JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF SETTLEMENT AND REGIONAL DEVELOPMENT
THE REPUBLIC OF INDONESIA

THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

FINAL REPORT

COMPONENT C:
URBAN DRAINAGE SYSTEM IMPROVEMENT

VOLUME II DESIGN NOTES

AUGUST 2000

CTI ENGINEERING INTERNATIONAL CO., LTD.
IN ASSOCIATION WITH
PACIFIC CONSULTANTS INTERNATIONAL
AND
PASCO INTERNATIONAL INC.

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CONSTITUTION OF THE REPORT

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VOLUME II	DESIGN CRITERIA
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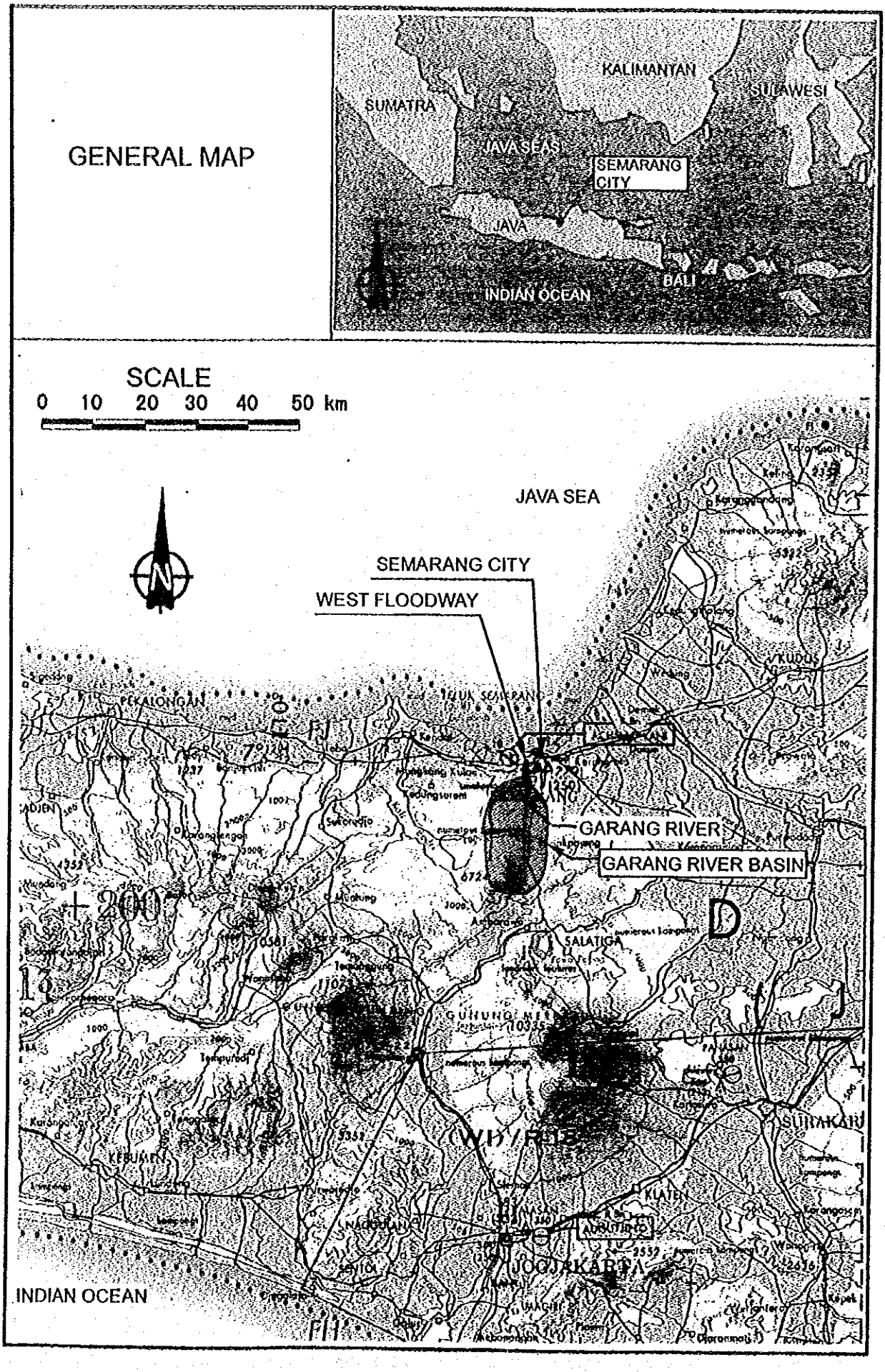
GENERAL MAP
KALIMANTAN
SULAWESI
SUMATRA
JAVA SEAS
SEMARANG CITY
JAVA
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SCALE
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JAVA SEA
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GARANG RIVER BASIN
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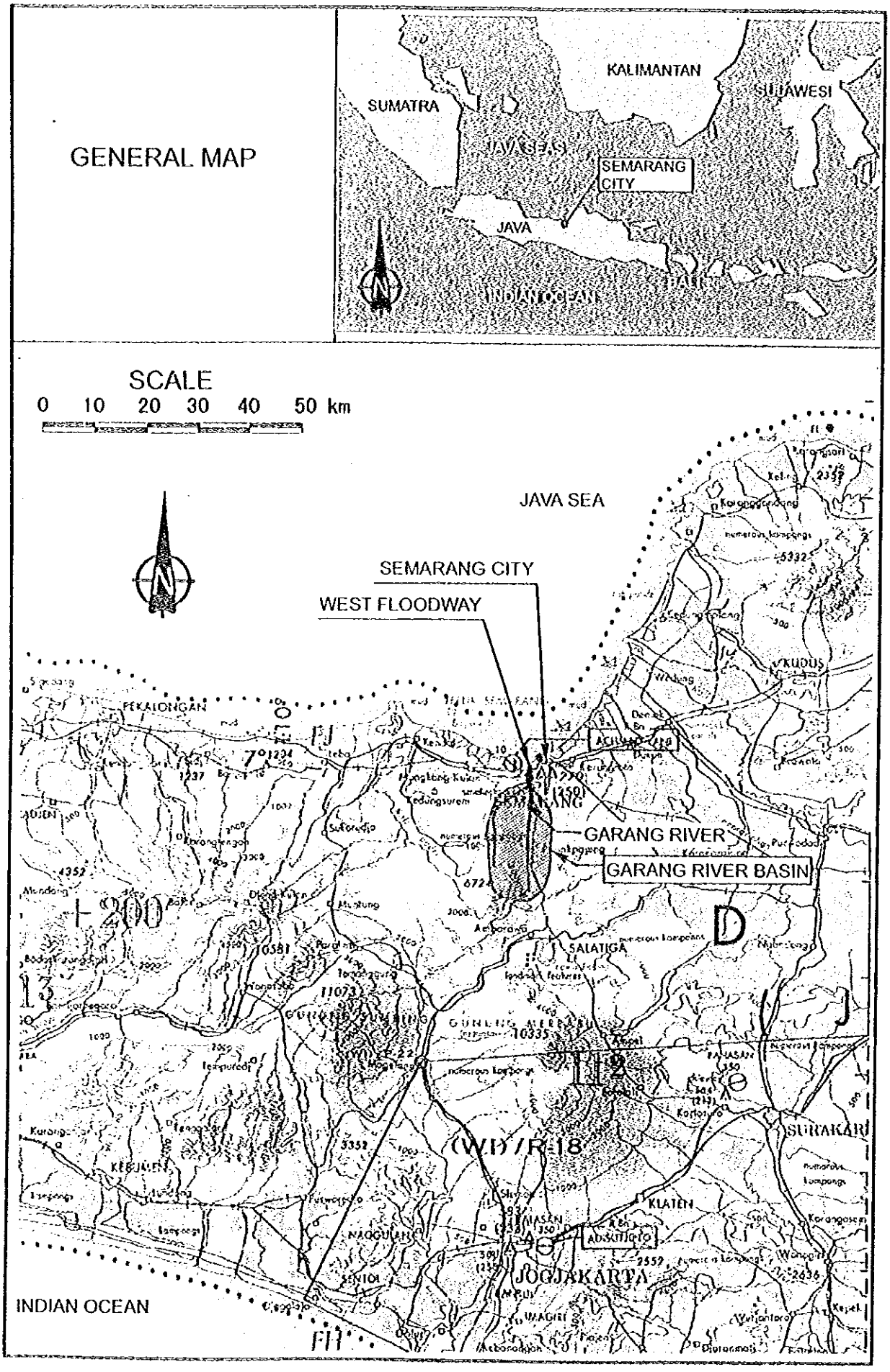
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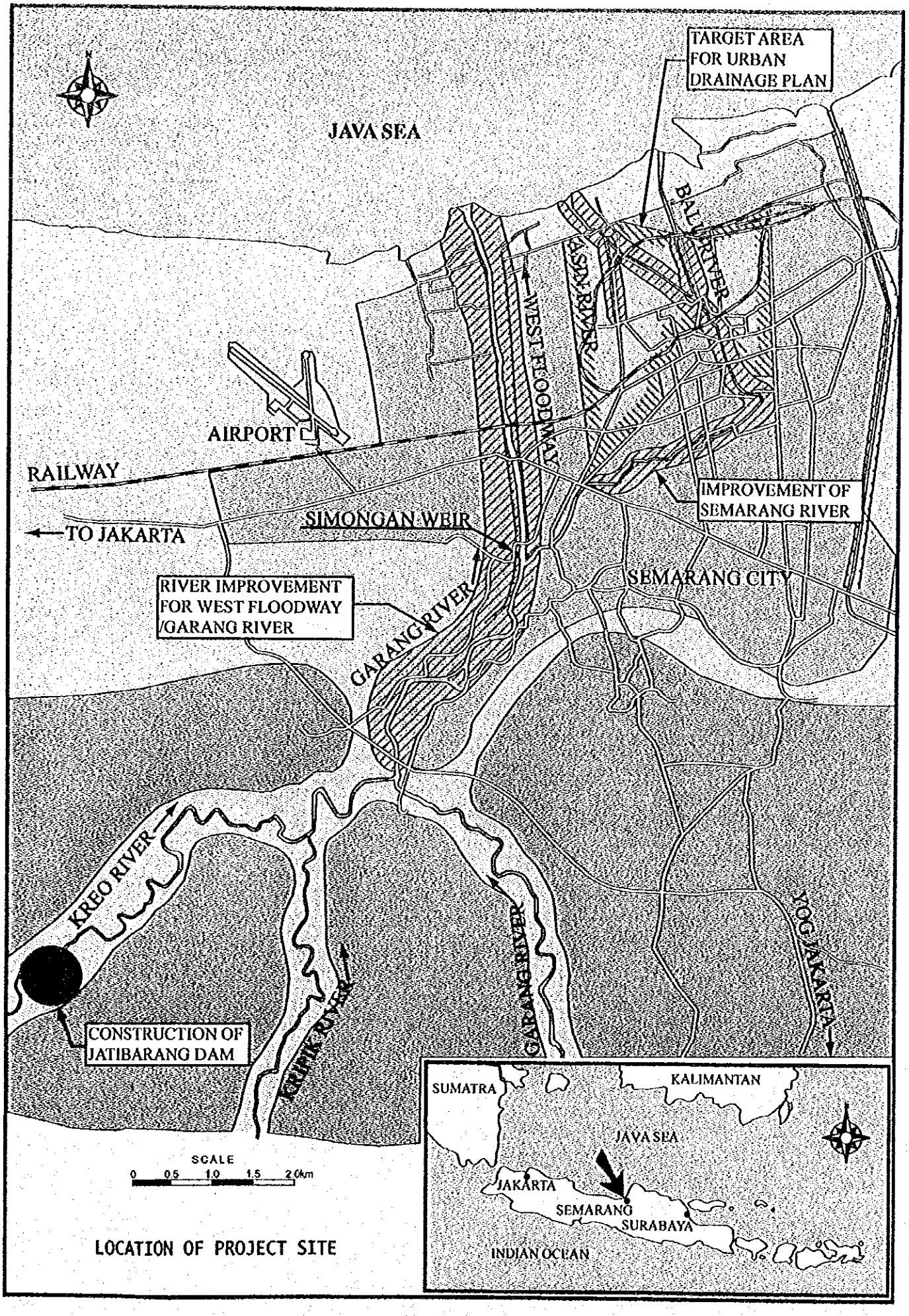
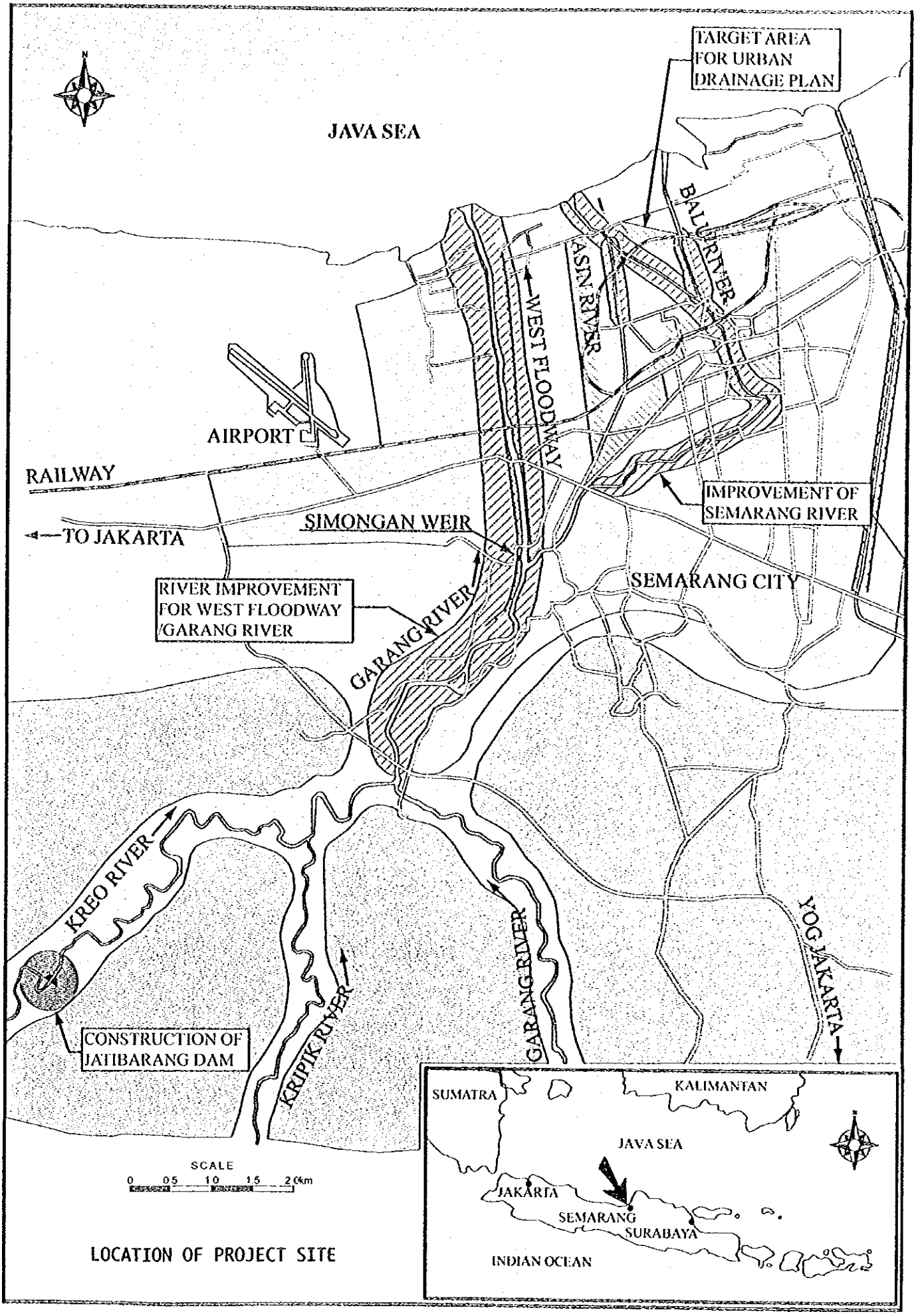


