REPUBLIC OF INDONESIA

FEASIBILITY STUDY
OF
JAKARTA RING ROAD PROJECT

APPENDIX

March, 1978

JAPAN INTERNATIONAL COOPERATION AGENCY

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FEASIBILITY STUDY
OF
JAKARTA RING ROAD PROJECT

APPENDIX

March, 1978

国際協力事業団
受入 2100
月日 7139
登録No. 3[illegible] SDS

JAPAN INTERNATIONAL COOPERATION AGENCY

国際協力事業団	
受入月日 '84. 5. 20	108
	61.4
登録No. 06045	SDS

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1. HOURLY TRAFFIC VOLUME BY DIRECTION

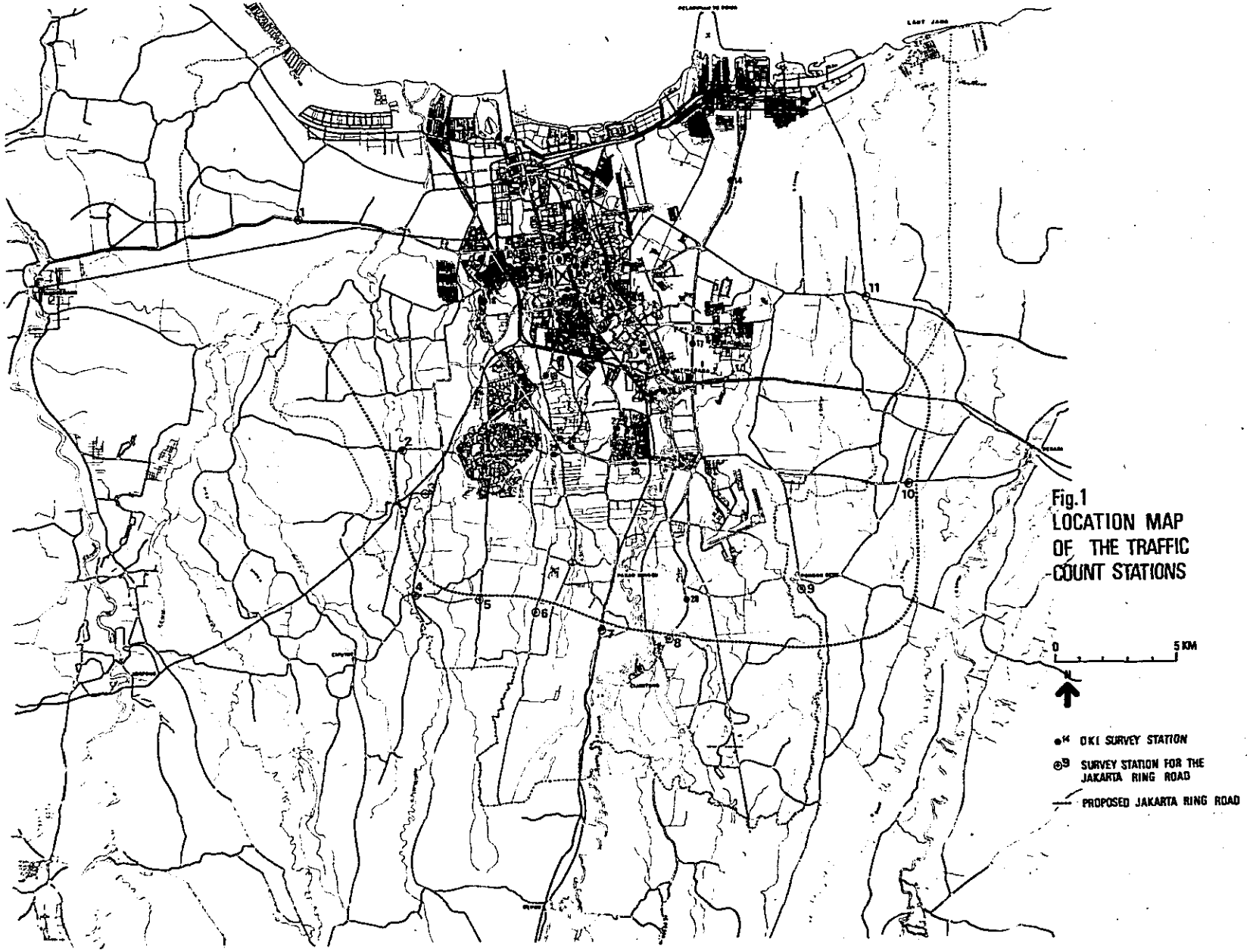


Fig.1
LOCATION MAP
OF THE TRAFFIC
COUNT STATIONS

Fig. 2

HOURLY TRAFFIC VOLUME BY DIRECTION

Station I.

Fig. 2-1

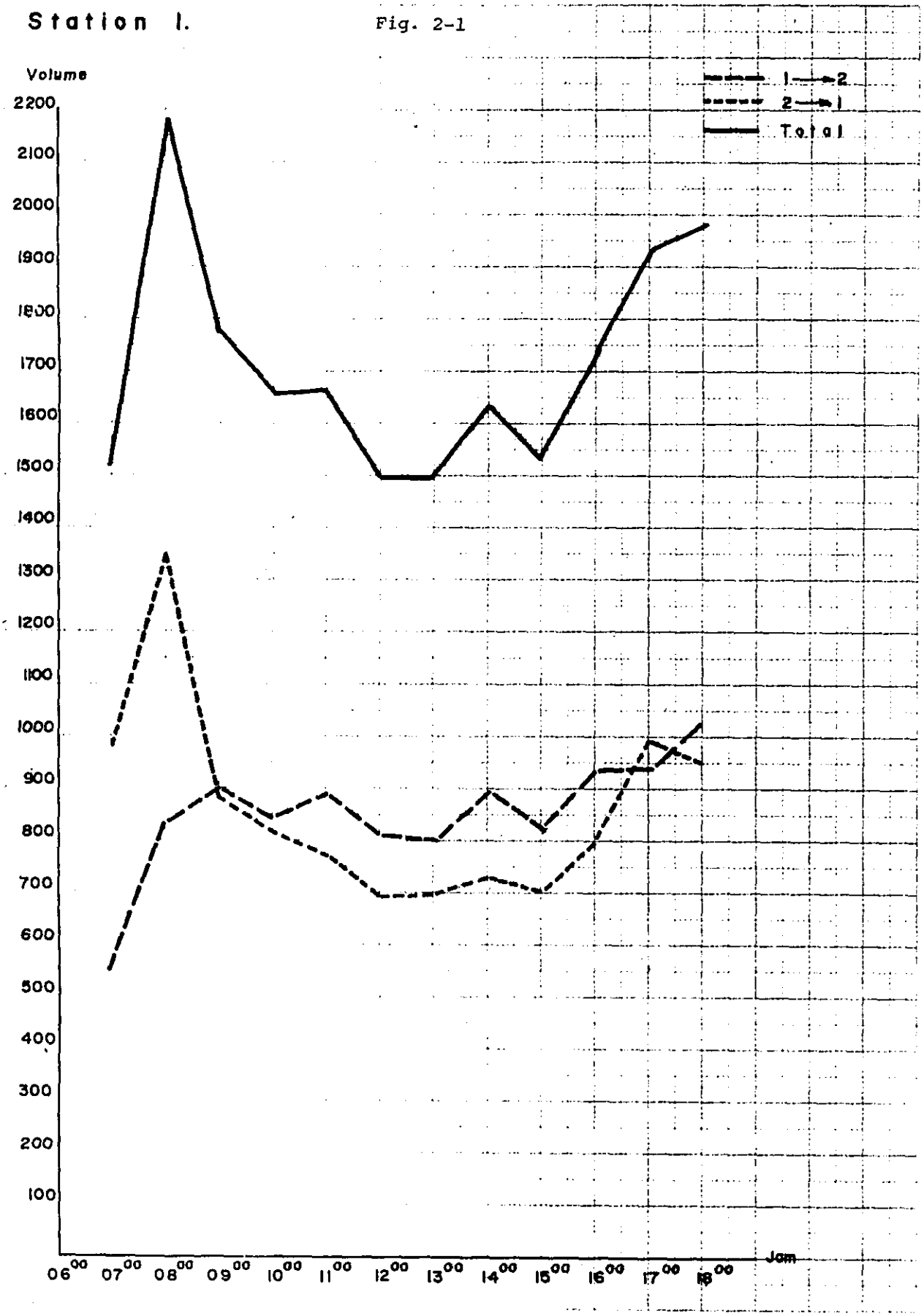


Fig. 2-2

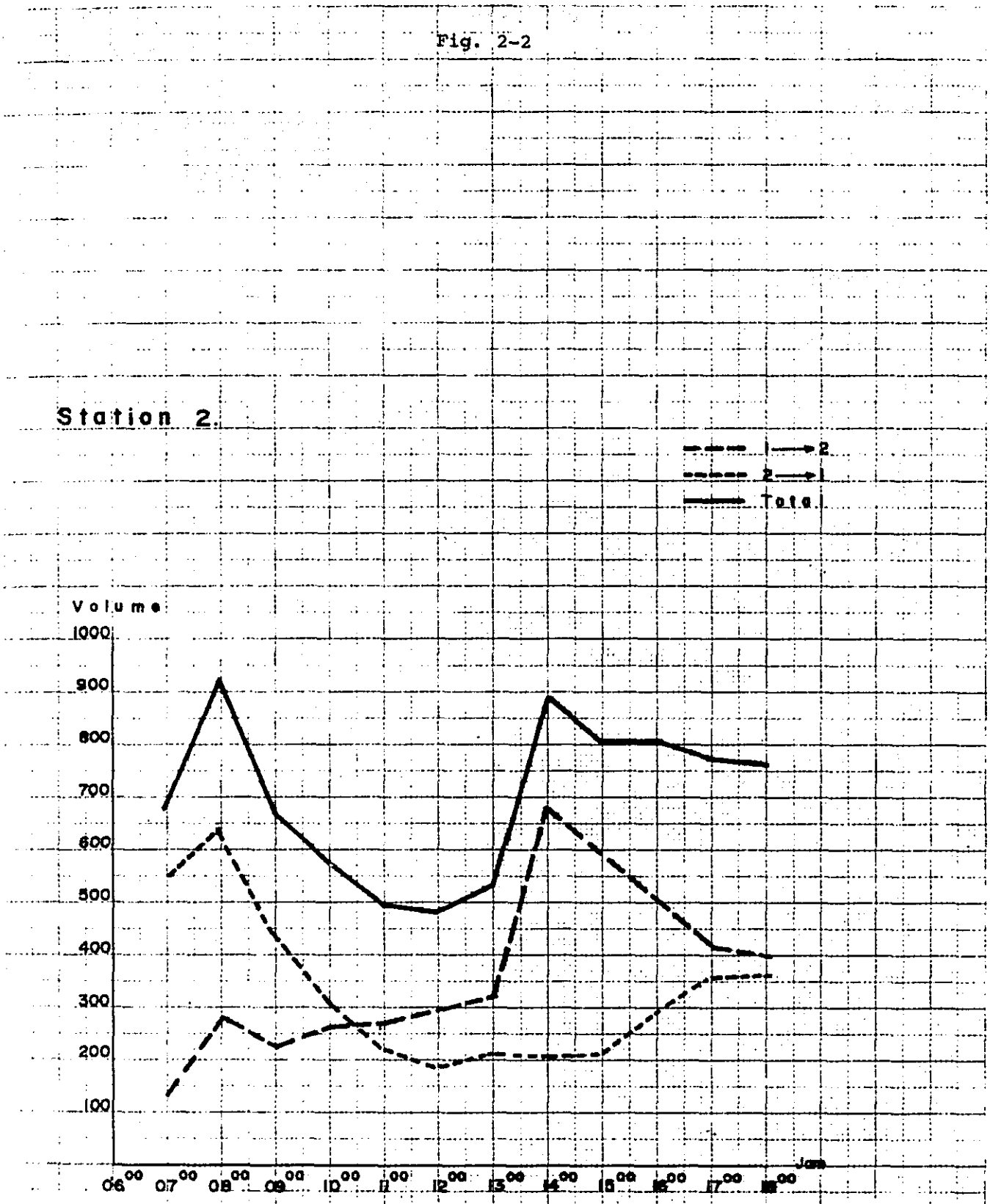
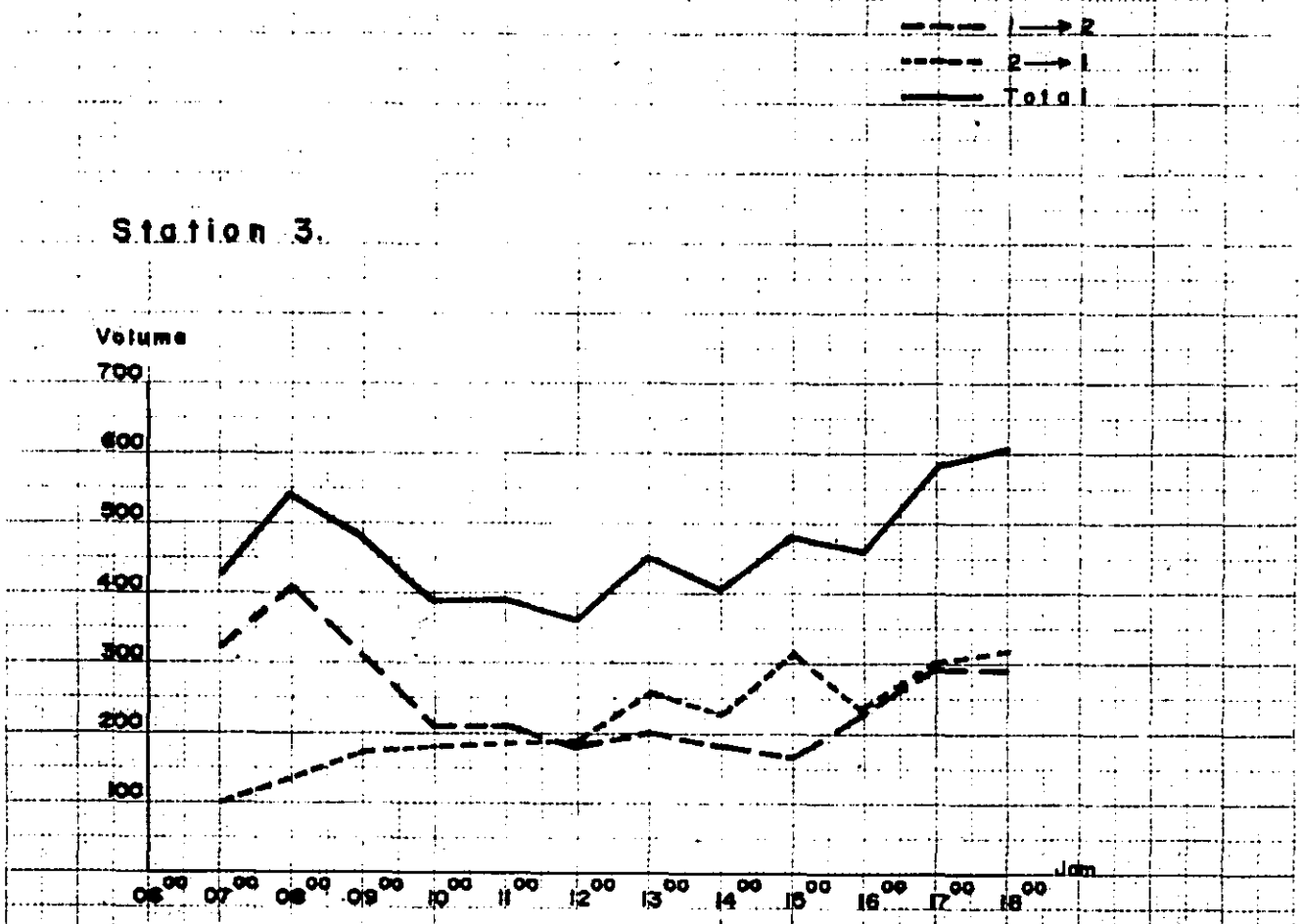

Station 2.
1 → 2
2 → 1
Total
Volume
1000
900
800
700
600
500
400
300
200
100
06^00
07^00
08^00
09^00
10^00
11^00
12^00
13^00
14^00
15^00
16^00
17^00
Jam

Fig. 2-3


1 → 2
2 → 1
Total
Station 3.
Volume
700
600
500
400
300
200
100
Jam
06 00
07 00
08 00
09 00
10 00
11 00
12 00
13 00
14 00
15 00
16 00
17 00
18 00

Station 4.

Fig. 2-4

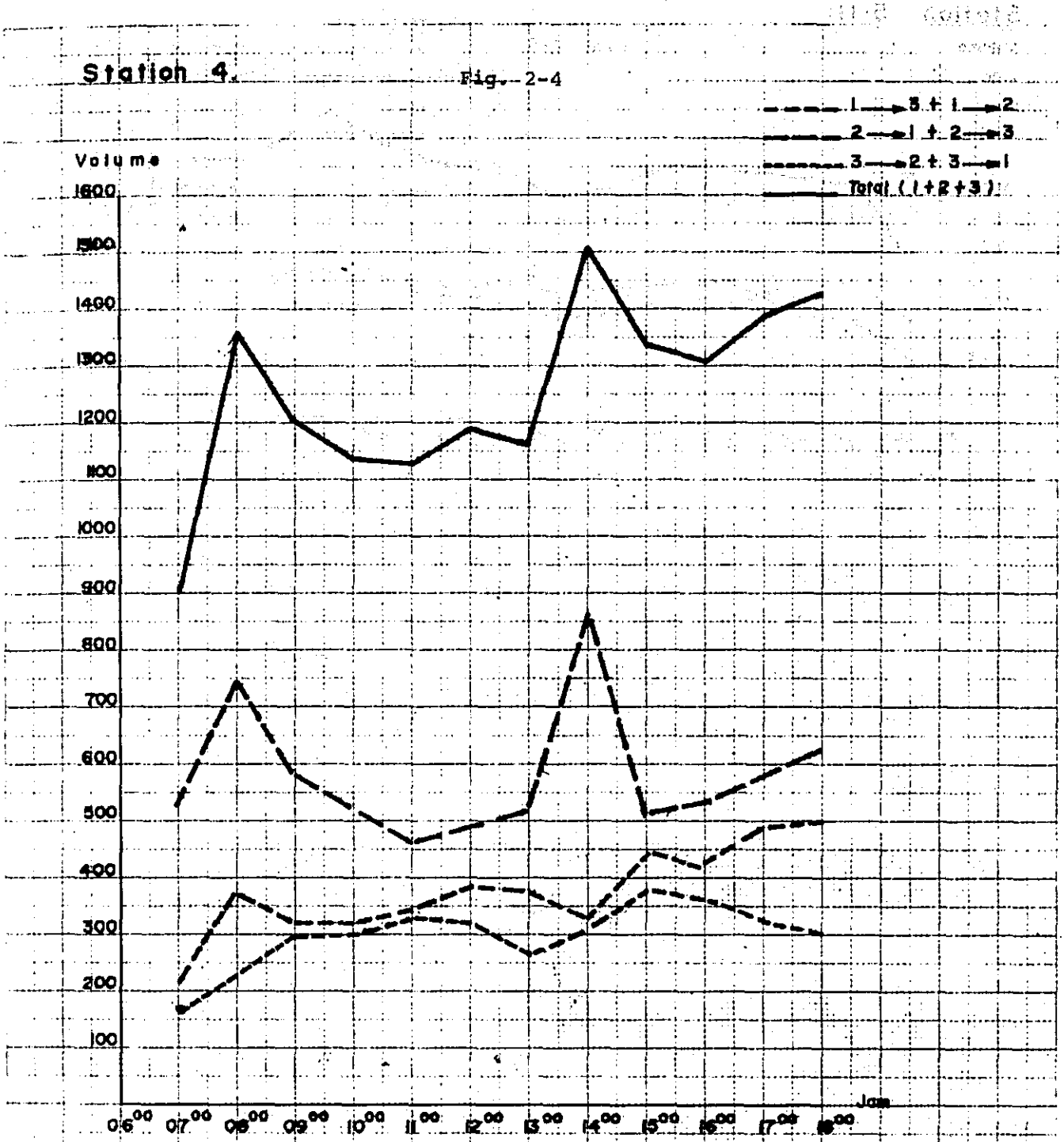


Fig. 2-5

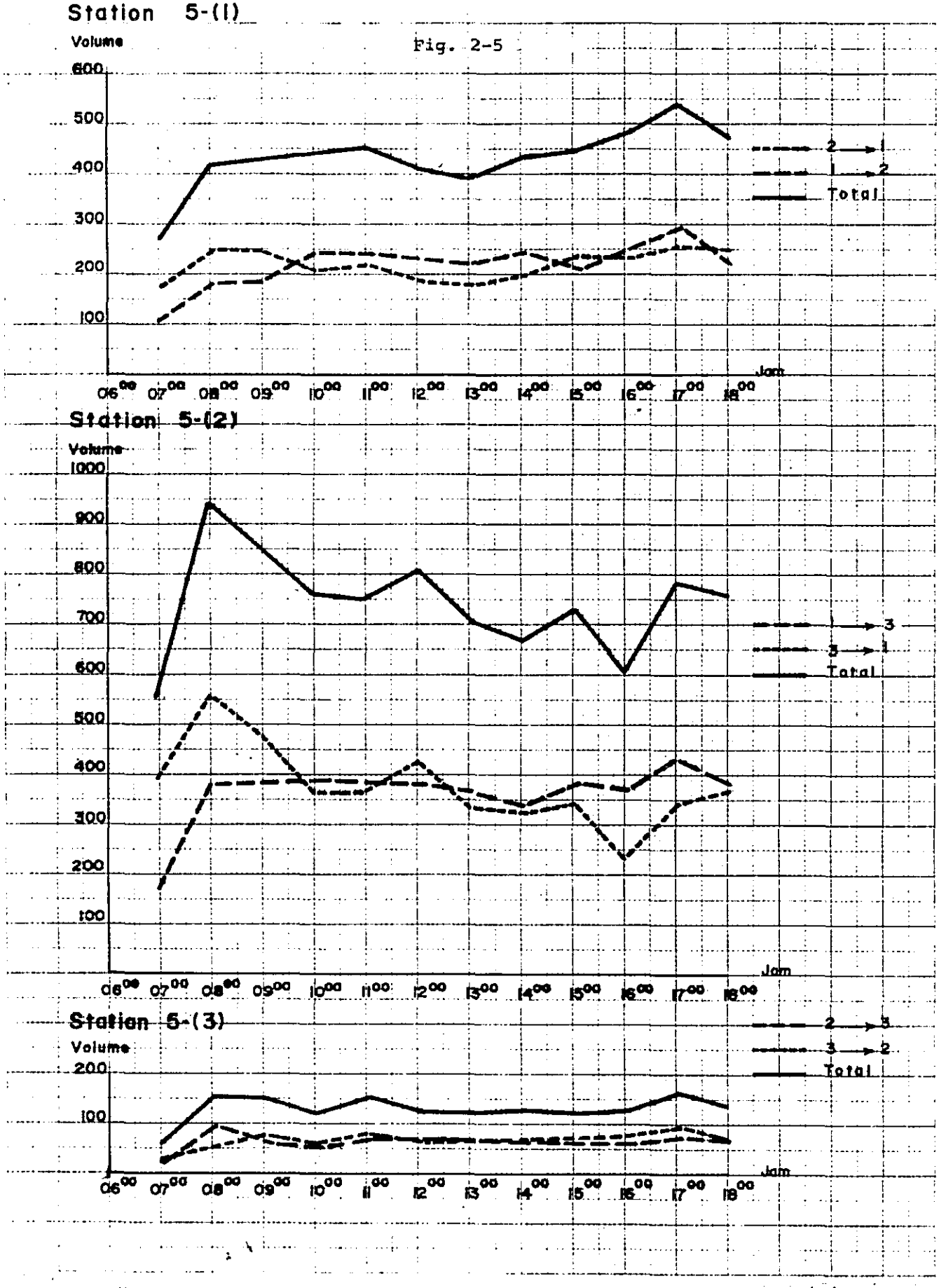

Station 5-(1)
Volume
600
500
400
300
200
100
2 → 1
1 → 2
Total
Jam
06^00 07^00 08^00 09^00 10^00 11^00 12^00 13^00 14^00 15^00 16^00 17^00 18^00
Station 5-(2)
Volume
1000
900
800
700
600
500
400
300
200
100
1 → 3
3 → 1
Total
Jam
06^00 07^00 08^00 09^00 10^00 11^00 12^00 13^00 14^00 15^00 16^00 17^00 18^00
Station 5-(3)
Volume
200
100
2 → 3
3 → 2
Total
Jam
06^00 07^00 08^00 09^00 10^00 11^00 12^00 13^00 14^00 15^00 16^00 17^00 18^00

Fig. 2-6

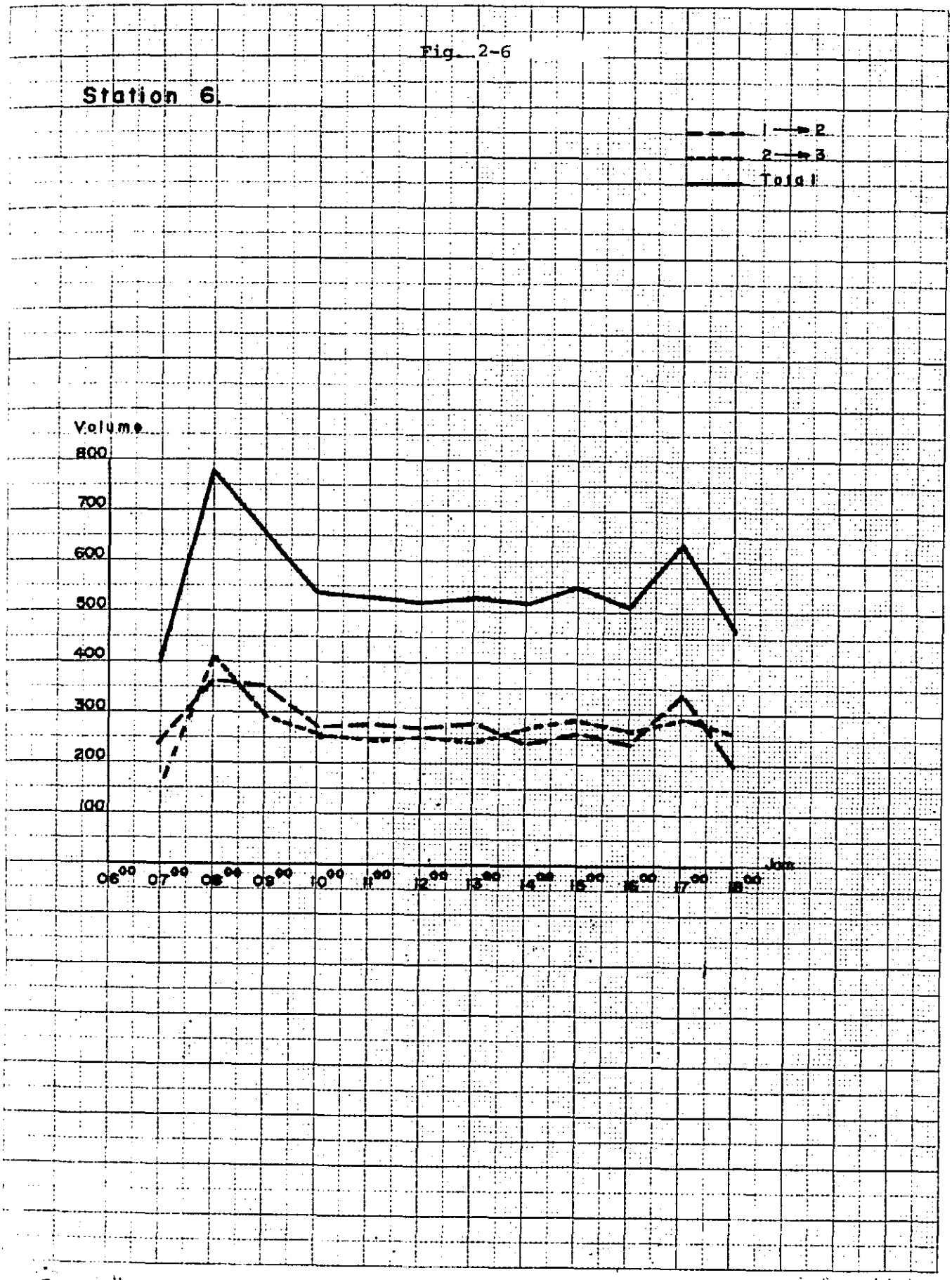
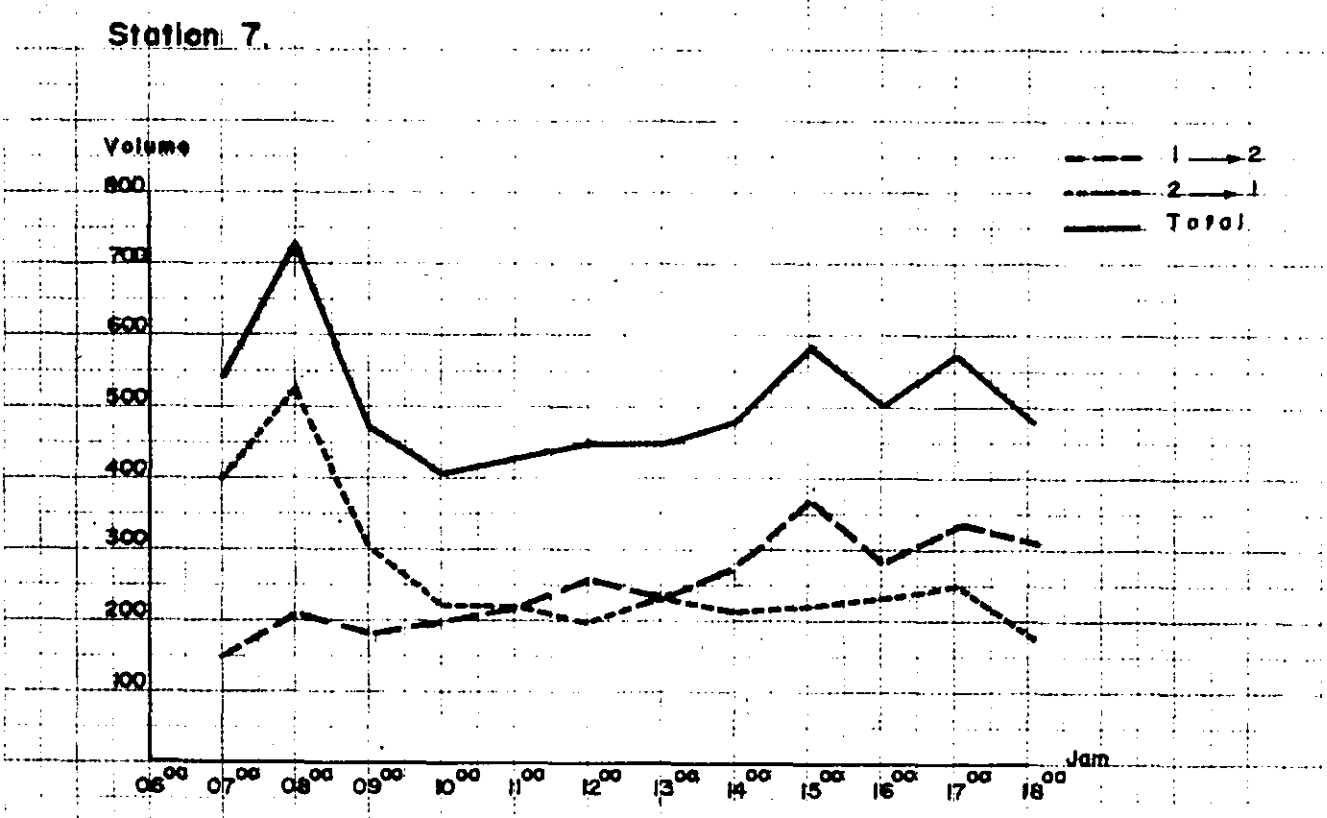

Station 6
1 → 2
2 → 3
Total
Volume
800
700
600
500
400
300
200
100
06^00
07^00
08^00
09^00
10^00
11^00
12^00
13^00
14^00
15^00
16^00
17^00
18^00
Hour

Fig. 2-7


Station 7.
Volume
800
700
600
500
400
300
200
100
1 → 2
2 → 1
Total
Jam
06^00
07^00
08^00
09^00
10^00
11^00
12^00
13^00
14^00
15^00
16^00
17^00
18^00

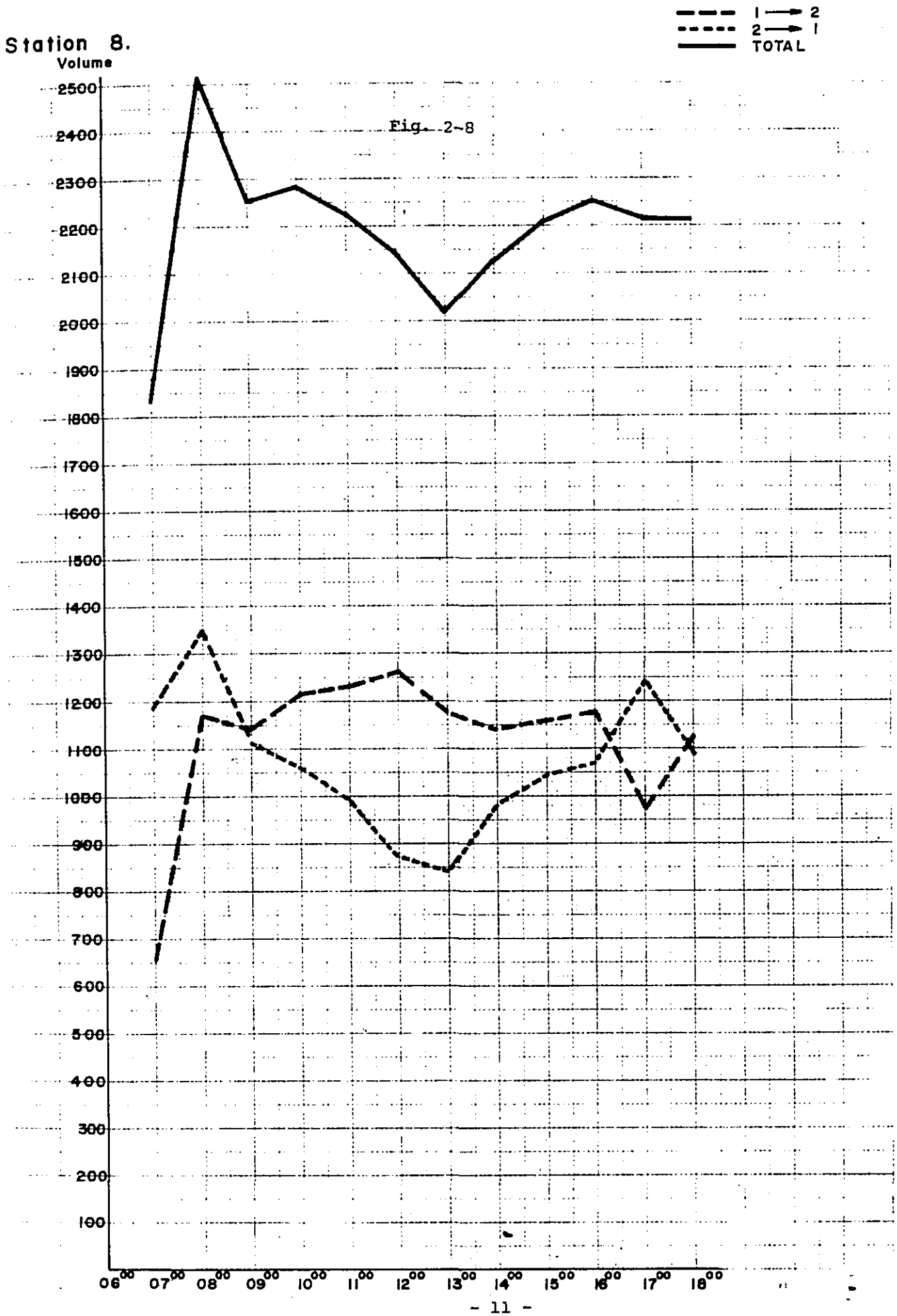

Station 8.
Volume
1 → 2
2 → 1
TOTAL
2500
2400
2300
2200
2100
2000
1900
1800
1700
1600
1500
1400
1300
1200
1100
1000
900
800
700
600
500
400
300
200
100
06^00
07^00
08^00
09^00
10^00
11^00
12^00
13^00
14^00
15^00
16^00
17^00
18^00

Fig. 2-8

Fig. 2-9

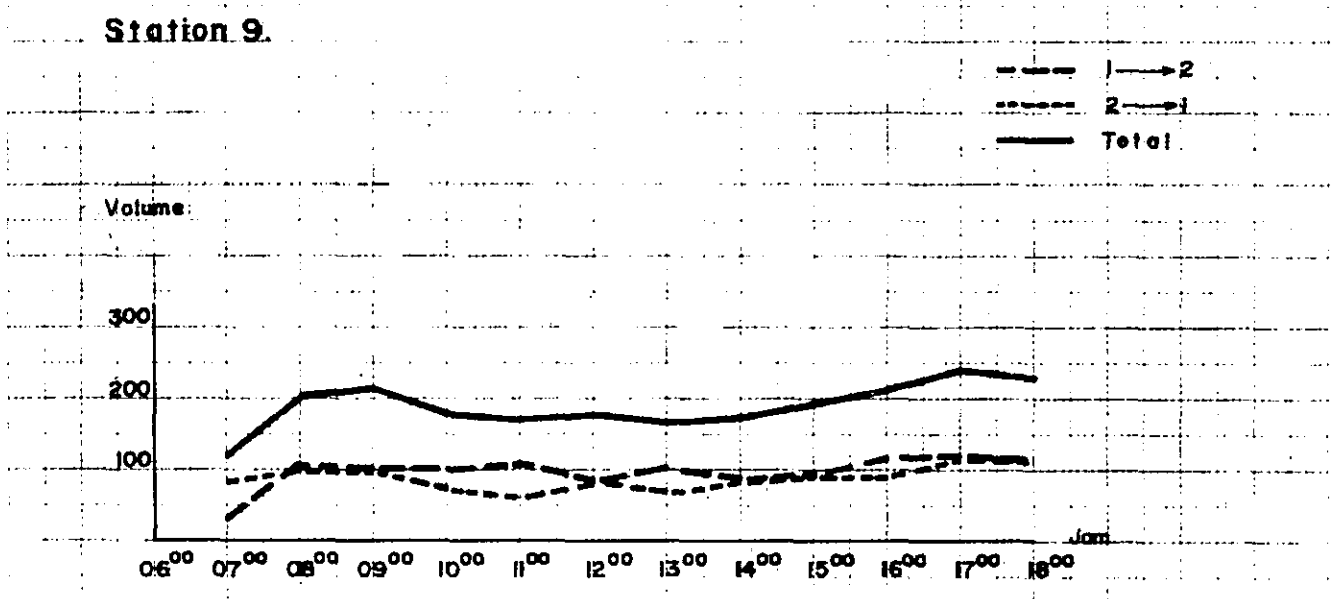
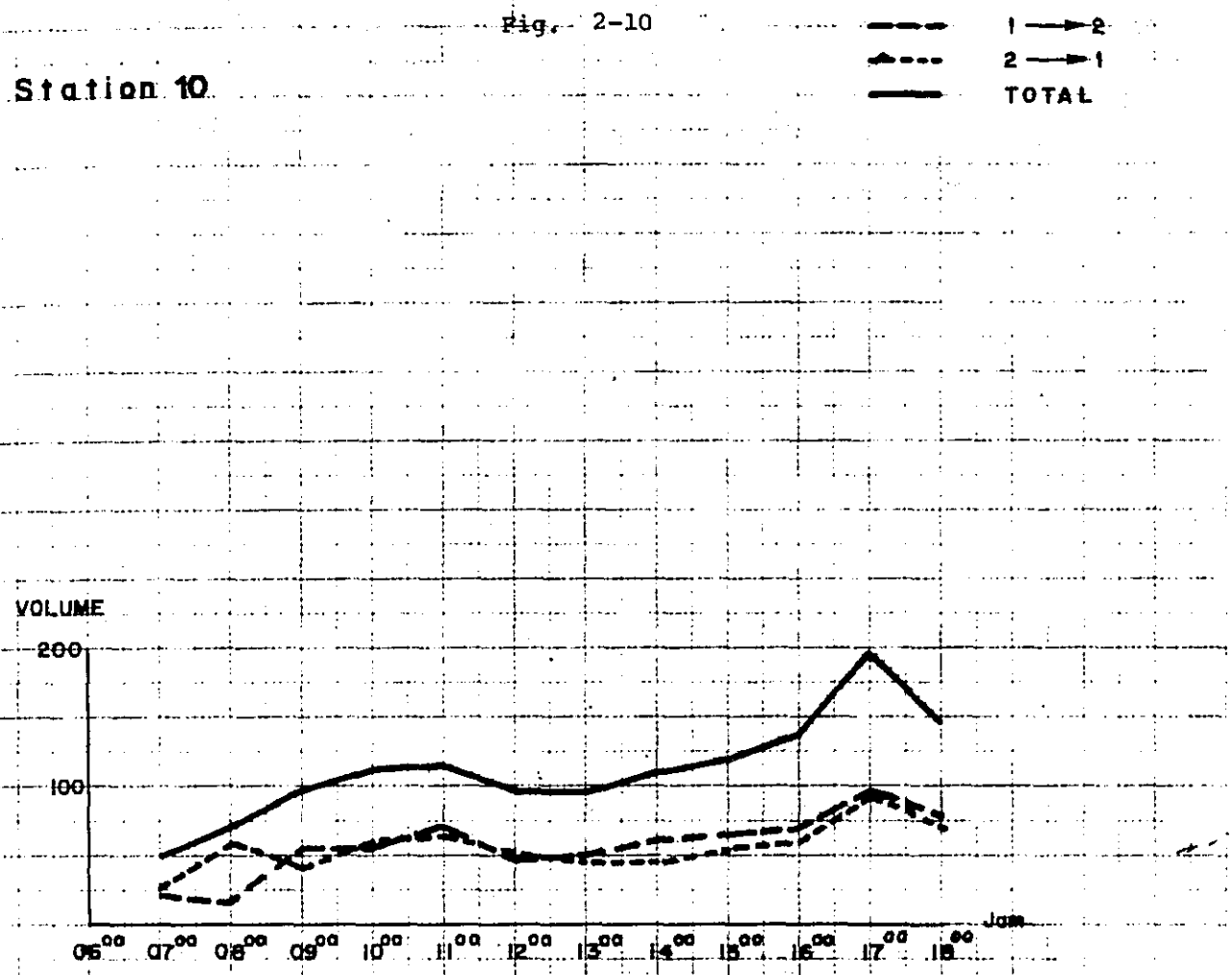

Station 9.
1 → 2
2 → 1
Total
Volume
300
200
100
0600
0700
0800
0900
1000
1100
1200
1300
1400
1500
1600
1700
1800
Jam

Fig. 2-10

Station 10



Station II.

