.500	5200.000	0.030	1100.096	47.430	4.427	6.930	5.459	4.570
30	22700.000	38.500	5200.000	0.030	1112.695	52.022	4.623	10.522	8.942	-2.128

NO MARK SUB CRITICAL FLOW
 * MARK SUPER CRITICAL FLOW
 C MARK CONTROL SECTION

***** BACK WATER CALCULATION WATER SURFACE PROFILE *****

RIVER NAME *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI

AT FIRST SECTION(DISCHARGE 2000.000 WATER LEVEL 0.000 GIVEN) COEFFICIENT OF ROUGHNESS 0.030 2

BEFORE THE ESTUARY AND THE CONFLUENCE *** WATER SURFACE PROFILE OF AGOS RIVER ***

SEC.NO.	DISTANCE	EL. MIN.	DISCHARGE	N. VALUE	AREA	W.L.	VELOCITY	DEPTH	C.W.D.	F.80.
ADD-1	0.	-5.000	7000.000	0.030	2727.273	0.435	2.567	5.000	2.754	0.500
ADD-2	600.000	-4.000	7000.000	0.030	1992.815	0.435	3.573	4.432	3.129	0.500
ADD-3	1200.000	-3.000	7000.000	0.030	1975.403	1.068	3.456	4.668	4.148	-1.168 OVER
ADD-4	1800.000	-2.500	7000.000	0.030	2031.804	3.088	3.445	5.588	4.925	-2.088 OVER
	2300.000	-2.100	7000.000	0.030	1985.906	4.184	3.523	6.264	5.382	-2.264 OVER
	3200.000	-1.900	7000.000	0.030	1231.841	8.174	3.618	8.074	7.121	-1.974 OVER
1	4300.000	1.480	7000.000	0.030	2090.195	8.474	3.349	6.974	5.910	-1.954 OVER
2	5500.000	3.350	7000.000	0.030	1975.703	10.686	3.541	7.376	6.314	-2.186 OVER
3	6200.000	-0.600	7000.000	0.030	1733.087	11.812	4.039	12.472	11.054	-2.862 OVER
4	7000.000	6.050	7000.000	0.030	1223.594	12.859	5.486	6.772	5.719	-3.829 OVER
ADD-5	7300.000	4.950	7000.000	0.030	1761.233	14.258	3.974	9.288	7.181	0.862
5	7800.000	8.000	7000.000	0.030	1769.198	15.132	3.927	7.132	6.131	-2.132 OVER
6	9100.000	9.250	7000.000	0.030	1867.254	17.555	3.710	8.306	6.491	-2.555 OVER
7	9900.000	11.400	7000.000	0.030	1855.186	18.808	3.725	7.408	6.066	-1.808 OVER
8	10900.000	8.600	7000.000	0.030	1003.732	19.719	6.974	11.119	10.785	-5.525 OVER
ADD-6	12100.000	11.350	7000.000	0.030	1443.902	24.523	4.848	13.175	10.891	1.587
9	13200.000	13.850	7000.000	0.030	1010.277	26.213	6.929	12.323	12.011	0.627
10	13700.000	14.000	7000.000	0.030	2780.603	28.252	2.517	15.252	10.627	6.395 OVER
11	14000.000	18.200	7000.000	0.030	2120.461	29.514	3.301	11.314	8.263	-5.314 OVER
12	14600.000	13.500	7000.000	0.030	2928.200	30.173	2.390	16.673	12.910	-4.773 OVER
13	14900.000	19.200	7000.000	0.030	2257.235	30.105	3.101	10.905	7.160	-2.805 OVER
14	15000.000	19.000	7000.000	0.030	1313.073	29.866	3.383	10.856	9.250	-4.506 OVER
15	15900.000	20.000	7000.000	0.030	1839.921	31.362	3.805	11.362	9.875	-2.562 OVER
16	16500.000	25.250	7000.000	0.030	1050.493	32.223	6.664	6.953	6.953	1.997 OVER
17	17000.000	27.500	7000.000	0.030	2412.451	36.376	2.902	12.526	7.979	-2.226 OVER
18	17800.000	27.500	7000.000	0.030	1486.972	39.149	4.708	8.849	7.290	1.851 OVER
19	18000.000	25.050	7000.000	0.030	1759.798	36.818	3.978	11.766	9.433	-0.018 OVER
20	18500.000	26.750	7000.000	0.030	911.713	35.788	7.678	9.038	9.010	-0.088 OVER
21	19000.000	25.700	7000.000	0.030	1199.785	38.874	5.834	13.174	11.733	0.226
22	19300.000	22.100	7000.000	0.030	1489.021	41.521	4.192	12.491	10.888	1.609
23	20300.000	33.500	7000.000	0.030	1526.363	42.477	4.586	8.917	6.896	-5.817 OVER
ADD-7	20450.000	35.750	7000.000	0.030	1669.865	42.841	5.984	7.081	4.947	37.159 OVER
24	20800.000	37.000	7000.000	0.030	1192.468	42.936	5.870	5.984	5.986	-0.686 OVER
ADD-8	20800.000	37.000	7000.000	0.030	1351.144	43.499	5.131	6.499	5.986	-1.199 OVER
25	20200.000	37.000	7000.000	0.030	1408.012	43.682	4.972	6.682	5.986	-1.182 OVER
ADD-9	20400.000	34.100	7000.000	0.030	945.899	44.883	7.400	19.783	19.783	-2.393 OVER
ADD-10	20760.000	34.100	7000.000	0.030	1043.280	45.510	6.710	11.470	10.783	-43.210 OVER
ADD-11	20760.000	34.100	7000.000	0.030	1080.103	45.738	6.481	11.637	10.783	-43.443 OVER
ADD-12	20780.000	34.100	7000.000	0.030	1702.457	45.917	6.521	11.817	10.783	-43.517 OVER
ADD-13	20800.000	34.100	7000.000	0.030	1222.260	46.678	5.254	12.528	10.783	-44.578 OVER
ADD-14	20940.000	34.100	7000.000	0.030	1332.285	47.312	5.244	13.212	10.783	10.188
G.S.	21140.000	34.100	7000.000	0.030	1366.335	47.518	5.123	13.418	11.783	9.982
ADD-15	2125.000	34.800	7000.000	0.030	1023.579	48.359	6.825	11.716	11.133	-1.639 OVER
26	21310.000	38.350	7000.000	0.030	1402.052	48.519	4.993	10.169	7.906	1.681
ADD-16	21590.000	38.350	7000.000	0.030	1411.780	48.569	4.958	10.219	7.906	1.631
ADD-17	21610.000	38.350	7000.000	0.030	1421.203	48.619	4.925	10.269	7.906	1.581
ADD-18	21650.000	38.350	7000.000	0.030	1430.350	48.666	4.894	10.316	7.906	1.534
27	21870.000	40.500	7000.000	0.030	1395.277	48.952	5.017	8.452	6.462	46.068
C-LINE	22700.000	38.500	7000.000	0.030	1381.624	50.415	5.066	11.915	10.031	0.782

NO MARK SUB CRITICAL FLOW
 * MARK SUPER CRITICAL FLOW
 C MARK CONTROL SECTION

***** BACK WATER CALCULATION WATER SURFACE PROFILE *****
 RIVER NAME *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON, KOEI
 AT FIRST SECTION'S DISCHARGE ... 10200.000 ... WATER LEVEL ... 0. ... (GIVEN) ... COEFFICIENT OF ROUGHNESS ... 0.050 ?
 BETWEEN THE ESTUARY AND THE CONFLUENCE *** WATER SURFACE PROFILE OF AGOS RIVER ***

SEC. NO.	DISTANCE	EL. MIN.	DISCHARGE	N. VALUE	AREA	W.L.	VELOCITY	DEPTH	C.M.D.	F.B.D.
ADD-1	0.	-5.000	10200.000	0.030	2727.273	0.	3.740	5.000	3.531	0.500
ADD-2	600.000	-4.000	10200.000	0.030	2855.415	1.012	4.276	5.012	4.033	-0.512 OVER
ADD-3	1200.000	-3.000	10200.000	0.030	2824.650	2.725	3.611	4.826	4.826	-2.225 OVER
ADD-4	1800.000	-2.500	10200.000	0.030	2647.153	3.967	3.853	6.467	5.563	-2.967 OVER
1	2000.000	-2.100	10200.000	0.030	2643.123	4.982	4.141	7.082	6.105	-3.082 OVER
2	3200.000	-1.900	10200.000	0.030	2513.850	6.282	3.222	8.882	7.872	-2.789 OVER
3	4300.000	1.480	10200.000	0.030	2834.488	9.391	3.872	7.911	6.635	-2.891 OVER
4	5500.000	3.350	10200.000	0.030	2860.131	11.592	4.146	8.242	7.079	-3.092 OVER
5	6200.000	-0.600	10200.000	0.030	2937.925	12.665	5.007	13.265	12.059	-3.715 OVER
ADD-5	7000.000	6.050	10200.000	0.030	1468.795	15.730	6.244	7.880	7.188	-4.730 OVER
6	7300.000	4.950	10200.000	0.030	2810.830	16.290	3.907	11.540	8.392	-1.190 OVER
7	7800.000	8.000	10200.000	0.030	2525.931	16.869	4.040	8.869	7.015	-3.869 OVER
8	9100.000	9.250	10200.000	0.030	2504.868	18.749	4.241	0.499	7.527	-3.776 OVER
9	9900.000	11.800	10200.000	0.030	2367.255	20.027	4.309	8.027	7.012	-3.027 OVER
10	10900.000	8.600	10200.000	0.030	1665.548	22.194	6.125	13.594	13.594	-1.194 OVER
ADD-6	12100.000	11.350	10200.000	0.030	1597.075	25.229	6.387	13.879	12.625	-6.229 OVER
12	13200.000	13.850	10200.000	0.030	1481.983	28.522	6.883	14.672	14.672	-0.722 OVER
13	13700.000	14.000	10200.000	0.030	3410.812	31.547	2.921	17.547	11.760	-8.347 OVER
14 *	14000.000	18.200	10200.000	0.030	248.793	31.444	3.711	13.244	9.464	-7.444 OVER
14-A	14600.000	13.500	10200.000	0.030	3770.200	32.143	3.209	18.643	13.813	-6.743 OVER
15	14900.000	19.200	10200.000	0.030	2810.395	31.964	3.625	12.764	8.394	-4.644 OVER
15-A	15500.000	19.000	10200.000	0.030	1222.830	31.377	6.285	12.377	10.875	-6.027 OVER
16	15900.000	20.200	10200.000	0.030	2625.837	33.430	3.885	13.430	10.842	-4.630 OVER
17	16500.000	25.250	10200.000	0.030	163.236	33.669	7.472	8.419	8.419	-0.531 OVER
18	17300.000	21.800	10200.000	0.030	2960.695	38.130	3.445	14.330	9.555	-4.030 OVER
19	17800.000	27.500	10200.000	0.030	1910.660	37.792	5.338	10.492	8.616	0.208 OVER
20	18000.000	25.050	10200.000	0.030	2336.165	38.537	4.561	13.487	10.680	-5.737 OVER
21	18500.000	26.750	10200.000	0.030	1185.405	37.753	8.602	11.003	11.003	-2.033 OVER
22	19000.000	25.700	10200.000	0.030	2043.739	41.957	4.991	16.257	14.274	-2.837 OVER
23	19200.000	29.100	10200.000	0.030	287.452	43.582	4.886	14.687	12.577	-0.527 OVER
24	20300.000	33.500	10200.000	0.030	1936.234	44.071	5.267	10.571	8.421	-7.441 OVER
ADD-7	20450.000	35.750	10200.000	0.030	1264.959	44.611	4.711	8.861	6.295	3.309 OVER
ADD-8	20580.000	37.000	10200.000	0.030	1336.798	44.097	6.637	7.097	7.097	-1.797 OVER
27	20600.000	37.000	10200.000	0.030	1709.569	44.653	5.966	7.653	7.653	-2.333 OVER
ADD-9	20680.000	37.000	10200.000	0.030	1722.964	44.857	5.753	7.857	7.097	-2.537 OVER
ADD-10	20740.000	34.300	10200.000	0.030	1236.977	46.720	8.432	12.620	12.620	-1.420 OVER
ADD-11	20760.000	34.100	10200.000	0.030	1345.046	47.390	7.583	13.290	12.619	-4.500 OVER
ADD-12	20780.000	34.100	10200.000	0.030	1393.801	47.674	7.318	13.574	12.619	-5.374 OVER
ADD-13	20800.000	34.100	10200.000	0.030	1431.853	47.891	7.124	13.791	12.619	-5.551 OVER
ADD-14	20940.000	34.100	10200.000	0.030	1625.807	48.881	4.881	14.781	12.619	-7.800 OVER
G.S.	21140.000	34.100	10200.000	0.030	1784.089	49.650	5.717	15.550	12.619	-7.619 OVER
ADD-15	21250.000	34.100	10200.000	0.030	1935.707	49.896	5.556	15.796	12.619	-7.619 OVER
28	21310.000	34.800	10200.000	0.030	1473.657	49.135	6.920	14.335	13.313	-3.113 OVER
ADD-16	21590.000	38.350	10200.000	0.030	1874.257	50.798	5.442	12.448	9.579	-0.538 OVER
ADD-17	21640.000	38.350	10200.000	0.030	1886.674	50.182	5.406	12.502	9.579	-0.652 OVER
ADD-18	21630.000	38.350	10200.000	0.030	1898.755	50.905	5.372	12.555	9.579	-0.703 OVER
29	21650.000	38.350	10200.000	0.030	1910.523	50.956	5.339	12.606	9.579	-0.736 OVER
C-LINE	21870.000	40.500	10200.000	0.030	1867.663	51.225	5.461	10.725	8.068	23.775 OVER
30	22700.000	38.500	10200.000	0.030	1836.359	52.514	5.554	14.014	11.712	-1.314 OVER