LOCATION OF PROJECT SITE



LOCATION OF PROJECT SITE

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CHAPTER 3 BANDARHARJO DRAINAGE SYSTEM IMPROVEMENT

TERMS AND ABBREVIATIONS

1. INDONESIAN GOVERNMENT AGENCIES AND ORGANIZATIONS

GOI	:	Government of Indonesia
BAPPENAS	:	Badan Perencanaan Pembangunan National (National Development Planning Board)
BAPPEDA	:	Badan Perencanaan Pembangunan Daerah (Provincial Development Planning Board)
BINAMARGA	:	Directorate General of Road and Bridge, Ministry of Public Works
BAPEDAL	:	Badan Pengendalian Dampak Lingkungan (Environmental Impact Assessement Board)
BPN	:	Badan Pertanahan Nasional (National Land Agency)
BPP	:	Balai Penyuluhan Pertanian (Agricultural Extension Center)
DPU	:	Departemen Pekerjaan Umum (Ministry of Public Works)
DGWRD	:	Directorate General of Water Resources Development, Ministry of Public Works
DGCK	:	Directorate General of Cipta Karya (Housing, Building and Urban Development, Ministry of Public Works)
DGRD	:	Directorate General of Research and Development, Ministry of Public Works)
DOR	:	Directorate of Rivers
DPUP	:	Dinas Pekerjaan Umum Propinsi (Provincial Public Works Services)
IHE	:	Institute of Hydraulic Engineering (Bandung)
PJKA	:	Perusahaan Jawatan Kereta Api (Railway Company, Old Name)
PERUMKA	:	Perusahaan Umum Kereta Api (Indonesian Railway Public Corporation, New Name)
PDAM	:	Perusahaan Daerah Air Minum (Water Works Company)
PMG	:	Pusat Meteorologi dan Geofisika (Center of Meteorology and Geographysics)
PLN	:	Perusahaan Listrik Negara (State Electricity Corporation)
P3SA	:	Proyek Pengembangan dan Penyelidikan Sumber-Sumber Air (Water Resources Development and Investigation Project)

2. JAPANESE GOVERNMENT / INTERNATIONAL ORGANIZATIONS

GOJ	:	Government of Japan
JICA	:	Japan International Cooperation Agency
MOC	:	Ministry of Construction, Japan

JEM	:	Japan Electric Machine Industry
ADB	:	Asian Development Bank
IBRD	:	International Bank for Reconstruction and Development (World Bank)
UNDP	:	United Nations Development Program
WMO	:	World Meteorological Organization
ASTM	:	American Society for Testing and Materials
ASME	:	American Society of Mechanical Engineer
USASI	:	United States of America Standards
IEC	:	International Electrotechnical Committee
NEMA	:	National Electrical Manufacturers Association

3. MEASUREMENT UNITS

(Length)			(Weight)		
mm	:	millimeter(s)	g, gr	:	gram(s)
cm	:	centimeter(s)	kg	:	kilogram(s)
m	:	meter(s)	t, ton	:	tonnage (s)
km	:	kilometer(s)			
(Area)			**(Time)**		
mm^2	:	square millimeter(s)	sec., s	:	second(s)
cm^2	:	square centimeter(s)	min	:	minute(s)
m^2	:	square meter(s)	h (hrs)	:	hour(s)
km^2	:	square kilometer(s)	d (dys)	:	day(s)
ha(has)	:	hectare(s)	y, yr(yrs)	:	year(s)
(Volume)			**(Discharge)**		
cm^3	:	cubic centimeter(s)	l, ltr	:	liter(s)
m^3	:	cubic meter(s)	EL., El.	:	Elevation

(Combined Units)

Speed/Velocity

cm/sec, cm/s	:	centimeter per second
m/sec, m/s	:	meter per second
km/hr, km/h	:	kilometer per hour

Stress

kgf/cm^2	:	kilogram per square centimeter
tf/m^2	:	ton per square meter
N/mm^2	:	newton per square millimeter

Mpa	:	mega pascal

Discharge

ltr/sec, l/s	:	liter per second
m^3/sec, m^3/s	:	cubic meter per second
m^3/yr, m^3/y	:	cubic meter per year

(Note : Other combined units may be constructed similarly as above)

Electricity

MW	:	megawatt	GW	:	gegawatt
MWh	:	megawatt hour	GWh	:	gegawatt hour
kV	:	kilovolt			

4. MONETARY TERMS

¥	:	Japanese Yen
US$	:	United States Dollar
Rp.	:	Indonesian Rupiah

5. INDONESIAN TERMS

JKT	:	Jakarta
Jawa	:	Java
Propinsi	:	Province
Kabupaten, Kab.	:	District (Regency)
Kotamadya, Kodya	:	Municipality
Kecamatan, Kec.	:	Sub-District
Desa	:	Village (Rural Area)
Kampung, Kp.	:	Village (Rural Area)
Kelurahan	:	Village (Urban Area)
Kali, Sungai	:	River
Gunung	:	Mountain
Rawa	:	Swamp
Danau	:	Lake
Laut	:	Sea
PT.	:	Incorporated or Limited
PPT	:	Panitia Pembebasan Tanah (Land Acquisition Committee)
KOMPUS	:	Komisi Pusat (Central Committee for Environmental Impact Assessment)
KA-ANDAL	:	Terms of Reference of Environmental Impact Statement
ANDAL	:	Environmental Impact Statement

RKL	:	Environmental Management Plan
RPL	:	Environmental Monitoring Plan
AMDAL	:	Environmental Impact Assessment
BPPM2	:	Semarang Port Bench Mark
SPB	:	Semarang Peil Baru (New Semarang Level)
TTG	:	Tanda Tinggi Geodesi (National Bench Mark)

6. OTHERS

JRATUNSELUNA PROJECT : Water Resources Development Projects for Jragung, Tuntang, Serang, Lusi and Juwana Rivers

SSUDP	:	Semarang and Surakarta Urban Development Program
IUIDP	:	Integrated Urban Infrastructures Development Program
SWL	:	Surcharge Water Level
DFWL	:	Design Flood Water Level
PMP	:	Probable Maximum Precipitation
PMF	:	Probable Maximum Flood
EIRR	:	Economic Internal Rate of Return
JIS	:	Japanese Industrial Standard
USASI	:	United States of America Standards
SWR	:	Shadow Wage Rate
CIF	:	Cost, Insurance and Freight
VAT	:	Value Added Tax.

CHAPTER 1
SEMARANG RIVER DRAINAGE SYSTEM IMPROVEMENT

1.1 Non-uniform Flow Calculation

Name of Structure	SEMARANG RIVER	Category Calculation	Non-uniform Flow Calculation	Page	1/18

Non-uniform Flow Calculation

Non-uniform calculation was made to design the high water level of Semarang River when design discharge flows.