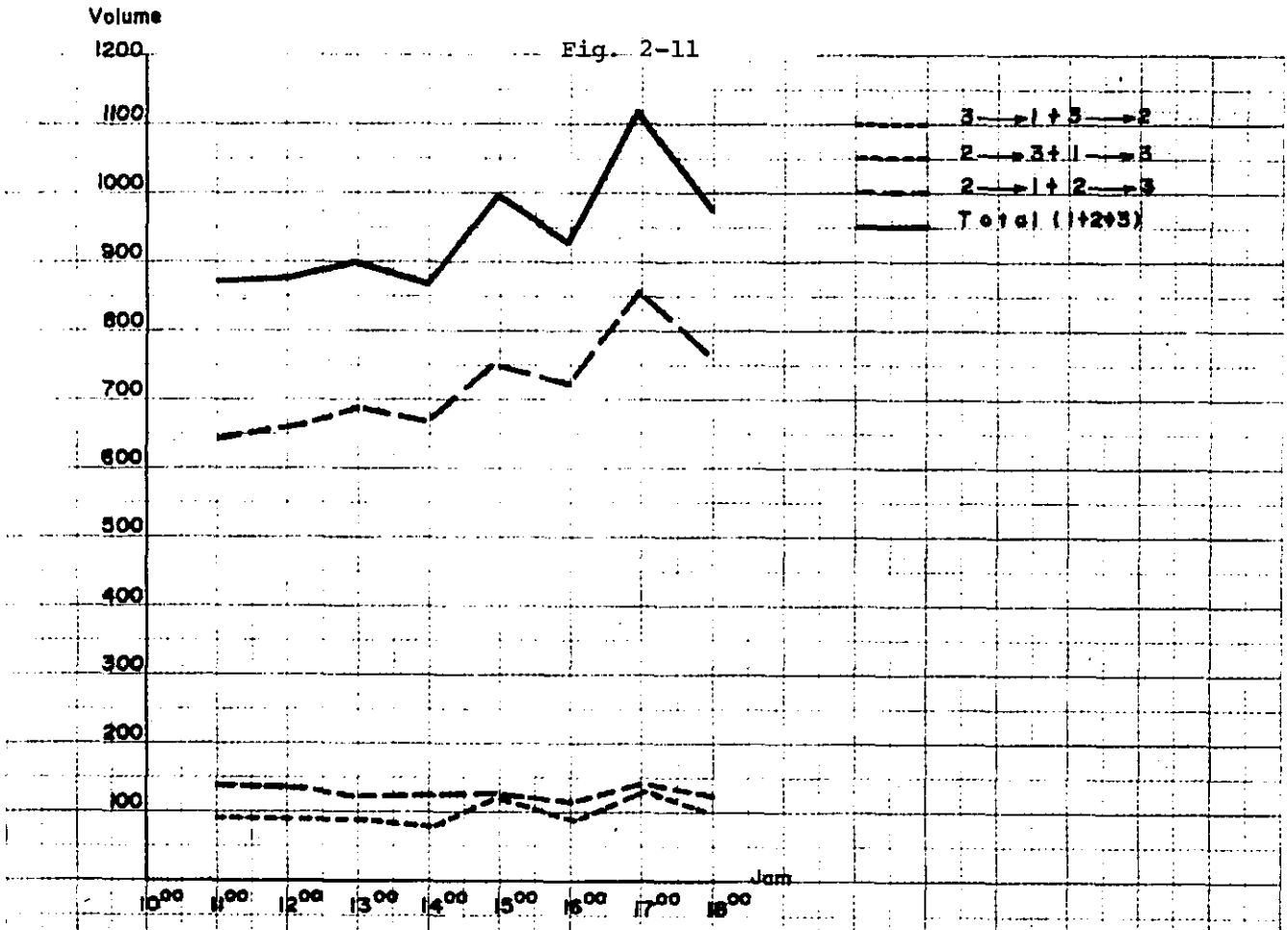


Fig. 2-11

2. PEAK HOUR TRAFFIC VOLUME BY TYPE OF VEHICLE

Table 1 PEAK HOUR TRAFFIC VOLUME BY TYPE OF VEHICLE

		MOTOR CYCLE	OPLET	SEDAN	BUS	PICK UP MICROTRUCK	TRUCK	TOTAL
1.	6:00 - 7:00	356	152	274	28	42	126	978
	7:00 - 8:00	551	345	207	47	65	132	1347
2 - 1	8:00 - 9:00	326	127	199	12	63	152	879
	Total	1233	624	680	87	170	410	3204
1.	6:00 - 7:00	191	189	51	21	43	54	549
	7:00 - 8:00	322	255	134	20	31	71	833
1 - 2	8:00 - 9:00	279	237	148	21	97	117	899
	Total	792	681	333	62	171	242	2281
2.	6:00 - 7:00	203	116	103	7	3	8	440
	7:00 - 8:00	379	97	140	4	15	4	639
2 - 1	8:00 - 9:00	238	63	112	7	20	3	443
	Total	820	276	355	18	38	15	1522
2.	6:00 - 7:00	23	45	25	2	30	4	129
	7:00 - 8:00	81	103	72	9	13	1	279
1 - 2	8:00 - 9:00	87	74	44	6	13	1	225
	Total	191	222	141	17	56	6	633
3.	6:00 - 7:00	22	32	31	4	7	2	98
	7:00 - 8:00	39	13	63	6	10	2	133
2 - 1	8:00 - 9:00	72	13	60	10	10	5	170
	Total	133	58	154	20	27	9	401
3.	6:00 - 7:00	92	54	159	3	7	6	321
	7:00 - 8:00	185	51	156	7	10	4	413
1 - 2	8:00 - 9:00	132	33	130	6	10	2	313
	Total	409	138	445	16	27	12	1047
4.	6:00 - 7:00	104	104	129	22	11	54	424
	7:00 - 8:00	190	85	160	20	17	44	516
2 - 1	8:00 - 9:00	110	77	135	12	13	36	383
	Total	404	266	424	54	41	134	1323
4.	6:00 - 7:00	23	76	40	9	0	33	181
	7:00 - 8:00	52	121	65	17	1	35	291
1 - 2	8:00 - 9:00	44	110	56	14	12	29	265
	Total	119	307	161	40	13	97	737
4.	6:00 - 7:00	20	3	29	4	6	0	62
	7:00 - 8:00	40	4	26	1	4	0	75
3 - 1	8:00 - 9:00	34	1	26	1	6	0	68
	Total	94	8	81	6	16	0	205

		MOTOR CYCLE	OPLET	SEDAN	BUS	PICK UP MICROTRUCK	TRUCK	TOTAL
4.	6:00 - 7:00	20	3	29	4	6	0	62
	7:00 - 8:00	40	4	36	1	4	0	85
1 - 3	8:00 - 9:00	34	1	26	1	6	0	68
	Total	94	8	91	6	16	0	215
5.	6:00 - 7:00	60	5	69	3	11	23	171
	7:00 - 8:00	87	8	115	6	9	18	243
2 - 1	8:00 - 9:00	77	2	100	3	25	40	247
	Total	224	15	284	12	45	81	661
5.	6:00 - 7:00	28	9	42	6	4	15	104
	7:00 - 8:00	58	21	68	3	9	16	175
1 - 2	8:00 - 9:00	43	10	84	6	15	24	182
	Total	129	40	194	15	28	55	461
5.	6:00 - 7:00	105	32	204	40	7	6	394
	7:00 - 8:00	203	28	281	30	6	7	555
3 - 1	8:00 - 9:00	163	36	244	25	5	5	478
	Total	471	96	729	95	18	18	1427
5.	6:00 - 7:00	49	13	73	28	9	1	173
	7:00 - 8:00	127	30	185	28	11	2	383
1 - 3	8:00 - 9:00	130	27	178	25	16	10	386
	Total	306	70	436	81	36	13	942
6.	6:00 - 7:00	68	83	74	5	4	6	240
	7:00 - 8:00	120	81	149	7	4	5	366
2 - 1	8:00 - 9:00	128	73	124	6	12	10	353
	Total	316	237	347	18	20	21	959
6.	6:00 - 7:00	34	74	15	3	10	17	153
	7:00 - 8:00	130	83	156	20	12	15	416
1 - 2	8:00 - 9:00	97	61	101	6	10	20	295
	Total	261	218	272	29	32	52	864
7.	6:00 - 7:00	178	100	61	31	9	14	393
	7:00 - 8:00	281	99	84	13	20	23	520
2 - 1	8:00 - 9:00	142	78	42	7	13	14	296
	Total	601	277	187	51	42	51	1209
7	6:00 - 7:00	21	79	16	13	4	10	143
	7:00 - 8:00	41	95	25	11	3	31	206
1 - 2	8:00 - 9:00	42	64	25	13	3	23	170
	Total	104	238	66	37	10	64	519
9.	6:00 - 7:00	235	304	330	98	65	146	1178
	7:00 - 8:00	370	326	405	77	55	115	1348
2 - 1	8:00 - 9:00	269	286	340	55	58	105	1113
	Total	874	916	1075	230	178	366	3639

		MOTOR CYCLE	OPLET	SEDAN	BUS	PICK UP MICROTRUCK	TRUCK	TOTAL
9.	6:00 - 7:00	142	270	80	49	30	81	652
	7:00 - 8:00	242	439	265	57	47	123	1173
1 - 2	8:00 - 9:00	205	379	259	64	90	143	1140
	Total	589	1088	604	170	167	347	2965
10.	6:00 - 7:00	51	22	8	0	7	0	88
	7:00 - 8:00	69	19	7	0	4	0	99
2 - 1	8:00 - 9:00	78	17	8	1	1	1	106
	Total	198	58	23	1	12	1	293
10.	6:00 - 7:00	11	14	8	0	0	0	33
	7:00 - 8:00	63	22	14	2	2	3	106
1 - 2	8:00 - 9:00	81	16	7	0	4	0	108
	Total	155	52	29	2	6	3	247
11.	6:00 - 7:00	7	16	3	0	0	0	26
	7:00 - 8:00	31	19	2	0	1	4	57
2 - 1	8:00 - 9:00	24	13	2	0	1	1	41
	Total	62	48	7	0	2	5	124
11.	6:00 - 7:00	9	7	2	0	2	0	20
	7:00 - 8:00	8	0	5	0	1	0	14
1 - 2	8:00 - 9:00	39	12	3	0	0	2	56
	Total	56	19	10	0	3	2	90
12.	6:00 - 7:00	89	141	36	29	28	117	440
	7:00 - 8:00	192	251	112	40	42	172	809
From	8:00 - 9:00	194	241	147	33	80	174	869
Jkt	Total	475	633	295	102	150	463	2118
12.	6:00 - 7:00	76	105	23	36	15	111	366
	7:00 - 8:00	149	190	57	35	37	165	633
To JKT	8:00 - 9:00	112	129	87	25	35	162	550
	Total	337	424	167	96	87	438	1549

3. OD TABLES AND TRAFFIC ASSIGNMENT (COMPUTER OUT-PUT)

Table 2 OD TABLE IN 1985 BY TYPE OF VEHICLE

**** RINGROAD PROJECT **** (1985) FRATER

TOTAL

		1	2	3	4	5	6	7	8	9	10	11	
1		8213	2997	2626	2744	3763	2138	1145	1002	181	229	148	
2		0	3340	2362	2102	1354	4169	1303	1015	187	233	89	
3		0	0	5682	3543	1817	1750	1106	1094	604	337	115	
4		0	0	0	7468	2492	1584	1002	1051	306	316	124	
5		0	0	0	0	4285	1081	587	600	154	159	90	
6		0	0	0	0	0	2414	2197	1302	250	406	94	
7		0	0	0	0	0	0	2211	2201	216	380	73	
8		0	0	0	0	0	0	0	4315	328	1511	77	
9		0	0	0	0	0	0	0	0	350	144	9	
10		0	0	0	0	0	0	0	0	0	1322	13	
11		0	0	0	0	0	0	0	0	0	0	63	
12		0	0	0	0	0	0	0	0	0	0	0	
13		0	0	0	0	0	0	0	0	0	0	0	
14		0	0	0	0	0	0	0	0	0	0	0	
15		0	0	0	0	0	0	0	0	0	0	0	
16		0	0	0	0	0	0	0	0	0	0	0	
17		0	0	0	0	0	0	0	0	0	0	0	
18		0	0	0	0	0	0	0	0	0	0	0	
19		0	0	0	0	0	0	0	0	0	0	0	
20		0	0	0	0	0	0	0	0	0	0	0	
21		0	0	0	0	0	0	0	0	0	0	0	
22		0	0	0	0	0	0	0	0	0	0	0	
23		0	0	0	0	0	0	0	0	0	0	0	
24		0	0	0	0	0	0	0	0	0	0	0	
25		0	0	0	0	0	0	0	0	0	0	0	
26		0	0	0	0	0	0	0	0	0	0	0	
27		0	0	0	0	0	0	0	0	0	0	0	
28		0	0	0	0	0	0	0	0	0	0	0	
29		0	0	0	0	0	0	0	0	0	0	0	
30		0	0	0	0	0	0	0	0	0	0	0	
31		0	0	0	0	0	0	0	0	0	0	0	
32		0	0	0	0	0	0	0	0	0	0	0	
33		0	0	0	0	0	0	0	0	0	0	0	
34		0	0	0	0	0	0	0	0	0	0	0	
35		0	0	0	0	0	0	0	0	0	0	0	
36		0	0	0	0	0	0	0	0	0	0	0	
37		0	0	0	0	0	0	0	0	0	0	0	
38		0	0	0	0	0	0	0	0	0	0	0	
39		0	0	0	0	0	0	0	0	0	0	0	
40		0	0	0	0	0	0	0	0	0	0	0	
41		0	0	0	0	0	0	0	0	0	0	0	
SUM	1-41	8213	6337	10669	15857	11711	13136	9551	12780	2576	5037	895	
42		0	0	0	0	0	0	0	0	0	0	0	
43		0	0	0	0	0	0	0	0	0	0	0	
44		0	0	0	0	0	0	0	0	0	0	0	
45		0	0	0	0	0	0	0	0	0	0	0	
46		0	0	0	0	0	0	0	0	0	0	0	
47		0	0	0	0	0	0	0	0	0	0	0	
48		0	0	0	0	0	0	0	0	0	0	0	
49		0	0	0	0	0	0	0	0	0	0	0	
50		0	0	0	0	0	0	0	0	0	0	0	
51		0	0	0	0	0	0	0	0	0	0	0	
52		0	0	0	0	0	0	0	0	0	0	0	
53		0	0	0	0	0	0	0	0	0	0	0	
54		0	0	0	0	0	0	0	0	0	0	0	
55		0	0	0	0	0	0	0	0	0	0	0	
56		0	0	0	0	0	0	0	0	0	0	0	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	0	0	
64		0	0	0	0	0	0	0	0	0	0	0	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0	
	TOTAL	8213	6337	10669	15857	11711	13136	9551	12780	2576	5037	895	

**** RINGROAD PROJECT **** (1985) FRATER

		TOTAL	12	13	14	15	16	17	18	19	20	21	22
1			8418	1465	466	606	940	677	945	631	1750	1518	2481
2			5962	612	255	293	386	426	369	378	1480	1170	1371
3			3431	825	346	391	517	593	492	503	2165	1542	1820
4			3292	1019	409	595	518	547	507	532	4654	2226	2690
5			3223	1376	367	452	439	469	400	393	1444	1277	1925
6			9839	576	294	274	355	676	415	424	1304	1094	1200
7			3333	323	205	200	259	308	297	319	792	733	801
8			2490	307	201	191	241	446	283	328	979	978	859
9			320	84	42	43	49	159	54	59	283	252	188
10			595	96	55	58	76	184	83	95	323	324	267
11			284	76	80	61	71	281	479	303	127	136	161
12			20712	1625	851	851	1295	1353	1546	1171	2540	2303	3302
13			0	1502	326	434	384	413	339	306	1145	1009	1752
14			0	0	758	523	638	435	378	298	444	435	767
15			0	0	0	911	558	289	254	233	685	497	1476
16			0	0	0	0	751	346	313	294	544	537	894
17			0	0	0	0	0	1576	2289	789	641	656	719
18			0	0	0	0	0	0	889	1023	534	525	650
19			0	0	0	0	0	0	0	1920	568	571	669
20			0	0	0	0	0	0	0	0	7730	4586	3532
21			0	0	0	0	0	0	0	0	0	5983	3148
22			0	0	0	0	0	0	0	0	0	0	5104
23			0	0	0	0	0	0	0	0	0	0	0
24			0	0	0	0	0	0	0	0	0	0	0
25			0	0	0	0	0	0	0	0	0	0	0
26			0	0	0	0	0	0	0	0	0	0	0
27			0	0	0	0	0	0	0	0	0	0	0
28			0	0	0	0	0	0	0	0	0	0	0
29			0	0	0	0	0	0	0	0	0	0	0
30			0	0	0	0	0	0	0	0	0	0	0
31			0	0	0	0	0	0	0	0	0	0	0
32			0	0	0	0	0	0	0	0	0	0	0
33			0	0	0	0	0	0	0	0	0	0	0
34			0	0	0	0	0	0	0	0	0	0	0
35			0	0	0	0	0	0	0	0	0	0	0
36			0	0	0	0	0	0	0	0	0	0	0
37			0	0	0	0	0	0	0	0	0	0	0
38			0	0	0	0	0	0	0	0	0	0	0
39			0	0	0	0	0	0	0	0	0	0	0
40			0	0	0	0	0	0	0	0	0	0	0
41			0	0	0	0	0	0	0	0	0	0	0
SUM	1-41		61899	9886	4655	5883	7477	9198	10332	9999	30132	28352	35976
42			0	0	0	0	0	0	0	0	0	0	0
43			0	0	0	0	0	0	0	0	0	0	0
44			0	0	0	0	0	0	0	0	0	0	0
45			0	0	0	0	0	0	0	0	0	0	0
46			0	0	0	0	0	0	0	0	0	0	0
47			0	0	0	0	0	0	0	0	0	0	0
48			0	0	0	0	0	0	0	0	0	0	0
49			0	0	0	0	0	0	0	0	0	0	0
50			0	0	0	0	0	0	0	0	0	0	0
51			0	0	0	0	0	0	0	0	0	0	0
52			0	0	0	0	0	0	0	0	0	0	0
53			0	0	0	0	0	0	0	0	0	0	0
54			0	0	0	0	0	0	0	0	0	0	0
55			0	0	0	0	0	0	0	0	0	0	0
56			0	0	0	0	0	0	0	0	0	0	0
57			0	0	0	0	0	0	0	0	0	0	0
58			0	0	0	0	0	0	0	0	0	0	0
59			0	0	0	0	0	0	0	0	0	0	0
60			0	0	0	0	0	0	0	0	0	0	0
61			0	0	0	0	0	0	0	0	0	0	0
62			0	0	0	0	0	0	0	0	0	0	0
63			0	0	0	0	0	0	0	0	0	0	0
64			0	0	0	0	0	0	0	0	0	0	0
65			0	0	0	0	0	0	0	0	0	0	0
66			0	0	0	0	0	0	0	0	0	0	0
SUM	42-66		0	0	0	0	0	0	0	0	0	0	0
	TOTAL		61899	9886	4655	5883	7477	9198	10332	9999	30132	28352	35976

**** RINGROAD PROJECT **** (1985) FRATER

	TOTAL	23	24	25	26	27	28	29	30	31	32	33
1		780	134	194	266	365	279	328	552	2421	1686	603
2		452	92	127	161	160	178	207	339	2316	1586	450
3		605	124	171	221	214	237	276	459	3659	2271	594
4		927	186	253	344	451	320	368	641	5286	4458	855
5		601	100	141	194	180	200	236	445	1872	1329	393
6		408	87	124	158	164	175	202	338	1912	1311	376
7		268	66	101	127	131	136	156	234	1422	882	275
8		284	74	110	136	157	156	164	244	1899	1030	295
9		72	17	20	33	33	27	32	60	1385	387	96
10		107	22	36	56	59	58	67	87	627	334	132
11		38	5	17	20	25	23	33	60	143	102	35
12		1108	208	308	420	548	458	524	851	3556	2485	856
13		342	77	109	149	131	150	186	385	913	682	274
14		355	39	56	76	92	109	162	320	415	302	130
15		909	47	76	99	118	147	228	638	465	339	153
16		406	55	97	133	147	179	298	513	604	419	163
17		335	53	77	103	114	116	155	293	710	481	187
18		257	46	72	92	89	110	139	240	596	417	159
19		251	52	83	109	102	128	158	246	634	442	166
20		1115	335	443	487	634	397	413	737	3601	2831	1238
21		994	2320	1545	1147	1067	656	699	710	2751	2127	1065
22		5539	251	352	469	450	668	872	2207	2611	1977	840
23		1265	77	111	148	180	269	370	1501	821	636	245
24		0	86	295	153	83	72	81	71	233	175	81
25		0	0	195	380	165	128	142	127	319	233	103
26		0	0	0	333	202	170	184	163	375	274	122
27		0	0	0	0	310	480	211	187	373	266	128
28		0	0	0	0	0	932	367	239	364	262	120
29		0	0	0	0	0	0	713	474	401	288	133
30		0	0	0	0	0	0	0	1092	615	446	194
31		0	0	0	0	0	0	0	0	6938	6534	1424
32		0	0	0	0	0	0	0	0	0	3944	1152
33		0	0	0	0	0	0	0	0	0	0	1259
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	17636	4573	5113	6014	6371	6958	7971	14453	50637	40936	14296
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	17636	4573	5113	6014	6371	6958	7971	14453	50637	40936	14296

**** RINGROAD PROJECT **** (1985) FRATER

	TOTAL	34	35	36	37	38	39	40	41	67 1-41	42	43
1		246	204	219	426	332	664	264	365	55411	138	74
2		195	159	169	352	252	541	268	323	37183	96	54
3		267	210	225	477	334	713	535	653	40917	124	73
4		340	269	293	580	427	899	443	586	49458	127	83
5		170	136	142	302	216	478	229	277	24362	87	58
6		192	152	164	389	245	486	423	414	31034	121	68
7		138	117	123	249	189	354	244	343	18606	66	37
8		150	133	152	343	206	449	905	940	21361	89	48
9		47	26	32	113	50	141	409	360	5376	32	22
10		57	49	71	175	91	220	922	920	7581	39	31
11		19	11	23	35	26	50	28	24	2859	22	0
12		411	348	364	743	556	1082	532	668	53575	1109	136
13		132	100	112	228	161	311	134	163	12549	74	36
14		71	58	60	136	89	158	77	89	7490	56	31
15		75	59	69	170	97	181	78	96	8947	49	41
16		95	77	69	212	123	198	89	119	7675	93	61
17		101	74	79	249	111	277	361	281	10827	344	74
18		84	71	74	155	108	202	93	217	6744	123	30
19		88	80	86	177	125	220	109	138	7122	130	38
20		465	348	381	784	550	1215	491	568	32899	140	102
21		438	335	358	1018	519	1194	475	518	29067	143	169
22		373	300	317	641	464	957	349	423	25164	166	166
23		121	94	99	254	150	295	136	161	6953	64	82
24		39	33	31	108	49	88	34	41	1753	10	9
25		75	57	52	194	84	121	44	58	2477	14	24
26		96	68	71	246	121	140	63	72	2700	18	30
27		106	82	74	291	131	150	79	90	2958	24	37
28		101	82	75	246	127	148	69	84	3216	37	48
29		119	88	77	296	149	157	76	87	3058	35	128
30		115	94	85	284	149	239	124	128	3565	73	78
31		1033	405	423	872	609	1445	1090	1369	22342	154	102
32		408	302	307	635	448	1153	512	617	9478	103	71
33		280	176	263	371	195	862	174	204	3784	44	25
34		340	310	154	587	144	210	85	90	1920	15	27
35		0	267	139	293	109	178	56	65	1107	17	13
36		0	0	411	205	157	342	80	100	1295	15	12
37		0	0	0	1526	402	362	281	262	2833	52	73
38		0	0	0	0	362	223	97	116	798	18	29
39		0	0	0	0	0	1302	331	329	1962	47	41
40		0	0	0	0	0	0	3116	6977	10093	72	59
41		0	0	0	0	0	0	0	1462	1462	45	39
SUM	1-41	6987	5374	5843	14362	8657	18605	13927	20697	579961	4225	2359
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	6987	5374	5843	14362	8657	18605	13927	20697	579961	4225	2359

**** RINGROAD PROJECT **** (1985) FRATER

		TOTAL	44	45	46	47	48	49	50	51	52	53	54
1		1149	63	131	73	82	62	509	23	51	63	24	1149
2		203	46	143	55	69	52	227	27	37	56	28	203
3		277	69	220	85	114	89	312	33	59	76	32	277
4		308	89	168	86	96	74	616	43	73	87	28	308
5		187	66	146	62	77	57	197	17	42	50	1	187
6		235	74	344	83	98	73	281	24	54	67	36	235
7		157	29	82	48	46	33	186	19	33	45	0	157
8		232	59	293	83	85	63	251	31	58	73	5	232
9		62	15	139	14	15	12	83	6	11	24	2	62
10		119	35	156	15	20	14	111	7	34	34	3	119
11		45	0	13	0	0	0	33	0	0	0	0	45
12		1570	127	319	151	184	139	808	56	106	123	54	1570
13		134	57	114	43	39	30	142	18	29	40	1	134
14		67	37	74	30	55	40	75	24	19	17	0	67
15		90	49	86	26	45	34	88	20	16	29	0	90
16		97	57	106	60	55	41	123	25	20	35	0	97
17		181	91	636	150	124	91	198	42	46	44	5	181
18		105	40	108	67	64	47	105	27	22	39	0	105
19		133	55	137	91	83	62	133	36	31	27	0	133
20		362	105	268	92	125	94	837	57	114	127	36	362
21		374	125	293	110	146	113	446	69	180	120	42	374
22		354	180	232	115	129	96	387	59	99	114	37	354
23		137	87	149	47	45	36	144	20	34	43	1	137
24		22	12	8	0	0	0	34	0	19	13	0	22
25		55	17	40	25	0	2	63	0	18	15	0	55
26		62	20	50	31	3	2	77	26	21	19	0	62
27		77	27	73	37	4	3	90	32	28	24	0	77
28		66	41	55	34	65	49	97	29	23	41	0	66
29		91	41	59	31	58	43	94	26	21	39	0	91
30		119	120	138	58	52	42	135	24	39	36	2	119
31		408	104	288	114	128	97	952	55	113	141	35	408
32		287	76	195	70	87	64	819	39	83	103	37	287
33		107	32	69	25	49	36	142	20	36	48	1	107
34		60	21	53	26	3	2	87	1	21	37	0	60
35		66	22	16	2	0	0	75	0	25	23	0	66
36		58	20	41	2	0	0	70	0	23	42	0	58
37		158	62	192	46	76	58	217	35	94	86	3	158
38		90	25	55	41	79	2	114	34	59	79	0	90
39		141	54	147	45	79	58	189	32	59	78	2	141
40		177	61	429	42	50	38	192	18	54	62	11	177
41		117	46	268	57	92	70	162	9	43	46	4	117
SUM	1-41	8739	2356	6533	2274	2621	1918	9896	1063	1943	2265	430	8739
42		17	0	0	0	0	0	126	2	2	5	0	17
43		10	0	0	0	0	0	42	7	5	4	0	10
44		13	0	0	0	0	0	15	4	2	5	0	13
45		119	0	0	0	0	0	143	28	31	34	5	119
46		11	0	0	0	0	0	14	0	4	4	0	11
47		19	0	0	0	0	0	15	0	6	5	0	19
48		14	0	0	0	0	0	12	0	5	4	0	14
49		0	0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	203	0	0	0	0	0	367	41	55	61	5	203
	TOTAL	8942	2356	6533	2274	2621	1918	10263	1104	1998	2326	435	8942

****** RINGROAD PROJECT **** (1985) FRATER**

	TOTAL	55	56	57	58	59	60	61	62	63	64	65
1		156	105	70	44	26	107	88	63	159	220	1083
2		119	78	69	44	29	96	87	55	107	220	311
3		155	119	93	59	36	149	105	92	183	267	469
4		188	122	108	63	29	163	109	79	193	299	423
5		109	85	63	37	33	91	65	60	117	179	292
6		143	110	95	56	40	152	112	89	174	315	680
7		98	71	61	31	0	84	76	36	138	135	217
8		123	119	148	62	14	209	136	130	160	304	835
9		42	19	38	24	3	58	34	21	38	94	333
10		59	69	91	35	11	126	100	82	54	197	593
11		32	0	0	0	0	2	0	0	0	6	56
12		304	187	144	84	53	227	187	144	324	511	1654
13		86	62	42	29	3	76	40	32	67	126	238
14		53	41	34	12	0	50	42	39	82	74	129
15		70	35	28	11	0	43	36	35	73	68	140
16		81	42	35	12	0	47	45	41	88	75	149
17		128	91	90	44	13	141	125	101	222	308	900
18		57	45	40	14	0	55	48	43	96	81	169
19		70	63	53	19	0	78	68	63	127	108	230
20		226	158	163	100	40	225	154	105	201	388	725
21		286	189	161	105	51	244	186	129	238	389	857
22		270	161	130	76	39	197	145	101	257	310	562
23		114	68	49	33	3	86	48	38	79	142	313
24		16	29	12	8	0	15	0	0	4	47	47
25		46	37	14	11	0	23	41	4	5	60	93
26		50	45	20	12	0	27	47	5	85	68	114
27		63	54	27	18	0	35	59	5	109	90	173
28		78	49	18	13	0	57	53	50	92	72	126
29		99	45	37	28	0	50	49	45	86	73	153
30		103	40	37	28	3	75	45	41	86	138	253
31		222	191	176	111	41	261	188	137	259	396	775
32		149	133	132	78	41	184	115	102	197	298	531
33		69	72	70	66	3	96	47	38	73	120	276
34		45	41	40	45	0	54	44	41	86	66	145
35		24	55	21	36	0	32	6	0	5	68	123
36		22	48	42	173	0	56	51	49	5	64	124
37		105	117	93	78	7	129	89	69	134	226	590
38		46	60	51	39	0	68	65	61	114	66	189
39		86	116	145	115	7	166	136	71	129	194	599
40		104	111	181	74	30	245	180	139	136	371	1271
41		85	86	154	66	17	203	129	100	168	233	905
SUM	1-41	4377	3368	3075	1993	572	4482	3400	2535	4952	7464	17825
42		0	0	154	6	0	14	10	8	29	51	176
43		0	0	5	5	0	13	8	6	16	38	143
44		0	0	7	3	0	15	10	8	20	43	146
45		0	0	69	40	22	131	138	90	327	409	1277
46		0	0	4	4	0	14	15	12	28	48	144
47		0	0	7	7	0	11	23	20	70	76	191
48		0	0	6	4	0	8	19	15	55	43	137
49		0	0	127	0	10	133	0	94	61	367	605
50		0	0	5	0	0	6	0	0	13	22	66
51		0	0	2	0	0	10	0	9	10	37	104
52		0	0	5	0	0	14	0	8	8	48	127
53		0	0	0	0	0	8	0	0	0	12	53
54		0	0	22	0	11	164	0	26	57	515	593
55		0	0	10	0	0	24	0	14	46	130	405
56		0	0	7	0	0	22	0	18	41	140	251
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	808	2310
65		0	0	0	0	0	0	0	0	0	0	2024
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	430	69	43	587	223	268	781	2787	8752
	TOTAL	4377	3368	3505	2062	615	5069	3673	2803	5733	10251	26577