NO MARK SUB CRITICAL FLOW
 * MARK SUPER CRITICAL FLOW
 C MARK CONTROL SECTION

7686T 01 06-12-80 14.476

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* FILENAME A1818-D8
* NOTE LABELS-A,R(C)I
* NOTE TABS/SETTINGS- ASIS
*** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI
0.5 20.0 3
1 6 200.0 0.5 250.0 -5.0
0.0 0.5 800.0 0.5 1000.0 0.5
750.0 -5.0 6
2 6 200.0 0.5 250.0 -4.0
0.0 1.0 700.0 0.5 900.0 1.0
650.0 -4.0 6
3 6 200.0 0.5 250.0 -3.0
0.0 1.4 600.0 0.5 800.0 1.4
550.0 -3.0 6
4 6 200.0 1.0 250.0 -2.5
450.0 -2.5 13
5 13 30.0 1.9 40.0 1.65
0.0 0.4 100.0 -0.3 133.0 -1.0
163.0 -1.0 185.0 -1.4 203.0 -2.1
303.0 -0.35 310.0 0.35 312.0 2.55
412.0 2.55 25
6 25 29.0 4.2 40.0 3.95
-171.0 4.2 60.0 3.15 70.0 2.0
50.0 3.6 100.0 1.0 120.0 0.9
90.0 1.15 164.0 -0.2 178.5 -0.2
140.0 0.4 206.0 -1.15 217.0 -1.85
199.0 -1.1 237.0 -0.95 248.0 0.35
226.0 1.1 278.0 1.1 288.0 2.0
295.5 3.2 308.0 4.1 328.0 4.75
378.0 4.75 20
7 20 28.5 6.5 34.5 6.15
-171.5 6.5 108.5 5.95 118.5 5.6
98.5 6.05 139.0 2.55 147.0 2.0
128.5 3.35 178.0 1.48 188.0 1.5
138.0 1.5 231.0 1.95 252.0 2.1
197.0 1.85 273.0 3.9 282.0 3.1
262.5 2.65 409.5 7.35 397.0 5.0
397.5 6.25 18
8 18 29.5 8.5 150.0 7.95
-150.5 8.5 190.0 6.95 200.0 5.5
180.0 7.55 249.0 4.95 259.0 3.7
250.0 5.2 289.0 3.35 316.0 3.5
275.0 3.4 349.0 4.2 362.0 4.2
338.5 3.65 373.0 8.75 383.0 9.2
367.0 5.25 17
9 17 13.0 15.2 15.0 13.35
0.0 25.0 19.0 8.25 24.5 3.1
16.5 2.25 53.5 0.85 67.0 1.05
30.0 -0.6 88.0 3.4 99.0 5.05
80.5 2.75

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7686T 01 00-12-80 14.476

109.0	6.0	119.0	6.35	169.0	7.7
191.5	8.95	371.5	8.95		
0.0	9.0	60.0	7.2	85.0	6.05
185.0	6.05	210.0	7.2	210.0	12.0
250.0	20.0				
10	22				
-150.0	15.1	50.0	15.1	60.0	12.85
20.0	11.2	80.5	10.2	86.5	9.2
200.0	8.75	235.0	6.2	240.0	7.55
250.0	7.0	274.0	5.2	290.0	5.35
300.0	4.95	315.0	5.15	328.0	5.65
338.0	5.7	339.0	7.05	340.0	10.3
345.0	10.3	348.0	14.4	351.0	17.6
355.0	20.5				
70	36				
-125.0	100.0	-125.0	12.8	78.0	12.8
90.0	9.55	98.0	8.7	104.0	8.3
112.0	8.2	121.0	8.25	137.0	8.25
147.0	8.4	156.0	8.75	165.0	9.0
173.0	8.4	183.0	9.25	192.0	9.8
203.0	10.0	213.0	10.25	222.5	10.6
233.0	10.75	243.0	10.75	253.0	10.75
263.0	10.45	273.0	10.45	283.0	10.4
293.0	10.35	303.0	10.25	313.0	10.0
320.0	8.65	322.5	8.6	328.0	8.0
333.5	8.65	336.0	12.1	338.0	12.35
343.0	11.05	347.0	18.3	351.0	21.3
80	44				
-171.0	18.2	-100.0	18.2	0.0	18.2
29.0	18.2	39.35	17.85	49.25	15.15
59.5	15.1	69.5	15.3	79.5	15.5
89.5	14.15	99.5	13.55	106.75	13.2
109.5	12.95	119.5	13.2	129.25	11.85
139.25	11.3	149.5	10.2	160.0	10.35
168.75	9.7	179.75	9.4	189.75	9.25
199.25	9.9	210.5	9.5	221.5	9.7
233.75	9.8	244.5	10.0	258.5	9.85
265.25	10.45	275.75	9.5	284.5	10.25
291.25	10.45	295.0	10.65	296.75	10.25
301.75	13.65	304.25	12.95	311.75	12.85
321.75	13.4	331.75	14.05	341.75	14.85
351.5	14.75	360.75	14.7	371.75	14.95
382.0	14.95	391.25	14.95		
20	57				
0.0	17.1	10.0	17.1	20.0	17.1
30.0	17.1	40.0	17.1	50.0	17.1
60.0	17.1	70.0	17.0	72.0	17.1
90.0	15.3	90.0	15.1	100.0	12.4
105.0	12.2	110.0	12.1	115.0	12.1
120.0	12.2	125.0	12.2	130.0	12.1
135.0	12.2	140.0	12.2	142.5	12.4
152.5	12.0	162.5	13.1	172.5	13.3

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182.5	13.7	192.5	13.9	202.5	14.0
212.5	13.85	222.5	12.3	232.0	12.2
237.25	11.85	242.0	11.6	247.0	11.55
252.0	11.6	257.0	11.5	262.0	11.5
267.0	11.4	272.0	11.4	277.0	11.45
282.0	11.5	287.0	11.7	292.0	11.65
297.0	11.85	302.0	12.0	306.75	12.15
315.0	14.05	316.75	13.7	326.5	15.9
330.5	16.8	346.5	16.6	356.5	16.7
366.5	17.1	376.5	17.0	386.5	17.0
396.5	17.1	406.75	17.0	416.5	17.1
100	100.0	29			
-180.0	100.0	-180.0	21.1	20.0	21.1
30.0	20.7	40.0	21.0	50.0	20.6
57.0	20.7	60.0	18.6	70.0	17.8
80.0	17.5	90.0	17.4	100.0	17.0
105.5	16.7	110.0	15.85	120.0	15.4
127.25	15.1	130.0	14.0	138.0	10.6
148.0	9.4	158.0	9.5	165.75	10.0
178.0	8.95	186.0	8.8	192.0	8.6
200.0	8.85	208.0	14.0	202.5	16.1
213.5	15.3	215.5	17.05		
11	50.0	20.0	11.35	60.0	11.35
80.0	17.0	150.0	19.0	300.0	30.0
120	27.72	60.0	27.75	50.0	24.3
-60.0	25.9	60.0	21.8	70.0	21.7
80.0	21.2	90.0	20.1	100.0	18.5
108.75	17.35	113.5	17.1	118.75	16.65
123.75	16.35	128.5	16.4	133.5	15.25
138.5	15.85	143.5	16.2	148.5	17.05
153.5	17.45	158.5	18.5	168.5	20.55
169.75	20.65	178.75	20.8	225.0	30.0
130	100.0	24			
-130.0	100.0	-130.0	23.15	70.0	23.15
80.0	22.15	90.0	19.5	100.0	17.9
105.0	17.2	110.0	16.3	115.0	15.5
120.0	15.1	125.0	14.7	130.0	14.5
135.0	14.25	140.0	14.1	145.0	14.8
150.0	14.0	155.0	15.0	160.0	15.1
165.0	15.3	170.0	15.4	175.0	17.1
181.5	17.9	185.5	20.6	205.0	47.3
140	26.75	35			
0.0	26.75	10.0	26.35	20.0	25.1
30.0	23.5	34.25	24.1	44.5	23.05
54.0	20.0	64.25	22.0	74.25	21.55
84.25	20.0	94.25	20.65	104.25	20.85
114.25	20.15	124.25	19.65	135.0	18.0
153.0	18.3	158.0	18.9	164.0	19.4
168.0	18.2	175.25	20.2	185.25	23.85
195.25	21.2	205.25	24.7	215.25	24.4
225.25	24.2	235.5	23.95	245.5	24.2