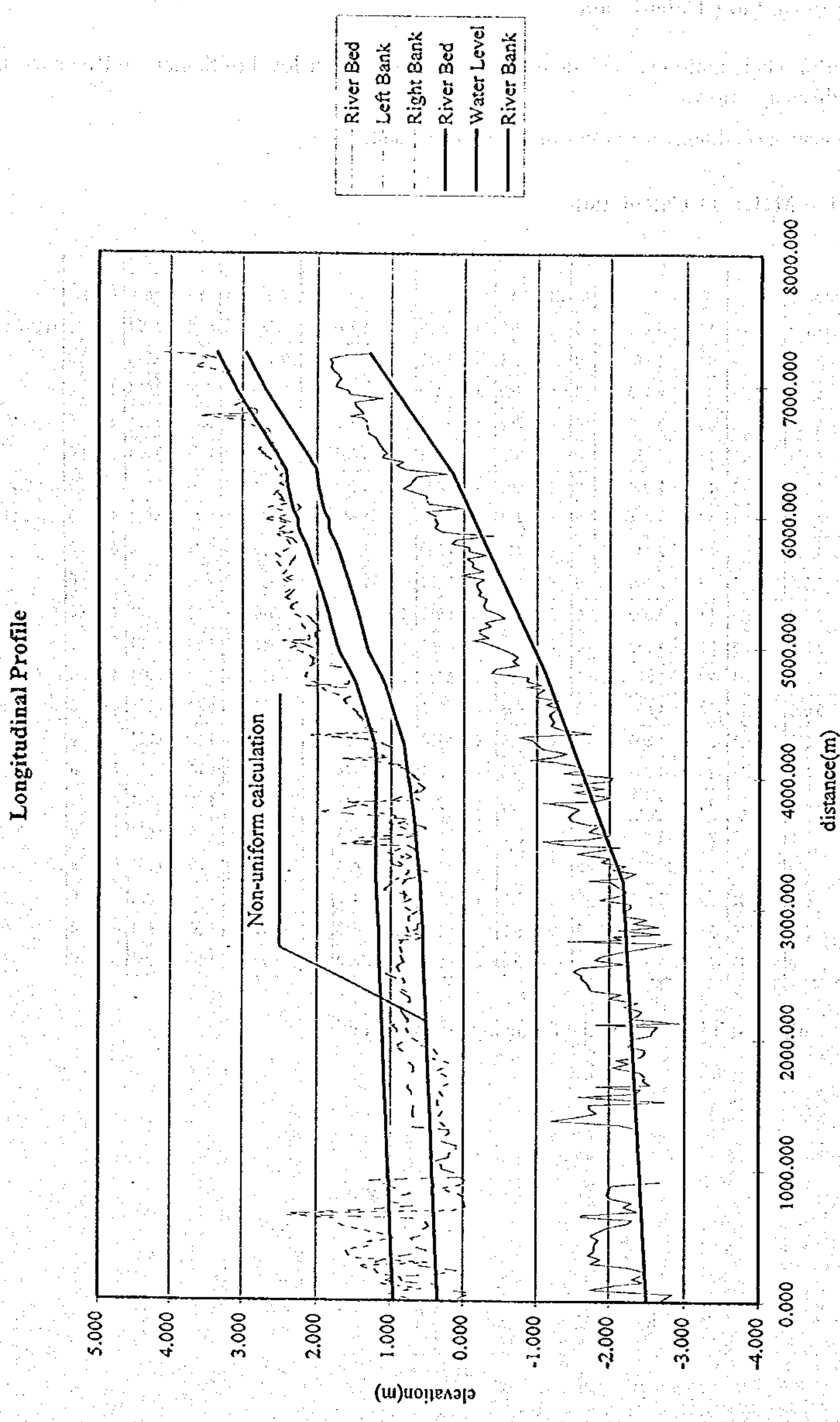
The calculation conditions are as shown the following table.

Table 1 MIKE 11 Calculation

Sec.No	Distance	Change	Bottom EL	Bank EL	B0	m	X1	Y1	X2	Y2	X3	Y3	X4	Y4	X5	Y5	n	Q	d Q	
241+13	7,223	0.000	1.280	5.280	6	0	0	5.280	0	1.280	3	1.280	6	1.280	6	5.280	0.024	16	16	Tugu Muda
212	6,341	0.882	0.178	4.178	6	0	0	4.178	0	0.178	3	0.178	6	0.178	6	4.178	0.024	16	0	
211	6,311	0.912	0.140	4.140	8	0	0	4.140	0	0.140	4	0.140	8	0.140	8	4.140	0.024	16	0	
195+17	5,858	1.365	-0.238	3.762	8	0	0	3.762	0	-0.238	4	-0.238	8	-0.238	8	3.762	0.024	21	5	Gajah Mada
162	4,861	2.362	-1.068	2.932	8	0	0	2.932	0	-1.068	4	-1.068	8	-1.068	8	2.932	0.024	21	0	
161	4,830	2.393	-1.094	2.906	14	0	0	2.906	0	-1.094	7	-1.094	14	-1.094	14	2.906	0.024	46	25	Kimangun
138	4,152	3.071	-1.546	2.454	14	0	0	2.454	0	-1.546	7	-1.546	14	-1.546	14	2.454	0.024	46	0	Sarkoro
137+14	4,133	3.090	-1.559	2.441	18	0	0	2.441	0	-1.559	9	-1.559	18	-1.559	18	2.441	0.024	46	0	
121	3,635	3.588	-1.891	2.109	18	0	0	2.109	0	-1.891	9	-1.891	18	-1.891	18	2.109	0.024	46	0	
120	3,607	3.616	-1.910	2.090	19	0	0	2.090	0	-1.910	9.5	-1.910	19	-1.910	19	2.090	0.024	46	0	
107	3,230	3.993	-2.161	1.839	19	0	0	1.839	0	-2.161	9.5	-2.161	19	-2.161	19	1.839	0.024	46	0	
106+13	3,202	4.021	-2.180	1.820	19	0	0	1.820	0	-2.180	9.5	-2.180	19	-2.180	19	1.820	0.024	46	0	Railway
101	3,026	4.197	-2.197	1.803	19	0	0	1.803	0	-2.197	9.5	-2.197	19	-2.197	19	1.803	0.024	46	0	
100	2,996	4.227	-2.200	1.800	20	0	0	1.800	0	-2.200	10	-2.200	20	-2.200	20	1.800	0.024	46	0	
95	2,856	4.367	-2.214	1.786	20	0	0	1.786	0	-2.214	10	-2.214	20	-2.214	20	1.786	0.024	46	0	
94	2,827	4.396	-2.217	1.783	20	2	0	1.783	8	-2.217	18	-2.217	28	-2.217	36	1.783	0.031	46	0	
32	975	6.248	-2.403	1.598	20	2	0	1.598	8	-2.403	18	-2.403	28	-2.403	36	1.598	0.031	46	0	
31	939	6.284	-2.406	1.594	24	2	0	1.594	8	-2.406	20	-2.406	32	-2.406	40	1.594	0.031	65	19	Asin
21	632	6.591	-2.437	1.563	24	2	0	1.563	8	-2.437	20	-2.437	32	-2.437	40	1.563	0.031	65	0	
20	604	6.619	-2.440	1.560	38	2	0	1.560	8	-2.440	27	-2.440	46	-2.440	54	1.560	0.031	65	0	
0	0	7.223	-2.500	1.500	38	2	0	1.500	8	-2.500	27	-2.500	46	-2.500	54	1.500	0.031	65	0	

The calculation result is shown in the following graph and tables.

Name of Structure	SEMARANG RIVER	Category Calculation	Non-uniform Flow Calculation	Page	2/18



Name of Structure	SEMARANG RIVER	Category Calculation	Non-uniform Flow Calculation	Page	3/18

Table 2 Semarang River Design Water Level Calculation

LINE	DIS	ACCM. DIS	Existing Bed	Existing Bank	Existing Bank	Proposed River Bed	Design Level	Proposed River Bank	Proposed Bed Slope	
0.00	0.000	0.000	-2.670	0.110	0.580	-2.500	0.350	0.950	1/10,000	
1.00	31.846	31.846	-2.750	0.030	0.870	-2.497	0.353	0.953	1/10,000	
2.00	27.987	59.833	-2.840	-0.140	1.060	-2.494	0.355	0.955	1/10,000	
3.00	31.043	90.876	-1.740	0.370	0.570	-2.491	0.358	0.958	1/10,000	
4.00	36.860	127.736	-2.090	0.390	1.120	-2.487	0.361	0.961	1/10,000	
5.00	22.456	150.192	-2.450	1.060	0.830	-2.485	0.363	0.963	1/10,000	
6.00	25.568	175.760	-2.310	0.960	0.860	-2.482	0.365	0.965	1/10,000	
7.00	26.373	202.133	-2.430	0.390	1.150	-2.480	0.367	0.967	1/10,000	
8.00	28.665	230.798	-2.480	0.070	1.200	-2.477	0.370	0.970	1/10,000	
9.00	33.341	264.139	-2.250	0.570	1.450	-2.474	0.373	0.973	1/10,000	
10.00	27.443	291.582	-1.750	1.200	0.490	-2.471	0.376	0.976	1/10,000	
11.00	31.949	323.531	-1.890	0.990	1.550	-2.468	0.379	0.979	1/10,000	
12.00	31.554	355.085	-1.720	0.690	1.580	-2.464	0.381	0.981	1/10,000	
13.00	29.428	384.513	-1.800	0.500	1.620	-2.462	0.384	0.984	1/10,000	
14.00	29.015	413.528	-1.800	0.710	1.290	-2.459	0.386	0.986	1/10,000	
15.00	28.856	442.384	-1.810	0.660	1.350	-2.456	0.388	0.988	1/10,000	
16.00	30.170	472.554	-1.860	0.720	0.940	-2.453	0.391	0.991	1/10,000	
17.00	31.600	504.154	-1.750	0.520	1.080	-2.450	0.394	0.994	1/10,000	
18.00	31.975	536.129	-1.870	0.580	1.390	-2.446	0.397	0.997	1/10,000	
19.00	31.203	567.332	-1.990	0.470	1.650	-2.443	0.400	1.000	1/10,000	
20.00	29.103	596.435	-2.250	0.520	1.770	-2.440	0.402	1.002	1/10,000	
21.00	28.290	624.725	-2.310	0.520	1.770	-2.438	0.404	1.004	1/10,000	
21+23	20.436	645.161	-1.620	2.200	2.400	-2.435	0.406	1.006	1/10,000	Bridge(JL.Serskko Usman Janatin)
22.00	11.419	656.580	-1.620	2.400	2.400	-2.434	0.407	1.007	1/10,000	
23.00	31.891	688.471	-2.380	1.360	0.150	-2.431	0.409	1.009	1/10,000	
24.00	32.525	720.996	-2.190	0.690	-0.030	-2.428	0.410	1.010	1/10,000	
25.00	32.689	753.685	-2.300	1.030	-0.010	-2.425	0.412	1.012	1/10,000	
26.00	31.218	784.903	-2.030	0.980	-0.030	-2.422	0.416	1.016	1/10,000	
27.00	29.832	814.735	-1.970	0.710	0.060	-2.419	0.420	1.020	1/10,000	
28.00	39.708	854.443	-2.000	0.930	0.320	-2.415	0.424	1.024	1/10,000	
29.00	30.227	884.670	-2.030	1.050	0.040	-2.412	0.411	1.011	1/10,000	
30.00	28.811	913.481	-2.670	1.290	-0.040	-2.409	0.430	1.030	1/10,000	
N1	30.000	943.481		0.040	0.040	-2.406	0.432	1.032	1/10,000	
N2	30.000	973.481		0.100	0.100	-2.403	0.434	1.034	1/10,000	Asin River
N3	30.000	1003.481		0.300	0.300	-2.400	0.436	1.036	1/10,000	
N4	30.000	1033.481		0.300	0.300	-2.397	0.438	1.038	1/10,000	
N5	30.000	1063.481		0.400	0.400	-2.394	0.440	1.040	1/10,000	
N6	30.000	1093.481		0.200	0.200	-2.391	0.442	1.042	1/10,000	
N7	30.000	1123.481		0.200	0.200	-2.388	0.444	1.044	1/10,000	
N8	30.000	1153.481		0.100	0.100	-2.385	0.446	1.046	1/10,000	
N9	30.000	1183.481		0.100	0.100	-2.382	0.448	1.048	1/10,000	
N10	30.000	1213.481		0.300	0.300	-2.379	0.450	1.050	1/10,000	
N11	30.000	1243.481		0.300	0.300	-2.376	0.452	1.052	1/10,000	
N12	30.000	1273.481		0.200	0.200	-2.373	0.454	1.054	1/10,000	
N13	30.000	1303.481		0.200	0.200	-2.370	0.456	1.056	1/10,000	
43.00	17.327	1320.808	-2.330	0.710	0.240	-2.368	0.457	1.057	1/10,000	
44.00	26.681	1347.489	-2.140	0.690	0.290	-2.365	0.458	1.058	1/10,000	
45.00	27.230	1374.719	-1.200	0.630	0.350	-2.363	0.460	1.060	1/10,000	
46.00	29.401	1404.120	-1.570	0.700	0.340	-2.360	0.463	1.063	1/10,000	
47.00	29.602	1433.722	-1.830	0.700	0.300	-2.357	0.466	1.066	1/10,000	