**** RINGROAD PROJECT **** (1985) FRATER

TOTAL

		66	68 42-66	TOTAL	T.E.
1		296	4859	60270	68483
2		907	3215	40398	46735
3		859	4149	45066	55735
4		444	4098	53556	69413
5		418	2596	26958	38669
6		4448	7972	39006	52142
7		7106	8834	27440	36991
8		4162	7792	29153	41933
9		1420	2561	7937	10513
10		1564	3599	11180	16217
11		32	241	3100	3495
12		1845	10546	64121	126020
13		256	1814	14363	24249
14		124	1203	8695	13350
15		103	1215	10162	16045
16		110	1498	9173	16650
17		1430	5619	16446	25644
18		136	1561	8305	18637
19		155	1990	9112	19111
20		685	5629	36528	68660
21		720	5865	34932	63284
22		447	4829	29993	65969
23		311	2173	9126	26762
24		36	337	2090	6663
25		93	660	3137	8250
26		65	892	3592	9806
27		102	1191	4149	10520
28		60	1253	4469	11427
29		71	1402	4460	12431
30		211	1976	5541	19994
31		1447	6895	29237	79874
32		637	4629	14107	55043
33		206	1768	5552	19848
34		120	1082	3002	9989
35		99	688	1795	7169
36		39	976	2271	8114
37		511	3300	6133	20495
38		75	1459	2257	10914
39		476	3212	5174	23779
40		2229	6336	16429	30356
41		1463	4607	6069	26766
SUM	1-41	35858	136523	716484	1296445
42		228	828	828	5053
43		139	441	441	2800
44		155	446	446	2802
45		1429	4292	4292	10825
46		159	461	461	2735
47		170	620	620	3241
48		135	457	457	2375
49		421	1758	1758	12021
50		57	169	169	1273
51		100	272	272	2270
52		119	329	329	2655
53		27	100	100	535
54		339	1727	1727	10669
55		248	877	877	5254
56		188	667	667	4035
57		0	0	0	3505
58		0	0	0	2062
59		0	0	0	615
60		0	0	0	5069
61		0	0	0	3623
62		0	0	0	2803
63		462	3580	3580	9313
64		977	3001	3001	13252
65		3579	3579	3579	30156
66		0	0	0	44790
SUM	42-66	8932	23604	23604	183731
	TOTAL	44790	160127	740088	1480176

****** RINGROAD PROJECT **** (1985) FRATER**

SEDAN

		1	2	3	4	5	6	7	8	9	10	11
1		7412	2446	2220	2412	3134	1805	1073	827	157	212	146
2		0	2764	2016	1700	1146	3308	1204	783	131	189	88
3		0	0	4910	2493	1559	1428	997	894	390	263	113
4		0	0	0	6418	2084	1318	907	817	235	272	123
5		0	0	0	0	1943	867	578	473	108	129	88
6		0	0	0	0	0	1701	1978	1034	107	234	88
7		0	0	0	0	0	0	2196	1935	180	342	73
8		0	0	0	0	0	0	0	2935	145	841	73
9		0	0	0	0	0	0	0	0	65	38	7
10		0	0	0	0	0	0	0	0	0	516	11
11		0	0	0	0	0	0	0	0	0	0	62
12		0	0	0	0	0	0	0	0	0	0	0
13		0	0	0	0	0	0	0	0	0	0	0
14		0	0	0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0	0	0
16		0	0	0	0	0	0	0	0	0	0	0
17		0	0	0	0	0	0	0	0	0	0	0
18		0	0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0	0
20		0	0	0	0	0	0	0	0	0	0	0
21		0	0	0	0	0	0	0	0	0	0	0
22		0	0	0	0	0	0	0	0	0	0	0
23		0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	7412	5210	9146	13523	9871	10427	8933	9698	1518	3036	874
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	7412	5210	9146	13523	9871	10427	8933	9698	1518	3036	874

**** RINGROAD PROJECT **** (1985) FRATER

SEDAN

		12	13	14	15	16	17	18	19	20	21	22
1		7897	1293	460	502	643	607	657	625	1543	1396	2144
2		5113	540	247	285	378	326	360	369	1175	951	1190
3		3011	730	333	379	504	435	478	488	1786	1274	1598
4		3021	872	400	467	511	454	499	523	3975	1942	2523
5		2827	1205	355	440	429	359	391	383	1182	1036	1709
6		8254	447	266	251	331	347	385	392	1010	853	1035
7		3143	319	204	200	258	271	296	318	776	716	792
8		2075	273	184	178	227	236	264	305	756	707	703
9		241	57	32	34	39	35	43	47	182	155	141
10		500	76	46	50	68	62	72	82	247	240	224
11		280	75	79	60	70	230	472	298	125	132	159
12		19726	1469	829	731	924	1087	1181	1148	2314	2128	2953
13		0	1363	315	420	376	305	330	298	928	845	1559
14		0	0	738	510	625	355	371	293	428	416	747
15		0	0	0	893	550	235	250	229	502	478	1317
16		0	0	0	0	743	291	309	290	530	521	878
17		0	0	0	0	0	498	1836	641	466	457	577
18		0	0	0	0	0	0	877	1004	518	508	638
19		0	0	0	0	0	0	0	1886	552	552	656
20		0	0	0	0	0	0	0	0	6560	1947	2979
21		0	0	0	0	0	0	0	0	0	5293	2675
22		0	0	0	0	0	0	0	0	0	0	4677
23		0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	56088	8719	4488	5400	6676	6133	9071	9619	25555	24547	31874
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	56088	8719	4488	5400	6676	6133	9071	9619	25555	24547	31874

**** RINGROAD PROJECT **** (1985) FRATER

SEDAN

		23	24	25	26	27	28	29	30	31	32	33
1		664	133	192	264	246	277	325	542	2174	1508	482
2		377	90	124	157	194	174	202	324	1826	1254	388
3		508	121	166	215	204	231	269	434	2966	1868	517
4		768	183	249	338	301	315	362	621	4569	3819	703
5		510	98	138	189	173	196	230	424	1504	1054	328
6		337	81	114	145	145	163	188	293	1475	1025	333
7		262	66	101	126	131	135	155	231	1662	867	272
8		239	70	101	127	141	146	154	213	1444	803	263
9		42	13	15	27	23	21	25	40	876	264	66
10		77	19	31	49	45	41	58	67	483	267	104
11		56	5	17	20	25	23	33	59	140	101	35
12		953	205	303	411	394	451	514	819	3281	2301	774
13		437	75	106	145	126	147	182	364	783	564	262
14		336	39	56	74	89	107	159	306	401	294	127
15		732	47	75	97	115	145	224	613	451	331	150
16		390	55	96	131	144	177	294	498	588	411	160
17		221	45	63	84	87	99	130	211	923	368	142
18		247	46	71	91	87	109	138	233	580	408	156
19		241	51	82	108	99	127	156	239	616	431	162
20		869	343	426	470	398	386	401	693	3086	2429	996
21		802	2068	1463	1093	703	632	672	661	2436	1853	882
22		4807	246	345	460	435	656	854	2108	2196	1632	755
23		1071	74	106	143	168	259	354	1360	677	508	229
24		0	85	287	150	81	72	80	69	227	171	79
25		0	0	192	370	160	126	140	123	308	227	101
26		0	0	0	328	196	168	181	158	363	268	119
27		0	0	0	0	295	465	205	178	356	255	123
28		0	0	0	0	0	917	361	232	355	257	118
29		0	0	0	0	0	0	700	458	390	282	130
30		0	0	0	0	0	0	0	1025	380	425	185
31		0	0	0	0	0	0	0	0	6136	5675	1156
32		0	0	0	0	0	0	0	0	0	3450	896
33		0	0	0	0	0	0	0	0	0	0	1092
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	14946	4258	4919	5812	5165	6775	7746	13596	43412	35370	12285
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	14946	4258	4919	5812	5165	6775	7746	13596	43412	35370	12285

**** RINGROAD PROJECT **** (1985) FRATER

SEDAN

		34	35	36	37	38	39	40	41	67 1-41	42	43
1		243	203	217	409	330	569	217	334	48947	129	68
2		187	155	165	314	248	443	171	258	31274	81	45
3		254	204	219	417	327	587	311	498	34879	100	59
4		331	266	289	537	422	767	314	500	43015	113	71
5		163	133	139	270	212	378	143	221	21005	72	44
6		169	140	153	284	230	394	157	235	24774	74	39
7		137	117	122	237	188	344	194	308	17674	62	36
8		132	124	141	254	194	366	322	521	15657	54	26
9		31	20	26	48	41	75	51	93	2913	12	9
10		44	43	61	98	81	145	182	324	4423	18	13
11		19	11	23	33	26	48	22	21	2759	21	0
12		398	343	358	680	548	943	366	562	49094	236	117
13		126	98	110	201	158	287	78	128	11116	62	28
14		69	57	60	124	88	149	52	75	7145	48	25
15		73	58	69	157	96	173	54	82	8196	43	35
16		94	76	69	199	122	191	64	105	7426	85	55
17		76	62	66	129	95	175	58	92	7201	128	26
18		82	71	74	145	107	193	67	101	6551	109	27
19		86	79	85	165	124	210	75	117	6899	116	35
20		439	338	369	677	536	987	277	427	28033	113	80
21		410	323	345	858	504	915	290	374	25212	113	126
22		360	295	311	584	457	823	233	340	22544	146	139
23		114	91	96	210	145	262	77	111	6055	47	60
24		38	33	31	99	49	84	24	36	1695	9	7
25		73	57	52	177	84	115	29	50	2384	12	21
26		94	67	71	224	119	134	43	60	2593	15	25
27		101	80	72	253	129	138	43	68	2761	18	29
28		98	81	74	227	126	142	48	71	3107	34	41
29		116	87	77	272	147	150	53	74	2936	31	108
30		109	92	83	244	146	218	69	95	3271	59	58
31		511	393	410	757	594	1237	621	1026	18516	124	80
32		389	295	300	561	436	927	310	479	8045	86	59
33		266	172	256	324	191	716	102	157	3276	38	19
34		322	300	150	495	141	192	49	67	1716	12	22
35		0	263	138	267	108	169	40	55	1040	16	12
36		0	0	404	189	156	323	54	84	1210	14	10
37		0	0	0	1076	371	285	87	138	1957	30	38
38		0	0	0	0	358	213	70	100	741	17	27
39		0	0	0	0	0	1029	139	203	1371	32	26
40		0	0	0	0	0	0	308	1082	1390	16	12
41		0	0	0	0	0	0	0	489	489	13	11
SUM	1-41	6194	5227	5685	12195	8436	15496	5824	10171	491290	2558	1773
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	6194	5227	5685	12195	8436	15496	5824	10171	491290	2558	1773

**** RINGROAD PROJECT **** (1985) FRATER

SEDAN

		44	45	46	47	48	49	50	51	52	53	54	
1		59	75	68	77	58	281	22	49	60	24	255	
2		36	42	46	59	44	199	25	31	48	27	181	
3		54	64	70	100	75	269	29	50	65	31	244	
4		77	71	77	87	67	324	40	66	79	27	286	
5		55	47	52	67	50	175	14	37	45	0	167	
6		42	47	51	65	49	197	13	35	43	31	169	
7		28	43	47	43	32	177	19	32	45	0	150	
8		34	52	58	55	40	173	23	42	54	0	168	
9		0	0	0	0	0	38	0	0	12	0	26	
10		19	0	0	0	0	31	0	21	18	0	71	
11		0	0	0	0	0	31	0	0	0	0	42	
12		106	119	130	162	123	494	49	94	109	52	458	
13		47	34	36	34	26	123	15	26	35	0	119	
14		32	23	26	52	38	67	22	18	16	0	59	
15		43	43	22	42	32	80	19	15	28	0	83	
16		52	51	56	52	39	115	23	19	34	0	93	
17		37	57	62	59	44	97	25	21	18	0	98	
18		37	57	62	58	43	96	26	21	37	0	99	
19		51	77	84	79	59	122	34	29	25	0	122	
20		81	85	75	106	80	375	48	96	107	33	314	
21		96	81	88	126	95	372	57	145	98	39	318	
22		152	93	102	115	86	349	52	88	103	36	325	
23		61	35	36	36	27	117	16	27	36	0	115	
24		11	0	0	0	0	32	0	14	12	0	21	
25		15	22	24	0	0	57	0	17	14	0	51	
26		17	26	29	0	0	66	24	20	18	0	58	
27		21	32	35	0	0	75	30	25	21	0	68	
28		38	29	32	61	46	90	27	22	40	0	61	
29		36	26	29	55	41	86	24	20	36	0	87	
30		93	44	49	45	34	115	21	35	30	0	104	
31		81	86	94	106	81	420	48	96	119	33	355	
32		62	74	59	75	56	289	34	73	90	36	254	
33		27	20	22	43	32	123	19	33	43	0	94	
34		16	25	27	0	0	74	0	19	34	0	51	
35		21	0	0	0	0	69	0	24	22	0	61	
36		19	28	0	0	0	62	0	22	40	0	54	
37		38	27	31	59	45	139	26	69	60	0	106	
38		24	35	39	76	0	103	34	58	77	0	82	
39		41	30	33	64	48	142	29	48	65	0	107	
40		19	30	0	0	0	42	0	22	20	0	57	
41		20	29	33	63	47	73	0	24	20	0	48	
SUM	1-41	1798	1759	1786	2121	1537	6379	887	1603	1876	369	5681	
42		0	0	0	0	0	34	0	0	0	0	0	
43		0	0	0	0	0	26	0	0	0	0	0	
44		0	0	0	0	0	0	0	0	0	0	0	
45		0	0	0	0	0	0	0	0	0	0	0	
46		0	0	0	0	0	0	0	0	0	0	0	
47		0	0	0	0	0	0	0	0	0	0	0	
48		0	0	0	0	0	0	0	0	0	0	0	
49		0	0	0	0	0	0	0	0	0	0	0	
50		0	0	0	0	0	0	0	0	0	0	0	
51		0	0	0	0	0	0	0	0	0	0	0	
52		0	0	0	0	0	0	0	0	0	0	0	
53		0	0	0	0	0	0	0	0	0	0	0	
54		0	0	0	0	0	0	0	0	0	0	0	
55		0	0	0	0	0	0	0	0	0	0	0	
56		0	0	0	0	0	0	0	0	0	0	0	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	0	0	
64		0	0	0	0	0	0	0	0	0	0	0	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	0	0	0	60	0	0	0	0	0	
	TOTAL	1798	1759	1786	2121	1537	6439	887	1603	1876	369	5681	

**** RINGROAD PROJECT **** (1985) FRATER

SEDAN

		55	56	57	58	59	60	61	62	63	64	65
1		148	100	63	41	24	98	80	57	147	193	177
2		105	67	55	34	27	73	68	42	82	164	124
3		132	101	71	44	31	111	75	71	141	177	174
4		172	112	91	53	27	136	91	64	168	240	216
5		94	76	51	29	31	70	52	49	94	130	122
6		94	74	50	27	31	81	50	47	91	133	137
7		94	68	56	30	0	75	69	31	128	110	142
8		79	83	86	36	0	115	84	79	77	122	172
9		19	0	11	7	0	14	0	0	0	0	18
10		27	44	37	12	0	49	46	44	0	65	62
11		32	0	0	0	0	0	0	0	0	0	36
12		272	165	119	68	50	182	147	118	269	397	312
13		74	54	33	23	0	61	26	25	49	88	95
14		46	38	31	10	0	42	38	35	72	55	52
15		63	32	25	9	0	36	32	31	63	50	70
16		73	39	31	11	0	43	40	37	76	56	83
17		51	43	36	12	0	49	44	42	84	59	92
18		51	43	35	12	0	48	44	41	83	58	91
19		63	59	49	17	0	66	61	57	112	74	125
20		189	135	122	73	33	169	111	77	151	266	262
21		230	160	117	76	39	175	130	92	177	243	284
22		237	146	108	60	36	162	119	84	219	229	263
23		90	56	33	23	0	61	28	26	51	83	97
24		15	29	11	7	0	14	0	0	0	40	18
25		41	35	13	10	0	18	36	0	0	46	48
26		45	42	16	11	0	22	42	0	80	53	58
27		54	51	20	14	0	26	52	0	96	62	70
28		72	46	17	12	0	50	46	44	86	55	63
29		91	42	33	24	0	46	42	40	80	53	87
30		82	34	28	21	0	58	35	32	65	95	98
31		186	164	134	81	32	195	139	104	202	259	299
32		127	116	107	60	35	144	88	83	162	212	220
33		57	68	55	50	0	75	33	31	62	86	117
34		38	39	33	35	0	44	40	38	76	45	55
35		22	52	20	30	0	27	0	0	0	58	70
36		20	46	38	143	0	51	46	44	0	50	63
37		64	91	56	40	0	74	45	42	84	99	125
38		41	57	47	33	0	63	58	56	108	50	119
39		63	100	102	74	0	108	101	46	91	99	170
40		21	47	38	13	0	52	48	45	0	53	65
41		38	47	59	28	0	80	48	46	89	43	98
SUM	1-41	3512	2801	2137	1393	396	3059	2334	1800	3615	4450	5049
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	65	0	0	89	0	0	0	84	110
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	124	0	0	0	109	155
55		0	0	0	0	0	0	0	0	0	0	116
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	477	1360
64		0	0	0	0	0	0	0	0	0	0	23
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	65	0	0	213	0	0	0	670	1764
	TOTAL	3512	2801	2202	1393	396	3272	2334	1800	3615	5120	6813

**** RINGROAD PROJECT **** (1985) FRATER

SEDAN

		66	68	42-66	TOTAL	T.E.
1			0	2353	51300	58712
2			0	1705	32979	38189
3			0	2338	37217	46363
4			0	2755	45770	59293
5			0	1628	22633	32504
6			0	1670	26444	36871
7			0	1517	19191	28124
8			0	1712	17369	27067
9			0	166	3079	4597
10			0	597	5020	8056
11			0	162	2921	3795
12			0	4348	53442	109530
13			0	1113	12229	20948
14			0	845	7990	12478
15			0	896	9092	14492
16			0	1163	8589	15265
17			0	1184	8385	14518
18			0	1178	7729	16800
19			0	1516	8415	18034
20			0	3177	31210	56765
21			0	3477	28689	53236
22			0	3449	25993	57867
23			0	1163	7218	22164
24			0	240	1935	6193
25			0	480	2864	7783
26			0	667	3260	9072
27			0	799	3560	8725
28			0	1012	4119	10894
29			0	1117	4053	11799
30			0	1235	4506	18102
31			0	3518	22034	65446
32			0	2601	10646	46016
33			0	1147	4423	16708
34			0	723	2439	8993
35			0	504	1544	6771
36			0	750	1960	7645
37			0	1388	3345	15540
38			0	1204	1945	10381
39			0	1619	2990	18486
40			0	600	1990	7814
41			0	957	1446	11617
SUM	1-41		0	60673	551963	1043253
42			0	34	34	2592
43			0	26	26	1799
44			0	0	0	1798
45			0	0	0	1759
46			0	0	0	1786
47			0	0	0	2121
48			0	0	0	1537
49			0	348	348	6787
50			0	0	0	887
51			0	0	0	1603
52			0	0	0	1876
53			0	0	0	369
54			0	388	388	6069
55			0	116	116	3628
56			0	0	0	2801
57			0	0	0	2202
58			0	0	0	1393
59			0	0	0	396
60			0	0	0	3272
61			0	0	0	2334
62			0	0	0	1800
63			0	1837	1837	5452
64			0	23	23	5143
65			0	0	0	6813
66			0	0	0	0
SUM	42-66		0	2772	2772	66217
	TOTAL		0	63445	554735	1109470

**** RINGROAD PROJECT **** (1985) FRATER

BUS		1	2	3	4	5	6	7	8	9	10	11	
1		758	509	364	307	570	244	67	142	0	0	0	0
2		0	462	239	352	159	381	78	142	0	0	0	0
3		0	0	493	443	178	104	89	79	0	0	0	0
4		0	0	0	931	346	153	86	173	0	0	0	0
5		0	0	0	0	266	104	0	77	0	0	0	0
6		0	0	0	0	0	120	101	94	0	0	0	0
7		0	0	0	0	0	0	0	157	0	0	0	0
8		0	0	0	0	0	0	0	421	0	0	0	0
9		0	0	0	0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0	0	0	0
11		0	0	0	0	0	0	0	0	0	0	0	0
12		0	0	0	0	0	0	0	0	0	0	0	0
13		0	0	0	0	0	0	0	0	0	0	0	0
14		0	0	0	0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0	0	0	0
16		0	0	0	0	0	0	0	0	0	0	0	0
17		0	0	0	0	0	0	0	0	0	0	0	0
18		0	0	0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0	0	0
20		0	0	0	0	0	0	0	0	0	0	0	0
21		0	0	0	0	0	0	0	0	0	0	0	0
22		0	0	0	0	0	0	0	0	0	0	0	0
23		0	0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	758	971	1096	2033	1519	1106	421	1285	0	0	0	0
42		0	0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	758	971	1096	2033	1519	1106	421	1285	0	0	0	0

**** RINGROAD PROJECT **** (1985) FRATER

BUS	12	13	14	15	16	17	18	19	20	21	22
1	412	149	0	99	292	0	282	0	178	91	310
2	661	47	0	0	0	0	0	0	243	163	141
3	300	55	0	0	0	0	0	0	268	180	159
4	203	120	0	120	0	0	0	0	329	205	309
5	300	110	0	0	0	0	0	0	202	181	159
6	640	65	0	0	0	0	0	0	136	90	63
7	142	0	0	0	0	0	0	0	0	0	0
8	222	0	0	0	0	0	0	0	117	156	93
9	0	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0	0
11	0	0	0	0	0	0	0	0	0	0	0
12	472	103	0	104	355	0	342	0	134	79	273
13	0	69	0	0	0	0	0	0	164	109	133
14	0	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	165	0	125
16	0	0	0	0	0	0	0	0	0	0	0
17	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0
19	0	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	758	325	427
21	0	0	0	0	0	0	0	0	0	258	343
22	0	0	0	0	0	0	0	0	0	0	312
23	0	0	0	0	0	0	0	0	0	0	0
24	0	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0	0
26	0	0	0	0	0	0	0	0	0	0	0
27	0	0	0	0	0	0	0	0	0	0	0
28	0	0	0	0	0	0	0	0	0	0	0
29	0	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0	0
31	0	0	0	0	0	0	0	0	0	0	0
32	0	0	0	0	0	0	0	0	0	0	0
33	0	0	0	0	0	0	0	0	0	0	0
34	0	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0	0
36	0	0	0	0	0	0	0	0	0	0	0
37	0	0	0	0	0	0	0	0	0	0	0
38	0	0	0	0	0	0	0	0	0	0	0
39	0	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0	0
41	0	0	0	0	0	0	0	0	0	0	0
SUM 1-41	3352	718	0	323	647	0	624	0	2894	1837	2847
42	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0
SUM 42-66	0	0	0	0	0	0	0	0	0	0	0
TOTAL	3352	718	0	323	647	0	624	0	2894	1837	2847

**** RINGROAD PROJECT **** (1985) FRATER

BUS		23	24	25	26	27	28	29	30	31	32	33
1		100	0	0	0	116	0	0	0	207	155	114
2		50	0	0	0	0	0	0	0	398	278	46
3		56	0	0	0	0	0	0	0	514	307	51
4		124	0	0	0	141	0	0	0	554	521	133
5		56	0	0	0	0	0	0	0	294	232	52
6		0	0	0	0	0	0	0	0	219	155	0
7		0	0	0	0	0	0	0	0	123	0	0
8		0	0	0	0	0	0	0	0	253	132	0
9		0	0	0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0	0	0
11		0	0	0	0	0	0	0	0	0	0	0
12		105	0	0	0	141	0	0	0	150	109	58
13		71	0	0	0	0	0	0	0	88	93	0
14		0	0	0	0	0	0	0	0	0	0	0
15		137	0	0	0	0	0	0	0	0	0	0
16		0	0	0	0	0	0	0	0	0	0	0
17		0	0	0	0	0	0	0	0	0	0	0
18		0	0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0	0
20		168	0	0	0	215	0	0	0	320	271	187
21		112	135	0	0	312	0	0	0	140	160	126
22		412	0	0	0	0	0	0	0	371	292	60
23		72	0	0	0	0	0	0	0	90	94	0
24		0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	468	542	205
32		0	0	0	0	0	0	0	0	0	342	215
33		0	0	0	0	0	0	0	0	0	0	116
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	1463	135	0	0	925	0	0	0	4189	3693	1363
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1463	135	0	0	925	0	0	0	4189	3693	1363

**** RINGROAD PROJECT **** (1985) FRATER

BUS		34	35	36	37	38	39	40	41	67	1-41	42	43	
1		0	0	0	0	0	79	0	0	5545	0	0	0	
2		0	0	0	0	0	65	0	0	3905	0	0	0	
3		0	0	0	0	0	73	0	0	3349	0	0	0	
4		0	0	0	0	0	92	0	0	4740	0	0	0	
5		0	0	0	0	0	72	0	0	2105	0	0	0	
6		0	0	0	0	0	0	0	0	1683	0	0	0	
7		0	0	0	0	0	0	0	0	422	0	0	0	
8		0	0	0	0	0	0	0	0	1394	0	0	0	
9		0	0	0	0	0	0	0	0	0	0	0	0	
10		0	0	0	0	0	0	0	0	0	0	0	0	
11		0	0	0	0	0	0	0	0	0	0	0	0	
12		0	0	0	0	0	84	0	0	2509	838	0	0	
13		0	0	0	0	0	0	0	0	727	0	0	0	
14		0	0	0	0	0	0	0	0	0	0	0	0	
15		0	0	0	0	0	0	0	0	427	0	0	0	
16		0	0	0	0	0	0	0	0	0	0	0	0	
17		0	0	0	0	0	0	0	0	0	0	0	0	
18		0	0	0	0	0	0	0	0	0	0	0	0	
19		0	0	0	0	0	0	0	0	0	0	0	0	
20		0	0	0	0	0	129	0	0	2800	0	0	0	
21		0	0	0	0	0	173	0	0	1759	0	0	0	
22		0	0	0	0	0	82	0	0	1529	0	0	0	
23		0	0	0	0	0	0	0	0	256	0	0	0	
24		0	0	0	0	0	0	0	0	0	0	0	0	
25		0	0	0	0	0	0	0	0	0	0	0	0	
26		0	0	0	0	0	0	0	0	0	0	0	0	
27		0	0	0	0	0	0	0	0	0	0	0	0	
28		0	0	0	0	0	0	0	0	0	0	0	0	
29		0	0	0	0	0	0	0	0	0	0	0	0	
30		0	0	0	0	0	0	0	0	0	0	0	0	
31		493	0	0	0	0	287	0	0	1995	0	0	0	
32		0	0	0	0	0	147	0	0	714	0	0	0	
33		0	0	0	0	0	77	0	0	193	0	0	0	
34		0	0	0	0	0	0	0	0	0	0	0	0	
35		0	0	0	0	0	0	0	0	0	0	0	0	
36		0	0	0	0	0	0	0	0	0	0	0	0	
37		0	0	0	0	0	0	0	0	0	0	0	0	
38		0	0	0	0	0	0	0	0	0	0	0	0	
39		0	0	0	0	0	102	0	0	102	0	0	0	
40		0	0	0	0	0	0	0	0	0	0	0	0	
41		0	0	0	0	0	0	0	0	0	0	0	0	
SUM	1-41	493	0	0	0	0	1462	0	0	36154	838	0		
42		0	0	0	0	0	0	0	0	0	0	0	0	
43		0	0	0	0	0	0	0	0	0	0	0	0	
44		0	0	0	0	0	0	0	0	0	0	0	0	
45		0	0	0	0	0	0	0	0	0	0	0	0	
46		0	0	0	0	0	0	0	0	0	0	0	0	
47		0	0	0	0	0	0	0	0	0	0	0	0	
48		0	0	0	0	0	0	0	0	0	0	0	0	
49		0	0	0	0	0	0	0	0	0	0	0	0	
50		0	0	0	0	0	0	0	0	0	0	0	0	
51		0	0	0	0	0	0	0	0	0	0	0	0	
52		0	0	0	0	0	0	0	0	0	0	0	0	
53		0	0	0	0	0	0	0	0	0	0	0	0	
54		0	0	0	0	0	0	0	0	0	0	0	0	
55		0	0	0	0	0	0	0	0	0	0	0	0	
56		0	0	0	0	0	0	0	0	0	0	0	0	
57		0	0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	0	0	0	
64		0	0	0	0	0	0	0	0	0	0	0	0	
65		0	0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0		
	TOTAL	493	0	0	0	0	1462	0	0	36154	838	0		

**** RINGROAD PROJECT **** (1985) FRATER

BUS	44	45	46	47	48	49	50	51	52	53	54	
1	0	0	0	0	0	216	0	0	0	0	884	
2	0	0	0	0	0	0	0	0	0	0	0	
3	0	0	0	0	0	0	0	0	0	0	0	
4	0	0	0	0	0	263	0	0	0	0	0	
5	0	0	0	0	0	0	0	0	0	0	0	
6	0	0	0	0	0	0	0	0	0	0	0	
7	0	0	0	0	0	0	0	0	0	0	0	
8	0	0	0	0	0	0	0	0	0	0	0	
9	0	0	0	0	0	0	0	0	0	0	0	
10	0	0	0	0	0	0	0	0	0	0	0	
11	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	262	0	0	0	0	1071	
13	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	398	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	0	
29	0	0	0	0	0	0	0	0	0	0	0	
30	0	0	0	0	0	0	0	0	0	0	0	
31	0	0	0	0	0	461	0	0	0	0	0	
32	0	0	0	0	0	487	0	0	0	0	0	
33	0	0	0	0	0	0	0	0	0	0	0	
34	0	0	0	0	0	0	0	0	0	0	0	
35	0	0	0	0	0	0	0	0	0	0	0	
36	0	0	0	0	0	0	0	0	0	0	0	
37	0	0	0	0	0	0	0	0	0	0	0	
38	0	0	0	0	0	0	0	0	0	0	0	
39	0	0	0	0	0	0	0	0	0	0	0	
40	0	0	0	0	0	0	0	0	0	0	0	
41	0	0	0	0	0	0	0	0	0	0	0	
SUM 1-41	0	0	0	0	0	2087	0	0	0	0	1955	
42	0	0	0	0	0	0	0	0	0	0	0	
43	0	0	0	0	0	0	0	0	0	0	0	
44	0	0	0	0	0	0	0	0	0	0	0	
45	0	0	0	0	0	0	0	0	0	0	0	
46	0	0	0	0	0	0	0	0	0	0	0	
47	0	0	0	0	0	0	0	0	0	0	0	
48	0	0	0	0	0	0	0	0	0	0	0	
49	0	0	0	0	0	0	0	0	0	0	0	
50	0	0	0	0	0	0	0	0	0	0	0	
51	0	0	0	0	0	0	0	0	0	0	0	
52	0	0	0	0	0	0	0	0	0	0	0	
53	0	0	0	0	0	0	0	0	0	0	0	
54	0	0	0	0	0	0	0	0	0	0	0	
55	0	0	0	0	0	0	0	0	0	0	0	
56	0	0	0	0	0	0	0	0	0	0	0	
57	0	0	0	0	0	0	0	0	0	0	0	
58	0	0	0	0	0	0	0	0	0	0	0	
59	0	0	0	0	0	0	0	0	0	0	0	
60	0	0	0	0	0	0	0	0	0	0	0	
61	0	0	0	0	0	0	0	0	0	0	0	
62	0	0	0	0	0	0	0	0	0	0	0	
63	0	0	0	0	0	0	0	0	0	0	0	
64	0	0	0	0	0	0	0	0	0	0	0	
65	0	0	0	0	0	0	0	0	0	0	0	
66	0	0	0	0	0	0	0	0	0	0	0	
SUM 42-66	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	0	0	0	0	0	2087	0	0	0	0	1955	

**** RINGROAD PROJECT **** (1985) FRATER

BUS		55	56	57	58	59	60	61	62	63	64	65	
1		0	0	0	0	0	0	0	0	0	0	0	812
2		0	0	0	0	0	0	0	0	0	0	0	0
3		0	0	0	0	0	0	0	0	0	0	0	0
4		0	0	0	0	0	0	0	0	0	0	0	0
5		0	0	0	0	0	0	0	0	0	0	0	0
6		0	0	0	0	0	0	0	0	0	0	0	0
7		0	0	0	0	0	0	0	0	0	0	0	0
8		0	0	0	0	0	0	0	0	0	0	0	0
9		0	0	0	0	0	0	0	0	0	0	0	0
10		0	0	0	0	0	0	0	0	0	0	0	0
11		0	0	0	0	0	0	0	0	0	0	0	0
12		0	0	0	0	0	0	0	0	0	0	0	983
13		0	0	0	0	0	0	0	0	0	0	0	0
14		0	0	0	0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0	0	0	0
16		0	0	0	0	0	0	0	0	0	0	0	0
17		0	0	0	0	0	0	0	0	0	0	0	0
18		0	0	0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0	0	0
20		0	0	0	0	0	0	0	0	0	0	0	0
21		0	0	0	0	0	0	0	0	0	0	0	0
22		0	0	0	0	0	0	0	0	0	0	0	0
23		0	0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	0	0	0	0	0	0	0	0	0	0	0	1795
42		0	0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	141	400
64		0	0	0	0	0	0	0	0	0	0	0	7
65		0	0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	141	407
	TOTAL	0	0	0	0	0	0	0	0	0	0	141	2202

**** RINGROAD PROJECT **** (1985) FRATER

BUS		66	68	42-66	TOTAL	T.E.
1		0	1912	7457	8215	
2		0	0	3905	4876	
3		0	0	3349	4445	
4		0	263	5003	7036	
5		0	0	2105	3624	
6		0	0	1683	2789	
7		0	0	422	843	
8		0	0	1394	2679	
9		0	0	0	0	
10		0	0	0	0	
11		0	0	0	0	
12		0	3154	5663	9015	
13		0	0	727	1445	
14		0	0	0	0	
15		0	0	427	750	
16		0	0	0	647	
17		0	0	0	0	
18		0	0	0	624	
19		0	0	0	0	
20		0	398	3198	6092	
21		0	0	1759	3596	
22		0	0	1529	4376	
23		0	0	256	1719	
24		0	0	0	135	
25		0	0	0	0	
26		0	0	0	0	
27		0	0	0	425	
28		0	0	0	0	
29		0	0	0	0	
30		0	0	0	0	
31		0	461	2456	6645	
32		0	487	1201	4894	
33		0	0	193	1556	
34		0	0	0	493	
35		0	0	0	0	
36		0	0	0	0	
37		0	0	0	0	
38		0	0	0	0	
39		0	0	102	1564	
40		0	0	0	0	
41		0	0	0	0	
SUM	1-41	0	6675	42879	78983	
42		0	0	0	838	
43		0	0	0	0	
44		0	0	0	0	
45		0	0	0	0	
46		0	0	0	0	
47		0	0	0	0	
48		0	0	0	0	
49		0	0	0	2087	
50		0	0	0	0	
51		0	0	0	0	
52		0	0	0	0	
53		0	0	0	0	
54		0	0	0	1455	
55		0	0	0	0	
56		0	0	0	0	
57		0	0	0	0	
58		0	0	0	0	
59		0	0	0	0	
60		0	0	0	0	
61		0	0	0	0	
62		0	0	0	0	
63		0	541	541	541	
64		0	7	7	148	
65		0	0	0	2202	
66		0	0	0	0	
SUM	42-66	0	548	548	7771	
	TOTAL	0	7223	43377	86754	

**** RINGROAD PROJECT **** (1965) PRATER

	TRUCK	1	2	3	4	5	6	7	8	9	10	11	
1		43	42	42	25	54	89	5	33	24	17		0
2		0	114	107	50	49	480	21	90	56	44		1
3		0	0	278	107	60	218	20	121	214	74		2
4		0	0	0	119	62	113	9	61	71	44		1
5		0	0	0	0	76	110	9	50	46	30		2
6		0	0	0	0	0	593	118	374	143	172		6
7		0	0	0	0	0	0	15	109	36	38		0
8		0	0	0	0	0	0	0	959	183	670		4
9		0	0	0	0	0	0	0	0	285	106		2
10		0	0	0	0	0	0	0	0	0	806		2
11		0	0	0	0	0	0	0	0	0	0		1
12		0	0	0	0	0	0	0	0	0	0		0
13		0	0	0	0	0	0	0	0	0	0		0
14		0	0	0	0	0	0	0	0	0	0		0
15		0	0	0	0	0	0	0	0	0	0		0
16		0	0	0	0	0	0	0	0	0	0		0
17		0	0	0	0	0	0	0	0	0	0		0
18		0	0	0	0	0	0	0	0	0	0		0
19		0	0	0	0	0	0	0	0	0	0		0
20		0	0	0	0	0	0	0	0	0	0		0
21		0	0	0	0	0	0	0	0	0	0		0
22		0	0	0	0	0	0	0	0	0	0		0
23		0	0	0	0	0	0	0	0	0	0		0
24		0	0	0	0	0	0	0	0	0	0		0
25		0	0	0	0	0	0	0	0	0	0		0
26		0	0	0	0	0	0	0	0	0	0		0
27		0	0	0	0	0	0	0	0	0	0		0
28		0	0	0	0	0	0	0	0	0	0		0
29		0	0	0	0	0	0	0	0	0	0		0
30		0	0	0	0	0	0	0	0	0	0		0
31		0	0	0	0	0	0	0	0	0	0		0
32		0	0	0	0	0	0	0	0	0	0		0
33		0	0	0	0	0	0	0	0	0	0		0
34		0	0	0	0	0	0	0	0	0	0		0
35		0	0	0	0	0	0	0	0	0	0		0
36		0	0	0	0	0	0	0	0	0	0		0
37		0	0	0	0	0	0	0	0	0	0		0
38		0	0	0	0	0	0	0	0	0	0		0
39		0	0	0	0	0	0	0	0	0	0		0
40		0	0	0	0	0	0	0	0	0	0		0
41		0	0	0	0	0	0	0	0	0	0		0
SUM	1-41	43	156	427	301	321	1603	197	1797	1058	2001		21
42		0	0	0	0	0	0	0	0	0	0		0
43		0	0	0	0	0	0	0	0	0	0		0
44		0	0	0	0	0	0	0	0	0	0		0
45		0	0	0	0	0	0	0	0	0	0		0
46		0	0	0	0	0	0	0	0	0	0		0
47		0	0	0	0	0	0	0	0	0	0		0
48		0	0	0	0	0	0	0	0	0	0		0
49		0	0	0	0	0	0	0	0	0	0		0
50		0	0	0	0	0	0	0	0	0	0		0
51		0	0	0	0	0	0	0	0	0	0		0
52		0	0	0	0	0	0	0	0	0	0		0
53		0	0	0	0	0	0	0	0	0	0		0
54		0	0	0	0	0	0	0	0	0	0		0
55		0	0	0	0	0	0	0	0	0	0		0
56		0	0	0	0	0	0	0	0	0	0		0
57		0	0	0	0	0	0	0	0	0	0		0
58		0	0	0	0	0	0	0	0	0	0		0
59		0	0	0	0	0	0	0	0	0	0		0
60		0	0	0	0	0	0	0	0	0	0		0
61		0	0	0	0	0	0	0	0	0	0		0
62		0	0	0	0	0	0	0	0	0	0		0
63		0	0	0	0	0	0	0	0	0	0		0
64		0	0	0	0	0	0	0	0	0	0		0
65		0	0	0	0	0	0	0	0	0	0		0
66		0	0	0	0	0	0	0	0	0	0		0
SUM	42-66	0	0	0	0	0	0	0	0	0	0		0
	TOTAL	43	156	427	301	321	1603	197	1797	1058	2001		21