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255.5	24.4	265.25	24.3	275.5	24.35
285.5	24.2	295.25	24.9	305.5	27.25
315.5	28.55	325.5	29.35		
0.0	141				
27.4	32	10.0	23.1	12.25	22.0
19.65		44.0	13.5	49.0	14.5
16.3		59.0	16.7	64.0	17.35
69.5		74.0	18.2	79.0	19.6
89.0		99.0	22.2	109.0	22.4
119.0		129.25	23.05	139.5	23.1
149.0		159.0	23.45	169.0	24.0
179.0		189.0	24.0	199.0	24.3
209.0		219.0	24.5	229.0	24.8
239.0		249.0	25.3	259.0	25.55
420.0		421.0	26.25		
150	33				
0.0	150	10.0	26.6	15.0	25.45
20.9		30.5	20.65	34.5	20.5
39.5		49.5	20.6	58.5	20.5
64.75		72.5	19.2	83.5	19.5
92.5		104.75	20.75	109.5	20.5
119.0		129.0	21.9	139.0	22.5
149.0		159.0	23.1	169.0	23.3
179.0		189.0	23.6	199.0	23.6
209.0		219.0	23.4	229.0	23.85
239.0		249.0	22.65	259.0	22.4
269.0		288.0	24.8	297.5	26.5
151	25				
25.0		8.75	24.4	10.0	24.4
20.0		30.0	24.0	40.0	24.0
50.0		60.0	23.85	70.0	23.2
80.0		90.0	21.8	100.0	21.7
122.0		127.0	21.6	132.0	20.9
137.0		142.0	19.65	147.0	19.0
152.0		157.5	20.2	159.5	20.2
162.0		168.75	24.2	172.5	25.35
259.0					
160	21				
200.0		0.0	28.8	20.0	27.85
25.0		35.0	25.1	45.0	24.1
55.0		65.0	22.5	75.0	21.65
83.25		92.25	20.0	100.0	21.1
105.0		111.5	22.3	121.0	22.9
131.0		141.5	24.1	151.0	24.25
161.0		170.5	24.3	180.0	31.25
170	23				
36.0		10.0	31.1	20.0	29.5
27.0		37.25	27.6	42.25	26.6
49.5		61.75	25.7	68.0	25.85
77.25		89.0	26.55	96.75	26.25
109.0		117.25	26.75	132.5	27.25
147.0		154.75	26.75	171.0	27.5
181.0		191.0	27.7	201.0	27.7

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213.0	27.7	26	219.0	34.85		
-13.0	40.0		10.0	23.05	13.0	21.75
38.25	27.25		54.25	23.15	73.5	24.41
95.5	26.1		114.25	28.5	134.5	25.3
150.5	26.8		162.5	28.5	166.75	21.5
173.5	27.75		183.5	29.6	193.5	28.9
203.5	28.9		213.5	31.5	223.75	30.65
233.5	30.2		243.2	33.55	264.75	30.65
256.75	31.85		266.75	35.3	276.5	31.2
287.0	34.3		296.5			
	190	27				
-79.0	100.0		72.0	38.0	21.0	38.0
30.0	33.2		33.0	38.25	43.0	32.75
75.0	32.65		93.0	38.0	103.0	31.5
113.0	31.1		123.0	30.45	133.0	31.4
166.0	30.35		153.0	28.9	163.0	28.4
181.5	27.7		189.5	27.4	199.5	27.5
213.25	27.6		219.5	27.4	228.5	27.65
243.25	27.3		252.0	28.25	262.0	28.7
264.25	28.2		275.0	31.0	283.0	31.75
	200	28				
0.0	38.75		10.0	38.9	20.0	38.65
30.0	38.0		39.0	37.9	40.0	36.3
50.0	35.6		60.0	34.65	70.0	27.85
96.5	27.0		101.5	26.8	108.5	26.45
111.5	26.0		119.5	24.05	121.5	24.25
126.5	26.3		131.5	24.0	136.5	24.1
141.5	27.75		151.5	28.6	161.5	28.25
171.5	20.8		181.5	30.3	182.5	30.4
191.5	30.75		202.0	30.55	211.5	30.75
311.5	32.75					
	210	22				
-20.0	60.0		4.5	43.8	10.0	40.0
20.0	31.75		30.0	26.65	64.0	27.75
69.0	27.55		74.0	26.75	79.0	27.3
84.0	27.5		89.0	27.75	94.0	28.2
99.0	28.45		104.0	28.25	109.0	28.7
119.0	28.9		129.0	28.9	130.0	28.9
149.0	29.45		159.0	31.0	164.0	31.2
222.0	60.0					
	220	26				
-80.0	100.0		80.0	39.1	20.0	39.1
30.0	37.6		39.0	35.6	40.0	35.4
50.0	32.6		60.0	30.5	70.0	28.9
94.0	29.0		98.75	24.35	104.0	25.7
109.0	26.4		114.0	24.6	119.0	24.3
124.0	26.1		129.0	30.0	139.0	31.2
149.0	31.7		159.0	32.1	169.0	32.7
172.0	34.25		179.0	33.2	189.0	33.5
199.0	39.75		209.0	43.8		
	230	27				
0.0	43.75		10.0	43.5	20.0	43.3

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30.0	42.9	31.75	42.7	40.0	38.8
50.0	38.5	90.0	38.1	70.0	37.6
80.0	38.25	90.0	33.55	100.0	32.0
100.0	30.8	139.5	29.1	144.5	29.6
120.0	29.7	154.5	32.0	184.5	33.65
140.0	35.15	182.0	36.2	234.5	35.25
160.0	34.85	204.5	36.85	284.5	38.0
180.0	38.0	229.5	40.0	339.5	40.0
200.0	24.0	175	36.15	390.0	35.25
220.0	50.0	45.5	34.6	440.0	34.25
240.0	35.1	60.5	33.7	490.0	33.85
260.0	55.5	75.5	34.5	540.0	34.5
280.0	70.5	95.5	33.5	590.0	34.5
300.0	85.5	125.5	35.3	640.0	35.45
320.0	100.5	155.5	35.15	690.0	35.65
340.0	115.5	185.5	37.5	740.0	40.6
360.0	130.5	215.5	40.45	790.0	44.0
380.0	145.5	245.5	35.75	840.0	35.75
400.0	160.5	275.5	35.75	890.0	35.75
420.0	175.5	305.5	41.0	940.0	38.4
440.0	190.5	335.5	38.3	990.0	37.8
460.0	205.5	365.5	37.9	1040.0	37.2
480.0	220.5	395.5	37.6	1090.0	37.0
500.0	235.5	425.5	37.4	1140.0	37.2
520.0	250.5	455.5	37.4	1190.0	37.4
540.0	265.5	485.5	37.6	1240.0	37.7
560.0	280.5	515.5	37.9	1290.0	38.0
580.0	295.5	545.5	38.0	1340.0	37.8
600.0	310.5	575.5	37.5	1390.0	37.6
620.0	325.5	605.5	37.5	1440.0	42.0
640.0	340.5	635.5	37.5	1490.0	48.5
660.0	355.5	665.5	44.0	1540.0	38.4
680.0	370.5	695.5	41.0	1590.0	38.15
700.0	385.5	725.5	38.3	1640.0	37.8
720.0	400.5	755.5	37.9	1690.0	37.2
740.0	415.5	785.5	37.6	1740.0	37.0
760.0	430.5	815.5	37.4	1790.0	37.2
780.0	445.5	845.5	37.4	1840.0	37.4
800.0	460.5	875.5	37.6	1890.0	37.7
820.0	475.5	905.5	37.9	1940.0	38.0
840.0	490.5	935.5	38.0	1990.0	37.8
860.0	505.5	965.5	37.5	2040.0	37.6
880.0	520.5	995.5	37.5	2090.0	42.0
900.0	535.5	1025.5	37.5	2140.0	48.5
920.0	550.5	1055.5	44.0	2190.0	38.4
940.0	565.5	1085.5	41.0	2240.0	38.15
960.0	580.5	1115.5	38.3	2290.0	37.8
980.0	595.5	1145.5	37.9	2340.0	37.2
1000.0	610.5	1175.5	37.6	2390.0	37.0
				2440.0	37.2
				2490.0	37.4
				2540.0	37.7
				2590.0	38.0
				2640.0	37.8
				2690.0	37.6
				2740.0	42.0
				2790.0	48.5
				2840.0	38.4
				2890.0	38.15
				2940.0	37.8
				2990.0	37.2
				3040.0	37.0
				3090.0	37.2
				3140.0	37.4
				3190.0	37.7
				3240.0	38.0
				3290.0	37.8
				3340.0	37.6
				3390.0	42.0
				3440.0	48.5
				3490.0	38.4
				3540.0	38.15
				3590.0	37.8
				3640.0	37.2
				3690.0	37.0
				3740.0	37.2
				3790.0	37.4
				3840.0	37.7
				3890.0	38.0
				3940.0	37.8
				3990.0	37.6
				4040.0	42.0
				4090.0	48.5
				4140.0	38.4
				4190.0	38.15
				4240.0	37.8
				4290.0	37.2
				4340.0	37.0
				4390.0	37.2
				4440.0	37.4
				4490.0	37.7
				4540.0	38.0
				4590.0	37.8
				4640.0	37.6
				4690.0	42.0
				4740.0	48.5
				4790.0	38.4
				4840.0	38.15
				4890.0	37.8
				4940.0	37.2
				4990.0	37.0
				5040.0	37.2
				5090.0	37.4
				5140.0	37.7
				5190.0	38.0
				5240.0	37.8
				5290.0	37.6
				5340.0	42.0
				5390.0	48.5
				5440.0	38.4
				5490.0	38.15
				5540.0	37.8
				5590.0	37.2
				5640.0	37.0
				5690.0	37.2
				5740.0	37.4
				5790.0	37.7
				5840.0	38.0
				5890.0	37.8
				5940.0	37.6
				5990.0	42.0
				6040.0	48.5
				6090.0	38.4
				6140.0	38.15
				6190.0	37.8
				6240.0	37.2
				6290.0	37.0
				6340.0	37.2
				6390.0	37.4
				6440.0	37.7
				6490.0	38.0
				6540.0	37.8
				6590.0	37.6
				6640.0	42.0
				6690.0	48.5
				6740.0	38.4
				6790.0	38.15
				6840.0	37.8
				6890.0	37.2
				6940.0	37.0
				6990.0	37.2
				7040.0	37.4
				7090.0	37.7
				7140.0	38.0
				7190.0	37.8
				7240.0	37.6
				7290.0	42.0
				7340.0	48.5
				7390.0	38.4
				7440.0	38.15
				7490.0	37.8
				7540.0	37.2
				7590.0	37.0
				7640.0	37.2
				7690.0	37.4
				7740.0	37.7
				7790.0	38.0
				7840.0	37.8
				7890.0	37.6
				7940.0	42.0
				7990.0	48.5
				8040.0	38.4
				8090.0	38.15