Name of Structure	SEMARANG RIVER	Category Calculation	Non-uniform Flow Calculation	Page	4/18

48.00	31.099	1464.821	-1.740	0.690	0.290	-2.354	0.469	1.069	1/10,000	
49.00	30.686	1495.507	-1.720	0.690	0.360	-2.350	0.472	1.072	1/10,000	
50.00	30.579	1526.086	-2.730	0.640	0.360	-2.347	0.475	1.075	1/10,000	
51.00	31.267	1557.353	-1.580	0.710	0.280	-2.344	0.479	1.079	1/10,000	
52.00	29.710	1587.063	-2.340	0.710	0.330	-2.341	0.482	1.082	1/10,000	
53.00	30.465	1617.528	-2.410	0.770	0.280	-2.338	0.485	1.085	1/10,000	
53+17	20.447	1637.975	-1.820	0.760	0.280	-2.336	0.487	1.087	1/10,000	Bridge(Steel)
54.00	13.524	1651.499	-2.540	0.760	0.210	-2.335	0.488	1.088	1/10,000	
55.00	31.430	1682.929	-2.450	0.740	0.210	-2.332	0.491	1.091	1/10,000	
56.00	30.735	1713.664	-2.470	0.760	0.240	-2.329	0.493	1.093	1/10,000	
57.00	35.330	1748.994	-2.410	0.690	0.380	-2.325	0.495	1.095	1/10,000	
58.00	37.008	1786.002	-2.040	0.690	0.230	-2.321	0.498	1.098	1/10,000	
59.00	29.189	1815.191	-2.270	0.760	0.210	-2.318	0.500	1.100	1/10,000	
60.00	26.460	1841.651	-2.090	0.750	0.430	-2.316	0.502	1.102	1/10,000	
61.00	25.554	1867.205	-2.420	0.800	0.340	-2.313	0.504	1.104	1/10,000	
62.00	24.943	1892.148	-2.470	0.820	0.380	-2.311	0.506	1.106	1/10,000	
63.00	28.923	1921.071	-2.470	0.890	0.420	-2.308	0.508	1.108	1/10,000	
64.00	26.951	1948.022	-2.250	0.900	0.620	-2.305	0.509	1.109	1/10,000	
65.00	25.371	1973.393	-2.300	0.820	0.610	-2.303	0.511	1.111	1/10,000	
66.00	26.534	1999.927	-2.270	0.870	0.720	-2.300	0.513	1.113	1/10,000	
67.00	31.344	2031.271	-2.550	0.910	0.740	-2.297	0.515	1.115	1/10,000	
68.00	32.692	2063.963	-2.570	0.910	0.790	-2.294	0.517	1.117	1/10,000	
69.00	34.032	2097.995	-2.640	0.980	0.770	-2.290	0.520	1.120	1/10,000	
69+14	12.863	2110.858	-1.810	0.800	0.800	-2.289	0.521	1.121	1/10,000	Bridgr(Conkrete)
70.00	16.137	2126.995	-2.930	0.780	0.760	-2.287	0.522	1.122	1/10,000	
71.00	31.090	2158.085	-2.280	0.800	0.780	-2.284	0.524	1.124	1/10,000	
72.00	28.466	2186.551	-2.390	0.830	0.840	-2.281	0.526	1.126	1/10,000	
73.00	31.301	2217.852	-2.430	0.860	0.870	-2.278	0.528	1.128	1/10,000	
74.00	31.611	2249.463	-2.200	0.840	0.810	-2.275	0.530	1.130	1/10,000	
75.00	31.923	2281.386	-2.380	0.820	0.730	-2.272	0.533	1.133	1/10,000	
76.00	32.574	2313.960	-1.990	0.740	0.740	-2.269	0.537	1.137	1/10,000	
77.00	30.692	2344.652	-2.160	0.850	0.750	-2.266	0.540	1.140	1/10,000	
78.00	28.105	2372.757	-1.750	0.880	0.860	-2.263	0.543	1.143	1/10,000	
79.00	28.215	2400.972	-1.720	0.870	0.830	-2.260	0.546	1.146	1/10,000	
80.00	30.069	2431.041	-1.690	0.880	0.810	-2.257	0.549	1.149	1/10,000	
81.00	29.804	2460.845	-1.620	0.940	0.850	-2.254	0.552	1.152	1/10,000	
82.00	27.795	2488.640	-1.620	1.070	0.860	-2.251	0.555	1.155	1/10,000	
83.00	29.008	2517.648	-1.510	0.980	0.890	-2.248	0.557	1.157	1/10,000	
84.00	29.537	2547.185	-1.620	0.920	0.920	-2.245	0.560	1.160	1/10,000	
85.00	29.696	2576.881	-2.190	0.840	0.810	-2.242	0.561	1.161	1/10,000	
86.00	29.642	2606.523	-1.800	0.850	0.860	-2.239	0.562	1.162	1/10,000	
87.00	30.705	2637.228	-1.910	0.870	0.840	-2.236	0.563	1.163	1/10,000	
88.00	33.344	2670.572	-2.170	0.870	0.860	-2.233	0.564	1.164	1/10,000	
89.00	34.985	2705.557	-2.520	0.910	0.890	-2.229	0.565	1.165	1/10,000	
90.00	30.818	2736.375	-2.830	0.840	0.860	-2.226	0.567	1.167	1/10,000	
90+11	11.146	2747.521	-1.420	0.900	0.830	-2.225	0.567	1.167	1/10,000	Bridgr(Conkrete),Baru River
91.00	14.457	2761.978	-2.160	0.620	0.520	-2.224	0.567	1.167	1/10,000	
92.00	23.993	2785.971	-2.050	0.580	0.830	-2.221	0.568	1.168	1/10,000	
93.00	22.833	2808.804	-2.670	0.780	0.760	-2.219	0.569	1.169	1/10,000	
94.00	27.405	2836.209	-2.120	0.630	0.780	-2.216	0.570	1.170	1/10,000	
95.00	28.241	2864.450	-2.650	0.640	0.800	-2.214	0.573	1.173	1/10,000	
96.00	25.900	2890.350	-2.310	0.590	0.750	-2.211	0.576	1.176	1/10,000	
97.00	28.133	2918.483	-2.500	0.640	0.770	-2.208	0.580	1.180	1/10,000	
98.00	27.698	2946.181	-2.180	0.720	0.710	-2.205	0.583	1.183	1/10,000	

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99.00	30.491	2976.672	-2.170	0.610	0.740	-2.202	0.587	1.187	1/10,000	
100.00	28.841	3005.513	-2.280	0.650	0.830	-2.199	0.590	1.190	1/10,000	
101.00	30.639	3036.152	-2.280	0.820	0.820	-2.196	0.593	1.193	1/10,000	
102.00	30.830	3066.982	-1.870	0.810	0.710	-2.193	0.596	1.196	1/10,000	
103.00	32.902	3099.884	-2.140	0.820	0.810	-2.190	0.599	1.199	1/10,000	
104.00	32.574	3132.458	-2.230	1.100	0.840	-2.187	0.602	1.202	1/10,000	
105.00	39.832	3172.290	-2.100	1.010	0.850	-2.183	0.606	1.206	1/10,000	
106.00	33.821	3206.111	-2.010	0.960	0.800	-2.179	0.610	1.210	1/10,000	
106+13	4.804	3210.915	-1.720	0.810	0.940	-2.179	0.610	1.210	1/10,000	Rail Way
107.00	27.777	3238.692	-2.210	0.590	0.820	-2.160	0.615	1.210	1/1,500	
108.00	32.346	3271.038	-2.350	0.490	0.760	-2.139	0.621	1.210	1/1,500	
109.00	27.475	3298.513	-2.040	0.730	0.790	-2.121	0.626	1.210	1/1,500	
110.00	28.408	3326.921	-2.220	1.000	0.850	-2.102	0.631	1.210	1/1,500	
111.00	30.471	3357.392	-1.890	0.850	0.930	-2.081	0.637	1.210	1/1,500	
112.00	29.777	3387.169	-2.000	0.720	0.830	-2.061	0.643	1.210	1/1,500	
113.00	30.177	3417.346	-1.550	0.850	1.050	-2.041	0.648	1.210	1/1,500	
114.00	26.066	3443.412	-1.840	0.670	0.890	-2.024	0.652	1.210	1/1,500	
115.00	27.854	3471.266	-2.140	0.770	0.840	-2.005	0.656	1.210	1/1,500	
115+14	13.308	3484.574	-1.420	1.620	1.680	-1.996	0.658	1.210	1/1,500	JL.Mputantular
116.00	16.427	3501.001	-1.190	1.490	1.230	-1.986	0.661	1.210	1/1,500	
116+8	9.545	3510.546	-1.080	1.350	1.350	-1.979	0.662	1.210	1/1,500	JL.Suprapto
117.00	20.697	3531.243	-1.700	0.870	1.450	-1.965	0.665	1.210	1/1,500	
118.00	28.865	3560.108	-1.990	0.540	0.690	-1.946	0.668	1.210	1/1,500	
119.00	27.772	3587.880	-1.720	0.570	0.760	-1.928	0.672	1.210	1/1,500	
120.00	25.930	3613.810	-1.800	0.530	0.850	-1.910	0.676	1.210	1/1,500	
121.00	26.985	3640.795	-1.910	0.740	0.990	-1.892	0.681	1.210	1/1,500	
121+3	2.384	3643.179	-1.710	0.920	1.030	-1.891	0.682	1.210	1/1,500	Bridge(Foot Path)
122.00	27.193	3670.372	-1.480	0.710	0.980	-1.873	0.687	1.210	1/1,500	
123.00	29.861	3700.233	-1.440	1.180	0.930	-1.853	0.694	1.210	1/1,500	
124.00	29.876	3730.109	-1.500	1.950	1.240	-1.833	0.701	1.210	1/1,500	
125.00	30.045	3760.154	-1.590	1.630	1.190	-1.813	0.708	1.210	1/1,500	
126.00	29.911	3790.065	-1.380	1.380	1.450	-1.793	0.715	1.210	1/1,500	
126+17	16.931	3806.996	-1.080	1.600	1.600	-1.782	0.719	1.210	1/1,500	JL. Agus Salim
127.00	15.377	3822.373	-1.780	0.980	0.610	-1.771	0.723	1.210	1/1,500	
128.00	31.920	3854.293	-2.010	0.820	0.740	-1.750	0.730	1.210	1/1,500	
129.00	36.634	3890.927	-1.510	0.590	0.670	-1.726	0.739	1.210	1/1,500	
130.00	31.976	3922.903	-1.920	0.540	0.560	-1.704	0.746	1.210	1/1,500	
131.00	29.044	3951.947	-1.470	0.670	0.630	-1.685	0.754	1.210	1/1,500	
132.00	27.437	3979.384	-2.000	0.620	0.690	-1.667	0.762	1.210	1/1,500	
133.00	28.183	4007.567	-2.040	0.710	0.670	-1.648	0.771	1.210	1/1,500	
134.00	29.149	4036.716	-1.370	0.750	0.770	-1.628	0.780	1.210	1/1,500	
135.00	26.245	4062.961	-1.650	0.890	0.810	-1.611	0.786	1.210	1/1,500	
136.00	29.822	4092.783	-1.540	0.880	0.970	-1.591	0.793	1.210	1/1,500	
137.00	30.322	4123.105	-1.230	1.210	1.260	-1.571	0.800	1.210	1/1,500	
137+14	14.224	4137.329	-0.900	1.220	1.680	-1.561	0.803	1.210	1/1,500	JL.Gong Gong
138.00	19.362	4156.691	-1.210	0.990	1.090	-1.548	0.808	1.210	1/1,500	
139.00	32.125	4188.816	-1.420	0.990	1.190	-1.527	0.815	1.215	1/1,500	
140.00	32.642	4221.458	-1.080	0.970	1.280	-1.505	0.822	1.222	1/1,500	
141.00	33.390	4254.848	-1.000	1.110	1.190	-1.483	0.830	1.230	1/1,500	
142.00	33.138	4287.986	-0.940	1.310	1.300	-1.461	0.847	1.247	1/1,500	
142+25	24.503	4312.489	-0.750	2.080	1.900	-1.445	0.860	1.260	1/1,500	JL.Pekajan
143.00	6.704	4319.193	-0.880	2.080	1.890	-1.440	0.864	1.264	1/1,500	
144.00	23.308	4342.501	-1.750	1.350	1.190	-1.425	0.877	1.277	1/1,500	
145.00	27.252	4369.753	-1.350	1.250	1.370	-1.406	0.893	1.293	1/1,500	