**** RINGROAD PROJECT **** (1985) FRATER

TRUCK		12	13	14	15	16	17	18	19	20	21	22
1		109	23	6	5	5	70	6	6	29	31	27
2		188	25	8	8	8	100	9	9	62	56	40
3		120	40	13	12	13	158	14	15	111	88	63
4		68	27	9	8	7	93	8	9	130	79	58
5		96	61	12	12	10	110	9	10	60	60	57
6		945	64	28	23	24	329	30	32	158	151	102
7		48	4	1	0	1	37	1	1	16	17	9
8		193	34	17	13	14	210	19	23	106	115	63
9		79	27	10	9	10	124	11	12	101	97	47
10		95	20	9	8	8	122	11	13	76	84	43
11		4	1	1	1	1	51	7	5	2	4	2
12		514	53	22	16	16	266	23	23	92	96	76
13		0	70	11	14	8	108	9	8	53	55	60
14		0	0	20	13	13	100	7	5	16	19	20
15		0	0	0	18	8	54	4	4	18	19	34
16		0	0	0	0	8	55	4	4	14	16	16
17		0	0	0	0	0	1078	453	148	175	199	142
18		0	0	0	0	0	0	12	19	16	17	12
19		0	0	0	0	0	0	0	14	16	19	13
20		0	0	0	0	0	0	0	0	412	314	126
21		0	0	0	0	0	0	0	0	0	432	130
22		0	0	0	0	0	0	0	0	0	0	115
23		0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	2459	449	167	160	154	3065	637	380	1683	1968	1255
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	2459	449	167	160	154	3065	637	380	1683	1968	1255

**** RINGROAD PROJECT **** (1985) FRATER

TRUCK	23	24	25	26	27	28	29	30	31	32	33	
1	16	1	2	2	3	2	3	10	40	23	7	
2	25	2	3	4	6	4	5	15	92	54	16	
3	41	3	5	6	10	6	7	25	179	96	26	
4	35	3	4	6	9	5	6	20	163	118	19	
5	35	2	3	5	7	4	6	21	74	43	13	
6	71	6	10	13	19	12	14	45	218	131	43	
7	6	0	0	1	0	1	1	3	37	19	3	
8	45	4	9	9	16	10	10	31	202	95	32	
9	30	4	5	6	10	6	7	20	509	123	30	
10	30	3	5	7	14	7	9	20	144	67	28	
11	2	0	0	0	0	0	0	1	3	1	0	
12	50	3	5	9	13	7	10	32	125	75	24	
13	34	2	3	4	5	3	4	21	42	25	12	
14	19	0	0	2	3	2	3	14	14	8	3	
15	40	0	1	2	3	2	4	25	14	8	3	
16	16	0	1	2	3	2	4	15	16	8	3	
17	114	8	14	19	27	17	25	82	187	113	45	
18	10	0	1	1	2	1	1	7	16	9	3	
19	10	1	1	1	3	1	2	7	18	11	4	
20	76	12	17	17	21	11	12	44	195	131	55	
21	80	117	82	54	52	24	27	49	175	114	57	
22	320	5	7	9	15	12	18	99	84	53	25	
23	122	3	5	5	12	10	16	141	54	34	16	
24	0	1	8	3	2	0	1	2	6	4	2	
25	0	0	3	10	5	2	2	4	11	6	2	
26	0	0	0	5	6	2	3	5	12	6	3	
27	0	0	0	0	15	15	6	9	17	11	5	
28	0	0	0	0	0	15	6	7	9	5	2	
29	0	0	0	0	0	0	13	16	11	6	3	
30	0	0	0	0	0	0	0	67	35	21	9	
31	0	0	0	0	0	0	0	0	334	317	63	
32	0	0	0	0	0	0	0	0	0	142	41	
33	0	0	0	0	0	0	0	0	0	0	51	
34	0	0	0	0	0	0	0	0	0	0	0	
35	0	0	0	0	0	0	0	0	0	0	0	
36	0	0	0	0	0	0	0	0	0	0	0	
37	0	0	0	0	0	0	0	0	0	0	0	
38	0	0	0	0	0	0	0	0	0	0	0	
39	0	0	0	0	0	0	0	0	0	0	0	
40	0	0	0	0	0	0	0	0	0	0	0	
41	0	0	0	0	0	0	0	0	0	0	0	
SUM 1-41	1227	180	194	402	281	183	225	857	3036	1873	648	
42	0	0	0	0	0	0	0	0	0	0	0	
43	0	0	0	0	0	0	0	0	0	0	0	
44	0	0	0	0	0	0	0	0	0	0	0	
45	0	0	0	0	0	0	0	0	0	0	0	
46	0	0	0	0	0	0	0	0	0	0	0	
47	0	0	0	0	0	0	0	0	0	0	0	
48	0	0	0	0	0	0	0	0	0	0	0	
49	0	0	0	0	0	0	0	0	0	0	0	
50	0	0	0	0	0	0	0	0	0	0	0	
51	0	0	0	0	0	0	0	0	0	0	0	
52	0	0	0	0	0	0	0	0	0	0	0	
53	0	0	0	0	0	0	0	0	0	0	0	
54	0	0	0	0	0	0	0	0	0	0	0	
55	0	0	0	0	0	0	0	0	0	0	0	
56	0	0	0	0	0	0	0	0	0	0	0	
57	0	0	0	0	0	0	0	0	0	0	0	
58	0	0	0	0	0	0	0	0	0	0	0	
59	0	0	0	0	0	0	0	0	0	0	0	
60	0	0	0	0	0	0	0	0	0	0	0	
61	0	0	0	0	0	0	0	0	0	0	0	
62	0	0	0	0	0	0	0	0	0	0	0	
63	0	0	0	0	0	0	0	0	0	0	0	
64	0	0	0	0	0	0	0	0	0	0	0	
65	0	0	0	0	0	0	0	0	0	0	0	
66	0	0	0	0	0	0	0	0	0	0	0	
SUM 42-66	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	1227	180	194	402	281	183	225	857	3036	1873	648	

**** RINGROAD PROJECT **** (1985) FRATER

TRUCK		34	35	36	37	38	39	40	41	67 1-41	42	43
1		3	1	2	17	2	16	47	31	919	9	6
2		8	4	4	38	4	33	97	65	2004	15	9
3		13	6	6	60	7	53	224	155	2689	24	14
4		9	3	4	43	5	40	129	86	1703	14	12
5		7	3	3	32	4	28	86	56	1252	15	9
6		23	12	11	105	15	92	266	179	4577	47	29
7		1	0	1	12	1	10	30	35	510	4	1
8		18	9	11	89	12	83	583	419	4310	35	22
9		16	6	6	65	9	66	358	267	2463	20	13
10		15	6	10	77	10	75	740	596	3158	21	18
11		0	0	0	2	0	2	6	3	100	1	0
12		13	5	6	63	8	55	166	106	1972	35	19
13		6	7	2	27	3	24	56	35	706	12	8
14		2	1	0	12	1	9	25	14	345	8	6
15		2	1	0	13	1	8	24	14	324	6	6
16		1	1	0	13	1	7	25	14	249	8	6
17		25	12	13	120	16	102	303	189	3626	216	48
18		2	0	0	10	1	9	28	16	293	14	3
19		2	1	1	12	1	10	34	21	223	14	3
20		26	10	12	107	14	99	214	141	2066	27	22
21		28	12	13	160	15	106	225	144	2096	30	43
22		13	5	6	57	7	52	116	73	1091	20	27
23		7	3	3	44	5	33	79	50	642	17	22
24		1	0	0	9	0	4	10	5	58	1	2
25		2	0	0	17	0	6	15	8	93	2	3
26		2	1	0	22	2	6	20	12	107	3	5
27		5	2	2	38	2	12	36	22	197	6	8
28		3	1	1	19	1	6	21	13	109	3	7
29		3	1	0	24	2	7	23	13	122	4	20
30		6	2	2	40	3	21	55	33	294	14	20
31		29	12	13	115	15	121	469	343	1831	30	22
32		19	7	7	74	10	79	202	138	719	17	12
33		14	4	7	47	4	69	72	47	315	6	6
34		18	10	4	92	3	18	36	23	204	3	5
35		0	4	1	26	1	9	16	10	67	1	1
36		0	0	7	16	1	19	26	16	85	1	2
37		0	0	0	450	31	77	194	124	876	22	35
38		0	0	0	0	4	10	27	16	57	1	2
39		0	0	0	0	0	171	192	126	489	15	15
40		0	0	0	0	0	0	2808	5895	8703	56	47
41		0	0	0	0	0	0	0	973	973	32	28
SUM	1-41	340	147	158	2167	221	1647	8103	10526	52517	829	586
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	340	147	158	2167	221	1647	8103	10526	52517	829	586

**** RINGROAD PROJECT **** (1985) FRATER

TRUCK		44	45	46	47	48	49	50	51	52	53	54	
1		4	56	5	5	4	12	1	2	3	0	10	
2		10	101	9	10	8	28	2	6	8	1	22	
3		15	156	15	14	14	43	4	9	11	1	33	
4		12	97	9	9	7	29	3	7	8	1	22	
5		11	99	10	10	7	22	3	5	5	1	20	
6		32	297	32	33	24	84	11	19	24	5	66	
7		1	39	1	3	1	9	0	1	0	0	7	
8		25	241	25	30	23	78	8	16	19	5	64	
9		15	139	14	15	12	45	6	11	12	2	36	
10		16	156	15	20	14	60	7	13	16	3	48	
11		0	13	0	0	0	2	0	0	0	0	3	
12		21	200	21	22	16	52	7	12	14	2	41	
13		10	80	7	5	4	19	3	3	5	1	15	
14		5	51	4	3	2	8	2	1	1	0	8	
15		6	43	4	3	2	8	1	1	1	0	7	
16		5	55	4	3	2	8	2	1	1	0	4	
17		54	579	68	65	47	101	17	25	26	5	83	
18		3	51	5	6	4	9	1	1	2	0	6	
19		4	60	7	4	3	11	2	2	2	0	11	
20		24	183	17	19	14	64	9	18	20	3	48	
21		29	212	22	20	18	74	12	35	22	3	56	
22		28	139	13	14	10	38	7	11	11	1	29	
23		26	114	9	9	9	27	4	7	7	1	22	
24		1	8	0	0	0	2	0	1	1	0	1	
25		2	18	1	0	2	6	0	1	1	0	4	
26		3	24	2	3	2	6	2	1	1	0	4	
27		6	41	2	4	3	15	2	3	3	0	9	
28		3	26	2	4	3	7	2	1	1	0	5	
29		5	33	2	3	2	8	2	1	3	0	4	
30		27	94	9	7	8	20	3	4	6	2	15	
31		23	202	20	22	16	71	7	17	22	2	53	
32		14	121	11	12	8	43	5	10	13	1	33	
33		5	49	3	6	4	19	1	3	5	1	13	
34		5	28	1	3	2	13	1	2	3	0	9	
35		1	16	2	0	0	6	0	1	1	0	5	
36		1	13	2	0	0	8	0	1	2	0	4	
37		24	165	15	17	13	78	9	25	26	3	52	
38		1	20	2	3	2	11	0	1	2	0	8	
39		13	117	12	15	10	47	3	11	13	2	34	
40		42	399	42	50	38	150	18	32	42	11	120	
41		26	239	24	29	23	89	9	19	26	4	69	
SUM	1-41	558	4774	488	500	381	1430	176	340	389	61	1103	
42		0	0	0	0	0	92	2	2	5	0	17	
43		0	0	0	0	0	16	7	5	4	0	10	
44		0	0	0	0	0	15	4	2	5	0	13	
45		0	0	0	0	0	143	28	31	34	5	119	
46		0	0	0	0	0	14	0	4	4	0	11	
47		0	0	0	0	0	15	0	6	5	0	19	
48		0	0	0	0	0	12	0	5	4	0	14	
49		0	0	0	0	0	0	0	0	0	0	0	
50		0	0	0	0	0	0	0	0	0	0	0	
51		0	0	0	0	0	0	0	0	0	0	0	
52		0	0	0	0	0	0	0	0	0	0	0	
53		0	0	0	0	0	0	0	0	0	0	0	
54		0	0	0	0	0	0	0	0	0	0	0	
55		0	0	0	0	0	0	0	0	0	0	0	
56		0	0	0	0	0	0	0	0	0	0	0	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	0	0	
64		0	0	0	0	0	0	0	0	0	0	0	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	0	0	0	307	41	55	61	5	203	
	TOTAL	558	4774	488	500	381	1737	217	395	450	66	1306	

**** RINGROAD PROJECT **** (1985) FRATER

TRUCK		55	56	57	58	59	60	61	62	63	64	65	
1		8	5	7	3	2	9	8	6	12	27	94	
2		14	11	14	10	2	23	19	13	25	56	187	
3		23	18	22	15	5	38	30	21	42	90	295	
4		16	10	17	10	2	27	18	15	25	59	207	
5		15	9	12	8	2	21	13	11	23	49	170	
6		49	36	45	29	9	71	62	42	83	182	543	
7		4	3	5	1	0	9	7	5	10	25	75	
8		44	36	62	26	14	94	72	51	83	162	663	
9		23	19	27	17	3	44	34	21	38	94	315	
10		32	25	54	23	11	77	54	38	54	132	531	
11		0	0	0	0	0	2	0	0	0	6	20	
12		32	22	25	16	3	45	40	26	55	114	359	
13		12	8	9	6	3	15	14	7	18	38	143	
14		7	3	3	2	0	8	4	4	10	19	77	
15		7	3	3	2	0	7	4	4	10	18	70	
16		4	3	4	1	0	4	5	4	12	19	66	
17		77	48	54	32	13	92	81	59	138	249	808	
18		6	2	5	2	0	7	4	2	13	23	78	
19		7	4	4	2	0	12	7	6	15	34	105	
20		37	23	41	27	7	60	43	28	50	122	463	
21		56	29	44	29	12	69	56	37	61	146	553	
22		35	15	22	16	3	35	26	17	38	81	294	
23		24	12	16	10	3	25	20	12	28	59	216	
24		1	0	1	1	0	1	0	0	4	7	29	
25		5	2	1	1	0	5	5	4	5	14	45	
26		5	3	4	1	0	5	5	5	5	15	56	
27		9	3	7	4	0	9	7	5	13	28	103	
28		6	3	1	1	0	7	7	6	6	17	63	
29		8	3	4	4	0	4	7	5	6	20	66	
30		21	6	9	7	3	17	10	9	21	43	155	
31		36	27	42	30	9	66	49	33	57	137	476	
32		22	17	25	18	6	40	27	19	35	84	311	
33		8	4	15	16	3	21	14	7	13	34	139	
34		7	2	7	10	0	10	4	3	10	21	90	
35		2	3	1	6	0	5	6	0	5	10	53	
36		7	2	4	30	0	5	5	5	5	14	61	
37		41	26	37	38	7	55	44	27	50	127	465	
38		5	3	4	6	0	5	7	5	6	16	70	
39		23	16	43	41	7	58	35	25	38	95	429	
40		83	64	143	61	30	193	132	94	136	318	1206	
41		47	39	93	38	17	123	81	54	79	190	807	
SUM	1-41	865	567	938	600	176	1423	1066	735	1337	3014	10981	
42		0	0	194	6	0	14	10	8	29	51	176	
43		0	0	5	5	0	13	8	6	16	38	143	
44		0	0	7	3	0	15	10	8	20	43	146	
45		0	0	69	40	22	131	138	90	327	409	1277	
46		0	0	4	4	0	14	15	12	28	48	144	
47		0	0	7	7	0	11	23	20	70	76	191	
48		0	0	6	4	0	8	19	15	55	43	137	
49		0	0	62	0	10	44	0	34	61	283	495	
50		0	0	5	0	0	6	0	0	13	22	66	
51		0	0	2	0	0	10	0	9	10	37	104	
52		0	0	5	0	0	14	0	8	8	48	127	
53		0	0	0	0	0	8	0	0	0	12	53	
54		0	0	22	0	11	40	0	26	57	406	438	
55		0	0	10	0	0	24	0	14	46	130	289	
56		0	0	7	0	0	22	0	18	41	140	251	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	190	550	
64		0	0	0	0	0	0	0	0	0	0	1994	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	365	69	43	374	223	268	781	1976	6581	
	TOTAL	865	567	1303	669	219	1797	1289	1003	2118	4990	17562	

**** RINGROAD PROJECT **** (1985) FRATER

	TRUCK	66	68 42-66	TOTAL	T.E.
1		296	594	1513	1556
2		907	1510	3514	3670
3		859	1811	4500	4927
4		444	1080	2783	3084
5		418	968	2220	2541
6		4448	6302	10879	12482
7		7106	7317	7827	8024
8		4162	6080	10390	12187
9		1420	2395	4858	5916
10		1564	3002	6160	8161
11		32	79	179	200
12		1845	3044	5016	7475
13		256	701	1407	1856
14		124	360	705	872
15		103	319	643	803
16		110	335	584	738
17		1430	4435	8061	11126
18		136	383	576	1213
19		155	474	697	1077
20		685	2054	4120	5803
21		720	2388	4484	6452
22		447	1380	2471	3726
23		311	1010	1652	2879
24		36	97	155	335
25		53	180	273	467
26		65	225	332	534
27		102	392	589	870
28		60	241	350	533
29		71	285	407	632
30		211	741	1035	1892
31		1447	2916	4747	7783
32		637	1541	2260	4133
33		206	621	936	1584
34		120	359	563	903
35		59	184	251	398
36		59	226	311	469
37		511	1912	2786	4955
38		79	255	312	533
39		476	1593	2082	3729
40		2229	5736	14439	22542
41		1469	3650	4623	15149
SUM	1-41	35858	69175	121692	174209
42		228	794	794	1623
43		139	415	415	1001
44		155	446	446	1004
45		1429	4292	4292	9066
46		159	461	461	949
47		170	620	620	1120
48		135	457	457	838
49		421	1410	1410	3147
50		57	169	169	386
51		100	272	272	667
52		119	329	329	779
53		27	100	100	166
54		339	1339	1339	2645
55		248	761	761	1626
56		188	667	667	1234
57		0	0	0	1303
58		0	0	0	669
59		0	0	0	219
60		0	0	0	1797
61		0	0	0	1289
62		0	0	0	1003
63		462	1202	1202	3320
64		977	2971	2971	7961
65		3579	3579	3579	21141
66		0	0	0	44790
SUM	42-66	8932	20284	20284	109743
	TOTAL	44790	89459	141976	283952

Table 3 OD TABLE IN 2000 BY TYPE OF VEHICLE

**** RINGROAD PROJECT **** (2000-A), PRATER

	TOTAL	1	2	3	4	5	6	7	8	9	10	11	
1		15944	4461	4930	4546	6107	4536	2656	1978	991	908	657	
2		0	4329	3856	2748	1905	7455	2436	1640	764	722	298	
3		0	0	11523	5418	3180	3981	2414	2199	2982	1340	567	
4		0	0	0	10704	3594	3013	2023	1640	1282	1104	497	
5		0	0	0	0	3457	2054	1330	1074	682	560	349	
6		0	0	0	0	0	5972	5495	3444	1156	1564	485	
7		0	0	0	0	0	0	7480	6196	1179	2088	394	
8		0	0	0	0	0	0	0	11020	1417	7354	342	
9		0	0	0	0	0	0	0	0	2529	944	146	
10		0	0	0	0	0	0	0	0	0	7367	180	
11		0	0	0	0	0	0	0	0	0	0	604	
12		0	0	0	0	0	0	0	0	0	0	0	
13		0	0	0	0	0	0	0	0	0	0	0	
14		0	0	0	0	0	0	0	0	0	0	0	
15		0	0	0	0	0	0	0	0	0	0	0	
16		0	0	0	0	0	0	0	0	0	0	0	
17		0	0	0	0	0	0	0	0	0	0	0	
18		0	0	0	0	0	0	0	0	0	0	0	
19		0	0	0	0	0	0	0	0	0	0	0	
20		0	0	0	0	0	0	0	0	0	0	0	
21		0	0	0	0	0	0	0	0	0	0	0	
22		0	0	0	0	0	0	0	0	0	0	0	
23		0	0	0	0	0	0	0	0	0	0	0	
24		0	0	0	0	0	0	0	0	0	0	0	
25		0	0	0	0	0	0	0	0	0	0	0	
26		0	0	0	0	0	0	0	0	0	0	0	
27		0	0	0	0	0	0	0	0	0	0	0	
28		0	0	0	0	0	0	0	0	0	0	0	
29		0	0	0	0	0	0	0	0	0	0	0	
30		0	0	0	0	0	0	0	0	0	0	0	
31		0	0	0	0	0	0	0	0	0	0	0	
32		0	0	0	0	0	0	0	0	0	0	0	
33		0	0	0	0	0	0	0	0	0	0	0	
34		0	0	0	0	0	0	0	0	0	0	0	
35		0	0	0	0	0	0	0	0	0	0	0	
36		0	0	0	0	0	0	0	0	0	0	0	
37		0	0	0	0	0	0	0	0	0	0	0	
38		0	0	0	0	0	0	0	0	0	0	0	
39		0	0	0	0	0	0	0	0	0	0	0	
40		0	0	0	0	0	0	0	0	0	0	0	
41		0	0	0	0	0	0	0	0	0	0	0	
SUM	1-41	15944	8790	20309	23916	18241	27011	23834	29131	12982	23951	4519	
42		0	0	0	0	0	0	0	0	0	0	0	
43		0	0	0	0	0	0	0	0	0	0	0	
44		0	0	0	0	0	0	0	0	0	0	0	
45		0	0	0	0	0	0	0	0	0	0	0	
46		0	0	0	0	0	0	0	0	0	0	0	
47		0	0	0	0	0	0	0	0	0	0	0	
48		0	0	0	0	0	0	0	0	0	0	0	
49		0	0	0	0	0	0	0	0	0	0	0	
50		0	0	0	0	0	0	0	0	0	0	0	
51		0	0	0	0	0	0	0	0	0	0	0	
52		0	0	0	0	0	0	0	0	0	0	0	
53		0	0	0	0	0	0	0	0	0	0	0	
54		0	0	0	0	0	0	0	0	0	0	0	
55		0	0	0	0	0	0	0	0	0	0	0	
56		0	0	0	0	0	0	0	0	0	0	0	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	0	0	
64		0	0	0	0	0	0	0	0	0	0	0	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0	
	TOTAL	15944	8790	20309	23916	18241	27011	23834	29131	12982	23951	4519	

**** RINGROAD PROJECT **** (2000-A) FRATER

	TOTAL	12	13	14	15	16	17	18	19	20	21	22
1		13437	2820	1641	1539	2585	2087	2548	1492	3000	3433	4977
2		7490	958	782	706	1328	1066	1195	762	1990	2034	2373
3		5396	1588	1325	1184	2223	1851	2001	1259	3704	3386	3973
4		4546	1592	1349	1210	1841	1505	1738	1120	6917	4295	5248
5		4398	2283	1258	1261	1696	1278	1414	865	2128	2381	3684
6		17673	1196	1240	907	191'	2215	1880	1205	2514	2739	2969
7		6041	834	954	704	1316	1288	1481	966	1824	2077	2244
8		4114	697	818	606	1305	1532	1286	931	1678	2130	1961
9		1383	408	356	303	767	875	571	357	1191	1276	1070
10		1878	358	408	332	747	881	638	462	1123	1469	1177
11		985	313	580	359	1114	1897	4051	1516	555	716	857
12		26998	2551	2463	1756	3167	3534	3793	2250	3641	4272	5476
13		0	2771	1224	1375	1654	1259	1308	757	1796	2107	3651
14		0	0	4664	2341	4623	2435	2575	1245	1510	1891	3196
15		0	0	0	3085	2985	1406	1520	804	1354	1667	4424
16		0	0	0	0	7011	7272	5399	2300	2148	2814	4798
17		0	0	0	0	0	6241	14456	3204	1820	2452	2905
18		0	0	0	0	0	0	6474	5070	1908	2490	3170
19		0	0	0	0	0	0	0	5187	1250	1647	1969
20		0	0	0	0	0	0	0	0	11993	9362	6338
21		0	0	0	0	0	0	0	0	0	16141	7343
22		0	0	0	0	0	0	0	0	0	0	11580
23		0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	94339	18369	19062	17718	36273	38622	54328	31752	54044	70779	84833
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	94339	18369	19062	17718	36273	38622	54328	31752	54044	70779	84833

**** RINGROAD PROJECT **** (2000-A) FRATER

	TOTAL	23	24	25	26	27	28	29	30	31	32	33
1		1588	609	1264	1102	1654	1119	1136	1970	5115	3480	1363
2		795	351	648	555	855	579	588	943	3788	2489	938
3		1325	586	1070	960	1472	967	991	1617	6741	4550	1553
4		1665	737	1513	1324	1937	1237	1143	1853	9740	7839	1770
5		1248	418	874	743	1107	727	806	1524	3318	2227	847
6		1083	479	851	765	1199	815	803	1322	4752	2903	1198
7		784	369	674	598	959	659	675	997	3813	2040	903
8		751	386	667	615	1064	740	660	954	3884	1900	993
9		423	199	346	298	475	310	269	485	6544	1619	557
10		452	245	467	397	712	476	424	569	2985	1359	724
11		353	136	257	239	419	322	398	610	744	925	236
12		1883	768	1545	1369	2112	1414	1431	2392	6375	4235	1744
13		1282	361	735	649	944	614	700	1523	1671	1274	726
14		1614	327	659	578	925	775	951	1958	1730	1229	698
15		2496	284	545	540	924	829	1053	3005	1483	1051	603
16		2240	561	1136	997	1826	1420	2058	3613	3049	1876	970
17		1517	457	890	802	1443	1095	1438	2612	2840	1968	779
18		1430	502	1012	926	1604	1255	1640	2520	2613	1757	892
19		867	329	674	571	1004	767	904	1347	1708	1177	576
20		2017	1464	2247	1829	2651	1646	1483	2229	7069	5218	2636
21		2439	11658	9963	4967	6085	3421	2979	2797	6818	5133	3040
22		13044	1278	2690	2396	3358	2998	3549	7877	5364	4093	2363
23		3192	426	856	764	1224	1249	1614	9687	1911	1378	779
24		0	892	3634	1276	1442	743	671	578	1148	882	505
25		0	0	2974	3804	3493	1670	1459	1181	1878	1436	827
26		0	0	0	2149	2927	1449	1295	1048	1693	1262	714
27		0	0	0	0	4492	5293	2247	1875	2574	1688	1065
28		0	0	0	0	0	6418	2344	1465	1680	1255	682
29		0	0	0	0	0	0	4054	2637	1487	1106	637
30		0	0	0	0	0	0	0	5913	2228	1610	907
31		0	0	0	0	0	0	0	0	17769	12600	3266
32		0	0	0	0	0	0	0	0	0	8709	2630
33		0	0	0	0	0	0	0	0	0	0	4594
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	44886	23822	38241	31253	48312	41003	39774	65101	124692	91668	42711
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	44886	23822	38241	31253	48312	41003	39774	65101	124692	91668	42711

****** RINGROAD PROJECT **** (2000-A) FRATER**

	TOTAL	34	35	36	37	38	39	40	41	1-41	42	43
1		672	829	674	1050	850	3286	446	1055	116333	408	268
2		461	537	462	719	528	2234	428	779	65512	212	183
3		748	893	760	1261	954	3712	996	1673	94953	394	247
4		822	978	809	1284	1010	4056	707	1443	97103	336	301
5		408	514	440	689	499	2076	386	692	51689	236	190
6		583	727	592	1062	723	2992	969	1338	79737	389	265
7		479	567	472	751	589	2283	691	1469	56738	201	130
8		471	648	652	1059	663	3206	2760	3812	63076	351	291
9		245	291	256	527	305	1594	1553	1805	30273	144	103
10		308	409	437	777	475	2422	3589	9085	39333	155	146
11		133	176	131	275	183	618	100	197	19599	150	70
12		896	1119	909	1469	1150	4406	873	1580	97591	643	389
13		349	432	334	583	412	1740	250	465	33146	217	180
14		327	417	350	611	434	1733	246	463	40533	350	156
15		310	349	295	572	368	1474	202	385	34463	244	221
16		534	661	493	1275	694	2504	754	960	58863	681	390
17		448	549	413	1208	577	2181	1138	1124	54157	1376	431
18		528	633	477	1164	661	2273	350	706	41960	716	347
19		330	431	330	867	447	1593	256	497	24528	415	161
20		1217	1349	1102	1808	1359	5736	889	1505	73172	412	401
21		1494	1667	1360	3241	1714	6945	1128	1770	102054	527	638
22		1117	1344	1111	1987	1386	5537	763	1371	75168	545	679
23		385	484	374	773	469	1915	361	562	24398	268	300
24		284	333	240	673	355	1202	151	289	15303	68	94
25		649	704	505	1480	702	1941	249	511	25463	201	249
26		563	601	429	1293	632	1738	240	452	18495	120	162
27		990	1067	759	2334	1124	2654	454	811	29625	220	297
28		606	665	483	1288	698	1755	285	534	20158	164	247
29		579	691	455	1278	665	1628	234	507	15958	280	469
30		533	651	480	1208	683	2494	410	658	17575	308	327
31		1485	1729	1454	2512	1749	7827	3196	4810	58397	544	494
32		1159	1297	1089	1732	1332	5925	928	1808	26609	397	276
33		1056	1067	1250	1297	757	7692	489	959	19136	125	116
34		1471	1910	796	2101	555	1877	202	366	9228	65	83
35		0	2377	998	1596	614	2399	244	475	8703	84	99
36		0	0	2303	861	750	3901	272	546	8693	69	74
37		0	0	0	4811	1473	2749	751	956	10740	180	241
38		0	0	0	0	1435	2040	274	532	4281	84	100
39		0	0	0	0	0	18635	2074	3495	24204	471	440
40		0	0	0	0	0	0	9036	22697	31733	212	199
41		0	0	0	0	0	0	0	6121	6121	189	179
SUM	1-41	22550	29086	24464	49196	29967	132773	39282	77483	1724961	13197	10613
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	22550	29086	24464	49196	29967	132773	39282	77483	1724961	13197	10613

Table 2 OD TABLE IN 2000 BY TYPE OF VEHICLE

**** RINGROAD PROJECT **** (2000-A) FRATER

	TOTAL	44	45	46	47	48	49	50	51	52	53	54	
1		263	290	259	425	314	808	184	214	269	31	661	
2		169	288	98	107	79	531	50	171	176	20	425	
3		258	451	301	182	131	863	91	250	267	31	733	
4		288	342	261	157	115	833	90	250	262	32	701	
5		213	307	99	108	77	501	59	195	179	13	407	
6		274	615	192	202	148	851	98	172	273	32	671	
7		136	210	124	154	99	603	67	112	134	26	403	
8		264	571	168	191	140	878	91	198	316	41	705	
9		110	400	82	98	71	373	51	88	109	14	269	
10		122	408	107	127	79	542	68	119	156	31	401	
11		68	167	66	65	59	163	25	38	41	7	134	
12		409	667	407	615	452	1155	262	313	391	46	1070	
13		200	186	86	86	62	369	46	85	91	12	339	
14		268	251	131	128	92	465	68	91	102	16	283	
15		264	169	88	88	63	369	60	77	82	14	232	
16		488	941	278	440	192	785	142	188	194	33	525	
17		456	2147	447	329	285	769	163	211	219	35	574	
18		343	703	257	218	190	624	105	140	152	25	562	
19		161	704	186	207	192	399	69	98	106	21	330	
20		372	511	330	197	145	1095	282	374	429	40	835	
21		493	704	409	277	206	1442	404	789	542	62	1094	
22		709	581	402	674	493	1173	348	494	453	47	912	
23		351	289	113	112	84	450	84	112	113	15	390	
24		67	78	41	50	35	232	45	108	71	9	171	
25		189	139	79	88	65	528	75	283	216	19	399	
26		122	136	75	76	54	501	63	195	121	15	281	
27		213	454	123	138	100	816	113	220	221	32	495	
28		161	180	95	106	79	609	91	140	141	25	343	
29		285	164	99	103	74	483	96	117	127	15	420	
30		594	390	163	163	120	550	114	147	158	24	412	
31		464	965	450	751	552	1531	347	440	583	69	1141	
32		257	426	341	174	126	942	103	317	434	39	741	
33		109	155	77	85	61	511	58	111	147	21	327	
34		65	82	38	52	37	373	36	80	96	16	193	
35		77	91	50	60	43	358	48	94	112	18	248	
36		54	75	46	54	36	330	36	66	112	15	225	
37		177	358	111	125	82	831	102	235	252	33	466	
38		75	100	55	63	45	459	52	112	173	19	296	
39		402	933	230	457	188	1408	167	481	546	65	1024	
40		149	870	141	157	114	656	86	150	192	39	462	
41		147	564	124	143	105	685	79	142	186	34	453	
SUM	1-41	10332	17477	7229	7632	5680	27840	4618	8117	6944	1151	20698	
42		0	0	0	0	0	248	18	26	25	1	78	
43		0	0	0	0	0	115	63	36	28	5	75	
44		0	0	0	0	0	94	23	26	25	1	67	
45		0	0	0	0	0	330	74	89	85	14	248	
46		0	0	0	0	0	68	6	17	16	1	66	
47		0	0	0	0	0	95	9	28	26	3	67	
48		0	0	0	0	0	67	6	18	17	1	48	
49		0	0	0	0	0	0	0	0	0	0	0	
50		0	0	0	0	0	0	0	0	0	0	0	
51		0	0	0	0	0	0	0	0	0	0	0	
52		0	0	0	0	0	0	0	0	0	0	0	
53		0	0	0	0	0	0	0	0	0	0	0	
54		0	0	0	0	0	0	0	0	0	0	0	
55		0	0	0	0	0	0	0	0	0	0	0	
56		0	0	0	0	0	0	0	0	0	0	0	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	0	0	
64		0	0	0	0	0	0	0	0	0	0	0	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	0	0	0	1017	199	240	222	24	649	
	TOTAL	10332	17477	7229	7632	5680	28857	4817	8357	9166	1175	21347	

TOTAL –

		55	56	57	58	59	60	61	62	63	64	65	
1		437	354	264	175	27	355	311	260	565	528	751	
2		265	142	191	131	20	254	126	90	238	443	661	
3		408	446	349	204	37	468	223	165	711	697	1706	
4		396	410	328	230	32	432	380	309	632	609	990	
5		306	132	186	127	19	254	127	91	238	435	619	
6		434	253	321	224	42	452	268	193	492	803	1792	
7		228	182	326	102	38	428	199	150	323	452	856	
8		495	272	686	275	70	762	366	275	497	1045	2649	
9		173	130	211	116	31	275	161	115	260	500	1404	
10		229	185	473	177	56	540	281	201	347	701	2179	
11		100	59	49	26	8	71	47	41	134	190	211	
12		645	531	409	270	48	564	496	399	923	464	1668	
13		271	100	167	118	12	223	98	74	187	265	592	
14		220	130	127	77	15	177	122	86	257	334	542	
15		195	102	101	62	13	142	94	73	188	258	543	
16		467	240	238	157	39	345	253	178	542	777	1723	
17		535	275	285	190	51	422	318	229	800	1114	2829	
18		353	197	176	103	24	254	186	130	440	477	846	
19		253	152	128	75	22	190	149	101	392	377	571	
20		659	524	457	334	48	590	502	410	792	860	1694	
21		1010	658	581	416	68	764	630	512	1013	1143	2436	
22		826	581	469	329	52	629	542	440	920	932	1755	
23		393	135	207	145	22	285	140	103	249	379	934	
24		149	75	76	49	10	105	68	44	102	180	314	
25		360	133	186	146	19	250	108	77	184	301	599	
26		207	129	118	93	15	162	104	80	170	290	490	
27		359	220	221	168	23	297	195	134	310	521	920	
28		280	160	145	105	26	198	136	97	244	369	600	
29		485	131	130	93	16	177	117	80	208	300	620	
30		371	184	182	119	24	260	180	126	351	504	961	
31		832	697	789	500	84	1018	722	568	1128	1425	3270	
32		476	539	491	336	47	617	531	192	812	761	1372	
33		189	144	329	249	30	392	161	112	203	337	915	
34		118	85	99	200	9	130	85	63	113	203	391	
35		152	110	136	192	20	175	116	74	148	262	465	
36		118	99	148	780	17	176	101	76	111	216	447	
37		324	208	260	457	36	337	213	153	302	608	1557	
38		170	129	194	158	23	199	115	83	154	284	518	
39		741	427	1017	1066	97	1188	511	385	632	1318	1742	
40		288	226	725	305	83	823	427	317	512	1138	4002	
41		271	220	831	269	75	919	359	274	413	869	3344	
SUM	1-41	15177	10101	12766	9198	1446	16299	10263	7560	17297	24229	53493	
42		0	0	374	30	2	81	58	47	159	201	603	
43		0	0	52	31	1	77	54	43	87	187	574	
44		0	0	36	29	2	57	50	39	85	169	507	
45		0	0	128	90	24	209	208	122	677	834	2683	
46		0	0	29	18	2	46	64	15	116	148	441	
47		0	0	43	29	2	65	27	17	246	221	532	
48		0	0	30	20	2	48	21	13	196	147	368	
49		0	0	583	0	37	719	0	144	780	1963	2577	
50		0	0	23	0	1	36	0	8	32	126	273	
51		0	0	39	0	1	58	0	43	65	178	455	
52		0	0	53	0	1	77	0	43	63	200	500	
53		0	0	4	0	0	9	0	1	8	38	164	
54		0	0	132	0	6	200	0	104	738	3146	1322	
55		0	0	84	0	4	129	0	75	156	488	967	
56		0	0	50	0	1	114	0	90	157	456	766	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	1451	5701	
64		0	0	0	0	0	0	0	0	0	0	6457	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	1660	247	86	1925	482	804	2565	10433	25090	
	TOTAL	15177	10101	14426	9445	1532	18224	10745	8364	19802	34662	78583	