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100.0	38.1	105.0	38.0	110.0	37.8
115.0	37.4	120.0	37.25	125.0	37.2
130.0	37.1	135.0	37.0	140.0	37.0
145.0	37.1	150.0	37.1	155.0	37.2
160.0	37.3	165.0	37.4	170.0	37.4
175.0	37.7	180.0	37.6	185.0	37.7
190.0	37.8	195.0	37.9	200.0	38.0
205.0	38.1	210.0	38.0	215.0	37.8
220.0	37.6	225.0	37.5	230.0	37.6
235.0	38.2	240.0	38.5	245.0	42.0
250.0	42.0	255.0	44.0	260.0	48.5
272	25	277	25	282	58.5
0.0	59.6	8.0	56.3	12.0	52.4
16.0	46.9	19.0	44.0	22.0	40.5
30.0	37.7	36.0	34.1	50.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
62.0	38.2	78.0	37.2	108.0	38.6
136.0	39.4	148.0	40.5	160.0	43.0
167.0	42.0	180.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8	273	25	282	57.8
0.0	59.6	8.0	56.3	12.0	52.4
16.0	46.9	19.0	44.0	22.0	40.5
30.0	37.7	36.0	34.1	50.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
62.0	38.2	78.0	37.2	108.0	38.6
136.0	39.4	148.0	40.5	160.0	43.0
167.0	42.0	180.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8	274	25	283	57.8
0.0	59.6	8.0	56.3	12.0	52.4
16.0	46.9	19.0	44.0	22.0	40.5
30.0	37.7	36.0	34.1	50.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
62.0	38.2	78.0	37.2	108.0	38.6
136.0	39.4	148.0	40.5	160.0	43.0
167.0	42.0	180.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8	275	25	284	57.8
0.0	59.6	8.0	56.3	12.0	52.4
16.0	46.9	19.0	44.0	22.0	40.5
30.0	37.7	36.0	34.1	50.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
62.0	38.2	78.0	37.2	108.0	38.6
136.0	39.4	148.0	40.5	160.0	43.0
167.0	42.0	180.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8	276	25	285	57.8
0.0	59.6	8.0	56.3	12.0	52.4
16.0	46.9	19.0	44.0	22.0	40.5
30.0	37.7	36.0	34.1	50.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
62.0	38.2	78.0	37.2	108.0	38.6
136.0	39.4	148.0	40.5	160.0	43.0
167.0	42.0	180.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8	277	25	286	57.8
0.0	59.6	8.0	56.3	12.0	52.4
16.0	46.9	19.0	44.0	22.0	40.5
30.0	37.7	36.0	34.1	50.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
62.0	38.2	78.0	37.2	108.0	38.6
136.0	39.4	148.0	40.5	160.0	43.0
167.0	42.0	180.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8	278	25	288	57.8
0.0	59.6	8.0	56.3	12.0	52.4
16.0	46.9	19.0	44.0	22.0	40.5
30.0	37.7	36.0	34.1	50.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
62.0	38.2	78.0	37.2	108.0	38.6
136.0	39.4	148.0	40.5	160.0	43.0
167.0	42.0	180.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8	279	25	289	57.8

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16.0	46.9	19.0	64.0	22.0	40.5
30.0	36.7	36.0	34.1	40.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
60.0	38.2	78.0	37.2	108.0	38.6
16.0	39.4	18.0	40.5	160.0	43.0
167.0	43.0	100.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8				
0.0	59.6	8.0	56.3	12.0	52.4
16.0	46.9	19.0	44.0	22.0	40.5
30.0	36.7	36.0	34.1	40.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
60.0	38.2	78.0	37.2	108.0	38.6
16.0	39.4	18.0	40.5	160.0	43.0
167.0	43.0	100.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8				
0.0	59.6	8.0	56.3	12.0	52.4
16.0	46.9	19.0	44.0	22.0	40.5
30.0	36.7	36.0	34.1	40.0	34.8
44.0	34.8	50.0	36.8	53.0	37.0
60.0	38.2	78.0	37.2	108.0	38.6
16.0	39.4	18.0	40.5	160.0	43.0
167.0	43.0	100.0	47.5	212.0	48.2
228.0	50.3	244.0	54.0	254.0	57.8
264.0	57.8				
0.0	65.0	3.0	43.9	10.0	42.0
20.0	40.0	30.0	38.7	54.5	36.6
50.5	35.9	60.5	34.8	60.5	34.9
74.5	35.6	80.0	32.1	80.5	37.0
89.5	38.7	99.5	39.5	109.5	40.1
119.5	40.8	139.5	41.2	159.5	44.0
149.5	48.0	159.5	46.0	179.5	47.2
179.5	48.2	189.5	49.1	199.5	49.8
209.5	51.55	219.5	52.5	229.5	54.1
239.0	56.7	239.5	56.6	249.5	57.35
0.0	53.6	10.0	53.4	20.0	52.8
23.5	52.1	30.0	50.8	40.0	49.8
50.0	48.35	60.0	42.9	70.0	40.6
78.25	40.1	81.25	39.75	81.25	39.05
91.25	38.15	91.25	38.55	101.25	38.7
108.5	39.35	113.5	39.1	118.5	39.5
131.5	39.9	138.5	40.2	144.5	40.2
158.75	40.3	153.5	40.2	168.5	40.3
173.5	40.2	188.5	40.1	183.5	40.2
188.5	40.0	193.5	40.1	198.5	40.0
198.5	40.5	203.5	40.4	208.5	40.7
212.5	44.0	220.5	45.9	228.5	48.5

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239.5	48.9	248.5	50.2	260.0	50.2
0.0	282	10.0	53.4	20.0	52.8
23.5	42	30.0	50.8	40.0	49.8
50.0		60.0	50.8	70.0	40.0
78.5		83.25	39.75	88.25	39.05
93.5		98.25	39.75	103.25	38.7
108.5		113.5	39.7	118.5	39.9
123.5		128.5	40.2	133.25	40.2
138.5		143.5	40.2	148.5	40.3
153.5		158.5	40.1	163.5	40.2
168.5		173.5	40.1	178.5	40.0
183.5		188.5	40.1	193.5	40.0
198.5		203.5	40.4	208.5	40.2
213.5		208.5	45.9	213.5	48.5
218.5		228.5	50.2	238.5	48.5
239.5		248.5	50.2	260.0	50.2
	283				
0.0	42	10.0	53.4	20.0	52.8
23.5		30.0	50.8	40.0	49.8
50.0		60.0	42.9	70.0	40.0
78.5		83.25	39.75	88.25	39.05
93.5		98.25	39.75	103.25	38.7
108.5		113.5	39.7	118.5	39.9
123.5		128.5	40.2	133.25	40.2
138.5		143.5	40.2	148.5	40.2
153.5		158.5	40.1	163.5	40.2
168.5		173.5	40.1	178.5	40.0
183.5		188.5	40.1	193.5	40.0
198.5		203.5	40.4	208.5	40.7
213.5		208.5	45.9	213.5	48.5
218.5		228.5	50.2	238.5	48.5
239.5		248.5	50.2	260.0	50.2
	290				
0.0	42	10.0	53.4	20.0	52.8
23.5		30.0	50.8	40.0	49.8
50.0		60.0	42.9	70.0	40.0
78.5		83.25	39.75	88.25	39.05
93.5		98.25	39.75	103.25	38.7
108.5		113.5	39.7	118.5	39.9
123.5		128.5	40.2	133.25	40.2
138.5		143.5	40.2	148.5	40.2
153.5		158.5	40.1	163.5	40.2
168.5		173.5	40.1	178.5	40.0
183.5		188.5	40.1	193.5	40.0
198.5		203.5	40.4	208.5	40.7
213.5		208.5	45.9	213.5	48.5
218.5		228.5	50.2	238.5	48.5
239.5		248.5	50.2	260.0	50.2
	291				
47.0	20	72.0	91.0	80.0	83.5
120.0		130.0	83.0	144.0	52.0
164.0		170.0	44.0	190.0	41.0
200.0		200.0	40.5	250.0	41.0
270.0		290.0	41.5	330.0	41.0
350.0		365.0	51.0	390.0	70.0

KASENMEI *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI

HF	AF	BF	SF	RF	HF	AF	BF	SF	RF
-5.000	0.000	0.000	0.000	0.000	-4.000	0.000	0.000	0.000	0.000
-4.500	252.273	509.091	509.146	0.495	-3.500	202.778	411.111	411.136	0.493
-4.000	509.091	518.182	518.201	0.982	-3.000	411.111	422.222	422.312	0.973
-3.500	770.455	527.273	527.337	1.461	-2.500	625.000	433.333	433.468	1.442
-3.000	1034.364	536.364	536.533	1.931	-2.000	844.444	444.444	444.924	1.899
-2.500	1300.818	545.455	545.729	2.395	-1.500	1069.444	455.556	455.780	2.346
-2.000	1581.818	554.545	554.874	2.851	-1.000	1300.000	466.667	466.936	2.784
-1.500	1861.364	563.636	564.020	3.300	-0.500	1536.111	477.778	478.082	3.213
-1.000	2145.455	572.727	573.166	3.743	0.000	1772.222	488.889	489.283	3.634
-0.500	2434.091	581.818	582.312	4.180	0.500	2025.000	500.000	500.404	4.047
0.000	2727.273	590.909	591.452	4.611	1.000	2375.000	500.000	500.405	4.066*
0.500	3025.000	600.000	600.603	5.037	1.500	2825.000	900.000	901.405	4.085*
1.000	3525.000	1000.000	1001.603	5.128*	2.000	3275.000	900.000	902.403	4.108*
1.500	4025.000	1000.000	1002.603	5.220*	2.500	3725.000	900.000	903.405	4.123
2.000	4525.000	1000.000	1003.603	5.311*	3.000	4175.000	900.000	904.405	4.146
2.500	5025.000	1000.000	1004.603	5.403*	3.500	4625.000	900.000	905.405	4.168
3.000	5525.000	1000.000	1005.603	5.494	4.000	5075.000	900.000	906.405	4.189
3.500	6025.000	1000.000	1006.603	5.585	4.500	5525.000	900.000	907.405	4.209
4.000	6525.000	1000.000	1007.603	5.676	5.000	5975.000	900.000	908.405	4.227
4.500	7025.000	1000.000	1008.603	5.765	5.500	6425.000	900.000	909.405	4.244
5.000	7525.000	1000.000	1009.603	5.853	6.000	6875.000	900.000	910.405	4.259
5.500	8025.000	1000.000	1010.603	5.941	6.500	7325.000	900.000	911.405	4.272
6.000	8525.000	1000.000	1011.603	6.027	7.000	7775.000	900.000	912.405	4.283
6.500	9025.000	1000.000	1012.603	6.113	7.500	8225.000	900.000	913.405	4.292
7.000	9525.000	1000.000	1013.603	6.198	8.000	8675.000	900.000	914.405	4.299
7.500	10025.000	1000.000	1014.603	6.281	8.500	9125.000	900.000	915.405	4.304
8.000	10525.000	1000.000	1015.603	6.363	9.000	9575.000	900.000	916.405	4.308
8.500	11025.000	1000.000	1016.603	6.445	9.500	10025.000	900.000	917.405	4.311
9.000	11525.000	1000.000	1017.603	6.526	10.000	10475.000	900.000	918.405	4.313
9.500	12025.000	1000.000	1018.603	6.605	10.500	10925.000	900.000	919.405	4.315
10.000	12525.000	1000.000	1019.603	6.684	11.000	11375.000	900.000	920.405	4.316
10.500	13025.000	1000.000	1020.603	6.762	11.500	11825.000	900.000	921.405	4.317
11.000	13525.000	1000.000	1021.603	6.839	12.000	12275.000	900.000	922.405	4.318
11.500	14025.000	1000.000	1022.603	6.915	12.500	12725.000	900.000	923.405	4.319
12.000	14525.000	1000.000	1023.603	6.990	13.000	13175.000	900.000	924.405	4.320
12.500	15025.000	1000.000	1024.603	7.064	13.500	13625.000	900.000	925.405	4.321
13.000	15525.000	1000.000	1025.603	7.137	14.000	14075.000	900.000	926.405	4.322
13.500	16025.000	1000.000	1026.603	7.209	14.500	14525.000	900.000	927.405	4.323
14.000	16525.000	1000.000	1027.603	7.281	15.000	14975.000	900.000	928.405	4.324
14.500	17025.000	1000.000	1028.603	7.352	15.500	15425.000	900.000	929.405	4.325
15.000	17525.000	1000.000	1029.603	7.421	16.000	15875.000	900.000	930.405	4.326
15.500	18025.000	1000.000	1030.603	7.489	16.500	16325.000	900.000	931.405	4.327