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146.00	30.935	4400.688	-1.190	1.270	1.320	-1.386	0.911	1.311	1/1,500	
147.00	29.268	4429.956	-1.240	1.400	1.310	-1.366	0.928	1.328	1/1,500	
148.00	27.284	4457.240	-1.200	1.410	1.450	-1.348	0.943	1.343	1/1,500	
149.00	28.782	4486.022	-1.170	1.460	1.430	-1.329	0.958	1.358	1/1,500	
150.00	24.719	4510.741	-1.230	1.490	1.510	-1.312	0.972	1.372	1/1,500	
151.00	27.751	4538.492	-1.300	1.510	1.550	-1.294	0.987	1.387	1/1,500	
152.00	28.040	4566.532	-1.120	1.640	1.620	-1.275	1.003	1.403	1/1,500	
153.00	29.038	4595.570	-1.300	1.660	1.650	-1.256	1.019	1.419	1/1,500	
154.00	26.991	4622.561	-0.990	1.540	1.660	-1.238	1.034	1.434	1/1,500	
155.00	28.414	4650.975	-1.010	1.530	1.880	-1.219	1.050	1.450	1/1,500	
156.00	31.659	4682.634	-1.110	1.580	1.940	-1.198	1.068	1.468	1/1,500	
156+17	17.837	4700.471	-0.850	2.180	1.820	-1.186	1.078	1.478	1/1,500	Bridge(Foot Path)
157.00	11.906	4712.377	-1.060	1.590	1.970	-1.178	1.085	1.485	1/1,500	
158.00	30.768	4743.145	-0.850	1.570	2.130	-1.157	1.109	1.509	1/1,500	
159.00	30.079	4773.224	-0.880	1.560	2.160	-1.137	1.133	1.533	1/1,500	
160.00	30.362	4803.586	-0.380	1.650	2.130	-1.117	1.162	1.562	1/1,500	
161.00	33.423	4837.009	-0.440	1.650	2.130	-1.089	1.194	1.594	1/1,500	JL.Kimangun Sarkoro
162.00	30.288	4867.297	-0.750	2.070	2.040	-1.064	1.223	1.623	1/1,200	
163.00	29.407	4896.704	-0.660	2.050	1.990	-1.040	1.251	1.651	1/1,200	
164.00	29.747	4926.451	-0.740	2.100	2.100	-1.015	1.280	1.680	1/1,200	
165.00	29.609	4956.060	-0.660	2.130	2.190	-0.990	1.309	1.709	1/1,200	
166.00	28.556	4984.616	-0.540	2.030	2.360	-0.966	1.326	1.726	1/1,200	
167.00	30.546	5015.162	-0.400	2.170	2.220	-0.941	1.344	1.744	1/1,200	
168.00	30.255	5045.417	-0.250	2.370	2.460	-0.916	1.359	1.759	1/1,200	
168+7	6.961	5052.378	-0.110	1.980	2.110	-0.910	1.362	1.762	1/1,200	JL.Sebandaran
169.00	23.477	5075.855	-0.340	2.030	2.100	-0.890	1.373	1.773	1/1,200	
170.00	29.969	5105.824	-0.220	2.030	2.150	-0.865	1.387	1.787	1/1,200	
171.00	29.465	5135.289	-0.210	1.910	2.160	-0.841	1.401	1.801	1/1,200	
172.00	27.772	5163.061	-0.370	2.010	2.200	-0.818	1.413	1.813	1/1,200	
173.00	31.041	5194.102	-0.290	2.060	2.190	-0.792	1.427	1.827	1/1,200	
174.00	33.520	5227.622	-0.560	2.100	2.230	-0.764	1.442	1.842	1/1,200	
175.00	32.015	5259.637	-0.460	2.240	2.330	-0.737	1.456	1.856	1/1,200	
176.00	30.669	5290.306	-0.300	2.340	2.360	-0.712	1.472	1.872	1/1,200	
177.00	28.293	5318.599	-0.270	2.340	2.330	-0.688	1.487	1.887	1/1,200	
178.00	28.199	5346.798	-0.290	2.230	2.300	-0.664	1.502	1.902	1/1,200	
179.00	28.688	5375.486	-0.310	2.410	2.440	-0.641	1.518	1.918	1/1,200	
180.00	25.271	5400.757	-0.200	2.360	2.460	-0.619	1.532	1.932	1/1,200	
181.00	28.756	5429.513	-0.230	2.310	2.360	-0.596	1.548	1.948	1/1,200	
182.00	30.915	5460.428	-0.180	2.270	2.380	-0.570	1.565	1.965	1/1,200	
183.00	31.844	5492.272	-0.180	2.270	2.380	-0.543	1.582	1.982	1/1,200	JL.Wol Gandul
184.00	30.428	5522.700	-0.280	2.410	2.490	-0.516	1.600	2.000	1/1,200	
185.00	30.002	5552.702	0.040	2.280	2.450	-0.493	1.617	2.017	1/1,200	
186.00	30.742	5583.444	-0.270	2.360	2.400	-0.467	1.634	2.034	1/1,200	
187.00	35.685	5619.129	-0.110	2.370	2.490	-0.438	1.653	2.053	1/1,200	
188.00	31.035	5650.164	-0.130	2.340	2.540	-0.412	1.671	2.071	1/1,200	
189.00	29.888	5680.052	-0.040	2.290	2.480	-0.387	1.688	2.088	1/1,200	
190.00	29.721	5709.773	-0.310	2.290	2.550	-0.362	1.704	2.104	1/1,200	
191.00	27.558	5737.331	-0.070	2.280	2.420	-0.339	1.719	2.119	1/1,200	
192.00	29.579	5766.910	-0.070	2.250	2.320	-0.314	1.740	2.140	1/1,200	
193.00	28.427	5795.337	0.170	2.280	2.370	-0.291	1.760	2.160	1/1,200	
194.00	31.111	5826.448	0.110	2.320	2.410	-0.265	1.788	2.188	1/1,200	
195.00	29.724	5856.172	-0.410	2.530	2.530	-0.240	1.815	2.215	1/1,200	
195+17	17.251	5873.423	0.110	2.320	2.410	-0.226	1.830	2.230	1/1,200	JL.Gajah Mada

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196.00	12.980	5886.403	0.310	2.370	2.550	-0.215	1.836	2.236	1/1,200	
197.00	30.167	5916.570	0.410	2.320	2.440	-0.190	1.851	2.251	1/1,200	
198.00	29.208	5945.778	0.360	2.310	2.380	-0.165	1.851	2.251	1/1,200	
199.00	30.113	5975.891	0.400	2.500	2.720	-0.140	1.851	2.251	1/1,200	
200.00	30.118	6006.009	0.390	2.440	2.400	-0.115	1.881	2.281	1/1,200	
201.00	30.257	6036.266	0.530	2.260	2.430	-0.090	1.911	2.311	1/1,200	
202.00	30.071	6066.337	0.020	2.220	2.650	-0.065	1.923	2.323	1/1,200	
203.00	30.747	6097.084	0.490	2.280	2.370	-0.039	1.936	2.336	1/1,200	
204.00	29.387	6126.471	0.520	2.460	2.500	-0.015	1.947	2.347	1/1,200	
205.00	29.804	6156.275	0.520	2.480	2.580	0.010	1.959	2.359	1/1,200	
206.00	25.633	6181.908	0.670	2.550	2.530	0.031	1.969	2.369	1/1,200	
207.00	31.913	6213.821	0.840	2.370	2.480	0.058	1.982	2.382	1/1,200	
208.00	30.177	6243.998	0.730	2.500	2.450	0.083	1.989	2.389	1/1,200	
209.00	30.128	6274.126	0.700	2.420	2.390	0.108	1.996	2.396	1/1,200	
210.00	30.166	6304.292	0.650	2.410	2.490	0.133	2.001	2.401	1/1,200	
211.00	22.778	6327.070	0.240	2.410	2.440	0.152	2.005	2.405	1/1,200	JL.Thamrin
212.00	30.397	6357.467	0.790	2.410	2.550	0.190	2.011	2.411	1/800	
213.00	30.063	6387.530	0.930	2.470	2.560	0.228	2.044	2.444	1/800	
214.00	29.755	6417.285	0.830	2.530	2.590	0.265	2.076	2.476	1/800	
215.00	31.149	6448.434	1.120	2.550	2.650	0.304	2.106	2.506	1/800	
215+22	22.789	6471.223	1.090	2.710	2.770	0.333	2.128	2.528	1/800	Bridge(Foot Path)
216.00	7.420	6478.643	1.050	2.710	2.600	0.342	2.135	2.535	1/800	
217.00	30.892	6509.535	1.110	2.780	2.510	0.381	2.173	2.573	1/800	
218.00	29.947	6539.482	1.150	2.700	2.530	0.418	2.209	2.609	1/800	
219.00	30.668	6570.150	1.180	2.720	2.630	0.456	2.242	2.642	1/800	
220.00	30.555	6600.705	1.210	2.650	2.630	0.494	2.275	2.675	1/800	
221.00	30.614	6631.319	1.310	2.620	2.670	0.533	2.309	2.709	1/800	
222.00	29.849	6661.168	1.320	2.650	2.710	0.570	2.342	2.742	1/800	
223.00	31.208	6692.376	1.340	2.860	2.880	0.609	2.378	2.778	1/800	
224.00	29.224	6721.600	1.330	2.840	2.890	0.646	2.411	2.811	1/800	
225.00	29.135	6750.735	1.390	2.820	3.430	0.682	2.445	2.845	1/800	
225+10	10.226	6760.961	1.570	3.510	3.610	0.695	2.457	2.857	1/800	JL.Pekenden
226.00	19.820	6780.781	1.380	2.800	2.860	0.720	2.480	2.880	1/800	
227.00	30.258	6811.039	1.430	2.810	2.860	0.757	2.515	2.915	1/800	
228.00	29.804	6840.843	1.490	3.120	2.910	0.795	2.549	2.949	1/800	
229.00	28.876	6869.719	1.510	2.940	3.020	0.831	2.582	2.982	1/800	
230.00	28.601	6898.320	1.110	3.000	3.100	0.867	2.614	3.014	1/800	
231.00	29.537	6927.857	1.570	3.040	3.090	0.903	2.648	3.048	1/800	
232.00	29.649	6957.506	1.590	3.090	3.110	0.940	2.680	3.080	1/800	
233.00	29.355	6986.861	1.760	3.080	3.060	0.977	2.708	3.108	1/800	
234.00	29.615	7016.476	1.730	3.120	3.120	1.014	2.736	3.136	1/800	
235.00	29.835	7046.311	1.690	3.050	3.110	1.051	2.765	3.165	1/800	
235+24	24.373	7070.684	1.720	3.140	3.210	1.082	2.788	3.188	1/800	Bridge(Water)
236.00	6.728	7077.412	1.720	3.140	3.210	1.090	2.794	3.194	1/800	
237.00	30.213	7107.625	1.790	3.190	3.340	1.128	2.823	3.223	1/800	
238.00	30.357	7137.982	1.820	3.310	3.680	1.166	2.852	3.252	1/800	
239.00	29.816	7167.798	1.800	3.290	3.490	1.203	2.880	3.280	1/800	
240.00	29.517	7197.315	1.840	3.360	3.500	1.240	2.908	3.308	1/800	
241.00	29.902	7227.217	1.630	3.570	3.610	1.278	2.937	3.337	1/800	
241+13	13.859	7241.076	1.320	4.010	4.110	1.295	2.950	3.350	1/800	Tugu Muda
242+20		7241.076	1.790	4.570	4.980			0.400		Tugu Muda
243.00		7241.076	2.030	4.970	5.330			0.400		
244.00		7241.076	1.790	4.830	4.830			0.400		Bridge