**** RINGROAD PROJECT **** (2000=A) FRATER

		TOTAL 66	66 42-66	TOTAL	T.E.
1		271	8710	125243	141187
2		829	5875	71387	80177
3		879	9492	104945	125254
4		468	9184	106287	130203
5		360	5468	57157	75398
6		5416	14872	94609	121620
7		16016	21699	78437	102271
8		6959	18586	81662	110793
9		2505	7793	36066	51048
10		3435	11265	50598	74549
11		89	2038	21637	26156
12		2200	15861	113472	207811
13		307	4368	37514	55883
14		261	4749	45282	64344
15		144	3956	38394	56117
16		1229	11261	70124	106397
17		2479	16969	71126	109748
18		298	7866	49826	104154
19		208	5672	30200	61952
20		762	13055	86227	140271
21		1011	17675	119929	190708
22		666	15651	90819	175652
23		455	6128	30526	75412
24		106	2341	17644	41466
25		159	5052	30515	68756
26		166	3880	22375	53628
27		795	6905	36530	84842
28		181	4918	25076	66079
29		170	5209	21167	60891
30		470	7207	24782	89883
31		3025	22439	80836	205528
32		539	11266	37495	129563
33		265	5279	24435	67146
34		140	2852	12080	34630
35		126	3358	12061	41147
36		111	3595	12278	36892
37		686	8129	18869	68065
38		139	3759	8040	38007
39		1020	17651	42055	174628
40		4856	17146	48879	88181
41		3172	14066	20167	97670
SUM	1-41	62868	394165	2109126	3839087
42		337	2288	2288	15485
43		226	1652	1652	12265
44		244	1454	1454	11786
45		1414	7229	7229	24706
46		207	1255	1255	8484
47		194	1609	1609	9241
48		146	1148	1148	6828
49		612	6915	6915	35772
50		93	592	592	5409
51		165	1004	1004	9361
52		179	1116	1116	10282
53		33	257	257	1432
54		420	5768	5768	27115
55		317	2200	2200	17317
56		220	1854	1854	11455
57		0	0	0	14426
58		0	0	0	9465
59		0	0	0	1532
60		0	0	0	18224
61		0	0	0	10745
62		0	0	0	8364
63		697	8349	8349	28151
64		1447	7904	7904	42266
65		7272	7272	7272	85855
66		0	0	0	77091
SUM	42-66	14223	59866	59866	503897
	TOTAL	77091	444031	2168992	4337484

**** RINGROAD PROJECT **** (2000-A) FRATER

SEDAN

		1	2	3	4	5	6	7	8	9	10	11	
1		13837	3819	4382	3491	5316	4048	2467	1704	856	816	609	
2		0	3610	3331	2396	1625	6204	2227	1325	589	603	297	
3		0	0	10271	5253	2800	3398	2236	1829	2241	1095	499	
4		0	0	0	9446	3141	2624	1878	1390	1032	942	440	
5		0	0	0	0	2998	1766	1229	898	536	469	343	
6		0	0	0	0	0	4585	4988	2480	703	1074	457	
7		0	0	0	0	0	0	7129	5397	1009	1861	392	
8		0	0	0	0	0	0	0	7594	786	4554	320	
9		0	0	0	0	0	0	0	0	1043	477	129	
10		0	0	0	0	0	0	0	0	0	4792	165	
11		0	0	0	0	0	0	0	0	0	0	596	
12		0	0	0	0	0	0	0	0	0	0	0	
13		0	0	0	0	0	0	0	0	0	0	0	
14		0	0	0	0	0	0	0	0	0	0	0	
15		0	0	0	0	0	0	0	0	0	0	0	
16		0	0	0	0	0	0	0	0	0	0	0	
17		0	0	0	0	0	0	0	0	0	0	0	
18		0	0	0	0	0	0	0	0	0	0	0	
19		0	0	0	0	0	0	0	0	0	0	0	
20		0	0	0	0	0	0	0	0	0	0	0	
21		0	0	0	0	0	0	0	0	0	0	0	
22		0	0	0	0	0	0	0	0	0	0	0	
23		0	0	0	0	0	0	0	0	0	0	0	
24		0	0	0	0	0	0	0	0	0	0	0	
25		0	0	0	0	0	0	0	0	0	0	0	
26		0	0	0	0	0	0	0	0	0	0	0	
27		0	0	0	0	0	0	0	0	0	0	0	
28		0	0	0	0	0	0	0	0	0	0	0	
29		0	0	0	0	0	0	0	0	0	0	0	
30		0	0	0	0	0	0	0	0	0	0	0	
31		0	0	0	0	0	0	0	0	0	0	0	
32		0	0	0	0	0	0	0	0	0	0	0	
33		0	0	0	0	0	0	0	0	0	0	0	
34		0	0	0	0	0	0	0	0	0	0	0	
35		0	0	0	0	0	0	0	0	0	0	0	
36		0	0	0	0	0	0	0	0	0	0	0	
37		0	0	0	0	0	0	0	0	0	0	0	
38		0	0	0	0	0	0	0	0	0	0	0	
39		0	0	0	0	0	0	0	0	0	0	0	
40		0	0	0	0	0	0	0	0	0	0	0	
41		0	0	0	0	0	0	0	0	0	0	0	
SUM	1-41	13837	7429	17984	21046	15879	22630	22156	22617	8795	16183	4242	
42		0	0	0	0	0	0	0	0	0	0	0	
43		0	0	0	0	0	0	0	0	0	0	0	
44		0	0	0	0	0	0	0	0	0	0	0	
45		0	0	0	0	0	0	0	0	0	0	0	
46		0	0	0	0	0	0	0	0	0	0	0	
47		0	0	0	0	0	0	0	0	0	0	0	
48		0	0	0	0	0	0	0	0	0	0	0	
49		0	0	0	0	0	0	0	0	0	0	0	
50		0	0	0	0	0	0	0	0	0	0	0	
51		0	0	0	0	0	0	0	0	0	0	0	
52		0	0	0	0	0	0	0	0	0	0	0	
53		0	0	0	0	0	0	0	0	0	0	0	
54		0	0	0	0	0	0	0	0	0	0	0	
55		0	0	0	0	0	0	0	0	0	0	0	
56		0	0	0	0	0	0	0	0	0	0	0	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	0	0	
64		0	0	0	0	0	0	0	0	0	0	0	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0	
	TOTAL	13837	7429	17984	21046	15879	22630	22156	22617	8795	16183	4242	

**** RINGROAD PROJECT **** (2000-A) FRATER

SEDAN

		12	13	14	15	16	17	18	19	20	21	22
1		11812	2494	1516	1391	2390	1864	2378	1406	2650	3074	4428
2		6387	623	709	626	1140	859	1102	701	1695	1799	2096
3		4757	1411	1208	1069	1945	1454	1872	1186	3262	2997	3506
4		4005	1414	1226	1095	1661	1263	1635	1062	6077	3828	4672
5		3831	1999	1146	1125	1488	1031	1321	800	1855	2104	3249
6		14819	1008	1093	796	1455	1341	1726	1085	2096	2280	2566
7		5574	762	896	662	1206	1098	1428	956	1678	1938	2077
8		3953	577	714	529	968	877	1143	798	1357	1706	1643
9		1048	307	303	257	471	364	473	314	865	915	825
10		1533	307	365	296	524	446	586	420	911	1162	1002
11		911	306	570	353	1039	1619	3807	1492	484	634	784
12		23622	2239	2246	1574	2756	2761	3524	2110	3178	3757	4857
13		0	2440	1128	1241	1430	974	1232	689	1568	1855	2243
14		0	0	4366	2220	4094	1982	2451	1222	1381	1732	2927
15		0	0	0	2843	2631	1139	1434	790	1228	1514	4017
16		0	0	0	0	5357	4148	4945	2082	1837	2374	3779
17		0	0	0	0	0	2614	12135	2681	1372	1791	2328
18		0	0	0	0	0	0	6229	4846	1774	2325	2984
19		0	0	0	0	0	0	0	5012	1168	1545	1830
20		0	0	0	0	0	0	0	0	10451	8138	5608
21		0	0	0	0	0	0	0	0	0	14148	6535
22		0	0	0	0	0	0	0	0	0	0	10431
23		0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	81652	16087	17486	16077	30558	25830	49421	29652	46887	61576	75347
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	81652	16087	17486	16077	30558	25830	49421	29652	46887	61576	75347

**** RINGROAD PROJECT **** (2000-A) FRATER

SEDAN

		23	24	25	26	27	28	29	30	31	32	33
1		1420	574	1126	1031	1564	1027	1039	1855	4509	3078	1266
2		684	324	564	518	803	535	935	875	3172	2144	848
3		1166	552	961	883	1369	910	910	1488	5781	4065	1448
4		1476	688	1348	1227	1811	1155	1052	1722	8443	6949	1642
5		1083	390	770	701	1049	680	727	1410	2848	1967	788
6		875	424	741	683	1069	723	714	1138	3686	2523	1060
7		731	366	639	591	944	651	633	972	3479	1401	856
8		589	325	570	527	919	634	593	795	2893	1600	881
9		284	168	274	253	395	264	237	371	3981	1270	436
10		356	218	383	353	621	423	395	469	2117	1136	638
11		340	134	294	235	414	317	394	591	653	455	232
12		1637	711	1366	1257	1957	1315	1306	2205	5442	3751	1619
13		1107	330	663	602	878	562	641	1385	1599	1140	683
14		1445	320	618	566	904	758	899	1831	1932	1121	645
15		2575	278	541	495	861	768	979	2799	1317	968	564
16		1828	516	1005	920	1624	1266	1869	3087	2400	1665	863
17		1048	383	737	675	1180	922	1229	1914	1846	1284	654
18		1332	495	950	873	1534	1188	1560	2403	2392	1667	850
19		782	324	610	562	983	754	893	1306	1576	1104	566
20		1743	1346	1995	1711	2446	1522	1346	2070	3947	4627	2470
21		2092	10596	8865	4536	5607	3128	2736	2524	5719	4585	2801
22		11419	1182	2418	2185	3127	2783	3262	7269	4658	3682	2206
23		2720	384	766	698	1124	1151	1465	5006	1575	1222	720
24		0	854	3370	1223	1376	725	630	556	1034	818	493
25		0	0	2675	3528	3257	1599	1344	1111	1650	1293	767
26		0	0	0	2124	2810	1384	1196	1007	1508	1175	697
27		0	0	0	0	4342	3055	2157	1788	2297	1773	1034
28		0	0	0	0	0	6144	2203	1407	1511	1153	666
29		0	0	0	0	0	0	3802	2483	1348	1030	602
30		0	0	0	0	0	0	0	5479	1959	1501	870
31		0	0	0	0	0	0	0	0	14276	10955	2939
32		0	0	0	0	0	0	0	0	0	7859	2450
33		0	0	0	0	0	0	0	0	0	0	4369
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	38732	21882	34209	28957	44965	38303	36748	59268	103144	81463	39573
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	38732	21882	34209	28957	44965	38303	36748	59268	103144	81463	39573

**** RINGROAD PROJECT **** (2000-A) FRATER

SEDAN

		34	35	36	37	38	39	40	41	1-41	42	43
1		603	761	643	971	799	3033	334	934	103811	273	178
2		397	491	416	630	515	1990	217	606	56279	137	94
3		674	835	711	1069	875	3386	369	1473	83351	235	157
4		736	891	766	1149	942	3712	426	1221	86194	211	176
5		373	466	397	609	491	1879	205	573	45592	155	113
6		509	645	547	827	676	2567	300	837	65098	207	126
7		430	567	469	713	583	2198	448	1275	52460	180	117
8		392	546	558	771	616	2661	716	2155	45660	148	110
9		204	255	223	326	265	1168	240	729	19134	62	42
10		270	372	395	538	429	1951	719	2436	26226	78	69
11		131	174	129	260	181	601	65	174	18327	132	63
12		796	1021	858	1300	1071	3991	450	1247	85924	405	235
13		311	381	326	495	403	1572	130	357	29365	127	95
14		320	410	344	507	427	1599	146	396	37226	223	133
15		271	344	290	530	362	1368	119	329	31354	146	125
16		488	622	463	992	649	2149	219	599	47746	364	231
17		372	481	360	742	499	1656	175	480	39566	509	172
18		482	626	471	961	653	2158	230	627	39612	546	223
19		324	426	326	629	441	1477	162	436	23236	362	142
20		1054	1227	1040	1543	1261	5150	403	1129	64132	229	216
21		1278	1522	1280	2714	1595	6231	472	1307	90273	303	376
22		1008	1236	1059	1729	1300	5079	404	1115	67552	349	396
23		334	423	360	626	446	1710	143	392	22268	145	161
24		282	328	236	618	349	1126	87	244	14349	99	80
25		575	650	462	1304	690	1795	191	421	23232	114	153
26		516	591	422	1162	621	1634	139	384	17370	105	137
27		924	1044	743	2090	1101	2693	244	673	27758	185	242
28		550	654	474	1187	685	1643	165	455	18899	142	207
29		533	623	450	1161	657	1538	155	425	14807	158	320
30		511	632	466	1058	662	2121	183	507	15949	238	247
31		1278	1518	1316	1960	1598	6775	1040	3101	46756	306	232
32		1019	1184	1038	1536	1245	5456	519	1481	23787	211	171
33		992	985	1179	1147	742	7180	273	780	17647	107	98
34		1268	1765	717	1620	544	1685	110	304	8713	55	69
35		0	2297	983	1451	606	2201	152	415	8105	75	87
36		0	0	2187	805	738	3681	165	472	8048	58	64
37		0	0	0	3690	1367	2329	211	587	8184	112	142
38		0	0	0	0	1411	1890	164	459	3924	74	86
39		0	0	0	0	0	17125	904	2614	20643	278	248
40		0	0	0	0	0	0	449	2994	3443	29	21
41		0	0	0	0	0	0	0	2607	2607	74	67
SUM	1-41	20215	26988	23104	41680	28497	119918	12345	39750	1463107	7906	6421
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	20215	26988	23104	41680	28497	119918	12345	39750	1463107	7906	6421

**** RINGROAD PROJECT **** (2000-A) FRATER

SEDAN

		44	45	46	47	48	49	50	51	52	53	54	
1		205	154	155	165	119	593	85	146	168	30	463	
2		103	82	84	93	68	362	44	80	104	18	278	
3		174	141	139	155	111	607	78	140	174	26	468	
4		179	130	126	142	103	623	83	157	185	30	474	
5		140	92	87	97	69	350	53	92	99	12	271	
6		139	118	123	136	97	504	67	116	140	21	395	
7		121	110	111	141	91	469	62	103	124	26	371	
8		104	97	102	120	88	475	56	98	128	27	386	
9		43	35	34	49	34	184	25	39	52	5	140	
10		59	49	56	70	39	307	38	63	87	18	236	
11		59	80	59	59	53	149	23	35	39	7	124	
12		263	230	238	250	181	835	119	200	234	40	658	
13		118	72	72	74	52	271	40	73	78	11	207	
14		162	113	115	113	81	329	62	81	92	15	257	
15		170	75	77	78	56	266	54	68	73	13	211	
16		246	176	175	159	124	482	93	124	132	23	379	
17		179	195	190	151	128	386	76	97	108	15	304	
18		231	273	230	199	172	510	96	127	140	24	402	
19		141	339	165	187	172	364	63	89	97	20	305	
20		207	141	145	165	120	761	108	226	235	34	567	
21		285	188	192	224	161	1014	191	452	309	51	762	
22		444	201	207	220	159	879	163	248	260	42	673	
23		203	78	86	88	65	318	66	86	88	11	242	
24		57	34	36	45	34	206	40	94	63	9	155	
25		111	69	70	81	59	381	67	150	118	18	278	
26		104	63	66	68	48	348	56	118	107	14	253	
27		179	106	107	125	90	599	96	186	191	32	435	
28		136	83	83	96	70	417	80	123	125	23	309	
29		175	88	90	96	68	390	87	107	117	14	290	
30		375	126	128	134	97	453	92	118	129	20	346	
31		226	193	192	223	161	994	128	233	302	51	746	
32		164	132	134	155	112	726	91	172	224	35	535	
33		92	68	67	75	54	401	52	96	129	19	292	
34		55	33	32	46	34	245	31	68	83	15	170	
35		68	46	45	54	40	324	45	85	102	17	227	
36		52	36	43	49	35	297	33	59	101	14	205	
37		105	66	70	86	53	476	66	150	165	23	331	
38		65	48	49	56	40	409	47	99	153	18	268	
39		232	176	182	208	150	1074	136	239	331	54	786	
40		21	20	21	24	17	110	13	21	30	6	79	
41		54	50	50	63	46	289	34	60	83	15	217	
SUM	1-41	6246	4606	4433	4819	3549	19177	2939	5118	5699	916	14495	
42		0	0	0	0	0	42	7	10	9	0	35	
43		0	0	0	0	0	50	23	10	10	0	31	
44		0	0	0	0	0	38	7	10	10	0	29	
45		0	0	0	0	0	34	9	7	7	0	30	
46		0	0	0	0	0	26	0	8	7	0	35	
47		0	0	0	0	0	48	0	16	15	0	29	
48		0	0	0	0	0	35	0	10	9	0	72	
49		0	0	0	0	0	0	0	0	0	0	0	
50		0	0	0	0	0	0	0	0	0	0	0	
51		0	0	0	0	0	0	0	0	0	0	0	
52		0	0	0	0	0	0	0	0	0	0	0	
53		0	0	0	0	0	0	0	0	0	0	0	
54		0	0	0	0	0	0	0	0	0	0	0	
55		0	0	0	0	0	0	0	0	0	0	0	
56		0	0	0	0	0	0	0	0	0	0	0	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	0	0	
64		0	0	0	0	0	0	0	0	0	0	0	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	0	0	0	273	46	71	67	0	211	
	TOTAL	6246	4606	4433	4819	3549	19450	2985	5189	5766	916	14706	

**** RINGROAD PROJECT **** (2000-A) FRATER

SEDAN

		55	56	57	58	59	60	61	62	63	64	65
1		284	205	187	113	26	250	162	124	324	404	405
2		154	125	123	75	17	161	99	72	190	245	253
		265	214	208	126	32	274	174	130	319	404	429
		279	214	214	135	29	278	175	126	308	395	436
		180	119	119	71	16	160	105	76	198	241	254
6		223	178	164	99	26	224	150	108	277	356	367
7		206	168	216	87	34	279	171	130	276	350	478
8		207	180	290	104	36	352	188	143	249	355	490
9		82	67	81	37	14	102	55	39	92	129	149
10		121	103	218	71	26	240	121	84	149	223	315
11		90	54	44	24	6	63	41	37	113	117	110
12		395	306	262	153	41	359	248	184	305	594	589
13		135	86	93	57	11	123	75	58	145	180	192
14		193	116	108	63	14	150	102	72	209	247	251
15		172	91	86	52	12	120	78	61	153	190	197
16		307	168	146	87	21	204	146	100	297	336	343
17		248	138	120	68	23	167	118	84	288	282	282
18		321	182	156	90	24	225	163	116	377	375	380
19		228	139	115	66	21	168	132	89	351	289	299
20		359	255	273	179	34	346	214	158	336	477	530
21		611	342	350	224	51	451	284	212	460	644	701
22		512	305	300	189	45	397	252	183	450	575	630
23		203	108	108	64	17	145	98	72	167	209	232
24		125	68	65	40	10	88	57	36	83	133	139
25		207	122	112	82	17	146	93	67	154	227	236
26		177	116	103	76	13	137	87	68	139	213	225
27		309	195	184	134	23	243	156	118	247	363	392
28		245	144	125	87	24	168	114	82	200	270	275
29		274	121	117	83	14	158	104	72	181	237	253
30		296	153	141	86	19	197	136	93	254	309	320
31		415	328	397	236	54	494	296	211	456	627	730
32		300	234	310	188	41	377	219	161	320	453	544
33		164	129	206	183	26	233	132	92	163	240	340
34		101	75	84	113	7	109	72	53	90	143	169
35		136	101	121	163	16	154	101	64	125	202	242
36		105	91	129	536	15	154	87	68	92	163	228
37		210	145	162	142	25	205	127	91	165	259	321
38		150	118	137	135	21	174	98	73	130	212	261
39		433	348	633	583	73	705	379	287	459	674	1014
40		39	36	90	30	9	103	43	38	59	70	134
41		116	104	275	92	26	265	129	103	153	202	365
SUM	1-41	9572	6491	7374	5223	1020	9368	5781	4235	9663	12614	14450
42		0	0	30	14	0	41	27	24	46	43	74
43		0	0	28	13	0	40	25	23	21	40	52
44		0	0	17	13	0	24	24	21	18	39	49
45		0	0	13	9	0	18	17	0	29	29	50
46		0	0	15	10	0	20	43	0	35	31	58
47		0	0	27	19	0	38	0	0	63	59	50
48		0	0	19	14	0	27	0	0	47	42	36
49		0	0	110	0	26	153	0	77	97	283	289
50		0	0	14	0	0	21	0	0	0	29	27
51		0	0	22	0	0	31	0	27	22	45	63
52		0	0	32	0	0	44	0	26	21	44	59
53		0	0	0	0	0	0	0	0	0	0	37
54		0	0	86	0	0	120	0	52	84	378	238
55		0	0	50	0	0	72	0	41	35	102	126
56		0	0	76	0	0	73	0	64	54	102	96
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	1069	3046
64		0	0	0	0	0	0	0	0	0	0	51
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	489	92	26	722	156	355	572	2339	4396
	TOTAL	9572	6491	7863	5315	1046	10090	5937	4590	10235	14949	18846

SEDAN

		66	66 42-66	TOTAL	T.E.
1		0	5216	109024	122866
2		0	3061	59340	66769
3		0	5180	88531	106515
4		0	5208	91402	112448
5		0	3171	48763	64637
6		0	4361	69459	92089
7		0	4371	56831	78987
8		0	4530	50190	72807
9		0	1591	20725	29520
10		0	2840	29066	45249
11		0	1583	19910	24152
12		0	7524	93448	175100
13		0	2445	31810	47897
14		0	3301	40527	58013
15		0	2624	33978	50055
16		0	4863	52609	83167
17		0	4328	43894	69724
18		0	9582	45194	94615
19		0	4323	27559	57211
20		0	6320	70452	117339
21		0	8838	99111	160687
22		0	8079	75631	150978
23		0	3060	24328	63060
24		0	1754	16103	37985
25		0	3132	26364	60573
26		0	2841	20211	49168
27		0	4937	32695	77660
28		0	3626	22525	60828
29		0	3614	18421	55169
30		0	4507	20456	79724
31		0	8231	54987	158131
32		0	6009	29796	111259
33		0	3458	21105	60678
34		0	1952	10165	30380
35		0	2642	10747	37735
36		0	2714	10762	33866
37		0	3697	11881	53561
38		0	7421	6845	35342
39		0	9682	30325	150243
40		0	1063	4506	16851
41		0	2934	5541	45291
SUM	1-41	0	172115	1635222	3098329
42		0	402	402	8308
43		0	366	366	6787
44		0	299	299	6545
45		0	272	272	4678
46		0	288	288	4721
47		0	364	364	5183
48		0	261	261	3810
49		0	1037	1037	20487
50		0	91	91	3076
51		0	210	210	3399
52		0	226	226	5492
53		0	32	32	948
54		0	958	958	15664
55		0	426	426	9498
56		0	415	415	6906
57		0	0	0	7863
58		0	0	0	5315
59		0	0	0	1048
60		0	0	0	10090
61		0	0	0	5437
62		0	0	0	4290
63		0	4115	4115	14350
64		0	51	51	15000
65		0	0	0	18846
66		0	0	0	0
SUM	42-66	0	9813	9813	191741
	TOTAL	0	181928	1645035	3290070

**** RINGKUMD PROJECT **** (7000-A) FRATER

BUS	1	2	3	4	5	6	7	8	9	10	11	
1	2067	803	500	527	748	366	177	221	81	59	44	
2	0	606	401	337	235	586	166	176	49	34	0	
3	0	0	876	529	296	231	133	167	181	73	57	
4	0	0	0	1112	390	211	122	152	94	67	51	
5	0	0	0	0	399	148	84	100	52	38	0	
6	0	0	0	0	0	244	216	143	26	38	0	
7	0	0	0	0	0	0	282	377	42	62	0	
8	0	0	0	0	0	0	0	843	80	296	0	
9	0	0	0	0	0	0	0	0	66	0	0	
10	0	0	0	0	0	0	0	0	0	119	0	
11	0	0	0	0	0	0	0	0	0	0	0	
12	0	0	0	0	0	0	0	0	0	0	0	
13	0	0	0	0	0	0	0	0	0	0	0	
14	0	0	0	0	0	0	0	0	0	0	0	
15	0	0	0	0	0	0	0	0	0	0	0	
16	0	0	0	0	0	0	0	0	0	0	0	
17	0	0	0	0	0	0	0	0	0	0	0	
18	0	0	0	0	0	0	0	0	0	0	0	
19	0	0	0	0	0	0	0	0	0	0	0	
20	0	0	0	0	0	0	0	0	0	0	0	
21	0	0	0	0	0	0	0	0	0	0	0	
22	0	0	0	0	0	0	0	0	0	0	0	
23	0	0	0	0	0	0	0	0	0	0	0	
24	0	0	0	0	0	0	0	0	0	0	0	
25	0	0	0	0	0	0	0	0	0	0	0	
26	0	0	0	0	0	0	0	0	0	0	0	
27	0	0	0	0	0	0	0	0	0	0	0	
28	0	0	0	0	0	0	0	0	0	0	0	
29	0	0	0	0	0	0	0	0	0	0	0	
30	0	0	0	0	0	0	0	0	0	0	0	
31	0	0	0	0	0	0	0	0	0	0	0	
32	0	0	0	0	0	0	0	0	0	0	0	
33	0	0	0	0	0	0	0	0	0	0	0	
34	0	0	0	0	0	0	0	0	0	0	0	
35	0	0	0	0	0	0	0	0	0	0	0	
36	0	0	0	0	0	0	0	0	0	0	0	
37	0	0	0	0	0	0	0	0	0	0	0	
38	0	0	0	0	0	0	0	0	0	0	0	
39	0	0	0	0	0	0	0	0	0	0	0	
40	0	0	0	0	0	0	0	0	0	0	0	
41	0	0	0	0	0	0	0	0	0	0	0	
SUM 1-41	2067	1209	1777	2505	2068	1786	1180	2229	671	782	152	
42	0	0	0	0	0	0	0	0	0	0	0	
43	0	0	0	0	0	0	0	0	0	0	0	
44	0	0	0	0	0	0	0	0	0	0	0	
45	0	0	0	0	0	0	0	0	0	0	0	
46	0	0	0	0	0	0	0	0	0	0	0	
47	0	0	0	0	0	0	0	0	0	0	0	
48	0	0	0	0	0	0	0	0	0	0	0	
49	0	0	0	0	0	0	0	0	0	0	0	
50	0	0	0	0	0	0	0	0	0	0	0	
51	0	0	0	0	0	0	0	0	0	0	0	
52	0	0	0	0	0	0	0	0	0	0	0	
53	0	0	0	0	0	0	0	0	0	0	0	
54	0	0	0	0	0	0	0	0	0	0	0	
55	0	0	0	0	0	0	0	0	0	0	0	
56	0	0	0	0	0	0	0	0	0	0	0	
57	0	0	0	0	0	0	0	0	0	0	0	
58	0	0	0	0	0	0	0	0	0	0	0	
59	0	0	0	0	0	0	0	0	0	0	0	
60	0	0	0	0	0	0	0	0	0	0	0	
61	0	0	0	0	0	0	0	0	0	0	0	
62	0	0	0	0	0	0	0	0	0	0	0	
63	0	0	0	0	0	0	0	0	0	0	0	
64	0	0	0	0	0	0	0	0	0	0	0	
65	0	0	0	0	0	0	0	0	0	0	0	
66	0	0	0	0	0	0	0	0	0	0	0	
SUM 42-66	0	0	0	0	0	0	0	0	0	0	0	
TOTAL	2067	1209	1777	2505	2068	1786	1180	2229	671	782	152	

**** RINGROAD PROJECT **** (2000=A) FRATER

BUS		12	13	14	15	16	17	18	19	20	21	22
1		1483	297	113	137	124	98	196	77	316	313	508
2		855	104	55	63	77	28	71	47	222	187	293
3		456	119	82	83	74	59	90	47	288	226	300
4		442	141	100	94	68	54	82	43	641	329	472
5		451	216	85	109	79	61	72	51	207	189	349
6		1120	77	60	47	57	32	52	52	158	130	174
7		347	57	96	34	44	51	37	0	106	84	130
8		372	51	41	31	37	44	69	76	136	149	157
9		96	27	0	0	0	0	37	0	78	56	80
10		102	0	0	0	0	0	0	0	36	39	37
11		53	0	0	0	0	0	179	0	58	62	58
12		2472	217	150	134	118	110	190	90	317	311	454
13		0	224	59	92	54	31	49	52	148	141	281
14		0	0	191	110	132	51	80	0	79	86	189
15		0	0	0	171	103	39	61	0	81	87	286
16		0	0	0	0	172	96	114	71	75	80	152
17		0	0	0	0	0	56	272	84	58	63	88
18		0	0	0	0	0	0	168	148	88	94	130
19		0	0	0	0	0	0	0	100	50	51	102
20		0	0	0	0	0	0	0	0	948	626	487
21		0	0	0	0	0	0	0	0	0	909	478
22		0	0	0	0	0	0	0	0	0	0	859
23		0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	8249	1530	982	1105	1087	810	1779	938	4090	4212	6024
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	8249	1530	982	1105	1087	810	1779	938	4090	4212	6024

**** RINGROAD PROJECT **** (2000-A) FRATER

BUS		23	24	25	26	27	28	29	30	31	32	33
1		143	31	130	63	75	81	92	90	499	379	87
2		70	18	71	24	29	31	44	27	367	288	66
3		84	18	85	52	63	32	64	53	467	365	81
4		125	36	143	74	86	61	78	74	807	748	95
5		109	20	89	27	30	33	68	57	285	217	41
6		57	21	58	28	34	36	51	50	246	185	49
7		28	0	28	0	0	0	37	0	183	110	34
8		50	32	52	41	49	51	32	40	271	164	28
9		28	0	29	0	0	0	0	0	334	118	36
10		0	0	42	0	0	0	0	0	118	84	0
11		0	0	0	0	0	0	0	0	60	63	0
12		139	37	143	75	90	62	100	74	479	376	75
13		92	21	54	28	33	35	46	58	130	101	20
14		90	0	29	0	0	0	38	48	80	85	36
15		162	0	44	34	42	43	58	74	80	62	26
16		56	0	56	0	45	47	73	44	100	80	32
17		31	0	31	0	0	0	41	52	58	61	0
18		48	0	49	39	46	48	62	39	107	65	28
19		54	0	55	0	0	0	0	0	51	55	0
20		129	64	184	83	99	69	104	79	484	418	117
21		140	441	687	208	176	148	155	84	397	352	104
22		827	64	214	112	133	140	224	236	362	319	95
23		164	22	54	30	35	36	92	148	110	97	20
24		0	17	169	20	25	0	31	0	42	46	0
25		0	0	249	185	146	76	95	29	130	118	43
26		0	0	0	25	30	31	39	0	85	61	0
27		0	0	0	0	35	76	47	0	102	71	0
28		0	0	0	0	0	119	102	0	72	76	0
29		0	0	0	0	0	0	208	76	79	61	26
30		0	0	0	0	0	0	0	47	50	53	0
31		0	0	0	0	0	0	0	0	1050	878	112
32		0	0	0	0	0	0	0	0	0	686	118
33		0	0	0	0	0	0	0	0	0	0	103
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	2626	842	2745	1148	1301	1255	1981	1459	7685	6842	1452
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	2626	842	2745	1148	1301	1255	1981	1459	7685	6842	1452

****** RINGROAD PROJECT **** (2000-A) FRATER**

BUS		34	35	36	37	38	39	40	41	67	42	43
										1-41		
1		64	64	27	53	46	214	36	67	11256	120	80
2		53	36	37	31	0	156	44	55	5999	49	50
3		53	40	33	66	59	164	44	77	6247	111	55
4		71	74	31	60	54	228	40	70	7620	98	100
5		26	41	36	34	0	129	47	25	4004	57	58
6		29	43	0	35	0	97	0	29	3704	58	59
7		44	0	0	0	0	71	0	44	2276	0	0
8		40	64	53	50	0	150	70	112	3731	98	98
9		0	0	0	0	0	78	0	49	1112	0	0
10		0	0	0	0	0	56	0	72	701	0	0
11		0	0	0	0	0	0	0	0	533	0	0
12		74	76	31	61	54	225	41	69	6844	153	103
13		28	43	0	36	0	88	0	26	1970	62	63
14		0	0	0	0	0	74	0	0	1398	90	0
15		33	0	0	0	0	54	0	0	1540	74	74
16		0	0	0	0	0	70	0	0	1313	83	0
17		0	0	0	0	0	39	0	0	934	99	0
18		38	0	0	48	0	57	0	0	1302	96	96
19		0	0	0	0	0	74	0	0	592	0	0
20		108	87	32	69	59	267	45	70	4628	125	126
21		113	89	34	110	62	265	48	49	5049	134	136
22		81	84	31	104	58	239	45	43	4270	132	201
23		28	45	0	37	0	63	0	24	1005	71	72
24		0	0	0	0	0	31	0	0	381	0	0
25		60	44	36	74	0	85	0	25	1395	71	72
26		33	0	0	29	0	41	0	0	374	0	0
27		40	0	0	35	0	49	0	0	455	0	0
28		42	0	0	0	0	51	0	0	462	0	0
29		37	61	0	48	0	50	0	31	677	104	104
30		0	0	0	0	0	33	0	0	183	0	0
31		108	131	65	106	59	307	91	134	3041	139	140
32		113	93	32	75	63	259	47	68	1554	153	77
33		34	58	44	47	0	174	0	27	487	0	0
34		115	100	63	82	0	114	0	0	474	0	0
35		0	46	0	40	0	127	0	0	213	0	0
36		0	0	79	0	0	86	0	0	165	0	0
37		0	0	0	69	0	102	0	0	171	0	0
38		0	0	0	0	0	85	0	0	85	0	0
39		0	0	0	0	0	460	63	81	604	114	115
40		0	0	0	0	0	0	0	242	242	0	0
41		0	0	0	0	0	0	0	64	64	0	0
SUM	1-41	1465	1319	664	1399	514	4912	661	1553	89055	2291	1879
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	1465	1319	664	1399	514	4912	661	1553	89055	2291	1879