KASENMEI *** CROSS SECTION DATA OF AGOS RIVER LUZON-PHILIPPINES *** NIPPON KOEI

NO. 3	NO. 4	NO. 5	NO. 6	NO. 7	NO. 8	NO. 9	NO. 10	NO. 11	NO. 12	NO. 13	NO. 14	NO. 15	NO. 16	NO. 17	NO. 18	NO. 19	NO. 20	NO. 21	NO. 22	NO. 23	NO. 24	NO. 25	NO. 26	NO. 27	NO. 28	NO. 29	NO. 30	NO. 31	NO. 32	NO. 33	NO. 34	NO. 35	NO. 36	NO. 37	NO. 38	NO. 39	NO. 40	NO. 41	NO. 42	NO. 43	NO. 44	NO. 45	NO. 46	NO. 47	NO. 48	NO. 49	NO. 50	NO. 51	NO. 52	NO. 53	NO. 54	NO. 55	NO. 56	NO. 57	NO. 58	NO. 59	NO. 60	NO. 61	NO. 62	NO. 63	NO. 64	NO. 65	NO. 66	NO. 67	NO. 68	NO. 69	NO. 70	NO. 71	NO. 72	NO. 73	NO. 74	NO. 75	NO. 76	NO. 77	NO. 78	NO. 79	NO. 80	NO. 81	NO. 82	NO. 83	NO. 84	NO. 85	NO. 86	NO. 87	NO. 88	NO. 89	NO. 90	NO. 91	NO. 92	NO. 93	NO. 94	NO. 95	NO. 96	NO. 97	NO. 98	NO. 99	NO. 100																																																																																																							
-3.000	0.500	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000	9.500	10.000	10.500	11.000	11.500	12.000	12.500	13.000	13.500	14.000	14.500	15.000	15.500	16.000	16.500	17.000	17.500	18.000	18.500	19.000	19.500	20.000	20.500	21.000	21.500	22.000	22.500	23.000	23.500	24.000	24.500	25.000	25.500	26.000	26.500	27.000	27.500	28.000	28.500	29.000	29.500	30.000	30.500	31.000	31.500	32.000	32.500	33.000	33.500	34.000	34.500	35.000	35.500	36.000	36.500	37.000	37.500	38.000	38.500	39.000	39.500	40.000	40.500	41.000	41.500	42.000	42.500	43.000	43.500	44.000	44.500	45.000	45.500	46.000	46.500	47.000	47.500	48.000	48.500	49.000	49.500	50.000	50.500	51.000	51.500	52.000	52.500	53.000	53.500	54.000	54.500	55.000	55.500	56.000	56.500	57.000	57.500	58.000	58.500	59.000	59.500	60.000	60.500	61.000	61.500	62.000	62.500	63.000	63.500	64.000	64.500	65.000	65.500	66.000	66.500	67.000	67.500	68.000	68.500	69.000	69.500	70.000	70.500	71.000	71.500	72.000	72.500	73.000	73.500	74.000	74.500	75.000	75.500	76.000	76.500	77.000	77.500	78.000	78.500	79.000	79.500	80.000	80.500	81.000	81.500	82.000	82.500	83.000	83.500	84.000	84.500	85.000	85.500	86.000	86.500	87.000	87.500	88.000	88.500	89.000	89.500	90.000	90.500	91.000	91.500	92.000	92.500	93.000	93.500	94.000	94.500	95.000	95.500	96.000	96.500	97.000	97.500	98.000	98.500	99.000	99.500	100.000

KASENHEI *** CROSS SECTION DATA OF AGOS RIVER LUZON-PHILIPPINES *** NIPPON KOEI

NO. = 5 NO. = 6 NO. = 7

BE	AF	BF	SE	AE	BE	SE	BF	AF	BF	SE	BF
-2.100	0.416	0.286	0.289	0.050	-1.900	0.	0.	0.	0.	0.	0.275
-2.000	0.	8.266	8.269	0.050	-1.500	5.264	19.132	19.132	0.	19.160	0.275
-1.500	1.914	4.214	4.214	0.310	-1.000	12.053	19.492	19.492	32.702	32.702	0.572
-1.000	5.471	102.857	102.857	0.510	-0.500	55.474	55.474	55.474	55.474	55.474	0.772
-0.500	131.936	185.000	185.037	0.713	0.	73.947	83.285	83.285	83.285	83.285	0.906
0.	235.677	227.929	227.988	1.034	0.500	125.513	114.000	114.000	114.172	114.172	1.099
0.500	355.500	260.314	261.082	1.372	1.000	189.979	156.667	156.667	156.862	156.862	1.211
1.000	490.982	265.391	265.798	1.847	1.500	283.493	200.680	200.680	200.906	200.906	1.411
1.500	624.791	269.845	270.512	2.310	2.000	388.161	238.000	238.000	238.259	238.259	1.778
2.000	782.548	581.500	482.491	2.415*	2.500	499.031	225.475	225.475	225.500	225.500	2.210
2.500	1023.433	521.255	485.666	2.522*	3.000	613.435	232.958	232.958	233.141	233.141	2.620
3.000	1309.450	592.000	584.684	2.622*	3.500	733.149	247.444	247.444	247.883	247.883	2.958
3.500	1600.450	582.000	583.684	2.733	4.000	861.812	268.811	268.811	269.277	269.277	3.201
4.000	1891.450	582.000	586.684	3.224	4.500	1062.924	491.308	491.308	492.086	492.086	3.248*
4.500	2182.450	582.000	587.684	3.714	5.000	1223.503	549.000	549.000	550.532	550.532	3.222*
5.000	2473.450	582.000	588.684	4.202	5.500	1598.463	549.000	549.000	551.532	551.532	3.453*
5.500	2764.450	582.000	589.684	4.688	6.000	1872.933	549.000	549.000	552.532	552.532	3.590
6.000	3055.450	582.000	590.684	5.173	6.500	2147.463	549.000	549.000	553.532	553.532	3.880
6.500	3346.450	582.000	591.684	5.659	7.000	2421.963	549.000	549.000	554.532	554.532	4.368
7.000	3637.450	582.000	592.684	6.137	7.500	2696.463	549.000	549.000	555.532	555.532	4.854
7.500	3928.450	582.000	593.684	6.617	8.000	2970.933	549.000	549.000	556.532	556.532	5.338
8.000	4219.450	582.000	594.684	7.095	8.500	3245.463	549.000	549.000	557.532	557.532	5.821
8.500	4510.450	582.000	595.684	7.572	9.000	3519.983	549.000	549.000	558.532	558.532	6.302
9.000	4801.450	582.000	596.684	8.047	9.500	3794.483	549.000	549.000	559.532	559.532	6.781
9.500	5092.450	582.000	597.684	8.520	10.000	4068.933	549.000	549.000	560.532	560.532	7.259
10.000	5383.450	582.000	598.684	8.992	10.500	4343.463	549.000	549.000	561.532	561.532	7.735
10.500	5674.450	582.000	599.684	9.462	11.000	4617.983	549.000	549.000	562.532	562.532	8.210
11.000	5965.450	582.000	600.684	9.931	11.500	4892.483	549.000	549.000	563.532	563.532	8.682
11.500	6256.450	582.000	601.684	10.408	12.000	5166.933	549.000	549.000	564.532	564.532	9.151
12.000	6547.450	582.000	602.684	10.864	12.500	5441.463	549.000	549.000	565.532	565.532	9.622
12.500	6838.450	582.000	603.684	11.328	13.000	5715.983	549.000	549.000	566.532	566.532	10.090
13.000	7129.450	582.000	604.684	11.790	13.500	5990.483	549.000	549.000	567.532	567.532	10.555
13.500	7420.450	582.000	605.684	12.251	14.000	6264.933	549.000	549.000	568.532	568.532	11.020
14.000	7711.450	582.000	606.684	12.711	14.500	6539.463	549.000	549.000	569.532	569.532	11.482
14.500	8002.450	582.000	607.684	13.169	15.000	6813.983	549.000	549.000	570.532	570.532	11.943
15.000	8293.450	582.000	608.684	13.625	15.500	7088.463	549.000	549.000	571.532	571.532	12.405
15.500	8584.450	582.000	609.684	14.080	16.000	7362.963	549.000	549.000	572.532	572.532	12.860
16.000	8875.450	582.000	610.684	14.534	16.500	7637.463	549.000	549.000	573.532	573.532	13.317
16.500	9166.450	582.000	611.684	14.986	17.000	7911.983	549.000	549.000	574.532	574.532	13.771
17.000	9457.450	582.000	612.684	15.436	17.500	8186.463	549.000	549.000	575.532	575.532	14.224
17.500	9748.450	582.000	613.684	15.885	18.000	8460.963	549.000	549.000	576.532	576.532	14.676
18.000	10039.450	582.000	614.684	16.333	18.500	8735.463	549.000	549.000	577.532	577.532	15.123