Table 3 Mike 11 Calculation Output

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR	MIN	SEMARANG 0.000	SEMARANG 0.098	SEMARANG 0.196	SEMARANG 0.294	SEMARANG 0.392
1998	1	1	0	0	3.16	2.86	2.76	2.65	2.55
1998	1	1	0	10	2.81	2.88	2.77	2.67	2.57
1998	1	1	0	20	3.12	2.84	2.74	2.64	2.54
1998	1	1	0	30	2.83	2.88	2.78	2.67	2.57
1998	1	1	0	40	3.1	2.83	2.73	2.63	2.53
1998	1	1	0	50	2.84	2.89	2.78	2.67	2.57
1998	1	1	1	0	3.09	2.83	2.72	2.62	2.53
1998	1	1	1	10	2.85	2.89	2.79	2.68	2.57
1998	1	1	1	20	3.08	2.82	2.71	2.62	2.53
1998	1	1	1	30	2.86	2.9	2.79	2.68	2.56
1998	1	1	1	40	3.07	2.81	2.71	2.62	2.54
1998	1	1	1	50	2.87	2.9	2.8	2.68	2.56
1998	1	1	2	0	3.05	2.8	2.7	2.61	2.54
1998	1	1	2	10	2.88	2.91	2.81	2.68	2.55
1998	1	1	2	20	3.03	2.79	2.69	2.61	2.55
1998	1	1	2	30	2.89	2.93	2.81	2.67	2.53
1998	1	1	2	40	3.01	2.77	2.67	2.61	2.56
1998	1	1	2	50	2.91	2.94	2.81	2.66	2.51
1998	1	1	3	0	2.98	2.75	2.66	2.62	2.58
1998	1	1	3	10	2.93	2.95	2.81	2.63	2.48
1998	1	1	3	20	2.94	2.72	2.65	2.63	2.61
1998	1	1	3	30	2.95	2.96	2.79	2.6	2.44
1998	1	1	3	40	2.9	2.68	2.64	2.65	2.63
1998	1	1	3	50	2.97	2.96	2.76	2.55	2.4
1998	1	1	4	0	2.84	2.65	2.63	2.67	2.66

DATA FIL : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAME : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR	MIN	SEMARANG 0.489	SEMARANG 0.587	SEMARANG 0.685	SEMARANG 0.783	SEMARANG 0.881
1998	1	1	0	0	2.46	2.37	2.28	2.2	2.13
1998	1	1	0	10	2.47	2.38	2.29	2.2	2.13
1998	1	1	0	20	2.44	2.36	2.27	2.19	2.12
1998	1	1	0	30	2.47	2.37	2.28	2.19	2.11
1998	1	1	0	40	2.44	2.35	2.27	2.19	2.12
1998	1	1	0	50	2.46	2.36	2.27	2.19	2.11
1998	1	1	1	0	2.44	2.36	2.28	2.2	2.12
1998	1	1	1	10	2.46	2.36	2.27	2.18	2.1
1998	1	1	1	20	2.45	2.37	2.29	2.21	2.13
1998	1	1	1	30	2.45	2.35	2.25	2.17	2.1
1998	1	1	1	40	2.46	2.38	2.3	2.22	2.14
1998	1	1	1	50	2.44	2.33	2.24	2.16	2.09
1998	1	1	2	0	2.47	2.39	2.31	2.23	2.14
1998	1	1	2	10	2.42	2.32	2.23	2.15	2.09

1998	1	1	2	20	2.48	2.41	2.32	2.23	2.15
1998	1	1	2	30	2.4	2.3	2.22	2.15	2.09
1998	1	1	2	40	2.5	2.43	2.34	2.24	2.15
1998	1	1	2	50	2.38	2.28	2.21	2.14	2.09
1998	1	1	3	0	2.53	2.44	2.34	2.24	2.14
1998	1	1	3	10	2.35	2.27	2.2	2.15	2.09
1998	1	1	3	20	2.55	2.46	2.34	2.23	2.13
1998	1	1	3	30	2.33	2.25	2.2	2.15	2.1
1998	1	1	3	40	2.57	2.46	2.33	2.2	2.1
1998	1	1	3	50	2.3	2.24	2.2	2.17	2.12
1998	1	1	4	0	2.58	2.45	2.29	2.16	2.07

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

HOUR : MIN					SEMARANG 0.912	SEMARANG 1.007	SEMARANG 1.101	SEMARANG 1.196	SEMARANG 1.291
1998	1	1	0	0	2.11	2.01	1.94	1.88	1.82
1998	1	1	0	10	2.14	2.01	1.95	1.89	1.83
1998	1	1	0	20	2.1	2	1.94	1.88	1.82
1998	1	1	0	30	2.13	2	1.93	1.87	1.81
1998	1	1	0	40	2.1	2	1.94	1.88	1.82
1998	1	1	0	50	2.12	1.99	1.93	1.86	1.8
1998	1	1	1	0	2.11	2.01	1.94	1.88	1.82
1998	1	1	1	10	2.12	1.99	1.92	1.86	1.8
1998	1	1	1	20	2.11	2.01	1.95	1.88	1.82
1998	1	1	1	30	2.11	1.98	1.92	1.86	1.8
1998	1	1	1	40	2.12	2.01	1.95	1.88	1.81
1998	1	1	1	50	2.11	1.98	1.92	1.87	1.81
1998	1	1	2	0	2.12	2.01	1.94	1.87	1.81
1998	1	1	2	10	2.11	1.99	1.93	1.87	1.82
1998	1	1	2	20	2.12	2.01	1.93	1.86	1.8
1998	1	1	2	30	2.11	1.99	1.94	1.88	1.83
1998	1	1	2	40	2.12	2	1.92	1.85	1.79
1998	1	1	2	50	2.12	2	1.95	1.9	1.84
1998	1	1	3	0	2.11	1.99	1.91	1.84	1.78
1998	1	1	3	10	2.12	2.02	1.97	1.91	1.85
1998	1	1	3	20	2.1	1.97	1.89	1.82	1.77
1998	1	1	3	30	2.13	2.04	1.98	1.92	1.86
1998	1	1	3	40	2.08	1.94	1.87	1.81	1.76
1998	1	1	3	50	2.15	2.06	2	1.94	1.86
1998	1	1	4	0	2.06	1.92	1.86	1.81	1.77

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

HOUR : MIN					SEMARANG 1.386	SEMARANG 1.480	SEMARANG 1.575	SEMARANG 1.670	SEMARANG 1.765
1998	1	1	0	0	1.76	1.71	1.65	1.6	1.55
1998	1	1	0	10	1.77	1.71	1.65	1.6	1.55
1998	1	1	0	20	1.76	1.7	1.65	1.59	1.54

1998	1	1	1	20	1.76	1.7	1.64	1.58	1.53
1998	1	1	1	30	1.75	1.69	1.64	1.59	1.54
1998	1	1	1	40	1.75	1.69	1.63	1.58	1.53
1998	1	1	1	50	1.76	1.7	1.65	1.59	1.54
1998	1	1	2	0	1.74	1.68	1.63	1.57	1.52
1998	1	1	2	10	1.76	1.71	1.65	1.6	1.55
1998	1	1	2	20	1.74	1.68	1.62	1.57	1.52
1998	1	1	2	30	1.77	1.71	1.66	1.6	1.54
1998	1	1	2	40	1.73	1.67	1.62	1.57	1.53
1998	1	1	2	50	1.78	1.72	1.66	1.6	1.54
1998	1	1	3	0	1.72	1.67	1.62	1.58	1.54
1998	1	1	3	10	1.78	1.72	1.65	1.59	1.53
1998	1	1	3	20	1.72	1.67	1.63	1.59	1.55
1998	1	1	3	30	1.79	1.71	1.64	1.58	1.52
1998	1	1	3	40	1.72	1.68	1.64	1.6	1.56
1998	1	1	3	50	1.78	1.7	1.63	1.57	1.51
1998	1	1	4	0	1.73	1.7	1.66	1.62	1.57

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

					SEMARANG	SEMARANG	SEMARANG	SEMARANG	SEMARANG
			HOUR : MIN		1.859	1954.000	2.049	2.144	2.238
1998	1	1	0	0	1.5	1.46	1.42	1.37	1.33
1998	1	1	0	10	1.5	1.45	1.4	1.36	1.32
1998	1	1	0	20	1.49	1.44	1.4	1.36	1.32
1998	1	1	0	30	1.48	1.44	1.39	1.35	1.31
1998	1	1	0	40	1.49	1.44	1.39	1.35	1.31
1998	1	1	0	50	1.48	1.43	1.39	1.35	1.3
1998	1	1	1	0	1.48	1.44	1.39	1.35	1.31
1998	1	1	1	10	1.49	1.44	1.4	1.35	1.31
1998	1	1	1	20	1.48	1.43	1.39	1.35	1.31
1998	1	1	1	30	1.49	1.45	1.4	1.36	1.31
1998	1	1	1	40	1.48	1.43	1.39	1.35	1.31
1998	1	1	1	50	1.49	1.45	1.4	1.35	1.31
1998	1	1	2	0	1.48	1.43	1.39	1.35	1.31
1998	1	1	2	10	1.49	1.45	1.4	1.35	1.31
1998	1	1	2	20	1.48	1.43	1.39	1.35	1.31
1998	1	1	2	30	1.49	1.44	1.39	1.35	1.31
1998	1	1	2	40	1.48	1.44	1.4	1.35	1.31
1998	1	1	2	50	1.48	1.43	1.39	1.35	1.31
1998	1	1	3	0	1.49	1.45	1.4	1.36	1.32
1998	1	1	3	10	1.48	1.43	1.38	1.34	1.3
1998	1	1	3	20	1.5	1.46	1.41	1.37	1.32
1998	1	1	3	30	1.47	1.42	1.37	1.33	1.3
1998	1	1	3	40	1.51	1.47	1.42	1.37	1.32
1998	1	1	3	50	1.46	1.41	1.37	1.33	1.3
1998	1	1	4	0	1.52	1.47	1.42	1.37	1.32