**** RINGROAD PROJECT **** (2000-A) FRATER

BUS		44	45	46	47	48	49	50	51	52	53	54	
1		66	73	97	253	187	191	97	62	94	0		182
2		41	92	0	0	0	117	0	78	58	0		112
3		45	100	136	0	0	159	0	86	65	0		200
4		83	89	119	0	0	148	0	76	58	0		186
5		49	106	0	0	0	111	0	92	68	0		104
6		48	0	0	0	0	128	0	0	68	0		122
7		0	0	0	0	0	90	0	0	0	0		0
8		82	0	0	0	0	147	0	0	116	0		135
9		0	0	0	0	0	0	0	0	0	0		0
10		0	0	0	0	0	0	0	0	0	0		0
11		0	0	0	0	0	0	0	0	0	0		0
12		86	92	174	324	238	192	124	79	120	0		273
13		59	0	0	0	0	55	0	0	0	0		104
14		76	0	0	0	0	96	0	0	0	0		0
15		62	0	0	0	0	71	0	0	0	0		0
16		70	0	0	0	0	90	0	0	0	0		0
17		0	0	0	0	0	0	0	0	0	0		0
18		80	175	0	0	0	68	0	0	0	0		128
19		0	0	0	0	0	0	0	0	0	0		0
20		106	114	152	0	0	188	152	98	147	0		173
21		114	123	163	0	0	149	169	212	160	0		182
22		169	170	162	422	316	176	162	208	156	0		160
23		61	0	0	0	0	49	0	0	0	0		92
24		0	0	0	0	0	0	0	0	0	0		0
25		81	0	0	0	0	105	0	113	85	0		94
26		0	0	0	0	0	110	0	0	0	0		0
27		0	0	0	0	0	129	0	0	0	0		0
28		0	0	0	0	0	135	0	0	0	0		0
29		88	0	0	0	0	60	0	0	0	0		109
30		90	0	0	0	0	0	0	0	0	0		0
31		117	126	169	441	324	171	169	107	163	0		152
32		65	141	184	0	0	127	0	121	182	0		130
33		0	0	0	0	0	55	0	0	0	0		0
34		0	0	0	0	0	42	0	0	0	0		0
35		0	0	0	0	0	0	0	0	0	0		0
36		0	0	0	0	0	0	0	0	0	0		0
37		0	0	0	0	0	129	0	0	0	0		0
38		0	0	0	0	0	0	0	0	0	0		0
39		96	0	0	0	0	98	0	180	136	0		84
40		0	0	0	0	0	0	0	0	0	0		0
41		0	0	0	0	0	54	0	0	0	0		0
SUM	1-41	1808	1351	1313	1440	1059	3540	869	1512	1676	0		2742
42		0	0	0	0	0	0	0	0	0	0		0
43		0	0	0	0	0	0	0	0	0	0		0
44		0	0	0	0	0	0	0	0	0	0		0
45		0	0	0	0	0	0	0	0	0	0		0
46		0	0	0	0	0	0	0	0	0	0		0
47		0	0	0	0	0	0	0	0	0	0		0
48		0	0	0	0	0	0	0	0	0	0		0
49		0	0	0	0	0	0	0	0	0	0		0
50		0	0	0	0	0	0	0	0	0	0		0
51		0	0	0	0	0	0	0	0	0	0		0
52		0	0	0	0	0	0	0	0	0	0		0
53		0	0	0	0	0	0	0	0	0	0		0
54		0	0	0	0	0	0	0	0	0	0		0
55		0	0	0	0	0	0	0	0	0	0		0
56		0	0	0	0	0	0	0	0	0	0		0
57		0	0	0	0	0	0	0	0	0	0		0
58		0	0	0	0	0	0	0	0	0	0		0
59		0	0	0	0	0	0	0	0	0	0		0
60		0	0	0	0	0	0	0	0	0	0		0
61		0	0	0	0	0	0	0	0	0	0		0
62		0	0	0	0	0	0	0	0	0	0		0
63		0	0	0	0	0	0	0	0	0	0		0
64		0	0	0	0	0	0	0	0	0	0		0
65		0	0	0	0	0	0	0	0	0	0		0
66		0	0	0	0	0	0	0	0	0	0		0
SUM	42-66	0	0	0	0	0	0	0	0	0	0		0
	TOTAL	1808	1351	1313	1440	1059	3540	869	1512	1676	0		2742

**** RINGROAD PROJECT **** (2000-A) FRATER

BUS		55	56	57	58	59	60	61	62	63	64	65	
1		141	142	64	94	0	87	139	128	218	75	181	
2		87	0	40	34	0	94	0	0	0	95	76	
3		97	200	91	38	0	121	0	0	305	105	169	
4		86	177	81	68	0	107	173	160	271	94	150	
5		102	0	47	40	0	64	0	0	0	110	88	
6		102	0	47	39	0	64	0	0	0	0	88	
7		0	0	79	0	0	105	0	0	0	0	145	
8		173	0	163	67	0	109	0	0	0	188	149	
9		0	0	0	0	0	0	0	0	0	0	0	
10		0	0	0	0	0	0	0	0	0	0	0	
11		0	0	0	0	0	0	0	0	0	0	0	
12		180	182	84	69	0	111	178	165	280	96	233	
13		110	0	51	43	0	69	0	0	0	0	95	
14		0	0	0	0	0	0	0	0	0	0	0	
15		0	0	0	0	0	0	0	0	0	0	113	
16		0	0	0	0	0	0	0	0	0	0	0	
17		0	0	0	0	0	0	0	0	0	0	0	
18		0	0	0	0	0	0	0	0	0	0	145	
19		0	0	0	0	0	0	0	0	0	0	0	
20		221	224	103	85	0	136	218	202	342	119	190	
21		238	243	111	93	0	148	236	219	371	128	205	
22		233	238	109	91	0	145	231	215	363	125	303	
23		127	0	58	49	0	79	0	0	0	0	109	
24		0	0	0	0	0	0	0	0	0	0	0	
25		128	0	59	49	0	79	0	0	0	0	110	
26		0	0	0	0	0	0	0	0	0	0	0	
27		0	0	0	0	0	0	0	0	0	0	0	
28		0	0	0	0	0	0	0	0	0	0	0	
29		184	0	0	0	0	0	0	0	0	0	159	
30		0	0	0	0	0	0	0	0	0	0	0	
31		244	250	172	95	0	229	241	224	379	132	316	
32		136	278	127	105	0	170	270	0	423	146	235	
33		0	0	82	68	0	109	0	0	0	0	152	
34		0	0	0	56	0	0	0	0	0	0	0	
35		0	0	0	0	0	0	0	0	0	0	0	
36		0	0	0	116	0	0	0	0	0	0	0	
37		0	0	0	0	0	0	0	0	0	0	0	
38		0	0	0	0	0	0	0	0	0	0	0	
39		202	0	140	140	0	253	0	0	0	219	351	
40		0	0	0	0	0	0	0	0	0	0	0	
41		0	0	133	0	0	177	0	0	0	0	244	
SUM	1-41	2791	1934	1891	1499	0	2416	1686	1313	2952	1632	4006	
42		0	0	0	0	0	0	0	0	0	0	0	
43		0	0	0	0	0	0	0	0	0	0	0	
44		0	0	0	0	0	0	0	0	0	0	0	
45		0	0	0	0	0	0	0	0	0	0	0	
46		0	0	0	0	0	0	0	0	0	0	0	
47		0	0	0	0	0	0	0	0	0	0	0	
48		0	0	0	0	0	0	0	0	0	0	0	
49		0	0	336	0	0	448	0	0	0	776	619	
50		0	0	0	0	0	0	0	0	0	0	0	
51		0	0	0	0	0	0	0	0	0	0	0	
52		0	0	0	0	0	0	0	0	0	0	0	
53		0	0	0	0	0	0	0	0	0	0	0	
54		0	0	0	0	0	0	0	0	0	1651	0	
55		0	0	0	0	0	0	0	0	0	0	0	
56		0	0	0	0	0	0	0	0	0	0	0	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	302	860	
64		0	0	0	0	0	0	0	0	0	0	14	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	336	0	0	448	0	0	0	2729	1493	
	TOTAL	2791	1934	2227	1499	0	2864	1686	1313	2952	4361	5499	

**** RINGROAD PROJECT **** (2000-A) FRATER

BUS		66	68 42-66	TOTAL	T.E.
1		0	2731	13987	16054
2		0	983	6982	8191
3		0	2083	8330	10107
4		0	2324	9944	12449
5		0	1096	5100	7168
6		0	823	4527	6313
7		0	419	2695	3875
8		0	1525	5256	7489
9		0	0	1112	1783
10		0	0	701	1483
11		0	0	533	685
12		0	3486	10330	18579
13		0	705	2675	4205
14		0	262	1660	2642
15		0	394	1934	3039
16		0	243	1556	2643
17		0	99	1033	1843
18		0	788	2090	3869
19		0	0	592	1530
20		0	3221	7849	11939
21		0	3582	8631	12843
22		0	4431	8701	14725
23		0	767	1772	4398
24		0	0	381	1223
25		0	1026	2421	5166
26		0	110	484	1632
27		0	129	384	1883
28		0	135	597	1852
29		0	808	1485	3466
30		0	90	273	1732
31		0	4500	7541	15226
32		0	3095	4649	11491
33		0	466	953	2405
34		0	148	622	2087
35		0	0	213	1532
36		0	116	281	945
37		0	129	300	1699
38		0	0	85	599
39		0	2278	2882	7794
40		0	0	242	903
41		0	608	672	2225
SUM	1-41	0	43600	132655	221710
42		0	0	0	2291
43		0	0	0	1879
44		0	0	0	1808
45		0	0	0	1351
46		0	0	0	1313
47		0	0	0	1440
48		0	0	0	1059
49		0	2179	2179	5719
50		0	0	0	869
51		0	0	0	1312
52		0	0	0	1676
53		0	0	0	0
54		0	1651	1651	4343
55		0	0	0	2791
56		0	0	0	1934
57		0	0	0	2227
58		0	0	0	1499
59		0	0	0	0
60		0	0	0	2864
61		0	0	0	1686
62		0	0	0	1313
63		0	1162	1162	4114
64		0	14	14	4375
65		0	0	0	5499
66		0	0	0	0
SUM	42-66	0	5006	5006	53617
	TOTAL	0	48606	137661	275322

**** RINGROAD PROJECT **** (2000-A) FRATER

	TRUCK	1	2	3	4	5	6	7	8	9	10	11
1		40	39	48	28	47	122	12	53	54	33	4
2		0	113	124	55	45	665	43	139	126	85	6
3		0	0	376	136	84	352	43	203	560	172	11
4		0	0	0	146	61	173	23	98	136	95	6
5		0	0	0	0	62	140	17	76	94	53	6
6		0	0	0	0	0	1143	291	771	427	452	28
7		0	0	0	0	0	0	69	362	128	165	2
8		0	0	0	0	0	0	0	2583	551	2504	22
9		0	0	0	0	0	0	0	0	1420	467	17
10		0	0	0	0	0	0	0	0	0	2960	15
11		0	0	0	0	0	0	0	0	0	0	8
12		0	0	0	0	0	0	0	0	0	0	0
13		0	0	0	0	0	0	0	0	0	0	0
14		0	0	0	0	0	0	0	0	0	0	0
15		0	0	0	0	0	0	0	0	0	0	0
16		0	0	0	0	0	0	0	0	0	0	0
17		0	0	0	0	0	0	0	0	0	0	0
18		0	0	0	0	0	0	0	0	0	0	0
19		0	0	0	0	0	0	0	0	0	0	0
20		0	0	0	0	0	0	0	0	0	0	0
21		0	0	0	0	0	0	0	0	0	0	0
22		0	0	0	0	0	0	0	0	0	0	0
23		0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	40	152	548	365	299	2595	498	4285	3516	6986	125
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	40	152	548	365	299	2595	498	4285	3516	6986	125

****** RINGROAD PROJECT **** (2000-A) FRATER**

TRUCK		12	13	14	15	16	17	18	19	20	21	22
1		142	29	12	11	71	125	14	9	14	46	41
2		248	31	18	17	111	183	22	14	73	88	64
3		183	58	35	32	204	338	39	26	154	163	117
4		99	37	23	21	112	188	21	15	109	138	104
5		116	68	27	27	123	186	21	14	66	88	86
6		1734	111	87	64	405	842	102	68	260	329	229
7		120	15	12	8	68	139	16	10	40	55	37
8		389	69	63	46	300	611	74	57	185	275	161
9		239	74	53	46	296	511	61	43	248	305	169
10		243	51	43	36	225	435	52	42	176	268	138
11		21	7	10	6	75	278	65	24	13	20	15
12		904	95	67	48	293	663	79	50	146	204	165
13		0	107	37	42	170	254	27	16	80	111	127
14		0	0	107	61	392	402	44	23	50	73	80
15		0	0	0	71	251	228	25	14	45	66	121
16		0	0	0	0	1534	3028	340	147	236	360	367
17		0	0	0	0	0	3571	2049	439	390	598	489
18		0	0	0	0	0	0	77	76	46	71	56
19		0	0	0	0	0	0	0	75	32	51	37
20		0	0	0	0	0	0	0	0	594	598	243
21		0	0	0	0	0	0	0	0	0	1084	330
22		0	0	0	0	0	0	0	0	0	0	290
23		0	0	0	0	0	0	0	0	0	0	0
24		0	0	0	0	0	0	0	0	0	0	0
25		0	0	0	0	0	0	0	0	0	0	0
26		0	0	0	0	0	0	0	0	0	0	0
27		0	0	0	0	0	0	0	0	0	0	0
28		0	0	0	0	0	0	0	0	0	0	0
29		0	0	0	0	0	0	0	0	0	0	0
30		0	0	0	0	0	0	0	0	0	0	0
31		0	0	0	0	0	0	0	0	0	0	0
32		0	0	0	0	0	0	0	0	0	0	0
33		0	0	0	0	0	0	0	0	0	0	0
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	4438	752	594	536	4626	11982	3128	1162	3067	4991	3462
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	4438	752	594	536	4626	11982	3128	1162	3067	4991	3462

**** RINGROAD PROJECT **** (2000-A) PRATER

TRUCK		23	24	25	26	27	28	29	30	31	32	33
1		25	4	8	8	15	7	5	25	107	23	10
2		41	9	13	13	23	13	9	41	249	57	24
3		75	16	24	25	45	25	17	76	493	120	44
4		64	13	22	23	40	21	13	57	490	142	33
5		56	8	15	15	26	14	11	57	185	43	18
6		151	34	52	54	96	56	36	154	820	195	89
7		25	3	7	7	15	8	5	25	155	29	13
8		112	29	45	47	96	55	35	119	720	136	84
9		111	31	43	45	80	46	28	114	2229	231	85
10		96	27	42	44	91	53	34	100	750	139	86
11		13	2	3	4	7	5	4	19	31	7	4
12		107	20	36	37	65	37	25	113	454	108	50
13		83	10	18	19	33	17	13	80	142	33	23
14		79	7	12	12	23	17	14	79	98	23	15
15		159	6	10	11	21	18	16	132	86	21	13
16		356	45	75	77	157	107	116	482	549	131	75
17		438	74	122	127	255	173	168	646	936	223	125
18		50	7	13	14	29	19	18	76	114	25	14
19		31	5	9	9	21	13	11	41	81	18	10
20		145	54	68	65	106	55	33	130	638	173	99
21		203	621	411	223	302	145	86	189	702	196	135
22		800	32	58	59	98	75	63	372	344	92	62
23		308	20	36	36	67	62	57	533	226	59	39
24		0	21	95	33	41	18	10	22	72	18	12
25		0	0	50	91	90	35	20	41	98	25	17
26		0	0	0	50	87	34	20	41	100	26	17
27		0	0	0	0	115	162	43	87	175	44	29
28		0	0	0	0	0	155	39	58	97	24	16
29		0	0	0	0	0	0	44	78	60	15	9
30		0	0	0	0	0	0	0	387	219	56	37
31		0	0	0	0	0	0	0	0	2443	767	215
32		0	0	0	0	0	0	0	0	0	164	62
33		0	0	0	0	0	0	0	0	0	0	122
34		0	0	0	0	0	0	0	0	0	0	0
35		0	0	0	0	0	0	0	0	0	0	0
36		0	0	0	0	0	0	0	0	0	0	0
37		0	0	0	0	0	0	0	0	0	0	0
38		0	0	0	0	0	0	0	0	0	0	0
39		0	0	0	0	0	0	0	0	0	0	0
40		0	0	0	0	0	0	0	0	0	0	0
41		0	0	0	0	0	0	0	0	0	0	0
SUM	1-41	3526	1098	1287	1148	2046	1445	995	4374	13863	3363	1686
42		0	0	0	0	0	0	0	0	0	0	0
43		0	0	0	0	0	0	0	0	0	0	0
44		0	0	0	0	0	0	0	0	0	0	0
45		0	0	0	0	0	0	0	0	0	0	0
46		0	0	0	0	0	0	0	0	0	0	0
47		0	0	0	0	0	0	0	0	0	0	0
48		0	0	0	0	0	0	0	0	0	0	0
49		0	0	0	0	0	0	0	0	0	0	0
50		0	0	0	0	0	0	0	0	0	0	0
51		0	0	0	0	0	0	0	0	0	0	0
52		0	0	0	0	0	0	0	0	0	0	0
53		0	0	0	0	0	0	0	0	0	0	0
54		0	0	0	0	0	0	0	0	0	0	0
55		0	0	0	0	0	0	0	0	0	0	0
56		0	0	0	0	0	0	0	0	0	0	0
57		0	0	0	0	0	0	0	0	0	0	0
58		0	0	0	0	0	0	0	0	0	0	0
59		0	0	0	0	0	0	0	0	0	0	0
60		0	0	0	0	0	0	0	0	0	0	0
61		0	0	0	0	0	0	0	0	0	0	0
62		0	0	0	0	0	0	0	0	0	0	0
63		0	0	0	0	0	0	0	0	0	0	0
64		0	0	0	0	0	0	0	0	0	0	0
65		0	0	0	0	0	0	0	0	0	0	0
66		0	0	0	0	0	0	0	0	0	0	0
SUM	42-66	0	0	0	0	0	0	0	0	0	0	0
	TOTAL	3526	1098	1287	1148	2046	1445	995	4374	13863	3363	1686

**** RINGROAD PROJECT **** (2000-A1 FRÅTER

TRUCK	34	35	36	37	38	39	40	41	67	42	43
									1-41		
1	5	4	4	26	5	39	78	54	1466	15	10
2	11	10	9	58	11	88	167	118	3234	26	19
3	21	18	16	106	20	162	443	323	5355	48	35
4	15	13	12	75	14	116	234	172	3289	27	25
5	9	7	7	46	8	68	134	94	2093	24	19
6	45	39	35	220	45	328	669	472	10935	124	80
7	5	5	3	38	6	54	203	150	2002	21	13
8	39	38	41	238	47	395	1974	1545	13685	105	83
9	41	36	33	201	40	348	1313	1027	10027	82	61
10	38	37	42	239	46	415	2866	2577	12406	77	77
11	2	2	2	15	2	17	35	23	739	18	7
12	26	22	20	128	25	140	382	264	4823	85	51
13	10	8	8	52	9	80	120	82	1811	28	22
14	7	7	6	44	7	60	100	67	1909	37	23
15	6	5	5	42	6	52	83	56	1569	24	22
16	46	39	30	263	45	285	535	361	9804	234	159
17	76	68	53	466	78	486	963	644	13657	768	259
18	8	7	6	55	8	58	120	79	1046	74	28
19	6	5	4	38	6	42	94	61	700	53	19
20	45	35	30	196	39	319	441	306	4412	58	59
21	63	51	46	417	57	449	608	414	6732	90	126
22	28	24	21	156	28	219	314	213	3346	64	82
23	18	16	14	110	18	142	218	146	2125	52	67
24	7	5	4	55	6	45	64	45	573	9	14
25	14	10	7	102	12	81	98	65	836	16	24
26	14	10	7	102	11	63	101	68	751	15	25
27	26	23	16	209	23	117	210	138	1412	35	55
28	14	11	9	101	13	61	120	79	797	22	40
29	9	7	5	69	8	40	79	51	474	18	45
30	22	14	14	150	21	140	227	151	1443	70	80
31	99	80	73	446	92	745	2065	1375	8600	149	122
32	27	20	19	121	24	210	367	259	1268	33	28
33	30	19	27	103	15	338	216	152	1022	18	18
34	38	45	16	199	11	78	92	62	541	10	14
35	0	34	15	105	8	71	92	60	385	9	12
36	0	0	37	56	12	134	107	74	420	7	10
37	0	0	0	1052	106	318	540	369	2385	68	99
38	0	0	0	0	24	65	110	73	272	10	14
39	0	0	0	0	0	1050	1107	800	2957	79	77
40	0	0	0	0	0	0	8587	19461	28048	183	178
41	0	0	0	0	0	0	0	3450	3450	115	112
SUM 1-41	870	779	696	6117	956	7943	26276	36180	172799	3000	2313
42	0	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0	0
54	0	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0	0
56	0	0	0	0	0	0	0	0	0	0	0
57	0	0	0	0	0	0	0	0	0	0	0
58	0	0	0	0	0	0	0	0	0	0	0
59	0	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0	0
61	0	0	0	0	0	0	0	0	0	0	0
62	0	0	0	0	0	0	0	0	0	0	0
63	0	0	0	0	0	0	0	0	0	0	0
64	0	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0	0
66	0	0	0	0	0	0	0	0	0	0	0
SUM 42-66	0	0	0	0	0	0	0	0	0	0	0
TOTAL	870	779	696	6117	956	7943	26276	36180	172799	3000	2313

**** RINGROAD PROJECT **** (2000=A) FRATER

TRUCK	44	45	46	47	48	49	50	51	52	53	54	
1	12	63	7	7	6	24	2	6	7	1	16	
2	21	114	14	14	11	52	6	13	14	2	35	
3	39	210	26	27	20	97	13	24	28	5	65	
4	26	123	16	15	12	62	7	17	19	2	41	
5	24	104	12	11	8	40	6	11	12	1	27	
6	87	497	64	66	51	219	31	56	65	11	156	
7	15	100	13	13	8	44	5	9	10	0	32	
8	78	474	66	71	52	256	35	60	72	14	184	
9	67	365	48	49	37	189	26	49	57	9	129	
10	63	359	51	57	40	235	30	56	69	13	165	
11	9	87	7	6	6	14	2	3	2	0	10	
12	60	340	45	41	33	128	19	34	37	6	89	
13	29	114	14	12	10	43	6	12	13	1	28	
14	30	138	16	15	11	40	6	10	10	1	26	
15	32	94	11	10	7	32	6	9	9	1	21	
16	172	765	103	81	66	213	49	64	62	10	146	
17	277	1952	257	178	157	383	97	114	111	20	270	
18	32	255	27	19	16	46	9	13	12	1	32	
19	20	370	21	20	20	35	6	9	9	1	25	
20	59	256	33	32	25	146	27	50	47	6	95	
21	94	393	52	53	41	229	48	175	73	11	150	
22	96	260	33	32	24	118	23	38	37	5	79	
23	87	211	27	24	19	83	18	26	25	4	56	
24	10	44	5	5	3	26	5	14	8	0	16	
25	17	70	9	7	6	42	8	20	13	1	27	
26	18	73	9	8	6	43	7	17	14	1	28	
27	34	148	16	13	10	88	17	34	30	0	60	
28	25	97	12	10	9	53	11	17	16	2	34	
29	22	76	9	7	6	33	9	10	10	1	21	
30	134	264	35	29	23	97	22	29	29	4	66	
31	121	646	89	87	67	366	50	100	118	18	243	
32	28	153	18	19	14	89	12	24	28	4	56	
33	17	87	10	10	7	55	6	15	18	2	35	
34	10	49	6	6	3	36	5	12	13	1	23	
35	9	45	5	6	3	34	3	9	10	1	21	
36	7	39	3	5	3	33	3	7	11	1	20	
37	72	292	41	39	29	226	36	85	87	10	135	
38	10	52	6	7	5	50	5	13	20	1	28	
39	74	357	48	49	36	236	31	62	79	11	154	
40	148	850	120	133	97	546	73	129	162	33	383	
41	93	534	74	80	54	342	45	82	103	19	236	
SUM 1-41	2278	11520	1483	1373	1072	5123	810	1487	1569	235	3461	
42	0	0	0	0	0	206	11	16	16	1	43	
43	0	0	0	0	0	65	40	26	18	3	44	
44	0	0	0	0	0	56	16	16	15	1	38	
45	0	0	0	0	0	296	65	82	78	14	218	
46	0	0	0	0	0	42	6	9	9	1	31	
47	0	0	0	0	0	47	9	12	11	3	35	
48	0	0	0	0	0	32	6	8	8	1	26	
49	0	0	0	0	0	0	0	0	0	0	0	
50	0	0	0	0	0	0	0	0	0	0	0	
51	0	0	0	0	0	0	0	0	0	0	0	
52	0	0	0	0	0	0	0	0	0	0	0	
53	0	0	0	0	0	0	0	0	0	0	0	
54	0	0	0	0	0	0	0	0	0	0	0	
55	0	0	0	0	0	0	0	0	0	0	0	
56	0	0	0	0	0	0	0	0	0	0	0	
57	0	0	0	0	0	0	0	0	0	0	0	
58	0	0	0	0	0	0	0	0	0	0	0	
59	0	0	0	0	0	0	0	0	0	0	0	
60	0	0	0	0	0	0	0	0	0	0	0	
61	0	0	0	0	0	0	0	0	0	0	0	
62	0	0	0	0	0	0	0	0	0	0	0	
63	0	0	0	0	0	0	0	0	0	0	0	
64	0	0	0	0	0	0	0	0	0	0	0	
65	0	0	0	0	0	0	0	0	0	0	0	
66	0	0	0	0	0	0	0	0	0	0	0	
SUM 42-66	0	0	0	0	0	744	193	169	155	24	438	
TOTAL	2278	11520	1483	1373	1072	5867	963	1656	1724	259	3899	

**** RINGROAD PROJECT **** (2000-A) FRATER

TRUCK		55	56	57	58	59	60	61	62	63	64	65	
1		12	7	13	8	1	18	10	8	23	49	165	
2		24	17	28	22	3	39	27	18	48	103	332	
3		46	32	50	40	5	73	49	35	87	188	606	
4		31	19	33	27	3	47	32	23	53	120	404	
5		24	13	20	16	1	30	22	15	40	84	277	
6		109	75	110	86	16	164	118	85	215	447	1337	
7		22	14	31	15	4	44	28	20	47	102	283	
8		120	92	233	104	34	301	178	132	248	552	2036	
9		91	63	130	79	17	173	106	76	168	371	1255	
10		108	82	255	106	30	300	160	117	198	478	1864	
11		10	5	5	2	0	8	6	4	21	33	101	
12		70	43	63	48	7	94	70	50	138	274	846	
13		24	14	23	18	1	31	23	16	42	85	305	
14		27	14	19	14	1	27	20	14	48	87	291	
15		23	11	15	10	1	22	16	12	35	68	233	
16		160	72	92	70	14	141	107	78	245	441	1380	
17		287	137	165	122	28	255	200	145	512	832	2547	
18		32	15	18	13	2	29	23	14	63	102	321	
19		25	13	13	9	1	22	17	12	61	88	272	
20		79	45	81	70	9	108	70	50	114	264	974	
21		161	73	120	99	17	165	110	81	182	421	1530	
22		81	38	60	49	7	87	59	42	107	232	822	
23		63	27	41	32	5	61	42	31	82	170	593	
24		18	7	11	9	0	17	11	8	19	47	175	
25		25	11	15	15	2	25	15	10	30	74	253	
26		25	13	15	17	2	25	17	12	31	77	265	
27		50	25	37	34	0	54	39	16	63	158	528	
28		35	16	20	18	4	30	22	15	44	99	325	
29		27	10	13	10	2	19	13	8	27	63	208	
30		75	31	41	33	3	63	44	33	97	195	641	
31		173	119	220	169	30	295	185	133	293	666	2224	
32		40	27	54	43	6	70	42	31	69	162	593	
33		25	15	41	48	4	50	29	20	40	97	423	
34		17	10	15	31	2	21	13	10	23	60	222	
35		16	4	15	29	2	21	15	10	23	60	223	
36		13	8	19	128	2	22	14	8	19	53	219	
37		114	63	98	115	11	132	86	62	137	349	1231	
38		20	11	17	23	2	29	17	10	24	72	257	
39		106	74	194	243	24	230	132	98	173	425	1877	
40		249	190	635	275	78	720	379	279	453	1068	3868	
41		155	116	423	177	47	457	230	171	280	667	2735	
SUM	1-41	2814	1676	3501	2476	426	4515	2796	2012	4622	9983	35037	
42		0	0	344	16	2	40	31	23	113	158	529	
43		0	0	24	18	1	37	29	20	66	147	522	
44		0	0	19	16	2	33	26	18	67	130	458	
45		0	0	115	81	24	191	171	122	648	805	2633	
46		0	0	14	8	2	26	21	15	81	117	383	
47		0	0	16	10	2	27	27	17	183	162	442	
48		0	0	11	6	2	21	21	13	149	105	337	
49		0	0	137	0	9	118	0	67	183	904	1669	
50		0	0	9	0	1	15	0	8	32	97	246	
51		0	0	17	0	1	27	0	16	43	133	392	
52		0	0	21	0	1	33	0	17	42	156	441	
53		0	0	4	0	0	9	0	1	8	38	132	
54		0	0	46	0	6	80	0	52	154	1117	1244	
55		0	0	34	0	4	57	0	34	121	366	841	
56		0	0	24	0	1	41	0	26	103	354	670	
57		0	0	0	0	0	0	0	0	0	0	0	
58		0	0	0	0	0	0	0	0	0	0	0	
59		0	0	0	0	0	0	0	0	0	0	0	
60		0	0	0	0	0	0	0	0	0	0	0	
61		0	0	0	0	0	0	0	0	0	0	0	
62		0	0	0	0	0	0	0	0	0	0	0	
63		0	0	0	0	0	0	0	0	0	480	1795	
64		0	0	0	0	0	0	0	0	0	0	6392	
65		0	0	0	0	0	0	0	0	0	0	0	
66		0	0	0	0	0	0	0	0	0	0	0	
SUM	42-66	0	0	835	155	58	755	326	449	1993	5369	19201	
	TOTAL	2814	1676	4336	2631	484	5270	3122	2461	6615	15352	54238	

TRUCK		66	66 42-66	TOTAL	T.E.
1		271	751	2227	2267
2		829	1631	5065	5417
3		879	2729	8084	8632
4		468	1652	4941	5306
5		360	1201	3294	3593
6		5416	9688	20623	23218
7		16016	16909	18911	19409
8		6959	12531	26216	30501
9		2505	6202	16229	19745
10		3439	8425	20831	27617
11		89	455	1194	1319
12		2200	4871	9694	14132
13		302	1218	3029	3781
14		261	1186	3095	3689
15		194	918	2487	3023
16		1229	6155	15959	20587
17		2479	12542	26199	38181
18		298	1496	2542	3670
19		208	1349	2049	3211
20		762	3514	7926	10993
21		1011	5455	12187	17178
22		666	3141	6487	9449
23		455	2301	4426	7454
24		106	587	1160	2258
25		159	894	1730	3017
26		166	929	1680	2628
27		295	1839	3251	5297
28		181	1157	1954	3399
29		120	787	1261	2256
30		470	2610	4053	8427
31		3029	9708	18308	32171
32		539	2187	3450	6813
33		265	1359	2377	4063
34		140	752	1293	2183
35		126	716	1101	1880
36		111	765	1185	1881
37		686	4303	6688	12805
38		134	838	1110	2066
39		1020	5891	8848	16791
40		4856	16083	44131	70407
41		3172	10524	13974	50154
SUM	1-41	62868	168430	341249	514048
42		337	1886	1886	4866
43		226	1286	1286	3599
44		244	1155	1155	3433
45		1414	6957	6957	18477
46		207	967	967	2450
47		199	1245	1245	2618
48		146	887	887	1459
49		617	3699	3699	9566
50		93	501	501	1464
51		169	794	794	2450
52		179	890	890	2614
53		33	225	225	484
54		420	3159	3159	7058
55		317	1774	1774	4568
56		220	1439	1439	3115
57		0	0	0	4336
58		0	0	0	2631
59		0	0	0	484
60		0	0	0	5270
61		0	0	0	3122
62		0	0	0	2461
63		697	3072	3072	9667
64		1447	7839	7839	23191
65		7272	7272	7272	61510
66		0	0	0	77091
SUM	42-66	14223	45067	45067	258544
	TOTAL	77091	213497	386296	772592

Table 4 TRAFFIC ASSIGNMENT ON TOLLWAYS (WHOLE CONST. ZONE TARIFF 20 RP/KM).

*** JAKARTA RING ROAD PROJECT *** (2000 CASE1) PAGE 424

TOTAL

	41	42	43	44	45	46	47	48	49	50
41	0	0	18844	9221	0	97	0	1971	0	20
42	0	0	0	0	0	0	0	0	0	0
43	0	0	0	3922	0	21	0	994	0	21
44	0	0	0	0	0	726	0	3679	0	778
45	0	0	0	0	0	9458	0	10616	0	2204
46	0	0	0	0	0	0	0	35863	0	8834
47	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	21990
49	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
	0	0	18844	13143	0	10302	0	53123	0	33847

	51	52	53	13		
41	30	0	0	0	30183	30183
42	0	0	0	0	0	0
43	52	0	0	0	5010	23854
44	528	0	0	0	5711	18854
45	2137	153	0	2526	27094	27094
46	3626	76	0	4724	53117	63419
47	0	0	0	0	0	0
48	8097	218	0	8209	38514	91637
49	0	0	0	0	0	0
50	15282	118	0	11449	26849	60696
51	0	2539	0	24351	26890	56636
52	0	0	0	46343	46343	49447
53	0	0	0	0	0	0
13	0	0	0	0	0	97602
	29746	3104	0	97602	259711	519422

SEDAN

	41	42	43	44	45	46	47	48	49	50
41	0	0	16253	8880	0	0	0	1780	0	0
42	0	0	0	0	0	0	0	0	0	0
43	0	0	0	3859	0	0	0	935	0	0
44	0	0	0	0	0	709	0	3666	0	771
45	0	0	0	0	0	9458	0	10616	0	2204
46	0	0	0	0	0	0	0	35810	0	8834
47	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	21990
49	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
	0	0	16253	12739	0	10167	0	52807	0	33799

	51	52	53	13		
41	0	0	0	0	26913	26913
42	0	0	0	0	0	0
43	0	0	0	0	4794	21047
44	526	0	0	0	5674	18413
45	2137	153	0	2526	27094	27094
46	3620	76	0	4724	53064	63231
47	0	0	0	0	0	0
48	8097	218	0	8209	38514	91321
49	0	0	0	0	0	0
50	15284	118	0	11449	26849	60648
51	0	2539	0	24351	26890	56554
52	0	0	0	45247	45247	48351
53	0	0	0	0	0	0
13	0	0	0	0	0	96506
	29664	3104	0	96506	255039	510078

BUS

	41	42	43	44	45	46	47	48	49	50
41	0	0	2591	341	0	97	0	191	0	20
42	0	0	0	0	0	0	0	0	0	0
43	0	0	0	63	0	21	0	59	0	21
44	0	0	0	0	0	17	0	13	0	7
45	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	53	0	0
47	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
	0	0	2591	404	0	135	0	316	0	48

	51	52	53	13		
41	30	0	0	0	3270	3270
42	0	0	0	0	0	0
43	52	0	0	0	216	2807
44	0	0	0	0	37	441
45	0	0	0	0	0	0
46	0	0	0	0	53	188
47	0	0	0	0	0	0
48	0	0	0	0	0	316
49	0	0	0	0	0	0
50	0	0	0	0	0	48
51	0	0	0	0	0	82
52	0	0	0	1096	1096	1096
53	0	0	0	0	0	0
13	0	0	0	0	0	1096
	82	0	0	1096	4672	9344

TRUCK

	41	42	43	44	45	46	47	48	49	50
41	0	0	0	0	0	0	0	0	0	0
42	0	0	0	0	0	0	0	0	0	0
43	0	0	0	0	0	0	0	0	0	0
44	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0
46	0	0	0	0	0	0	0	0	0	0
47	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	0
49	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
13	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0

	51	52	53	13		
41	0	0	0	0	0	0
42	0	0	0	0	0	0
43	0	0	0	0	0	0
44	0	0	0	0	0	0
45	0	0	0	0	0	0
46	0	0	0	0	0	0
47	0	0	0	0	0	0
48	0	0	0	0	0	0
49	0	0	0	0	0	0
50	0	0	0	0	0	0
51	0	0	0	0	0	0
52	0	0	0	0	0	0
53	0	0	0	0	0	0
13	0	0	0	0	0	0
	0	0	0	0	0	0

TRAFFIC ASSIGNMENT ON TOLLWAYS (WHOLE CONST. FLAT TARIFF 300 RP)

*** JAKARTA RING ROAD PROJECT *** (2000 CASE1) PAGE 544

TOTAL

	41	42	43	44	45	46	47	48	49	50
41	0	0	785	7549	3065	3789	0	6898	0	2938
42	0	0	0	351	188	566	0	1715	0	515
43	0	0	0	0	0	1017	0	2274	0	883
44	0	0	0	0	0	0	0	2656	0	462
45	0	0	0	0	0	0	0	5735	0	995
46	0	0	0	0	0	0	0	12198	0	2558
47	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	4793
49	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
	0	0	785	7900	3253	5372	0	31476	0	13144

	51	52	53		
41	1342	0	1126	27492	27492
42	398	0	282	4015	4015
43	547	0	1040	5761	6546
44	53	0	693	3864	11764
45	2196	0	1201	10127	13380
46	2894	0	1927	19577	24949
47	0	0	0	0	0
48	2286	0	3128	10207	41683
49	0	0	0	0	0
50	1435	0	2362	3797	16941
51	0	0	4636	4636	15787
52	0	0	0	0	0
53	0	0	0	0	16395
	11151	0	16395	89476	178952

SEDAN

	41	42	43	44	45	46	47	48	49	50
41	0	0	59	4164	1000	2341	0	5501	0	1712
42	0	0	0	132	0	262	0	1422	0	330
43	0	0	0	0	0	162	0	1309	0	375
44	0	0	0	0	0	0	0	2424	0	360
45	0	0	0	0	0	0	0	5058	0	857
46	0	0	0	0	0	0	0	11394	0	2170
47	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	4398
49	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
	0	0	59	4296	1000	2765	0	27108	0	10202

	51	52	53		
41	476	0	918	16171	16171
42	210	0	186	2542	2542
43	0	0	328	2174	2293
44	32	0	647	3463	7759
45	1910	0	900	8725	9725
46	2730	0	1759	18053	20818
47	0	0	0	0	0
48	2087	0	2967	9452	36560
49	0	0	0	0	0
50	1314	0	2000	3314	13516
51	0	0	4238	4238	12997
52	0	0	0	0	0
53	0	0	0	0	13943
	8759	0	13943	68132	136264

BUS

	41	42	43	44	45	46	47	48	49	50
41	0	0	5	357	221	115	0	235	0	143
42	0	0	0	0	0	0	0	78	0	0
43	0	0	0	0	0	0	0	22	0	62
44	0	0	0	0	0	0	0	66	0	33
45	0	0	0	0	0	0	0	215	0	33
46	0	0	0	0	0	0	0	278	0	103
47	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	242
49	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
	0	0	5	357	221	115	0	894	0	616

	51	52	53		
41	48	0	7	1131	1131
42	0	0	0	78	78
43	0	0	0	84	84
44	0	0	14	113	470
45	66	0	36	350	571
46	0	0	6	387	502
47	0	0	0	0	0
48	46	0	44	382	1276
49	0	0	0	0	0
50	32	0	60	92	708
51	0	0	192	192	384
52	0	0	0	0	0
53	0	0	0	0	409
	192	0	409	2809	5618

TRUCK

	41	42	43	44	45	46	47	48	49	50
41	0	0	721	3028	1644	1333	0	1162	0	1083
42	0	0	0	219	188	304	0	215	0	185
43	0	0	0	0	0	855	0	943	0	446
44	0	0	0	0	0	0	0	166	0	69
45	0	0	0	0	0	0	0	462	0	105
46	0	0	0	0	0	0	0	526	0	285
47	0	0	0	0	0	0	0	0	0	0
48	0	0	0	0	0	0	0	0	0	153
49	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
51	0	0	0	0	0	0	0	0	0	0
52	0	0	0	0	0	0	0	0	0	0
53	0	0	0	0	0	0	0	0	0	0
	0	0	721	3247	2032	2492	0	3474	0	2326

	51	52	53		
41	818	0	201	10190	10190
42	188	0	96	1395	1395
43	547	0	712	3503	4224
44	21	0	32	288	3535
45	220	0	265	1052	3084
46	164	0	162	1137	3629
47	0	0	0	0	0
48	153	0	67	373	3847
49	0	0	0	0	0
50	89	0	302	391	2717
51	0	0	206	206	2406
52	0	0	0	0	0
53	0	0	0	0	2043
	2200	0	2043	18535	37070

4. CARGO TERMINAL

1. General

As the division of various landuses proceeds in the course of modernization, urbanization and industrialization, the distance between places of production and those of consumption has been constantly enlarged not only for agricultural products, but also for industrial products.