KASEMNET *** CROSS SECTION DATA OF AGOS RIVER LIZON/PHILIPPINES *** NIPPON KOEI

NO. 9	NO. 10	NO. 11	NO. 12	NO. 13	NO. 14	NO. 15	NO. 16	NO. 17	NO. 18	NO. 19	NO. 20	NO. 21	NO. 22	NO. 23	NO. 24	NO. 25	NO. 26	NO. 27	NO. 28	NO. 29	NO. 30	NO. 31	NO. 32	NO. 33	NO. 34	NO. 35	NO. 36	NO. 37	NO. 38	NO. 39	NO. 40	NO. 41	NO. 42	NO. 43	NO. 44	NO. 45	NO. 46	NO. 47	NO. 48	NO. 49	NO. 50	NO. 51																																																																																																																																																													
0.500	1.000	1.500	2.000	2.500	3.000	3.500	4.000	4.500	5.000	5.500	6.000	6.500	7.000	7.500	8.000	8.500	9.000	9.500	10.000	10.500	11.000	11.500	12.000	12.500	13.000	13.500	14.000	14.500	15.000	15.500	16.000	16.500	17.000	17.500	18.000	18.500	19.000	19.500	20.000	20.500	21.000	21.500	22.000	22.500	23.000	23.500	24.000	24.500	25.000	25.500	26.000	26.500	27.000	27.500	28.000	28.500	29.000	29.500	30.000	30.500	31.000	31.500	32.000	32.500	33.000	33.500	34.000	34.500	35.000	35.500	36.000	36.500	37.000	37.500	38.000	38.500	39.000	39.500	40.000	40.500	41.000	41.500	42.000	42.500	43.000	43.500	44.000	44.500	45.000	45.500	46.000	46.500	47.000	47.500	48.000	48.500	49.000	49.500	50.000	50.500	51.000	51.500	52.000	52.500	53.000	53.500	54.000	54.500	55.000	55.500	56.000	56.500	57.000	57.500	58.000	58.500	59.000	59.500	60.000	60.500	61.000	61.500	62.000	62.500	63.000	63.500	64.000	64.500	65.000	65.500	66.000	66.500	67.000	67.500	68.000	68.500	69.000	69.500	70.000	70.500	71.000	71.500	72.000	72.500	73.000	73.500	74.000	74.500	75.000	75.500	76.000	76.500	77.000	77.500	78.000	78.500	79.000	79.500	80.000	80.500	81.000	81.500	82.000	82.500	83.000	83.500	84.000	84.500	85.000	85.500	86.000	86.500	87.000	87.500	88.000	88.500	89.000	89.500	90.000	90.500	91.000	91.500	92.000	92.500	93.000	93.500	94.000	94.500	95.000	95.500	96.000	96.500	97.000	97.500	98.000	98.500	99.000	99.500	100.000

KASENMEI *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI

ME-11 50.E 10 ME-12 50.E 20

HE	AE	HE	SE	RE	HF	AF	BE	SE	RE
4.950	0	0	0	0.025	8.000	0	0	0	0
5.000	0.125	0	5.001	0.025	8.500	12.003	53.574	53.649	0.224
5.500	12.054	36.924	36.944	0.326	9.000	43.708	73.220	80.022	0.571
6.000	37.810	60.458	60.645	0.623	9.500	90.406	101.886	101.886	0.867
6.500	70.282	73.593	74.042	0.929	10.000	147.292	127.097	128.184	1.159
7.000	111.626	88.963	89.673	1.245	10.500	223.391	193.065	194.501	1.280*
7.500	152.429	98.229	99.310	1.595	11.000	332.350	233.213	232.622	1.610
8.000	206.669	101.939	103.329	2.017	11.500	449.823	235.977	238.093	1.869
8.500	240.823	114.446	116.359	2.242	12.000	568.327	238.039	240.491	2.363
9.000	335.342	202.656	204.720	2.246*	12.500	688.340	241.956	244.590	2.814
9.500	457.045	254.313	256.288	2.250*	13.000	842.250	430.231	432.281	2.852*
10.000	581.681	256.311	259.346	2.254	13.500	1062.741	431.435	433.080	2.691*
10.500	719.224	263.233	266.342	2.218	14.000	1278.675	432.300	436.578	2.529
11.000	846.469	266.062	269.883	3.136	14.500	1495.041	433.164	438.077	3.413
11.500	980.904	271.678	275.726	3.557	15.000	1711.832	434.022	438.576	3.894
12.000	1118.147	277.297	281.672	3.970	15.500	1929.011	434.861	440.861	4.376
12.500	1238.203	282.926	287.579	4.375	16.000	2146.470	435.206	442.122	4.832
13.000	1401.005	287.642	292.383	4.788	16.500	2364.217	435.781	443.384	5.332
13.500	1544.473	290.230	295.480	5.230	17.000	2582.521	436.355	444.646	5.807
14.000	1691.235	292.818	298.377	5.668	17.500	2800.573	436.930	445.907	6.281
14.500	1828.222	295.422	301.288	6.101	18.000	3019.181	437.504	447.169	6.732
15.000	1986.678	298.118	304.231	6.550	18.500	3238.079	438.098	448.445	7.221
15.500	2216.055	492.031	505.732	6.570*	19.000	3457.884	438.721	449.744	7.687
16.000	2465.688	499.500	506.977	6.611*	19.500	3676.799	439.383	451.042	8.152
16.500	2712.555	492.969	508.182	6.651*	20.000	3896.627	439.986	452.340	8.613
17.000	2965.656	500.438	509.348	6.692*	20.500	4116.265	440.588	453.639	9.075
17.500	3215.992	500.906	510.533	6.732*	21.000	4337.213	441.211	454.937	9.534
18.000	3466.598	501.552	511.832	6.773	21.500	4557.951	441.584	456.116	9.993
18.500	3717.546	502.641	513.244	7.244	22.000	4778.243	441.584	457.116	10.454
19.000	3968.639	502.931	514.535	7.713	22.500	4999.535	441.584	458.116	10.913
19.500	4220.477	503.621	515.907	8.181	23.000	5220.327	441.584	459.116	11.370
20.000	4472.460	504.310	517.259	8.646	23.500	5441.119	441.584	460.116	11.826
20.500	4724.287	505.000	518.611	9.110	24.000	5661.911	441.584	461.116	12.279
21.000	4977.287	505.000	519.611	9.579	24.500	5882.703	441.584	462.116	12.730
21.500	5229.787	505.000	520.611	10.043	25.000	6102.925	441.584	463.116	13.179
22.000	5482.288	505.000	521.611	10.510	25.500	6324.287	441.584	464.116	13.627
22.500	5734.788	505.000	522.611	10.973	26.000	6545.079	441.584	465.116	14.072
23.000	5987.288	505.000	523.611	11.435	26.500	6765.871	441.584	466.116	14.515
23.500	6239.788	505.000	524.611	11.897	27.000	6986.662	441.584	467.116	14.957
24.000	6492.288	505.000	525.611	12.357	27.500	7207.454	441.584	468.116	15.397
24.500	6744.788	505.000	526.611	12.808	28.000	7428.247	441.584	469.116	15.833
25.000	6997.288	505.000	527.611	13.262	28.500	7649.039	441.584	470.116	16.271
25.500	7249.788	505.000	528.611	13.713	29.000	7869.831	441.584	471.116	16.709
26.000	7502.288	505.000	529.611	14.166	29.500	8090.623	441.584	472.116	17.147
26.500	7754.788	505.000	530.611	14.615	30.000	8311.415	441.584	473.116	17.585

KASENHAI *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI

H=	A=	B=	S=	R=	H=	A=	B=	S=	R=
9.250	0	0	0	0	11.400	0	0	0	0
9.500	5.258	34.417	36.421	0.153	11.500	1.250	20.000	20.001	0.062
10.000	40.670	116.872	116.921	0.348	12.000	24.275	42.000	42.025	0.402
10.500	103.018	135.239	135.320	0.761	12.500	60.285	135.989	136.099	0.590
11.000	174.228	148.385	148.436	1.172	13.000	155.264	161.528	161.762	0.260
11.500	251.590	160.169	160.651	1.566	13.500	245.463	195.775	196.163	1.251
12.000	334.171	171.172	171.885	1.944	14.000	350.584	239.086	239.742	1.462
12.500	422.701	181.204	182.151	2.321	14.500	471.146	242.822	243.657	1.934
13.000	518.436	205.227	206.262	2.514	15.000	534.174	246.020	247.024	2.401
13.500	623.896	215.800	216.882	2.877	15.500	717.237	249.359	250.531	2.863
14.000	737.928	234.550	235.676	3.131	16.000	842.733	253.613	254.945	3.306
14.500	857.730	244.892	245.892	3.502	16.500	971.638	261.808	263.271	3.681
15.000	920.537	308.204	309.486	3.607*	17.000	1114.448	304.289	305.871	3.729*
15.500	1154.033	343.296	345.162	3.711*	17.500	1316.587	416.500	418.909	3.902*
16.000	1426.144	345.148	347.580	3.815	18.000	1522.837	416.500	419.909	4.007*
16.500	1499.181	347.000	349.999	4.283	18.500	1731.087	416.500	420.909	4.113
17.000	1673.144	348.832	352.417	4.248	19.000	1939.337	416.500	421.909	4.397
17.500	1848.033	350.704	354.835	5.208	19.500	2147.587	416.500	422.909	5.078
18.000	2024.116	352.331	361.073	5.606	20.000	2355.837	416.500	423.909	5.557
18.500	2264.675	362.250	367.734	5.670*	20.500	2564.087	416.500	424.909	6.034
19.000	2545.800	362.250	368.734	5.735*	21.000	2772.337	416.500	425.909	6.303
19.500	2826.925	362.250	369.734	5.799*	21.500	2980.587	416.500	426.909	6.982
20.000	3108.050	362.250	370.734	5.863*	22.000	3188.837	416.500	427.909	7.452
20.500	3389.175	362.250	371.734	5.928*	22.500	3397.087	416.500	428.909	8.399
21.000	3670.300	362.250	372.734	6.408	23.000	3605.337	416.500	429.909	8.850
21.500	3951.425	362.250	373.734	6.887	23.500	3813.587	416.500	430.909	9.312
22.000	4232.550	362.250	374.734	7.364	24.000	4021.837	416.500	431.909	9.771
22.500	4513.675	362.250	375.734	7.840	24.500	4230.088	416.500	432.909	10.222
23.000	4794.800	362.250	376.734	8.316	25.000	4438.338	416.500	433.909	10.684
23.500	5075.925	362.250	377.734	8.786	25.500	4646.588	416.500	434.909	11.137
24.000	5357.050	362.250	378.734	9.257	26.000	4854.838	416.500	435.909	11.588
24.500	5638.175	362.250	379.734	9.725	26.500	5063.088	416.500	436.909	12.028
25.000	5919.300	362.250	380.734	10.193	27.000	5271.338	416.500	437.909	12.485
25.500	6200.425	362.250	381.734	10.659	27.500	5479.588	416.500	438.909	12.930
26.000	6481.550	362.250	382.734	11.123	28.000	5687.838	416.500	439.909	13.373
26.500	6762.675	362.250	383.734	11.585	28.500	5896.088	416.500	440.909	13.814
27.000	7043.800	362.250	384.734	12.046	29.000	6104.338	416.500	441.909	14.253
27.500	7324.925	362.250	385.734	12.506	29.500	6312.588	416.500	442.909	14.690
28.000	7606.050	362.250	386.734	12.963	30.000	6520.838	416.500	443.909	15.125
28.500	7887.175	362.250	387.734	13.420	30.500	6729.088	416.500	444.909	15.558
29.000	8168.300	362.250	388.734	13.871	31.000	6937.338	416.500	445.909	15.989
29.500	8449.425	362.250	389.734	14.328	31.500	7145.588	416.500	446.909	16.419