1998	1	1	3	30	1.47	1.42	1.37	1.33	1.3
1998	1	1	3	40	1.51	1.47	1.42	1.37	1.32
1998	1	1	3	50	1.46	1.41	1.37	1.33	1.3
1998	1	1	4	0	1.52	1.47	1.42	1.37	1.32

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

					SEMARANG	SEMARANG	SEMARANG	SEMARANG	SEMARANG
HOUR : MIN					2.333	2.393	2.485	2.578	2.670
1998	1	1	0	0	1.3	1.24	1.1	1.05	1
1998	1	1	0	10	1.28	1.26	1.09	1.03	0.98
1998	1	1	0	20	1.28	1.22	1.08	1.03	0.98
1998	1	1	0	30	1.27	1.25	1.08	1.02	0.97
1998	1	1	0	40	1.27	1.22	1.07	1.02	0.97
1998	1	1	0	50	1.26	1.25	1.08	1.02	0.97
1998	1	1	1	0	1.27	1.22	1.08	1.02	0.97
1998	1	1	1	10	1.27	1.25	1.08	1.02	0.97
1998	1	1	1	20	1.27	1.22	1.07	1.02	0.97
1998	1	1	1	30	1.27	1.25	1.08	1.02	0.97
1998	1	1	1	40	1.27	1.22	1.08	1.02	0.97
1998	1	1	1	50	1.27	1.25	1.07	1.02	0.97
1998	1	1	2	0	1.28	1.23	1.08	1.03	0.98
1998	1	1	2	10	1.26	1.24	1.07	1.01	0.96
1998	1	1	2	20	1.28	1.23	1.09	1.03	0.98
1998	1	1	2	30	1.26	1.24	1.07	1.01	0.96
1998	1	1	2	40	1.28	1.23	1.09	1.03	0.98
1998	1	1	2	50	1.26	1.24	1.07	1.01	0.96
1998	1	1	3	0	1.28	1.23	1.09	1.03	0.98
1998	1	1	3	10	1.26	1.24	1.07	1.01	0.97
1998	1	1	3	20	1.28	1.23	1.09	1.03	0.98
1998	1	1	3	30	1.27	1.24	1.06	1.01	0.97
1998	1	1	3	40	1.28	1.23	1.09	1.03	0.97
1998	1	1	3	50	1.27	1.24	1.07	1.02	0.97
1998	1	1	4	0	1.27	1.23	1.09	1.03	0.97

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

					SEMARANG	SEMARANG	SEMARANG	SEMARANG	SEMARANG
HOUR : MIN					2.762	2.854	2.947	3.039	3.090
1998	1	1	0	0	0.95	0.9	0.85	0.81	0.81
1998	1	1	0	10	0.93	0.88	0.83	0.78	0.81
1998	1	1	0	20	0.93	0.88	0.83	0.79	0.79
1998	1	1	0	30	0.92	0.87	0.82	0.77	0.8
1998	1	1	0	40	0.92	0.87	0.82	0.78	0.78
1998	1	1	0	50	0.91	0.86	0.81	0.76	0.79
1998	1	1	1	0	0.92	0.87	0.83	0.79	0.79
1998	1	1	1	10	0.92	0.87	0.81	0.76	0.79
1998	1	1	1	20	0.92	0.87	0.82	0.78	0.78

1998	1	1	1	30	0.92	0.87	0.82	0.77	0.8
1998	1	1	1	40	0.92	0.87	0.82	0.78	0.78
1998	1	1	1	50	0.92	0.87	0.82	0.77	0.8
1998	1	1	2	0	0.92	0.87	0.82	0.78	0.78
1998	1	1	2	10	0.91	0.87	0.82	0.77	0.8
1998	1	1	2	20	0.93	0.87	0.83	0.78	0.79
1998	1	1	2	30	0.91	0.87	0.82	0.77	0.8
1998	1	1	2	40	0.92	0.87	0.82	0.78	0.78
1998	1	1	2	50	0.92	0.87	0.83	0.78	0.8
1998	1	1	3	0	0.92	0.87	0.82	0.77	0.78
1998	1	1	3	10	0.92	0.87	0.83	0.78	0.8
1998	1	1	3	20	0.92	0.87	0.81	0.77	0.78
1998	1	1	3	30	0.92	0.88	0.83	0.79	0.8
1998	1	1	3	40	0.92	0.86	0.81	0.77	0.78
1998	1	1	3	50	0.93	0.88	0.83	0.79	0.8
1998	1	1	4	0	0.91	0.86	0.81	0.76	0.78

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR : MIN		SEMARANG 3.183	SEMARANG 3.277	SEMARANG 3.370	SEMARANG 3.464	SEMARANG 3.557
1998	1	1	0	0	0.78	0.76	0.74	0.72	0.7
1998	1	1	0	10	0.78	0.76	0.74	0.72	0.7
1998	1	1	0	20	0.76	0.74	0.72	0.7	0.68
1998	1	1	0	30	0.77	0.75	0.72	0.7	0.68
1998	1	1	0	40	0.75	0.73	0.71	0.69	0.67
1998	1	1	0	50	0.77	0.74	0.72	0.7	0.68
1998	1	1	1	0	0.77	0.74	0.72	0.7	0.68
1998	1	1	1	10	0.76	0.74	0.72	0.69	0.67
1998	1	1	1	20	0.76	0.74	0.72	0.7	0.68
1998	1	1	1	30	0.77	0.74	0.72	0.7	0.68
1998	1	1	1	40	0.76	0.74	0.72	0.7	0.68
1998	1	1	1	50	0.77	0.74	0.72	0.7	0.68
1998	1	1	2	0	0.76	0.74	0.72	0.7	0.68
1998	1	1	2	10	0.77	0.74	0.72	0.7	0.68
1998	1	1	2	20	0.77	0.75	0.72	0.7	0.68
1998	1	1	2	30	0.77	0.74	0.72	0.7	0.68
1998	1	1	2	40	0.76	0.74	0.72	0.7	0.68
1998	1	1	2	50	0.77	0.74	0.72	0.7	0.68
1998	1	1	3	0	0.76	0.74	0.72	0.7	0.68
1998	1	1	3	10	0.77	0.75	0.72	0.7	0.68
1998	1	1	3	20	0.76	0.74	0.72	0.7	0.68
1998	1	1	3	30	0.77	0.75	0.72	0.71	0.69
1998	1	1	3	40	0.76	0.74	0.72	0.7	0.68
1998	1	1	3	50	0.77	0.74	0.72	0.7	0.68
1998	1	1	4	0	0.77	0.75	0.72	0.7	0.68

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

					SEMARANG 3.616	SEMARANG 3.703	SEMARANG 3789.000	SEMARANG 3.866	SEMARANG 3.944
HOUR : MIN									
1998	1	1	0	0	0.7	0.68	0.67	0.66	0.64
1998	1	1	0	10	0.69	0.68	0.66	0.65	0.63
1998	1	1	0	20	0.68	0.67	0.65	0.64	0.63
1998	1	1	0	30	0.68	0.66	0.65	0.63	0.62
1998	1	1	0	40	0.67	0.65	0.64	0.63	0.61
1998	1	1	0	50	0.68	0.66	0.65	0.64	0.62
1998	1	1	1	0	0.68	0.66	0.65	0.63	0.62
1998	1	1	1	10	0.67	0.66	0.65	0.63	0.62
1998	1	1	1	20	0.68	0.67	0.65	0.64	0.62
1998	1	1	1	30	0.67	0.66	0.65	0.63	0.62
1998	1	1	1	40	0.68	0.66	0.65	0.63	0.62
1998	1	1	1	50	0.68	0.66	0.65	0.64	0.63
1998	1	1	2	0	0.68	0.66	0.65	0.63	0.62
1998	1	1	2	10	0.67	0.66	0.65	0.64	0.63
1998	1	1	2	20	0.68	0.66	0.65	0.63	0.62
1998	1	1	2	30	0.67	0.66	0.65	0.64	0.62
1998	1	1	2	40	0.68	0.67	0.65	0.64	0.62
1998	1	1	2	50	0.67	0.66	0.65	0.63	0.62
1998	1	1	3	0	0.68	0.66	0.65	0.64	0.63
1998	1	1	3	10	0.68	0.66	0.65	0.63	0.62
1998	1	1	3	20	0.67	0.66	0.65	0.64	0.63
1998	1	1	3	30	0.68	0.67	0.65	0.63	0.62
1998	1	1	3	40	0.67	0.66	0.65	0.64	0.62
1998	1	1	3	50	0.68	0.67	0.65	0.64	0.62
1998	1	1	4	0	0.67	0.66	0.65	0.64	0.62

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

					SEMARANG 4.021	SEMARANG 4.109	SEMARANG 4.197	SEMARANG 4.227	SEMARANG 4.297
HOUR : MIN									
1998	1	1	0	0	0.63	0.62	0.6	0.6	0.59
1998	1	1	0	10	0.62	0.6	0.58	0.59	0.58
1998	1	1	0	20	0.62	0.6	0.59	0.59	0.58
1998	1	1	0	30	0.6	0.58	0.56	0.57	0.55
1998	1	1	0	40	0.6	0.59	0.58	0.58	0.57
1998	1	1	0	50	0.61	0.59	0.58	0.58	0.57
1998	1	1	1	0	0.61	0.59	0.58	0.58	0.57
1998	1	1	1	10	0.61	0.59	0.57	0.58	0.56
1998	1	1	1	20	0.61	0.59	0.58	0.58	0.57
1998	1	1	1	30	0.61	0.59	0.57	0.58	0.56
1998	1	1	1	40	0.61	0.59	0.58	0.58	0.57

1998	1	1	2	0	0.6	0.59	0.57	0.57	0.57
1998	1	1	2	10	0.62	0.6	0.59	0.59	0.58
1998	1	1	2	20	0.6	0.59	0.57	0.57	0.56
1998	1	1	2	30	0.61	0.6	0.58	0.59	0.57
1998	1	1	2	40	0.61	0.59	0.57	0.57	0.57
1998	1	1	2	50	0.61	0.59	0.58	0.58	0.57
1998	1	1	3	0	0.61	0.6	0.58	0.58	0.57
1998	1	1	3	10	0.6	0.59	0.57	0.58	0.56
1998	1	1	3	20	0.61	0.6	0.58	0.58	0.57
1998	1	1	3	30	0.61	0.59	0.58	0.58	0.57
1998	1	1	3	40	0.61	0.59	0.58	0.58	0.57
1998	1	1	3	50	0.61	0.59	0.58	0.58	0.57
1998	1	1	4	0	0.61	0.59	0.57	0.57	0.56

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR : MIN		SEMARANG 4.367	SEMARANG 4.392	SEMARANG 4.488	SEMARANG 4.584	SEMARANG 4.680
1998	1	1	0	0	0.58	0.58	0.57	0.56	0.56
1998	1	1	0	10	0.56	0.59	0.58	0.58	0.57
1998	1	1	0	20	0.57	0.57	0.57	0.56	0.55
1998	1	1	0	30	0.54	0.57	0.56	0.55	0.54
1998	1	1	0	40	0.56	0.56	0.56	0.55	0.55
1998	1	1	0	50	0.55	0.58	0.57	0.56	0.55
1998	1	1	1	0	0.56	0.56	0.56	0.55	0.55
1998	1	1	1	10	0.55	0.58	0.57	0.56	0.55
1998	1	1	1	20	0.57	0.57	0.56	0.56	0.55
1998	1	1	1	30	0.55	0.57	0.56	0.55	0.54
1998	1	1	1	40	0.57	0.57	0.57	0.56	0.56
1998	1	1	1	50	0.55	0.58	0.56	0.55	0.55
1998	1	1	2	0	0.56	0.56	0.56	0.56	0.55
1998	1	1	2	10	0.56	0.58	0.57	0.56	0.55
1998	1	1	2	20	0.56	0.56	0.56	0.56	0.55
1998	1	1	2	30	0.56	0.58	0.57	0.56	0.55
1998	1	1	2	40	0.57	0.57	0.56	0.56	0.55
1998	1	1	2	50	0.55	0.57	0.56	0.56	0.55
1998	1	1	3	0	0.57	0.57	0.57	0.56	0.55
1998	1	1	3	10	0.55	0.57	0.56	0.55	0.55
1998	1	1	3	20	0.57	0.58	0.57	0.57	0.56
1998	1	1	3	30	0.55	0.57	0.56	0.55	0.55
1998	1	1	3	40	0.57	0.57	0.57	0.57	0.56
1998	1	1	3	50	0.55	0.57	0.56	0.55	0.55
1998	1	1	4	0	0.56	0.57	0.57	0.56	0.55