And so, to organize an efficient cargo transportation system of circulation networks, vehicles and cargo terminals is indispensable. It is beneficial not only in an economic sense, but also it would remove a considerable amount of multi-directional short distance cargo movements within the city center.

2. Typology

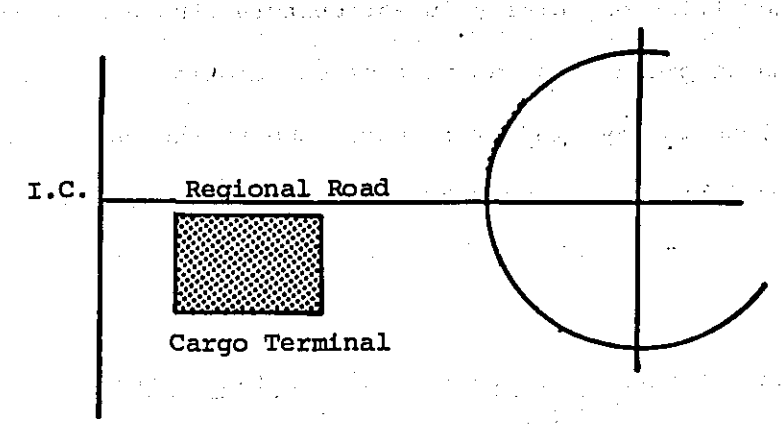
According to the variation of facilities contained, cargo terminals are classified into three major types as follows:

Type-I (Cargo Transferring)

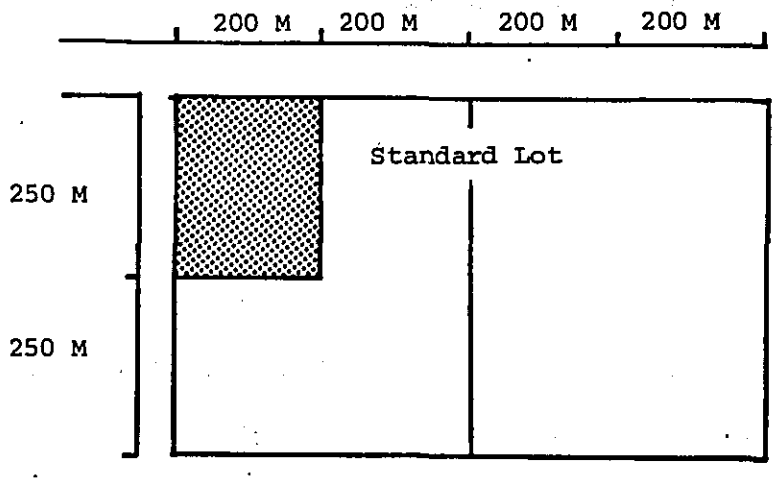
The mode of transportation differs according to the travel distance and commodities. It is transformed from one to another by cargo transferring facilities. The cargo transferring, in most cases from long distance freight trucks to local distributing trucks, and vice versa, which in an unadvanced stage is taken care by individual small-scale enterprices, is concentrated upon a large scale cargo terminal to maximize the efficiency.

Fig. 3

Location:



Lot Module:



Standard Lot Size: 200 M x 250 M
Small Lot: 5 HA
Medium Lot: 20 HA
Large Lot: 40 HA

Type-II (Cargo Transferring & Storing)

In most industries especially in agriculture, there is a gap between the time of production and that of consumption. This gap exists more or less in any kind of industry due to the market conditions, and it is adjusted by organizing storages maintaining the stability in market economy.

Type-III (Cargo Transferring, Storing and Manufacturing)

Adequate locations of manufacturing facilities, especially assembling and processing facilities, should be carefully studied to minimize the loss in the movement of materials and products. Type-III will be equipped with manufacturing facilities in addition to cargo transferring and storing facilities. If it is possible to combine manufacturing facilities with storages and transferring facilities, the loss in the intermediate goods movement would be eliminated to a large extent.

3. Facility Design

In this section design of cargo terminals including the lot size, the layout of facilities and the network system of goods and pedestrian circulation is going to be mentioned.

i) Facility Layout

There are two types of traffic flow, pedestrian and goods movement in a cargo terminal, and the layout of facilities should reflect

mainly the goods flow.

Facilities which serve for cargo transferring, such as a truck terminal and a distribution center should be close enough to the access way.

Those for processing and/or assembling should be behind the cargo transferring facilities.

Those with storing functions such as a wholesale market and a storage, and also the administration section should be in-between those two groups mentioned above.

The boundary areas of those three groups and the fringe of a lot should accommodate sustainning facilities such as a truck repairing facility, a gas stand, parking lots, recreational facilities following the location of main facilities.

The conceptual layout by types is as in Fig. 4.

ii) Network System

It would be desirable to separate rather distinctively the goods circulation and the pedestrian networks. The circulation system by types is as in Fig. 6.

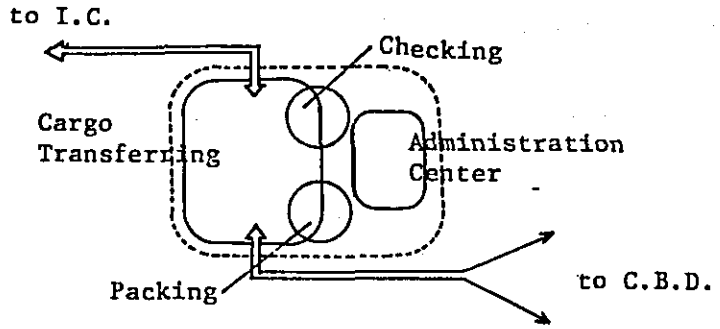
iii) Some Detail Arrangement of Green Zone

* Buffer Zone

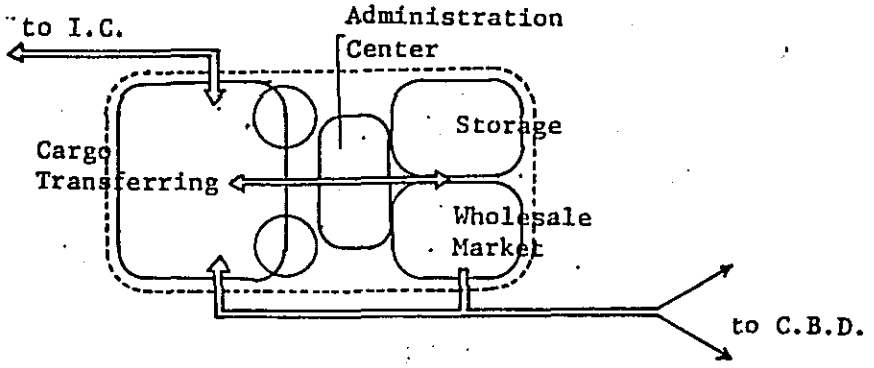
  A green belt of 20 M wide should be reserved around a lot, when a foot path is necessary, it should be located within it.

Fig. 4 Conceptual Layout of Terminal Facilities by Types

TYPE I:



TYPE II:



TYPE III:

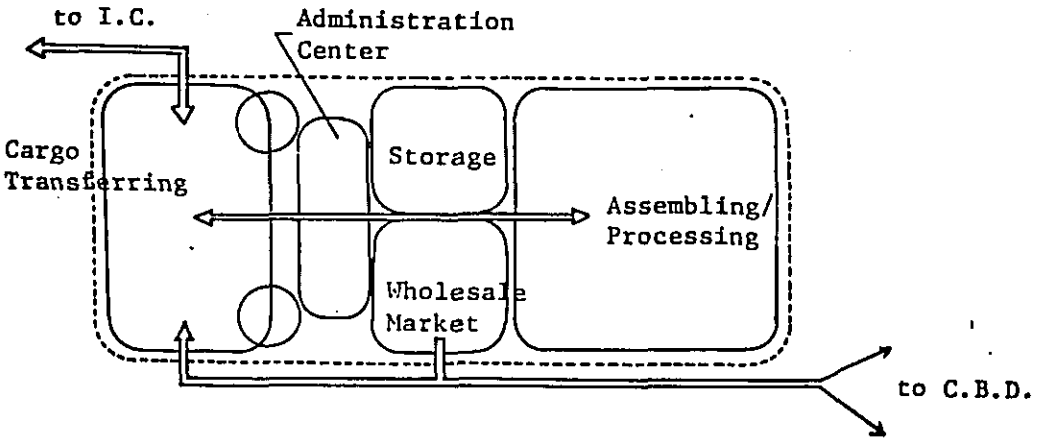
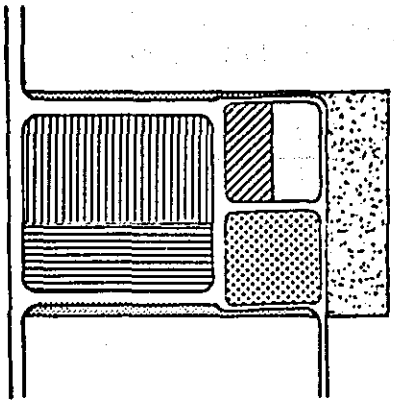


Fig. 5 Layout Scheme of Cargo Terminal by Types

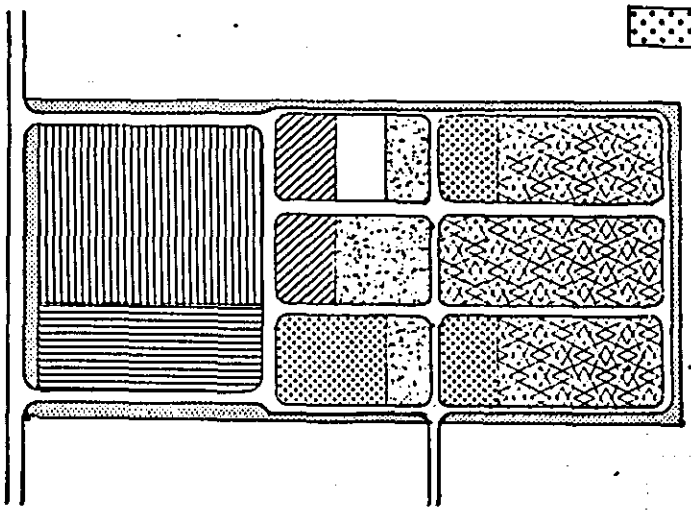
Type I:



Legend:

- Truck Terminal
- Delivery Center
- Checking/Packing Yard
- Utility
- Storage
- Administration Center
- Wholesale Market
- Processing/Assembling

Type II:



Type III:

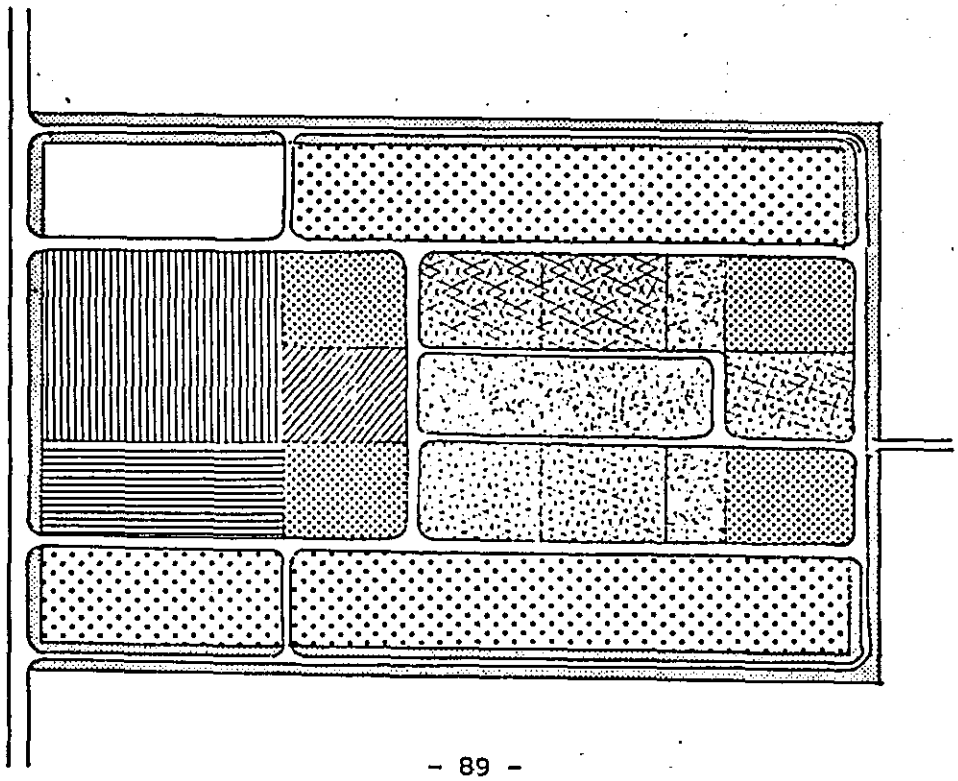
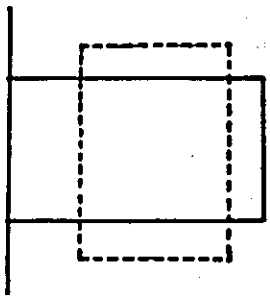


Fig. 6

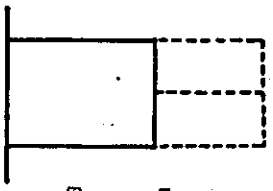
Pattern of Circulations



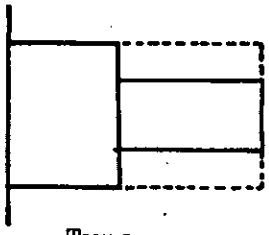
Basic Pattern

——— : Goods Circulation

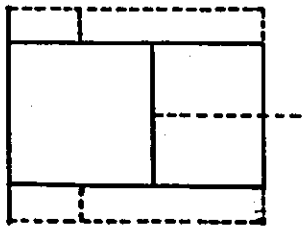
---------- : Pedestrian Circulation



Type I



Type II



Type III

* Green Belt

It would be disirable to locate non-goods-oriented facilities such as an administration center, recreational facilities in a green belt to protect the field of human activity from goods movement.

4. Lot Size

The size of a cargo terminal depends upon its type mentioned previously. The following table indicates the average ground areas by major types.

Table 5 : Average Ground Areas by Major Type

Type	Functions	Ground Area	Facilities
I	Cargo Transferring	20 Ha 40 Ha 60 Ha	Trucks Terminal, Distribution Center, Storage, Cargo Handling Yard, etc.
II	Cargo Transferring + Storing	100 Ha	In addition to those Type I: Storage, Wholesale Market, Information Center, etc.
III	Cargo Transferring + Storing + Processing & Assembling	200 Ha	In addition to those of Type II: Processing & Assembling Facilities, Storage, etc.

The size of cargo terminal represented in each type by a ground area of truck terminal and number of berth required are figured out by the following methods.

i) Ground area required for a truck terminal

- to figure out the amounts of goods carried by regular long distance truck services by directions.
- to project the above figures in future proportionally to other economic statistics such as the total amount of industrial production values, the total income within the region, the G.N.P., the population, etc.
- to estimate the percentage of the amount of goods handled at cargo terminals taking the administrative policy into account.
- to figure out the area required based upon the assumption of the unit area of 23 M^2/ton/day.

ii) Number of berthes required

- to estimate the number of berthes for arrival and departure trucks based on the assumption that each of the number of departure and arrival berthes is a half of the number of departure and arrival trucks. Or else, this is done (A) from the tonnage of cargo accumulated on platforms, or (B) from the tonnage of cargo handled during the peak hours.

A. <u>From the tonnage of cargo accumulated on platforms.</u>

When,

D: The maximum amount of cargo on departure platforms.
Ordinarily, 65% of the daily departure cargo which is about 9 - 10% more than the average daily departure cargo.

A: The maximum amount of cargo on arrival platforms.
Ordinarily, 55% of the daily arrival cargo which is about 9 - 10% more than the average daily arrival cargo.

R: The amount of cargo accumulated on platforms, less than 20% of the amount of the cargo handled daily.

T: The amount of time required in dealing with cargo.

- Td for departure platform : about 3 hours
- Ta for arrival platform : about 6 hours

C: The capacity of a platform:

- Cd for departure platform : about 4 tons/hour
- Ca for arrival platform : about 6 tons/hour

Then,

- The number of departure berthes= $\frac{D - R}{Td.Cd} = 0.033\ V$

- The number of arrival berthes = $\frac{A}{Ta.Ca} = 0.007\ V$

Where, V = Average daily cargo handling volume.

B. From the Tonnage cargo handled during peak hours

When,

V: The average daily cargo handling volume.

r: The ratio of the maximum tonnage of cargo handled to the average tonnage of cargo handled daily, around 1.09 or 1.10.

d: The ratio of the tonnage of departure cargo to V, around 59%.

a: The ratio of the tonnage of arrival cargo to V, around 41%.

P: The ratio of the tonnage of cargo handled during peak hours to the maximum tonnage of cargo handled daily.

Pd for departure cargo : 19%

Pa for arrival cargo : 11%

C: The capacity of a platform

Cd for departure platform: about 5 tons/hour

Ca for arrival platform: about 5,5 tons/hour.

Then,

- The number of departure berthes $= \frac{V.r.d.Pd}{Cd}$

- The number of arrival berthes $= \frac{V.r.a.Pa}{Ca}$

5. Size of Cargo Terminal and Terminal Cost

By adding administration, maintenance and cargo handling costs to the construction cost terminal utilization fare (terminal cost), for the amotization, will be determined. In order to avoid the influence of location of a terminal to a total construction cost, land acquisition cost is set aside for the analysis of terminal cost.

Cargo handling cost contains not only handling cost itself but also the cost of parking area and loss in waiting time for cargo transferring. Those costs are generally explained by the function of the terminal size and the cargo volume handled.

Among the determinants of size of a cargo terminal, those affecting terminal cost directly are the size of platform and parking facilities. Based on this, the relation between terminal cost and cargo handling volume is analysed and presented diagramtically (see Fig. 7). A general curve derived from the abovementioned curves will give the relation between minimum terminal cost and cargo handling volume (see Fig. 8).

Fig. 7 AMOUNT OF CARGO HANDLED & TERMINAL COST BY SIZE

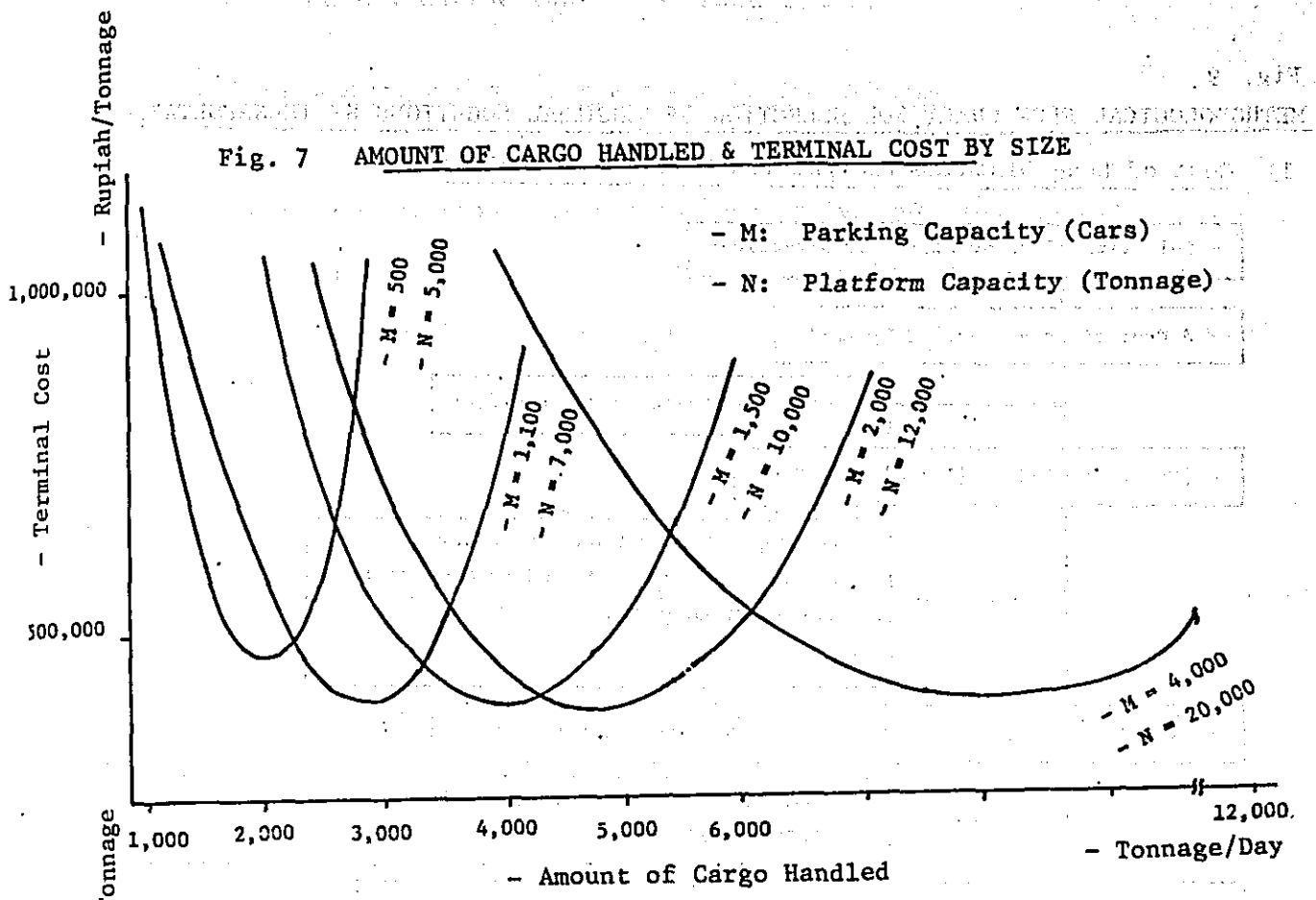


Fig. 8 MINIMUM TERMINAL COST & AMOUNT OF CARGO HANDLED

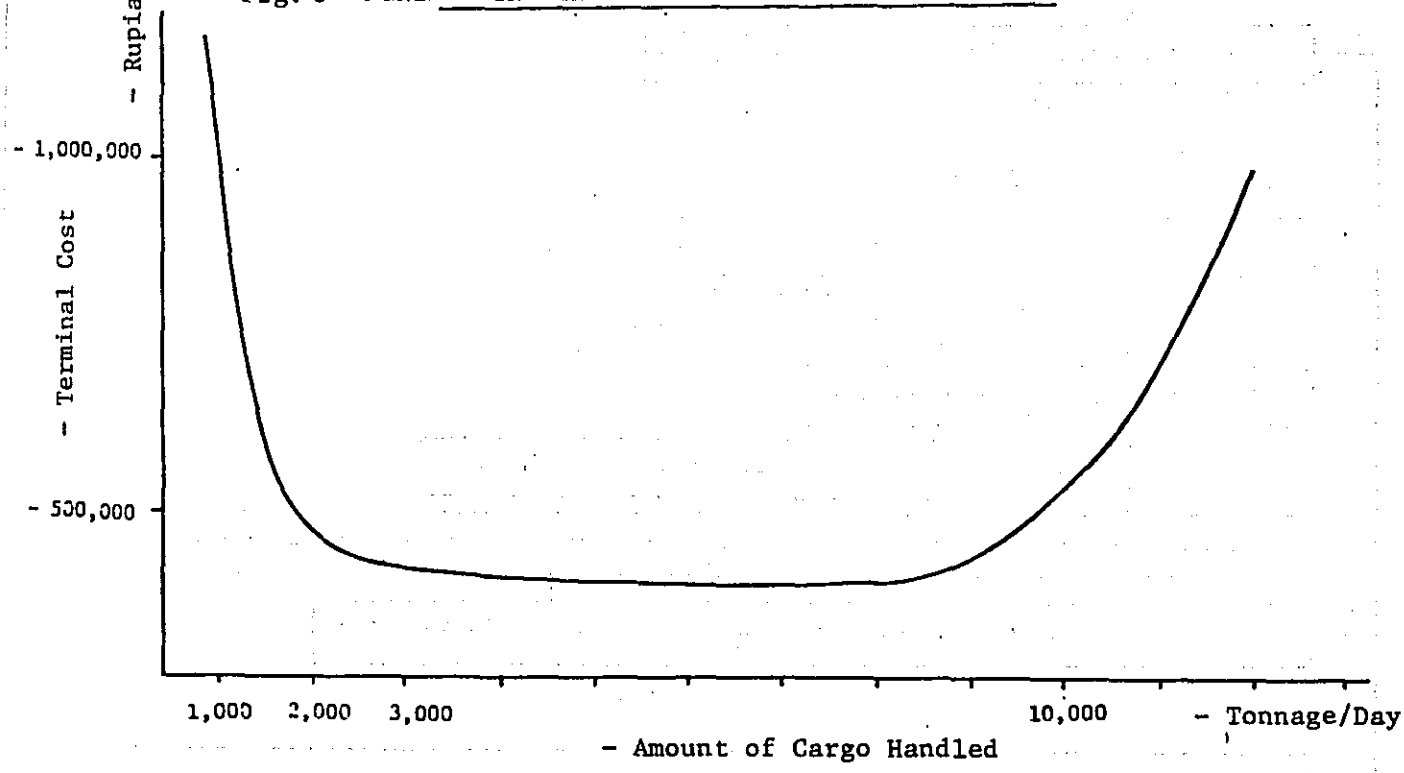
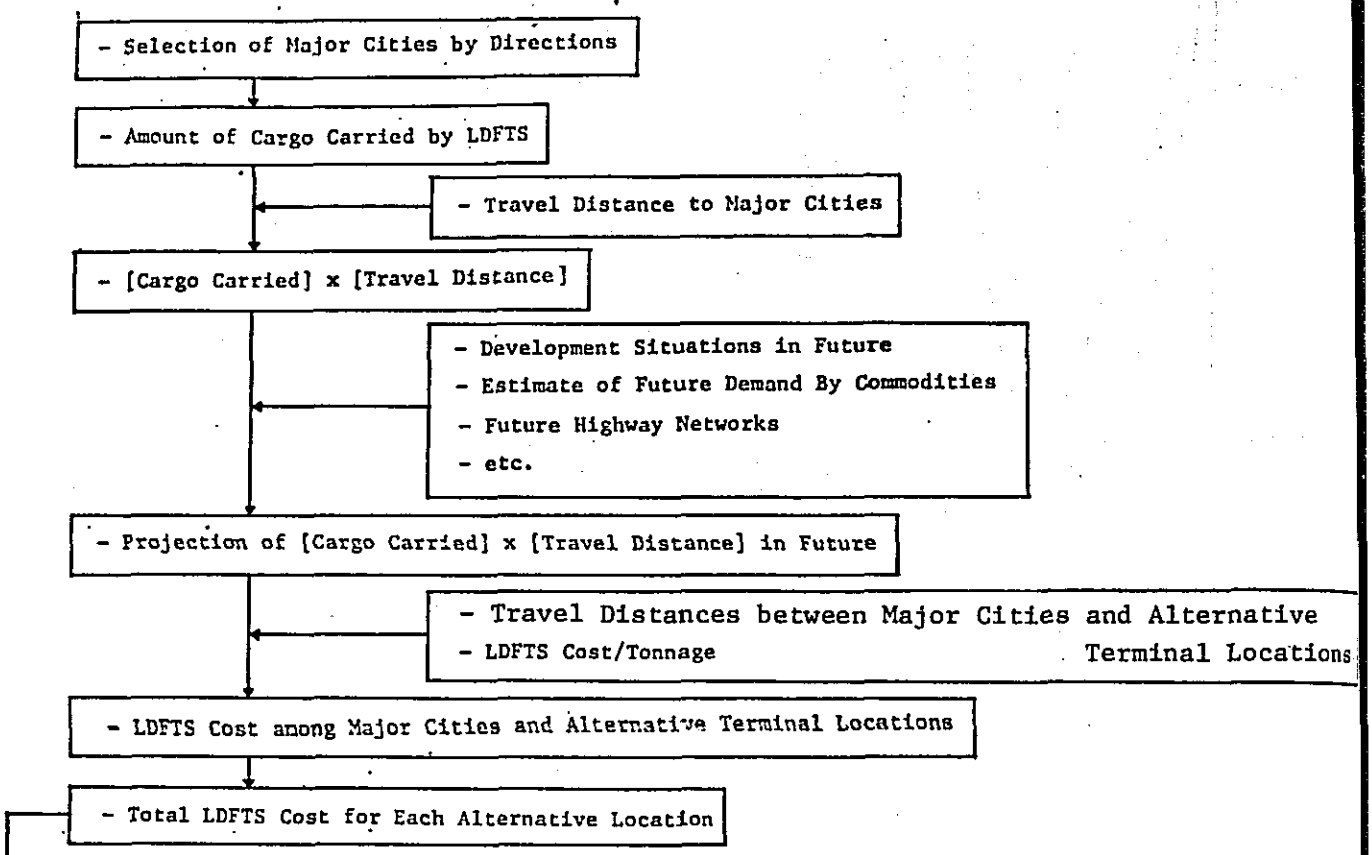


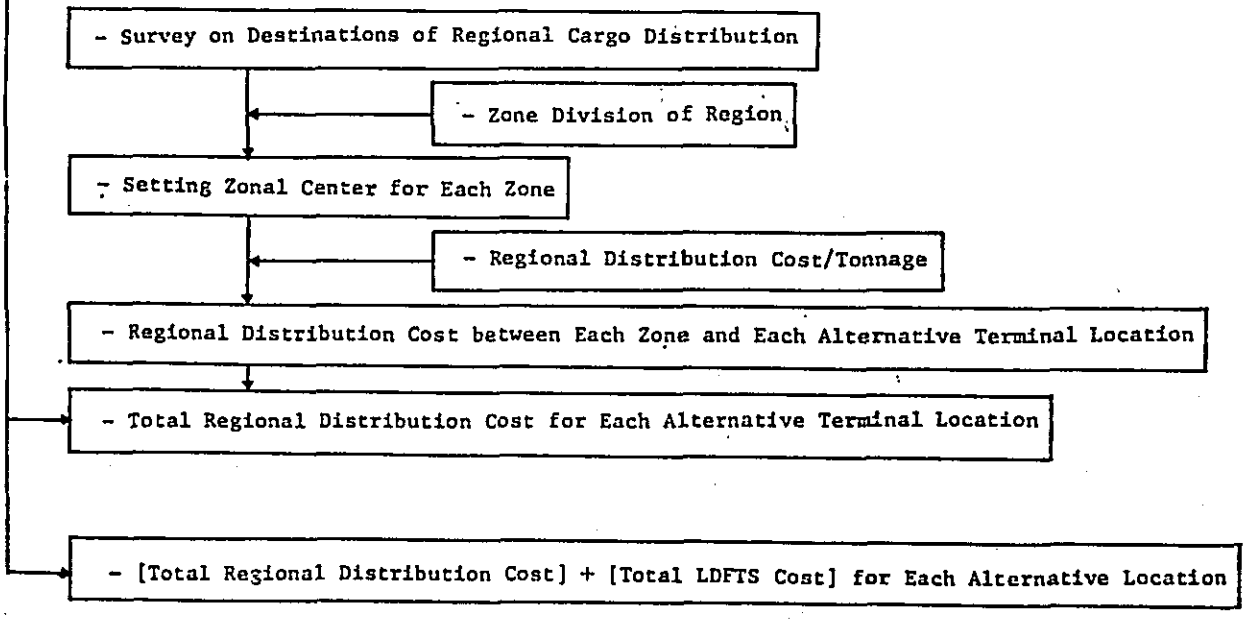
Fig. 9

METHODOLOGICAL FLOW CHART FOR SELECTION OF TERMINAL LOCATIONS BY TRANSPORTATION COSTS

1) Cost of Long Distance Freight Truck Services (LDFTS)



2) Regional Distribution Cost



5. VEHICLE OPERATING COST AND TIME VALUE

A. Vehicle Operating Costs for Representative Vehicles

The vehicle operating cost for representative vehicles travelling on a tangent paved road are calculated as shown in the succeeding pages. The variation of the operating costs corresponding to the vehicle travel speeds is also computed.

(i) Unit Prices and Relevant Factors for Calculation of Operating Costs

The prices for the various cost items of vehicles and their relevant factors for calculations are listed in Table 1-6 which show the weighted average prices for the items where the prices may vary with type or class.

(ii) Methods and Equations of Calculation

Vehicle operating costs sonsist of such cost components as fuel, engine oil, tire/tube wear, depreciation, maintenance and overhead.

(a) Equation of Fuel Consumption

Sedan : $Y = 0.1391\ V^2 - 10.649\ V + 337.16$

Bus : $Y = 0.1691\ V^2 - 11.657\ V + 371,23$

Truck : $Y = 0.1900\ V^2 - 11.141\ V + 481.13$

where : Y = volume of fuel consumption per kilometer (c.c/km-veh)

V = running speed (km/h)

(Source: Empirical formulae in Japan)

Through the above equations, fuel comsumptions in relation to the travel speeds by type of vehicle which are expressed in terms of liter per kilometer are shown in Table 7.

Table 6

AVERAGE PRICES AND RELEVANT FACTORS FOR CALCULATION OF VEHICLE OPERATING COSTS

(a) Average Prices of Vehicles, Tyres, Fuel and Oil (Unit in Rupiah)

Items	Unit	Including Taxes			Excluding Taxes		
		Passenger Car	Bus	Truck	Passenger Car	Bus	Truck
Vehicle	ea.	4,800,000	11,000,000	7,500,000	3,000,000	8,800,000	5,700,000
Tyres	set	50,000	96,000	96,000	41,000	78,000	78,000
Fuel	lit.	70	30	30	40	35	35
Oil	lit.	750	750	750	600	600	600

(b) Other Relevant Factors

Items	Unit	Passenger Car	Bus	Truck
Average vehicle life	Year	8	7	7
Average tire life	Km	50,000	25,000	25,000
Average annual mileage	Km	60,000	120,000	120,000

Table 7

FUEL CONSUMPTION BY SPEED

Unit Litter/Km

Travel Speed	Sedan	Truck	Bus
10	0.2446	0.3887	0.2715
15	0.2087	0.3567	0.2344
20	0.1798	0.3343	0.2057
25	0.1579	0.3213	0.1855
30	0.1429	0.3179	0.1737
35	0.1348	0.3239	0.1704
40	0.1338	0.3394	0.1755
45	0.1396	0.3645	0.1891
50	0.1525	0.3990	0.2111
55	0.1722	0.4431	0.2416
60	0.1190	0.4966	0.2805
65	0.2327	0.5597	0.3279
70	0.2733	0.6322	0.3838
75	0.3209	0.7143	0.4481
80	0.3755	0.8058	0.5209

(b) Engine Oil Consumption

It is assumed as follows:

Sedan : I.2% of fuel consumption

Bus : 2.2% of fuel consumption

Truck : 1.5% of fuel consumption

(Source: Practice in Japan)

(c) Cost of Tire/Tube Wear

Sedan : $0.713 + 2.296 \times 10^{-6} V^3$ (Rp./km-veh.)

Bus/Truck : $2.14 + 1.866 \times 10^{-5} V^3$ (Rp./km-veh.)

Costs of tire/tube wear calculated by those above equations include tax and 82% of the calculated costs will be tax free costs, respectively.