KASEMFI *** CROSS SECTION DATA OF AGOS RIVER LUZON-PHILIPPINES *** NIPPON KOEI

NO. 10 NO. 11

HE	A=	B=	S=	B=	H=	A=	B=	S=	B=
8.000	0.	0.	0.	0.	11.350	0.	0.	0.	0.
9.000	5.630	24.771	24.776	0.227	11.500	0.046	40.609	40.721	0.148
9.500	19.844	41.212	41.444	0.481	12.000	26.857	42.632	43.123	0.623
10.000	44.946	58.746	59.238	0.739	13.500	48.683	44.666	43.525	1.069
10.500	75.575	64.359	64.359	1.114	13.000	71.523	46.595	47.322	1.492
11.000	108.197	66.281	67.144	1.611	13.500	95.377	48.723	50.329	1.895
11.500	141.824	68.234	69.346	2.045	14.000	120.246	50.232	52.731	2.280
12.000	174.431	70.187	71.349	2.466	14.500	146.129	52.280	55.134	2.650
12.500	212.043	72.150	73.451	2.873	15.000	173.022	54.802	57.536	3.007
13.000	248.572	74.094	75.553	3.273	15.500	200.938	56.838	59.938	3.352
13.500	286.107	76.047	78.155	3.661	16.000	229.864	58.866	62.340	3.687
14.000	324.619	78.000	80.357	4.040	16.500	259.805	60.895	64.742	4.013
14.500	364.021	79.802	82.117	4.422	17.000	290.752	62.924	67.144	4.330
15.000	404.226	81.214	84.278	4.796	17.500	326.661	65.082	69.214	4.634*
15.500	447.075	82.464	85.925	4.899*	18.000	371.442	68.441	73.285	4.939*
16.000	493.715	104.318	108.339	4.863*	18.500	425.102	716.200	72.355	4.343*
16.500	549.260	107.262	112.222	4.826	19.000	487.642	733.232	73.423	4.347*
17.000	605.236	114.947	119.565	5.062	19.500	556.390	741.036	74.824	4.351*
17.500	669.316	135.372	140.230	5.089*	20.000	628.677	748.112	75.224	4.355*
18.000	737.806	148.000	153.289	5.075*	20.500	704.503	755.189	76.623	4.359
18.500	813.369	154.250	160.039	5.022	21.000	783.827	762.266	78.023	4.363*
19.000	891.171	156.071	162.511	5.464	21.500	866.769	769.343	79.422	4.913
19.500	969.385	156.286	163.883	5.915	22.000	953.210	776.420	80.822	5.186
20.000	1047.956	157.500	165.355	6.371	22.500	1043.189	783.497	82.221	5.455
20.500	1126.885	158.424	166.827	6.782	23.000	1138.207	790.574	83.621	5.722
21.000	1213.111	193.000	201.994	6.806*	23.500	1233.763	797.651	85.020	5.989
21.500	1300.806	195.500	205.596	6.849*	24.000	1334.358	804.728	86.420	6.252
22.000	1388.524	195.500	206.196	6.837*	24.500	1438.491	811.805	87.819	6.514
22.500	1480.320	195.500	207.396	6.825*	25.000	1546.792	818.882	89.218	6.772
23.000	1584.056	195.500	208.596	6.977*	25.500	1659.372	825.958	90.618	7.034
23.500	1701.696	195.500	209.796	7.030*	26.000	1772.121	833.035	92.017	7.292
24.000	1829.356	195.500	210.996	7.083*	26.500	1890.408	840.112	93.417	7.549
24.500	1967.320	195.500	212.196	7.136*	27.000	2012.233	847.189	94.816	7.805
25.000	2115.936	195.500	213.396	7.188*	27.500	2137.597	854.266	96.216	8.060
25.500	2272.806	195.500	214.596	7.191	28.000	2266.499	861.343	97.615	8.314
26.000	2439.530	195.500	215.796	7.651	28.500	2398.940	868.420	99.015	8.567
26.500	2616.330	195.500	216.996	8.102	29.000	2534.919	875.497	100.414	8.820
27.000	2802.066	195.500	218.196	8.564	29.500	2674.437	882.574	101.814	9.072
27.500	3000.806	195.500	219.396	9.017	30.000	2817.493	889.651	103.213	9.323
28.000	3211.530	195.500	220.596	9.468	30.500	2962.381	896.728	104.613	9.576
28.500	3434.330	195.500	221.796	9.917	31.000	3109.102	903.805	106.013	9.830
29.000	3669.066	195.500	222.996	10.364	31.500	3258.551	910.882	107.413	10.084
29.500	3915.530	195.500	224.196	10.809					
30.000	4173.330	195.500	225.396	11.251					
30.500	4442.066	195.500	226.596	11.693					
31.000	4721.530	195.500	227.796	12.130					
31.500	5011.806	195.500	228.996	12.567					

KASENMEI *** CROSS SECTION DATA OF AGOS RIVER LUZON-PHILIPPINES *** NIPPON KOEI

NO. = 120 NO. = 150

NO.	A	B	S	R	M	AZ	BE	SE	RE
13.850	0.064	0.855	0.909	0.071	14.000	0.422R	18.482	0.608	0.227
14.000	1.204	3.539	3.539	0.310	15.000	18.062	33.750	31.286	0.531
14.500	3.706	6.969	6.969	0.541	15.500	41.015	55.294	55.572	0.738
15.000	7.282	10.187	10.187	0.762	16.000	62.811	59.890	60.290	1.158
15.500	13.370	12.835	13.593	0.985	16.500	100.891	64.346	64.872	1.555
16.000	21.546	24.015	24.822	1.016*	17.000	134.126	68.525	68.242	1.837
17.000	36.066	33.539	34.479	1.046	17.500	169.971	75.393	76.125	2.233
17.500	56.188	44.129	47.115	1.132	18.000	208.539	82.377	83.084	2.522
18.000	80.759	52.315	53.385	1.513	18.500	251.642	86.139	87.155	2.887
18.500	108.462	58.455	59.855	1.818	19.000	295.678	90.005	91.215	3.262
19.000	139.104	64.064	65.309	2.130	19.500	341.646	93.870	95.272	3.586
19.500	172.527	69.628	70.844	2.431	20.000	382.238	96.598	98.117	3.967
20.000	208.732	75.192	76.618	2.724	20.500	438.144	99.125	100.963	4.340
20.500	247.946	81.892	83.399	2.973	21.000	488.104	101.433	103.343	4.714
21.000	293.220	97.937	99.501	3.058*	21.500	539.593	103.704	106.160	5.083
21.500	344.444	108.269	109.901	3.134	22.000	592.008	105.936	108.731	5.445
22.000	405.383	125.545	127.257	3.170	22.500	645.931	110.388	113.453	5.693
22.500	467.260	129.263	131.789	3.546	23.000	702.466	115.233	118.027	5.898
23.000	533.346	134.581	136.321	3.912	23.500	831.071	117.618	121.574	5.900*
23.500	601.641	138.800	140.853	4.271	24.000	989.971	117.983	122.693	5.901*
24.000	672.152	143.337	145.501	4.620	24.500	1149.054	118.348	123.812	5.903*
24.500	745.031	147.810	150.207	4.960	25.000	1308.320	118.713	124.931	5.895*
25.000	819.987	151.893	154.303	5.314	25.500	1467.768	119.079	126.051	5.896*
25.500	894.925	155.856	158.399	5.662	26.000	1627.598	119.444	127.170	5.898*
26.000	975.843	159.819	162.495	6.005	26.500	1787.212	119.809	128.289	5.910*
26.500	1056.743	163.282	166.591	6.343	27.000	1947.212	120.174	129.408	5.911
27.000	1139.625	167.745	170.687	6.677	27.500	2107.366	120.539	130.527	6.316
27.500	1224.688	171.702	174.783	7.006	28.000	2267.717	120.904	131.646	6.838
28.000	1337.742	174.946	178.392	7.070*	28.500	2428.250	121.270	132.765	7.297
28.500	1475.843	177.452	181.455	7.135*	29.000	2589.016	121.635	133.885	7.764
29.000	1615.201	179.973	184.518	7.200*	29.500	2749.985	122.000	135.004	8.209
29.500	1755.816	182.466	187.581	7.264*	30.000	2911.016	122.365	136.123	8.661
30.000	1897.688	185.000	190.644	7.329*	30.500	3072.290	122.730	137.242	9.110
30.500	2040.188	187.500	193.707	7.394*	31.000	3233.717	123.096	138.361	9.557
31.000	2182.688	189.964	196.770	7.459	31.500	3395.386	123.461	139.480	10.002
31.500	2325.188	192.428	199.833	7.518	32.000	3557.207	123.826	140.600	10.444
32.000	2467.688	194.892	202.896	8.575	32.500	3719.212	124.191	141.719	10.884
32.500	2610.188	197.356	205.959	8.829	33.000	3881.328	124.556	142.838	11.321
33.000	2752.688	199.820	209.022	9.879	33.500	4043.768	124.921	143.957	11.757
33.500	2895.188	202.284	212.085	9.927	34.000	4206.320	125.287	145.076	12.190
34.000	3037.688	204.748	215.148	10.172	34.500	4368.054	125.652	146.195	12.620

KASENMEI *** CROSS SECTION DATA OF AGOS RIVER LUZON-PHILIPPINES *** NIPPON KOEI

NE 19 NO. 140 NE 20 NO. 141

HE	AF	BF	SE	RE	HF	AF	BF	SE	RE
18.200	0	0	9.854	0.110	18.500	0	0	0	0.244
18.500	1.080	0	9.756	0.110	18.500	1.146	0	4.583	4.693
19.000	11.558	31.200	11.200	0.162	19.000	4.580	9.018	9.262	0.494
19.500	31.243	46.312	46.752	0.668	19.500	9.924	12.340	12.717	0.780
20.000	36.931	57.275	57.796	0.986	20.000	16.920	15.543	16.122	1.048
20.500	48.192	66.822	67.439	1.308	20.500	25.567	18.945	19.628	1.303
21.000	127.820	23.218	23.318	1.361	21.000	36.061	24.202	25.014	1.442
21.500	178.182	106.869	107.995	1.655	21.500	49.999	30.966	31.864	1.569
22.000	233.882	115.932	116.862	2.001	22.000	62.092	38.910	39.898	1.682
22.500	298.446	132.075	133.121	2.242	22.500	88.625	46.091	47.139	1.880
23.000	368.957	137.969	139.131	2.630	23.000	112.904	50.584	51.780	2.180
23.500	436.487	144.184	145.460	3.001	23.500	139.150	54.321	55.648	2.500
24.000	516.201	165.026	166.469	3.077	24.000	167.224	58.027	59.512	2.810
24.500	616.152	265.929	267.450	3.104*	24.500	197.349	62.578	64.155	3.076
25.000	753.591	275.061	276.948	3.130*	25.000	229.808	67.258	68.950	3.333
25.500	892.588	281.067	282.743	3.157	25.500	264.607	71.937	73.744	3.588
26.000	1031.636	287.248	289.012	3.580	26.000	301.883	77.233	79.048	3.820
26.500	1180.027	293.979	297.824	3.962	26.500	342.479	84.645	86.656	3.952
27.000	1331.203	304.530	308.386	5.341	27.000	387.999	99.723	101.914	3.370*
27.500	1483.750	307.423	310.124	4.784	27.500	440.883	115.629	117.896	3.987*
28.000	1638.432	311.269	314.503	5.210	28.000	509.078	130.852	133.217	4.005*
28.500	1795.028	315.115	318.881	5.629	28.500	588.061	181.093	183.589	4.023*
29.000	1954.035	321.125	325.412	6.003	29.000	684.198	212.256	214.860	4.640*
29.500	2116.019	325.500	330.431	6.403	29.500	795.316	233.419	236.132	4.058*
30.000	2278.769	325.500	331.431	6.875	30.000	941.173	416.321	419.197	4.072*
30.500	2441.519	325.500	332.431	7.374	30.500	1150.854	419.994	422.983	4.093*
31.000	2604.269	325.500	333.431	7.810	31.000	1361.267	423.657	426.798	4.111*
31.500	2767.019	325.500	334.431	8.273	31.500	1574.355	426.070	429.588	4.128*
32.000	2929.769	325.500	335.431	8.734	32.000	1782.669	422.000	431.201	4.146
32.500	3092.519	325.500	336.431	9.192	32.500	2001.169	427.000	432.201	4.830
33.000	3255.269	325.500	337.431	9.647	33.000	2246.669	427.000	433.201	5.112
33.500	3418.019	325.500	338.431	10.099	33.500	2428.169	427.000	434.201	5.592
34.000	3580.769	325.500	339.431	10.549	34.000	2651.669	427.000	435.201	6.070
34.500	3743.519	325.500	340.431	10.996	34.500	2855.169	427.000	436.201	6.546
35.000	3906.269	325.500	341.431	11.440	35.000	3098.669	427.000	437.201	7.019
35.500	4069.019	325.500	342.431	11.882	35.500	3282.169	427.000	438.201	7.490
36.000	4231.769	325.500	343.431	12.321	36.000	3495.669	427.000	439.201	7.952
36.500	4394.519	325.500	344.431	12.758	36.500	3709.169	427.000	440.201	8.426
37.000	4557.269	325.500	345.431	13.192	37.000	3922.669	427.000	441.201	8.891
37.500	4720.019	325.500	346.431	13.624	37.500	4136.169	427.000	442.201	9.354
38.000	4882.769	325.500	347.431	14.053	38.000	4353.669	427.000	443.201	9.814
38.500	5045.519	325.500	348.431	14.480	38.500	4583.169	427.000	444.201	10.273
					39.000	4728.669	427.000	445.201	10.732
					39.500	4920.169	427.000	446.201	11.184
					40.000	5103.669	427.000	447.201	11.636
					40.500	5290.169	427.000	448.201	12.086
					41.000	5479.669	427.000	449.201	12.535
					41.500	5672.169	427.000	450.201	12.981
					42.000	5868.669	427.000	451.201	13.426
					42.500	6068.169	427.000	452.201	13.868
					43.000	6270.669	427.000	453.201	14.309