Name of Structure	SEMARANG RIVER	Category Calculation	Non-uniform Flow Calculation	Page	15/18

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR : MIN		SEMARANG 4.776	SEMARANG 4.873	SEMARANG 4.969	SEMARANG 5.065	SEMARANG 5.161
1998	1	1	0	0	0.55	0.54	0.54	0.53	0.52
1998	1	1	0	10	0.56	0.55	0.55	0.54	0.53
1998	1	1	0	20	0.55	0.54	0.53	0.53	0.52
1998	1	1	0	30	0.53	0.53	0.52	0.51	0.5
1998	1	1	0	40	0.54	0.54	0.53	0.52	0.52
1998	1	1	0	50	0.54	0.54	0.53	0.52	0.51
1998	1	1	1	0	0.54	0.53	0.53	0.52	0.51
1998	1	1	1	10	0.54	0.54	0.53	0.53	0.52
1998	1	1	1	20	0.55	0.54	0.53	0.52	0.51
1998	1	1	1	30	0.54	0.53	0.53	0.52	0.52
1998	1	1	1	40	0.55	0.54	0.54	0.53	0.52
1998	1	1	1	50	0.54	0.53	0.52	0.52	0.51
1998	1	1	2	0	0.55	0.54	0.53	0.53	0.52
1998	1	1	2	10	0.54	0.54	0.53	0.52	0.51
1998	1	1	2	20	0.54	0.54	0.53	0.52	0.52
1998	1	1	2	30	0.55	0.54	0.53	0.53	0.52
1998	1	1	2	40	0.54	0.53	0.52	0.52	0.51
1998	1	1	2	50	0.55	0.54	0.54	0.53	0.52
1998	1	1	3	0	0.54	0.53	0.52	0.52	0.51
1998	1	1	3	10	0.54	0.54	0.54	0.53	0.52
1998	1	1	3	20	0.55	0.54	0.53	0.52	0.51
1998	1	1	3	30	0.54	0.54	0.53	0.53	0.52
1998	1	1	3	40	0.55	0.54	0.53	0.52	0.51
1998	1	1	3	50	0.54	0.53	0.53	0.52	0.52
1998	1	1	4	0	0.55	0.54	0.53	0.53	0.52

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR : MIN		SEMARANG 5.257	SEMARANG 5.353	SEMARANG 5.449	SEMARANG 5.545	SEMARANG 5.641
1998	1	1	0	0	0.52	0.51	0.5	0.49	0.49
1998	1	1	0	10	0.52	0.52	0.51	0.5	0.49
1998	1	1	0	20	0.51	0.5	0.5	0.49	0.48
1998	1	1	0	30	0.5	0.49	0.48	0.48	0.47
1998	1	1	0	40	0.51	0.5	0.5	0.49	0.49
1998	1	1	0	50	0.51	0.5	0.49	0.48	0.48
1998	1	1	1	0	0.5	0.5	0.49	0.48	0.48
1998	1	1	1	10	0.51	0.51	0.5	0.49	0.49
1998	1	1	1	20	0.5	0.49	0.49	0.48	0.47
1998	1	1	1	30	0.51	0.51	0.5	0.49	0.49
1998	1	1	1	40	0.51	0.5	0.49	0.48	0.47
1998	1	1	1	50	0.5	0.5	0.49	0.49	0.48
1998	1	1	2	0	0.51	0.51	0.5	0.49	0.48
1998	1	1	2	10	0.5	0.49	0.49	0.48	0.47

1998	1	1	2	10	0.5	0.49	0.49	0.48	0.47
1998	1	1	2	20	0.51	0.51	0.5	0.5	0.49
1998	1	1	2	30	0.51	0.5	0.49	0.48	0.47
1998	1	1	2	40	0.51	0.5	0.5	0.5	0.49
1998	1	1	2	50	0.51	0.5	0.49	0.48	0.47
1998	1	1	3	0	0.5	0.5	0.49	0.49	0.49
1998	1	1	3	10	0.52	0.51	0.5	0.49	0.48
1998	1	1	3	20	0.5	0.49	0.49	0.48	0.48
1998	1	1	3	30	0.52	0.51	0.5	0.5	0.49
1998	1	1	3	40	0.5	0.49	0.49	0.48	0.47
1998	1	1	3	50	0.51	0.51	0.5	0.5	0.49
1998	1	1	4	0	0.51	0.5	0.49	0.48	0.47

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR : MIN		SEMARANG 5.737	SEMARANG 5.834	SEMARANG 5.930	SEMARANG 6.026	SEMARANG 6.122
1998	1	1	0	0	0.48	0.47	0.47	0.46	0.45
1998	1	1	0	10	0.49	0.48	0.47	0.46	0.45
1998	1	1	0	20	0.47	0.46	0.46	0.45	0.44
1998	1	1	0	30	0.46	0.46	0.45	0.44	0.44
1998	1	1	0	40	0.48	0.47	0.46	0.46	0.45
1998	1	1	0	50	0.47	0.46	0.45	0.44	0.43
1998	1	1	1	0	0.47	0.47	0.46	0.46	0.45
1998	1	1	1	10	0.48	0.47	0.46	0.45	0.44
1998	1	1	1	20	0.46	0.46	0.45	0.45	0.44
1998	1	1	1	30	0.48	0.48	0.47	0.46	0.45
1998	1	1	1	40	0.46	0.46	0.45	0.44	0.43
1998	1	1	1	50	0.48	0.47	0.47	0.46	0.46
1998	1	1	2	0	0.47	0.46	0.45	0.44	0.43
1998	1	1	2	10	0.47	0.46	0.46	0.46	0.46
1998	1	1	2	20	0.48	0.47	0.46	0.45	0.44
1998	1	1	2	30	0.46	0.46	0.45	0.45	0.45
1998	1	1	2	40	0.49	0.48	0.47	0.46	0.44
1998	1	1	2	50	0.46	0.45	0.45	0.44	0.44
1998	1	1	3	0	0.48	0.48	0.47	0.46	0.45
1998	1	1	3	10	0.47	0.46	0.45	0.44	0.43
1998	1	1	3	20	0.48	0.47	0.47	0.47	0.46
1998	1	1	3	30	0.47	0.46	0.45	0.44	0.43
1998	1	1	3	40	0.47	0.47	0.47	0.46	0.46
1998	1	1	3	50	0.48	0.47	0.46	0.44	0.43
1998	1	1	4	0	0.46	0.46	0.46	0.46	0.46

Name of Structure	SEMARANG RIVER	Category Calculation	Non-uniform Flow Calculation	Page	17/18

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR : MIN	SEMARANG 6.218	SEMARANG 6.269	SEMARANG 6.365	SEMARANG 6.461	SEMARANG 6.527
1998	1	1	0 0	0.45	0.44	0.42	0.41	0.41
1998	1	1	0 10	0.45	0.45	0.42	0.41	0.42
1998	1	1	0 20	0.43	0.42	0.4	0.39	0.39
1998	1	1	0 30	0.43	0.44	0.4	0.4	0.41
1998	1	1	0 40	0.44	0.43	0.42	0.41	0.4
1998	1	1	0 50	0.42	0.43	0.39	0.38	0.4
1998	1	1	1 0	0.45	0.44	0.43	0.42	0.41
1998	1	1	1 10	0.43	0.43	0.39	0.37	0.39
1998	1	1	1 20	0.44	0.43	0.42	0.42	0.42
1998	1	1	1 30	0.44	0.44	0.4	0.38	0.39
1998	1	1	1 40	0.43	0.42	0.41	0.42	0.41
1998	1	1	1 50	0.45	0.45	0.41	0.39	0.4
1998	1	1	2 0	0.42	0.41	0.4	0.4	0.4
1998	1	1	2 10	0.45	0.46	0.42	0.4	0.41
1998	1	1	2 20	0.42	0.41	0.39	0.39	0.39
1998	1	1	2 30	0.45	0.45	0.42	0.41	0.42
1998	1	1	2 40	0.43	0.42	0.39	0.39	0.39
1998	1	1	2 50	0.44	0.45	0.42	0.41	0.43
1998	1	1	3 0	0.44	0.42	0.4	0.39	0.38
1998	1	1	3 10	0.43	0.44	0.42	0.41	0.43
1998	1	1	3 20	0.45	0.43	0.4	0.39	0.39
1998	1	1	3 30	0.42	0.43	0.41	0.41	0.42
1998	1	1	3 40	0.45	0.44	0.41	0.39	0.39
1998	1	1	3 50	0.42	0.42	0.4	0.4	0.42
1998	1	1	4 0	0.46	0.45	0.42	0.4	0.4

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR : MIN	SEMARANG 6.626	SEMARANG 6.726	SEMARANG 6.825	SEMARANG 6.925	SEMARANG 7.024
1998	1	1	0 0	0.4	0.39	0.38	0.37	0.37
1998	1	1	0 10	0.41	0.4	0.4	0.39	0.38
1998	1	1	0 20	0.38	0.37	0.36	0.35	0.34
1998	1	1	0 30	0.41	0.4	0.4	0.4	0.4
1998	1	1	0 40	0.39	0.38	0.36	0.34	0.32
1998	1	1	0 50	0.39	0.39	0.39	0.4	0.41
1998	1	1	1 0	0.41	0.39	0.38	0.35	0.32
1998	1	1	1 10	0.38	0.38	0.38	0.38	0.4

Name of Structure	SEMARANG RIVER	Category Calculation	Non-uniform Flow Calculation	Page	18/18

DATA FILE : SEM(12).RDF BOUNDARY FILE : SEM(12).BSF
PARAMETER : SEM(12).RRF CALCULATED : 9-FEB-1998, 15:15

			HOUR	MIN	SEMARANG 7.124	SEMARANG 7.223	SEMARANG	SEMARANG	SEMARANG
1998	1	1	0	0	0.36	0.35			
1998	1	1	0	10	0.37	0.35			
1998	1	1	0	20	0.32	0.35			
1998	1	1	0	30	0.4	0.35			
1998	1	1	0	40	0.3	0.35			
1998	1	1	0	50	0.43	0.35			
1998	1	1	1	0	0.28	0.35			
1998	1	1	1	10	0.44	0.35			
1998	1	1	1	20	0.27	0.35			
1998	1	1	1	30	0.45	0.35			
1998	1	1	1	40	0.26	0.35			
1998	1	1	1	50	0.45	0.35			
1998	1	1	2	0	0.26	0.35			
1998	1	1	2	10	0.45	0.35			
1998	1	1	2	20	0.26	0.35			
1998	1	1	2	30	0.45	0.35			
1998	1	1	2	40	0.27	0.35			
1998	1	1	2	50	0.44	0.35			
1998	1	1	3	0	0.28	0.35			
1998	1	1	3	10	0.43	0.35			
1998	1	1	3	20	0.29	0.35			
1998	1	1	3	30	0.42	0.35			
1998	1	1	3	40	0.3	0.35			
1998	1	1	3	50	0.41	0.35			
1998	1	1	4	0	0.31	0.35			