KASEMNET *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI

N=	AZ	AE	SE	RE	HE	A=	B=	S=	R=
19.200	0	0	0	0	19.000	0	0	0	0
19.500	1.918	12.788	12.818	0.150	19.500	3.209	16.496	10.560	0.304
20.000	10.464	21.394	21.437	0.487	20.000	10.100	17.092	17.233	0.586
20.500	24.765	44.528	44.687	0.554	20.500	20.742	24.940	24.940	0.832
21.000	45.101	82.347	82.365	0.705	21.000	34.312	28.990	28.990	1.144
21.500	113.178	99.885	100.225	1.129	21.500	50.194	33.952	34.568	1.452
22.000	164.992	107.205	108.169	1.523	22.000	82.746	84.810	85.566	1.571*
22.500	221.458	122.026	122.615	1.806	22.500	126.322	89.493	90.376	1.690*
23.000	294.844	164.903	164.944	1.867*	23.000	172.240	94.122	95.186	1.810
23.500	389.521	220.333	221.221	1.929*	23.500	221.025	104.142	105.274	2.100
24.000	513.368	256.287	258.000	1.920	24.000	279.267	134.210	135.484	2.151*
24.500	644.129	266.058	267.190	2.411	24.500	358.070	161.202	162.598	2.202
25.000	772.160	272.475	273.758	2.846	25.000	434.358	183.250	185.527	2.686
25.500	916.009	275.015	276.490	3.313	25.500	522.036	166.914	168.666	3.095
26.000	1054.381	278.472	280.099	3.764	26.000	606.340	170.381	172.293	3.532
26.500	1194.482	281.930	283.707	4.210	26.500	692.437	173.848	175.920	3.936
27.000	1337.106	289.363	291.259	4.591	27.000	780.288	177.318	179.544	4.345
27.500	1483.609	294.932	297.133	4.993	27.500	869.733	180.783	183.173	4.748
28.000	1631.120	285.216	292.011	5.452	28.000	960.991	184.250	186.800	5.144
28.500	1779.625	297.500	300.289	5.915	28.500	1053.983	187.718	190.427	5.535
29.000	1928.575	297.500	301.889	6.318	29.000	1148.792	191.185	194.053	5.920
29.500	2077.325	297.500	302.889	6.858	29.500	1245.169	194.653	197.680	6.299
30.000	2226.075	297.500	303.889	7.325	30.000	1343.362	198.120	201.307	6.673
30.500	2374.825	297.500	304.889	7.789	30.500	1443.288	201.587	204.934	7.043
31.000	2523.575	297.500	305.889	8.250	31.000	1544.943	205.052	208.560	7.408
31.500	2672.325	297.500	306.889	8.708	31.500	1648.343	208.522	212.187	7.768
32.000	2821.075	297.500	307.889	9.163	32.000	1753.471	211.989	215.814	8.123
32.500	2969.825	297.500	308.889	9.615	32.500	1860.332	215.457	219.441	8.478
33.000	3118.575	297.500	309.889	10.064	33.000	1968.928	218.925	223.067	8.827
33.500	3267.325	297.500	310.889	10.510	33.500	2079.257	222.392	226.694	9.172
34.000	3416.075	297.500	311.889	10.952	34.000	2191.319	225.859	230.321	9.514
34.500	3564.825	297.500	312.889	11.393	34.500	2305.116	229.326	233.947	9.853
35.000	3713.575	297.500	313.889	11.831	35.000	2420.646	232.794	237.574	10.189
35.500	3862.325	297.500	314.889	12.266	35.500	2537.909	236.261	241.201	10.522
36.000	4011.075	297.500	315.889	12.698	36.000	2656.907	239.728	244.828	10.852
36.500	4159.825	297.500	316.889	13.127	36.500	2777.638	243.196	248.454	11.180
37.000	4308.575	297.500	317.889	13.554	37.000	2900.102	246.663	252.081	11.505
37.500	4457.325	297.500	318.889	13.978	37.500	3024.301	250.131	255.708	11.827
38.000	4606.075	297.500	319.889	14.399	38.000	3150.233	253.598	259.335	12.147
38.500	4754.825	297.500	320.889	14.816	38.500	3277.899	257.065	262.961	12.465
39.000	4903.575	297.500	321.889	15.234	39.000	3407.298	260.533	266.588	12.781
39.500	5052.325	297.500	322.889	15.647	39.500	3538.431	264.000	270.215	13.095

KASENWEI *** CROSS SECTION DATA OF AGOS RIVER LUZON, PHILIPPINES *** NIPPON KOEI

RF	AE	BE	SE	RF	HE	AE	BE	SE	RF
20.000	0.0	0.0	0.0	0.0	25.250	0.555	0.555	0.555	0.124
20.500	4.717	14.230	14.293	0.531	25.500	0.555	4.438	4.470	0.264
21.000	13.443	20.597	20.740	0.468	26.000	10.450	39.632	39.632	0.535
21.500	25.570	28.147	28.360	0.902	26.500	37.661	70.175	70.390	0.803
22.000	41.920	35.832	38.100	1.400	27.000	77.719	96.500	96.800	1.032
22.500	63.598	49.667	49.978	1.273	27.500	137.650	135.250	135.617	1.214
23.000	91.682	63.222	63.573	1.442	28.000	219.119	173.207	180.466	1.669
23.500	127.239	78.100	78.489	1.631	28.500	310.397	195.207	189.005	2.116
24.000	170.947	101.628	102.110	1.624	29.000	404.232	289.971	191.033	2.555
24.500	231.159	129.773	130.312	1.774	29.500	500.353	394.310	195.834	2.928
25.000	297.604	135.457	136.183	2.184	30.000	598.495	498.015	192.851	3.435
25.500	366.260	138.363	140.293	2.611	30.500	698.408	201.600	203.469	3.860
26.000	436.806	142.824	143.582	3.034	31.000	800.094	205.144	202.284	4.302
26.500	509.084	146.285	147.632	3.448	31.500	903.327	207.562	210.002	4.743
27.000	583.090	149.717	151.272	3.855	32.000	1007.642	202.898	217.443	5.180
27.500	658.777	153.032	154.798	4.256	32.500	1113.025	211.834	214.883	5.611
28.000	734.300	156.113	161.681	4.282	33.000	1219.476	213.910	217.324	6.038
28.500	818.460	169.925	172.066	4.737	33.500	1326.995	216.106	219.764	6.461
29.000	945.804	376.924	379.436	4.781*	34.000	1433.582	218.252	222.205	6.879
29.500	1134.437	377.608	380.783	4.805*	34.500	1545.237	220.378	224.645	7.294
30.000	1323.472	378.291	382.129	4.820*	35.000	1655.950	222.368	227.040	7.708
30.500	1512.728	378.975	383.476	4.834*	35.500	1767.574	224.194	229.328	8.117
31.000	1702.386	379.658	384.823	4.848*	36.000	1880.055	225.821	231.615	8.522
31.500	1892.344	380.000	385.996	4.902	36.500	1993.394	227.537	233.903	8.923
32.000	2082.244	380.000	386.996	5.381	37.000	2107.592	229.254	236.191	9.320
32.500	2272.344	380.000	387.996	5.857	37.500	2222.648	230.970	238.479	9.713
33.000	2462.344	380.000	388.996	6.330	38.000	2338.562	232.687	240.766	10.102
33.500	2652.344	380.000	389.996	6.801	38.500	2455.355	234.403	243.054	10.497
34.000	2842.344	380.000	390.996	7.269	39.000	2572.965	236.119	245.342	10.869
34.500	3032.344	380.000	391.996	7.736	39.500	2691.654	237.836	247.630	11.247
35.000	3222.344	380.000	392.996	8.199	40.000	2810.801	239.552	249.917	11.622
35.500	3412.344	380.000	393.996	8.661	40.500	2931.006	241.269	252.205	11.993
36.000	3602.344	380.000	394.996	9.120	41.000	3052.070	242.985	254.493	12.361
36.500	3792.344	380.000	395.996	9.577	41.500	3173.992	244.701	256.781	12.725
37.000	3982.344	380.000	396.996	10.031	42.000	3296.771	246.418	259.068	13.087
37.500	4172.344	380.000	397.996	10.483	42.500	3420.409	248.134	261.356	13.446
38.000	4362.344	380.000	398.996	10.933	43.000	3544.906	249.851	263.644	13.802
38.500	4552.344	380.000	399.996	11.381	43.500	3670.260	251.567	265.932	14.154
39.000	4742.344	380.000	400.996	11.829	44.000	3796.473	253.284	268.219	14.504
39.500	4932.344	380.000	401.996	12.270	44.500	3923.544	255.000	270.507	14.851
40.000	5122.344	380.000	402.996	12.711	45.000	4051.044	256.716	272.795	15.191
40.500	5312.344	380.000	403.996	13.149	45.500	4178.544	258.432	275.083	15.534