(d) Depreciation

Sedan : $\frac{0.9}{8} \times$ (purchase price) $\times \frac{1}{\text{annual running kilometer}}$

Bus : $\frac{0.9}{7} \times$ (purchase price) $\times \frac{1}{\text{annual running kilometer}}$

Truck : $\frac{0.9}{7} \times$ (purcahse price) $\times \frac{1}{\text{annual running kilometer}}$

The annual running kilometers of each average running speed are expressed as follows:

Sedan : $(0.00875\ V + 0.570) \times 60{,}000$

Bus : $(0.0115\ V + 0.435) \times 120{,}000$

Truck : $(0.0115\ V + 0.435) \times 120{,}000$

(Source: Empirical formulae in Japan)

(e) Maintenance Cost

Assuming that annual maintenance will cost 10% of the purchase cost for Sedan and 20% of the purcahse cost for Bus and Truck, respectively;

Sedan : 10% x (purcahse price) x $\frac{0.01\ V + 0.50}{\text{annual running kiloemters}}$

Bus : 20% x (purcahse price) x $\frac{0.01\ V + 0.55}{\text{annual running kilometers}}$

Truck : 20% x (purchase price) x $\frac{0.01\ V + 0.55}{\text{annual running kilometers}}$

(f) Overhead

It is assumed as follows:

Sedan : 5% of above subtotal

Bus : 60% of above subtotal

Truck : 80% of above subtotal

(iii) Calculated Total Operating Costs

The total operating costs, economic (excluding taxes) and financial (including taxes) in relation to the travel speeds of each type of vehicle are calculated and tabulated in Table 1-8 (a) thru (c) and Table 9 (a) thru (c), respectively.

Table 8 (a)

OPERATION COST by SPEED

- SEDAN -

(excluding Tax) - Rupiah/Km.Veh.

SPEED	FUEL	OIL	TIRE & TUBE	MAIN-TENANCE	DEPRE-CIATION	SUB-TOTAL	OVER-HEAD	TOTAL
10	9.784	1.761	0.586	4.563	8.555	25.249	1.262	26.511
15	8.348	1.503	0.591	4.635	8.021	23.026	1.151	24.177
20	7.192	1.295	0.600	4.698	7.550	21.335	1.066	22.401
25	6.316	1.137	0.614	4.754	7.132	19.953	0.997	20.950
30	5.716	1.029	0.635	4.805	6.757	18.942	0.947	19.889
35	5.392	0.971	0.665	4.850	6.419	18.297	0.914	19.211
40	5.352	0.963	0.705	4.891	6.114	18.025	0.901	18.926
45	5.584	1.005	0.756	4.929	5.837	18.111	0.905	19.016
50	6.100	1.098	0.820	4.963	5.583	18.564	0.928	19.492
55	6.888	1.240	0.898	4.994	5.351	19.371	0.968	20.339
60	7.960	1.433	0.991	5.023	5.137	20.544	1.027	21.571
65	9.308	1.675	1.102	5.049	4.940	22.074	1.103	23.177
70	10.932	1.968	1.230	5.074	4.757	23.961	1.198	25.159
75	12.836	2.310	1.379	5.097	4.587	26.209	1.310	27.519
80	15.020	2.704	1.549	5.118	4.429	28.820	1.441	30.261

Table 8 (b)

OPERATION COST by SPEED

- BUS -

(excluding Tax) - Rupiah/Km.Veh.

SPEED	FUEL	OIL	TIRE & TUBE	MAIN-TENANCE	DEPRE-CIATION	SUB-TOTAL	OVER-HEAD	TOTAL
10	9.503	3.584	1.770	17.333	17.143	49.333	39.466	88.799
15	8.204	3.094	1.806	16.844	15.469	45.417	36.334	81.751
20	7.200	2.715	1.877	16.541	14.178	42.511	34.009	76.520
25	6.493	2.449	1.994	16.240	13.050	40.226	32.181	72.407
30	6.080	2.293	2.168	15.983	12.088	38.612	30.890	69.502
35	5.964	2.249	2.411	15.761	11.258	37.643	30.114	67.757
40	6.143	2.317	2.734	15.568	10.535	37.297	29.838	67.135
45	6.619	2.496	3.149	15.398	9.899	37.561	30.049	67.610
50	7.389	2.787	3.667	15.248	9.335	38.426	30.741	67.167
55	8.456	3.189	4.301	15.113	8.832	39.891	31.913	71.804
60	9.818	3.703	5.060	14.993	8.381	41.955	33.564	75.519
65	11.477	4.328	5.957	14.884	7.973	44.619	35.695	80.314
70	13.433	5.066	7.003	14.785	7.604	47.891	38.313	86.204
75	15.684	5.915	8.210	14.695	7.267	51.771	41.417	93.188
80	18.232	6.876	9.589	14.613	6.958	56.268	45.014	101.282

Table 8 (c)

OPERATION COST by SPEED

TRUCK -

(excluding Tax) - Rupiah Km/Veh.

SPEED	FUEL	OIL	TIRE & TUBE	MAIN-TENANCE	DEPRE-CIATION	SUB-TOTAL	OVER-HEAD	TOTAL
10	13.605	3.498	1.770	11.227	11.104	41.204	24.722	65.926
15	12.485	3.210	1.806	10.911	10.020	38.432	23.059	61.491
20	11.701	3.009	1.877	10.714	9.184	36.485	21.891	58.376
25	11.246	2.892	1.994	10.519	8.453	35.104	21.062	56.166
30	11.127	2.861	2.168	10.353	7.830	34.339	20.603	54.942
35	11.337	2.915	2.411	10.209	7.292	34.164	20.498	54.662
40	11.879	3.055	2.734	10.084	6.824	34.576	20.746	55.322
45	12.758	3.281	3.149	9.974	6.412	35.574	21.344	56.918
50	13.965	3.591	3.667	9.876	6.047	37.146	22.288	59.434
55	15.509	3.988	4.301	9.789	5.721	39.308	23.585	62.893
60	17.381	4.469	5.060	9.711	5.429	42.050	25.230	67.280
65	19.590	5.037	5.957	9.641	5.165	45.390	27.234	72.624
70	22.127	5.690	7.003	9.577	4.925	49.322	29.593	78.915
75	25.001	6.429	8.210	9.518	4.707	53.865	32.319	86.184
80	28.203	7.252	9.589	9.465	4.507	59.016	35.410	94.426

Table 9 (a)

FINANCIAL OPERATION COST BY SPEED

- SEDAN -

Rupiah/Km.Veh.

SPEED	FUEL	O I L	TIRE & TUBE	MAIN-TENANCE	DEPRE-CIATION	SUB-TOTAL	OVER-HEAD	TOTAL
10	17.122	2.201	0.215	7.301	13.688	41.027	4.103	45.130
15	14.609	1.879	0.721	7.416	12.834	37.450	3.746	41.205
20	12.586	1.619	0.732	7.517	12.080	24.534	3.453	37.987
25	11.053	1.421	0.749	7.606	11.411	32.240	3.224	35.464
30	10.003	1.286	0.774	7.688	10.562	30.562	3.256	33.618
35	9.436	1.214	0.811	7.760	10.270	29.491	2.949	32.440
40	9.436	1.204	0.860	7.826	9.782	29.008	2.901	31.909
45	9.772	1.256	0.922	7.886	9.339	29.175	2.918	32.093
50	10.675	1.373	1.000	7.941	8.933	29.922	2.922	32.914
55	12.054	1.550	1.095	7.990	8.562	31.351	3.125	34.376
60	13.930	1.791	1.209	8.037	8.219	33.186	3.319	36.505
65	16.289	2.094	1.344	8.078	7.904	35.709	3.571	39.280
70	19.131	2.460	1.500	8.118	7.611	38.280	3.882	42.702
75	22.463	2.888	1.682	8.155	7.339	42.527	4.253	46.780
80	26.285	3.380	1.889	8.189	7.086	46.829	4.683	51.512

Table 9 (b)

FINANCIAL OPERATION COST BY SPEED

- BUS -

Rupiah/Km.Veh.

SPEED	FUEL	O I L	TIRE & TUBE	MAIN-TENANCE	DEPRE-CIATION	SUB-TOTAL	OVER-HEAD	TOTAL
10	8.145	4.480	2.159	21.666	21.429	57.879	57.879	115.758
15	7.032	3.818	2.202	21.055	19.336	53.493	53.493	106.986
20	6.171	3.394	2.289	20.676	17.723	50.253	50.253	100.506
25	5.565	3.061	2.432	20.300	16.313	47.671	47.671	95.342
30	5.211	2.866	2.644	19.979	15.110	45.810	45.810	91.620
35.	5.112	2.811	2.940	19.701	14.073	44.639	44.639	89.274
40	5.265	2.896	3.334	19.460	13.169	44.124	44.124	88.248
45	5.673	3.120	3.840	19.248	12.374	44.255	44.255	88.510
50	6.333	3.484	4.472	19.060	11.669	45.018	45.018	90.036
55	7.248	3.986	5.245	18.891	11.040	46.410	46.410	92.820
60	8.415	4.129	6.171	18.741	10.476	48.432	48.432	96.864
65	9.837	5.410	7.265	18.605	9.966	51.083	51.083	102.166
70	11.514	6.333	8.540	18.481	9.505	54.373	54.373	108.746
75	13.443	7.394	10.012	18.369	9.084	58.302	58.302	116.604
80	15.627	8.595	11.694	18.266	8.698	62.910	62.910	125.820

Table 9 (c)

FINANCIAL OPERATION COST BY SPEED

- TRUCK -

Rupiah/Km.Veh.

SPEED	FUEL	O I L	TIRE & TUBE	MAIN-TENANCE	DEPRE-CIATION	SUB-TOTAL	OVER-HEAD	TOTAL
10	11.661	4.373	2.150	14.774	14.612	47.579	38.063	85.642
15	10.701	4.012	2.202	14.358	13.186	44.459	35.567	80.026
20	10.029	3.761	2.289	14.099	12.086	42.264	33.811	76.075
25	9.639	3.615	2.432	13.843	11.124	40.653	32.522	73.175
30	9.537	3.576	2.644	13.625	10.304	39.686	31.749	71.435
35	9.717	3.644	2.940	13.435	9.596	39.332	31.466	70.788
40	10.182	3.819	3.334	13.271	8.980	39.586	31.669	71.255
45	10.935	4.101	3.840	13.126	8.438	40.440	32.352	72.792
50	11.970	4.489	4.472	12.996	7.957	41.884	33.507	75.391
55	13.293	4.985	5.425	12.882	7.528	43.933	35.146	79.979
60	14.898	5.586	6.171	12.779	7.144	46.578	37.262	83.840
65	16.791	6.296	7.265	12.687	6.797	49.836	39.868	89.704
70	18.966	7.113	8.540	12.603	6.481	53.703	42.962	96.665
75	21.429	8.036	10.012	12.525	6.194	58.196	46.556	104.752
80	24.174	9.065	11.694	12.455	5.931	63.319	50.655	113.974

B. Time Value

Measuring time value is very difficult, involving many uncertain factors. Generally it is clear that, as far as road users' inclination is concerned, they will use better roads to avoid traffic congestion. It is safely considered that this kind of inclination can be fundamentally on the basis of time value of individual road users. And the time value of road users must be able to be expressed without great difficulty in many countries.

Time value can thus be estimated on the same assumption as Herbert Mohring's that the road users have an inclination for minimizing the total cost of their trips.

The following formula is an expression of the total trip costs.

$$C = F\ (V,N,\bar{Z}) + \frac{P}{V^*\ (V,N,\bar{Z})}$$

Where: P = time value for users
F = all of operation costs except time cost
C = all of trip costs per kilometer
V*= actual driver's desired travel speed
N = traffic volume
$\bar{Z}$ = other factors

Since the above equation does not involve unmeasurable factors such as comfort and accidents reduction, the calculated time value will result in underestimation of the benefits.

For the urban trips using the Jakarta Ring Road and each street of the tollway system, travel time must be a very important factor which constitutes trip cost. In the case of a road such as the Jakarta Ring Road it is considered that its trip cost would not vary with its traffic volume and that there would be little difference between desired speed and actual travel speed. Therefore, it may be that V = V* in the above formula, the factor N being irrelevant to the trip costs. The above equation is thus simplified as :

$$C = F\ (V, O, \bar{Z}) \quad + \quad P/V$$

If each user will minimize the total trip costs,

$$\frac{\partial C}{\partial V} = \frac{\partial F}{\partial V} + \frac{\partial P}{\partial V^2} \quad = \quad O$$

Therefore, $$P \quad = \quad V^2 \left(\frac{\partial F}{\partial V} \right)$$

Of the travel cost, the cost of fuel, oil and tire/tube (including overhead cost) being represented by F, the weighted average values of travel time at drivers' desired speeds can be obtained on the assumption that the desired speeds will form a normal distribution curve centering around, for example, 55 km/hr for Sedan.

Adopting the data and calculation method descirbed in Subsection A above, the value F for Sedan in terms of financial time value can be calculated

as an example as follows:

$$F = (\text{Fuel Consumption}) \frac{(\text{Fuel Price/l}) + (\text{Oil Consumption}) \times (\text{Oil Price/l})}{1{,}000 \text{ cubic centimeter/liter}} + (\text{Tire/Tube Cost}) \times (\text{Overhead}).$$

By substituting the respective values,

$$F = (0.1391\ V^2 - 10.649\ V + 337.16) \frac{70 + 0.012 \times 750}{1{,}000} + (0.713 + 2.296 \times 10^{-6}\ V^3) \times 1.05$$

The time value equations of $V^2\left(\frac{\partial}{\partial} - \frac{F}{V}\right)$ by type of vehicle are shown as follows:

a. Financial time value

Sedan: $7.2324 \times 10^{-6}\ V^4 + 0.023077\ V^3 - 0.8833\ V^2$

Bus: $8.9568 \times 10^{-5}\ V^4 + 0.02374\ V^3 - 0.81832\ V^2$

Truck: $10.0764 \times 10^{-5}\ V^4 + 0.02371\ V^3 - 0.69520\ V^2$

b. Economic time value

Sedan: $5.9306 \times 10^{-6}\ V^4 + 0.013131\ V^3 - 0.52776\ V^2$

Bus: $7.3446 \times 10^{-5}\ V^4 + 0.025690\ V^3 - 0.88547\ V^2$

Truck: $8.2626 \times 10^{-5}\ V^4 + 0.025658\ V^3 - 0.75224\ V^2$

Time Value
Unit: Rp/hr-Vehicle

a) Financial Time Value

Speed V (km/h)	Rate of Speed Distribution A (%)	Sedan		Bus		Truck	
		$V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$\frac{A}{100}V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$\frac{A}{100}V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$\frac{A}{100}V^2(\frac{\partial}{\partial}-\frac{F}{V})$
20	0.1350	-167.6	-0.23	-123.1	-0.17	-72.3	-0.10
30	2.1400	-166.0	-3.55	- 23.0	-0.49	96.1	2.06
40	13.5905	82.2	11.17	439.3	59.70	663.1	90.12
50	34.1345	721.6	246.31	1,481.5	505.70	1,855.5	633.37
60	34.1345	1,898.5	648.04	3,342.7	1,141.01	3,924.5	1,339.61
70	13.5905	3,760.9	511.12	6,283.6	853.97	7,145.4	971.10
80	2.1400	6,458.5	138.21	10,586.3	226.55	11,817.5	252.89
90	0.1350	10,142.9	13.69	16,554.6	22.35	18,264.6	24.66
Total:	100.00%	-	1,564.8	-	2,808.6	-	3,313.7

b) Economic Time Value

Speed V (km/hr)	Rate of Speed Distribution A (%)	Sedan		Bus		Truck	
		$V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$\frac{A}{100}V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$\frac{A}{100}V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$V^2(\frac{\partial}{\partial}-\frac{F}{V})$	$\frac{A}{100}V^2(\frac{\partial}{\partial}-\frac{F}{V})$
20	0.1350	-105.1	-0.14	-136.9	-0.18	-82.4	-0.11
30	2.1400	-115.6	-2.47	43.8	-0.94	82.7	1.77
40	13.5905	11.2	1.52	415.4	56.45	650.1	88.35
50	34.1345	359.0	122.54	1,456.6	497.20	1,843.1	629.13
60	34.1345	1,013.2	345.85	3,313.2	1,130.94	3,904.9	1,332,92
70	13.5905	2,060.3	280.01	6,236.3	847.54	7,)98.6	964.74
80	2.1400	3,588.3	76.79	10,494.6	224.54	11,706.9	250.53
90	0.1350	5,686.7	7.68	16,374.5	22.11	18,032.6	24.34
Total:	100.00%	-	831.8	-	2,777.2	-	3,291.7

6. COSTS AND BENEFIT ALLOCATION FOR YEARS

Note: Table numbers in parentheses correspond with those in LIST OF TABLES (MAIN REPORT).

Table 10-1

(Table 9-13-1) ECONOMIC INVESTMENT COST AT 1977 PRICE

Unit: Million Rupiah

Year \ Alternative	Total Construction (Toll Free)	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1978	1,007.3	1,007.2	1,089.7
1979	7,959.2	7,096.2	8,192.7
1980	6,952.0	6,089.0	7,103.0
1981	10,693.1	10,767.0	11,464.0
1982	10,175.2	11,316.7	12,048.3
1983	12,961.8	13,100.0	13,946.9
1984	12,961.8	13,717.0	14,604.0
1985	9,591.9	10,766.9	11,464.0
Sub-total	72,302.3	73,860.0	79,912.6
1994	628.0		
1995	942.1		
Sub-total	1,570.1	-	-
Grand-Total	73,872.4	73,860.0	79,912.6

Table 10-2

(Table 9-13-2) ECONOMIC INVESTMENTMENT COST AT 1977 PRICE

Unit: Million Rupiah

Total \ Alternative	Stage Construction (Toll Free)	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1978	661.4	634.2	717.6
1979	5,987.6	5,093.8	6,191.4
1980	5,326.3	4,459.6	5,473.7
1981	7,673.0	7,640.1	8,465.4
1982	8,760.0	8,349.8	9,251.0
1983	10,124.1	10,520.2	11,656.1
1984	8,397.8	9,810.7	10,870.2
Sub-total	46,930.2	46,508.4	52,625.4
1988	358.6	373.0	372.1
1989	1,984.3	2,002.3	2,001.4
1990	1,625.7	1,629.3	1,629.3
1991	4,695.4	5,126.5	5,112.6
1992	5,386.8	6,065.2	6,049.0
1993	6,840.7	6,065.2	6,049.0
1994	6,972.5	6,090.1	6,073.7
Sub-total	27,863.9	27,351.6	27,287.1
Grand Total	74,794.1	73,860.0	79,912.5

Table 10-3

(Table 9-14-1) ECONOMIC INVESTMENT COST AT 10% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Total Construction (Toll Free)	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1978	2,159.2	2,159.0	2,335.9
1979	15,510.1	13,899.3	15,965.1
1980	12,315.5	10,786.7	12,583.0
1981	17,221.2	17,340.3	18,462.8
1982	14,897.5	16,568.8	17,639.9
1983	17,252.2	17,436.1	18,563.3
1984	15,683.8	16,597.6	17,670.8
1985	10,551.1	11,843.6	12,610.4
Sub-total	105,590.6	106,631.4	115,831.2
1994	266.3	-	-
1995	363.2	-	-
Sub-total	629.5	-	-
Grand Total	106,220.1	106,631.4	115,831.2

Table 10-4

(Tabel 9-14-2) ECONOMIC INVESTMENT COST AT 10% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Stage Construction (Toll Free)	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1978	1,288.9	1,235.9	1,398.4
1979	10,607.6	9,023.7	10,968.7
1980	8,578.0	7,182.2	8,815.4
1981	11,234.0	11,185.9	12,394.2
1982	11,659.6	11,113.6	12,313.1
1983	12,250.2	12,729.4	14,103.9
1984	9,237.6	10,791.8	11,957.2
Sub-total	64,855.9	63,262.5	71,950.9
1988	244.9	254.8	254.1
1989	1,232.1	1,243.2	1,242.7
1990	917.7	919.7	919.7
1991	2,409.7	2,630.9	2,623.8
1992	2,512.9	2,829.4	2,821.9
1993	2,901.1	2,572.3	2,565.4
1994	2,687.9	2,347.7	2,341.4
Sub-total	12,906.3	12,798.0	12,769.0
Grand-Total	77,762.2	76,060.5	74,719.9

Table 10-5
(Table 9-15-1) ECONOMIC INVESTMENT COST AT 12% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Total Construction (Toll Free)	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1978	2,494.1	2,493.8	2,698.1
1979	17,595.4	15,687.6	18,111.6
1980	13,721.9	12,018.5	14,019.9
1981	18,844.5	18,974.7	20,203.0
1982	16,010.7	17,806.8	18,958.0
1983	18,210.0	18,404.2	19,594.0
1984	16,259.3	17,206.6	18,319.3
1985	10,742.9	12,058.9	12,839.7
Sub-total	113,878.8	114,651.1	124,743.6
1994	226.5	-	-
1995	303.4	-	-
Sub-total	529.9	-	-
Grand Total	114,408.7	114,651.1	124,743.6

Table 10-6
(Tabel 9-15-2) ECONOMIC INVESTMENT COST AT 12% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Stage Construction (Toll Free)	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1978	1,462.2	1,402.0	1,586.4
1979	11,818.3	10,054.1	12,220.6
1980	9,386.5	7,859.2	9,646.3
1981	12,073.5	12,021.7	13,320.3
1982	12,306.9	11,730.6	12,996.7
1983	12,699.7	13,196.5	14,621.4
1984	9,405.5	10,988.0	12,174.6
Sub-total	69,152.6	67,252.1	76,566.3
1988	227.9	237.0	236.5
1989	1,125.9	1,136.1	1,135.6
1990	823.6	825.4	825.4
1991	2,123.7	2,318.7	2,312.4
1992	2,175.7	2,449.7	2,443.2
1993	2,466.8	2,187.1	2,181.3
1994	2,245.1	1,961.0	1,955.7
Sub-total	11,188.7	11,115.0	11,090.1
Grand-Total	80,341.3	78,367.1	87,656.4

Table 10-7
(Table 9-16-1) ECONOMIC INVESTMENT COST AT 15% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Total Construction (Toll Free)	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1978	3,081.3	3,081.0	3,333.4
1979	21,171.5	18,875.9	21,792.6
1980	16,080.7	14,084.5	16,429.9
1981	21,508.1	21,656.7	23,058.7
1982	17,796.4	19,792.9	21,072.5
1983	19,713.6	19,923.8	21,211.8
1984	17,142.0	18,140.7	19,313.8
1985	11,030.7	12,381.9	13,183.6
Sub-total	127,524.3	127,937.4	139,396.3
1994	178.5	-	-
1995	232.9	-	-
Sub-total	411.4	-	-
Grand Total	127,935.7	127,937.4	139,396.3

Table 10-8
(Tabel 9-16-2) ECONOMIC INVESTMENT COST AT 15% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Stage Construction (Toll Free)	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1978	1,759.3	1,687.0	1,908.8
1979	13,849.9	11,782.5	14,321.3
1980	10,713.3	8,970.0	11,009.8
1981	13,420.1	13,362.5	14,806.0
1982	13,323.1	12,699.2	14,069.8
1983	13,389.1	13,913.0	15,415.2
1984	9,657.5	11,282.3	12,500.7
Sub-total	76,112.3	73,696.5	84,031.6
1988	205.0	213.3	212.8
1989	986.6	995.5	995.1
1990	702.8	704.3	704.3
1991	1,765.0	1,927.1	1,921.8
1992	1,760.9	1,982.7	1,977.4
1993	1,944.8	1,724.3	1,719.7
1994	1,723.6	1,505.5	1,501.4
Sub-total	9,088.7	9,052.7	9,032.5
Grand-Total	85,201.0	82,749.2	93,064.1

Table 11-1

(Table 9-18-1) ANNUAL ECONOMIC MAINTENANCE COST

(including overlay Cost) at 1977 Price

Unit: Million Rupiah

Year \ Alternative	Total Construction (Toll Free)	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1986	404.3	362.1	400.5
1987	404.3	362.1	400.5
1988	404.3	362.1	400.5
1989	404.3	362.1	400.5
1990	404.3	362.1	400.5
1991	404.3	362.1	400.5
1992	404.3	362.1	400.5
1993	404.3	362.1	400.5
1994	404.3	362.1	400.5
1995	1,927.1	1,766.4	1,896.9
1996	420.8	362.1	400.5
1997	420.8	362.1	400.5
1998	420.8	362.1	400.5
1999	420.8	362.1	400.5
2000	420.8	362.1	400.5
2001	420.8	362.1	400.5
2002	420.8	362.1	400.5
2003	420.8	362.1	400.5
2004	420.8	362.1	400.5
2005	420.8	362.1	400.5
Sub-total	9,773.8	8,646.3	9,506.4
2006	420.8	362.1	400.5
2007	420.8	362.1	400.5
2008	420.8	362.1	400.5
2009	420.8	362.1	400.5
2010	420.8	362.1	400.5

Table 11-2

(Table 9-18-2) ANNUAL ECONOMIC MAINTENANCE COST

(including overlay Cost) at 1977 Price

Unit: Million Rupiah

Year \ Alternative	Stage Construction (Toll Free)	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1985	248.9	216.5	254.8
1986	248.9	216.5	254.8
1987	248.9	216.5	254.8
1988	248.9	216.5	254.8
1989	248.9	216.5	254.8
1990	248.9	216.5	254.8
1991	248.9	216.5	254.8
1992	248.9	216.5	254.8
1993	248.9	216.5	254.8
1994	1,145.3	1,024.1	1,751.2
1995	420.8	362.1	400.5
1996	420.8	362.1	400.5
1997	420.8	362.1	400.5
1998	420.8	362.1	400.5
1999	420.8	362.1	400.5
2000	420.8	362.1	400.5
2001	420.8	362.1	400.5
2002	420.8	362.1	400.5
2003	420.8	362.1	400.5
2004	420.8	362.1	400.5
Sub-total			
2005	420.8	362.1	400.5
2006	420.8	362.1	400.5
2007	420.8	362.1	400.5
2008	420.8	362.1	400.5
2009	420.8	362.1	400.5

Table 11-3

(Table 9-19-2) ANNUAL ECONOMIC MAINTENANCE COST
(including Overlay Cost) at 10% Discount Rate

Unit: Million Rupiah

Year \ Alternative	Stage Construction (Toll Free)	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1985	226.3	196.8	231.6
1986	205.7	178.9	210.6
1987	187.0	162.6	191.4
1988	170.0	147.9	174.0
1989	154.6	134.4	158.2
1990	140.5	122.2	143.9
1991	127.7	111.1	130.8
1992	116.1	101.0	118.9
1993	105.6	91.8	108.1
1994	594.5	394.8	675.1
1995	147.5	126.9	140.4
1996	134.1	115.4	127.6
1997	121.9	104.9	116.0
1998	110.8	95.4	105.5
1999	100.7	86.8	95.9
2000	91.6	78.8	87.2
2001	83.2	71.6	79.3
2002	75.7	65.2	72.1
2003	68.8	59.3	65.5
2004	62.5	53.9	59.5
Sub-total			
2005	56.8	49.0	54.1
2006	51.6	44.5	49.2
2007	46.9	40.5	44.7
2008	42.7	36.8	40.7
2009	38.8	33.5	36.9

Table 11-4

(Table 9-19-1) ANNUAL ECONOMIC MAINTENANCE COST
(including Overlay Cost) at 10% Discount Rate

Unit: Million Rupiah

Year \ Alternative	Total Construction (Toll Free)	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1986	367.6	329.2	364.1
1987	334.2	299.2	331.1
1988	303.8	272.0	301.0
1989	276.1	247.3	273.6
1990	251.0	224.9	248.7
1991	228.2	204.4	226.1
1992	207.4	185.8	205.6
1993	188.6	168.9	186.8
1994	171.4	153.6	169.8
1995	742.9	681.0	731.4
1996	147.5	126.9	140.4
1997	134.1	115.4	127.6
1998	121.9	104.9	116.0
1999	110.8	95.4	105.5
2000	100.7	86.8	95.9
2001	91.6	78.8	87.2
2002	83.2	71.6	79.3
2003	75.7	65.2	72.1
2004	68.8	59.3	65.5
2005	62.5	53.9	59.5
Sub-total	4,065.6	3,624.6	3,987.1
2006	56.8	49.0	54.1
2007	51.6	44.5	49.2
2008	46.9	40.5	44.7
2009	42.7	36.8	40.7
2010	38.8	33.5	36.9

Table 11-5

(Table 9-20-1) ANNUAL ECONOMIC MAINTENANCE COST
(including Overlay Cost) at 12% Discount Rate

Unit: Million Rupiah

Alternative / Year	Total Construction (Toll Free)	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1986	361.0	323.3	357.6
1987	322.3	288.6	319.3
1988	287.8	257.7	285.1
1989	257.0	230.1	254.5
1990	229.5	205.5	227.3
1991	204.9	183.5	202.9
1992	183.0	163.8	181.2
1993	163.4	146.2	161.7
1994	145.9	130.5	144.4
1995	620.6	568.7	610.8
1996	121.0	104.1	115.1
1997	108.0	93.0	102.8
1998	96.4	83.0	91.8
1999	86.1	74.1	81.9
2000	76.9	66.2	73.2
2001	68.7	59.1	65.3
2002	61.3	52.8	58.3
2003	54.8	47.1	52.1
2004	48.9	42.0	46.5
2005	43.6	37.5	41.5
Sub-total	3,541.0	3,156.7	3,473.4
2006	39.0	33.5	37.1
2007	34.8	29.9	33.1
2008	31.0	26.7	29.5
2009	27.7	23.8	26.4
2010	24.8	21.3	23.5

Table 11-6

(Table 9-20-2) ANNUAL ECONOMIC MAINTENANCE COST
(including Overlay Cost) at 12% Discount Rate

Unit: Million Rupiah

Alternative / Year	Stage Construction (Toll Free)	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1985	222.3	193.3	227.5
1986	198.4	172.6	203.1
1987	177.2	154.1	181.4
1988	158.2	137.6	161.9
1989	141.3	122.8	144.6
1990	126.1	109.7	129.1
1991	112.6	97.9	115.3
1992	100.5	87.4	102.9
1993	89.8	78.0	91.9
1994	537.6	329.8	563.8
1995	121.0	104.1	115.1
1996	108.0	93.0	102.8
1997	96.4	83.0	91.8
1998	86.1	74.1	81.9
1999	76.9	66.2	73.2
2000	68.7	59.1	65.3
2001	61.3	52.8	58.3
2002	54.8	47.1	52.1
2003	48.9	42.0	46.5
2004	43.6	37.5	41.5
Sub-total			
2005	39.0	33.5	37.1
2006	34.8	29.9	33.1
2007	31.0	26.7	29.5
2008	27.7	23.8	26.4
2009	24.8	21.3	23.5

Table 11-8
(Table 9-21-2) ANNUAL ECONOMIC MAINTENANCE COST
(including Overlay Cost) at 15% Discount Rate

Unit: Million Rupiah

Year \ Alternative	Stage Construction (Toll Free)	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1985	216.4	188.3	221.5
1986	188.2	163.7	192.7
1987	163.7	142.3	167.5
1988	142.3	123.8	145.7
1989	123.8	107.6	126.7
1990	107.6	93.6	110.2
1991	93.6	81.4	95.8
1992	81.4	70.8	83.3
1993	70.8	61.6	72.4
1994	470.4	253.2	432.9
1995	90.4	77.8	86.1
1996	78.6	67.7	74.9
1997	68.4	58.8	65.1
1998	59.5	51.1	56.6
1999	51.7	44.4	49.2
2000	44.9	38.7	42.8
2001	39.1	33.6	37.2
2002	34.0	29.2	32.4
2003	29.5	25.4	28.2
2004	25.7	22.1	24.5
Sub-total			
2005	22.3	19.2	21.3
2006	19.4	16.7	18.5
2007	16.9	14.5	16.1
2008	14.7	12.7	14.0
2009	12.7	11.0	12.2

Table 11-7
(Table 9-21-1) ANNUAL ECONOMIC MAINTENANCE COST
(including Overlay Cost) at 15% Discount Rate

Unit: Million Rupiah

Year \ Alternative	Total Construction (Toll Free)	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1986	351.6	314.9	348.3
1987	305.8	273.8	302.8
1988	265.9	238.1	263.4
1989	231.2	207.1	229.0
1990	201.0	180.1	199.2
1991	174.8	156.6	173.2
1992	152.0	136.2	150.6
1993	132.2	118.4	131.0
1994	115.0	103.0	113.8
1995	476.4	436.6	468.9
1996	90.4	77.8	86.1
1997	78.6	67.7	74.9
1998	68.4	58.8	65.1
1999	59.5	51.1	56.6
2000	51.7	44.4	49.2
2001	44.9	38.7	42.8
2002	39.1	33.6	37.2
2003	34.0	29.2	32.4
2004	29.5	25.4	28.2
2005	25.7	22.1	24.5
Sub-total	2,927.7	2,613.5	2,877.0
2006	22.3	19.2	21.3
2007	19.4	16.7	18.5
2008	16.9	14.5	16.1
2009	14.7	12.7	14.0
2010	12.7	11.0	12.2

Table 12-1
(Table 9-23-1) ANNUAL ECONOMIC OPERATION COST
(in case of a tollway) at 1977 Price

Unit: Million Rupiah

Year \ Alternative	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1986	238.4	250.5
1987	238.4	250.5
1988	238.4	250.5
1989	238.4	250.5
1990	238.4	250.5
1991	267.9	288.9
1992	267.9	288.9
1993	267.9	288.9
1994	267.9	288.9
1995	267.9	288.9
1996	315.7	412.2
1997	315.7	412.2
1998	315.7	412.2
1999	315.7	412.2
2000	315.7	412.2
2001	341.6	437.9
2002	341.6	437.9
2003	341.6	437.9
2004	341.6	437.9
2005	341.6	437.9
Sub-total	5,818.0	6,947.5
2006	341.6	437.9
2007	341.6	437.9
2008	341.6	437.9
2009	341.6	437.9
2010	341.6	437.9

Table 12-2
(Table 9-23-2) ANNUAL ECONOMIC OPERATION COST
(in case of a tollway) at 1977 Price

Unit: Million Rupiah

Year \ Alternative	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1985	155.7	174.3
1986	155.7	174.3
1987	155.7	174.3
1988	155.7	174.3
1989	155.7	174.3
1990	172.8	225.6
1991	172.8	225.6
1992	172.8	225.6
1993	172.8	225.6
1994	172.8	225.6
1995	315.7	412.2
1996	315.7	412.2
1997	315.7	412.2
1998	315.7	412.2
1999	315.7	412.2
2000	341.6	437.9
2001	341.6	437.9
2002	341.6	437.9
2003	341.6	437.9
2004	341.6	437.9
Sub-total	4,929.0	6,250.0
2005	341.6	437.9
2006	341.6	437.9
2007	341.6	437.9
2008	341.6	437.9
2009	341.6	437.9

Table 12-3

(Table 9-24-1) ANNUAL ECONOMIC OPERATION COST

(in case of a tollway) at 10% Discount Rate

Unit: Million Rupiah

Year \ Alternative	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1986	216.7	227.7
1987	197.0	207.0
1988	179.1	188.2
1989	162.8	171.1
1990	148.0	155.5
1991	151.2	163.1
1992	137.5	148.3
1993	125.0	134.8
1994	113.6	122.5
1995	103.3	111.4
1996	110.7	144.5
1997	100.6	131.3
1998	91.4	119.4
1999	83.1	108.5
2000	75.6	98.7
2001	74.3	95.3
2002	67.6	86.6
2003	61.4	78.7
2004	55.8	71.6
2005	50.8	65.1
Sub-total	2,305.5	2,629.3
2006	46.2	59.2
2007	42.0	53.8
2008	38.1	48.9
2009	34.7	44.5
2010	31.5	40.5

Table 12-4

(Table 9-24-2) ANNUAL ECONOMIC OPERATION COST

(in cases of a tollway) at 10% Discount Rate

Year \ Alternative	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1985	141.5	158.5
1986	128.7	144.1
1987	117.0	131.0
1988	106.3	119.1
1989	96.7	108.2
1990	97.5	127.4
1991	88.7	115.8
1992	80.6	105.2
1993	73.3	95.7
1994	66.6	87.0
1995	110.7	144.5
1996	100.6	131.3
1997	91.4	119.4
1998	83.1	108.5
1999	75.6	98.7
2000	74.3	95.3
2001	67.6	86.6
2002	61.4	78.7
2003	55.8	71.6
2004	50.8	65.1
Sub-total	1,768.2	2,191.7
2005	46.2	59.2
2006	42.0	53.8
2007	38.1	48.9
2008	34.7	44.5
2009	31.5	40.5

Table 12-5
(Table 9-25-1) ANNUAL ECONOMIC OPERATION COST
(in case of a tollway) at 12% Discount Rate

Unit: Million Rupiah

Year \ Alternative	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1986	212.9	223.7
1987	190.1	199.7
1988	169.7	178.3
1989	151.5	159.2
1990	135.3	142.1
1991	135.7	146.4
1992	121.2	130.7
1993	108.2	116.7
1994	96.6	104.2
1995	86.3	93.0
1996	90.8	118.5
1997	81.0	105.8
1998	72.4	94.5
1999	64.6	84.4
2000	57.7	75.3
2001	55.7	71.4
2002	49.7	63.8
2003	44.4	56.9
2004	39.7	50.8
2005	35.4	45.4
Sub-total	1,998.9	2,260.8
2006	31.6	40.5
2007	28.2	36.2
2008	25.2	32.3
2009	22.5	28.8
2010	20.1	25.7

Table 12-6
(Table 9-25-2) ANNUAL ECONOMIC OPERATION COST
(in cases of a tollway) at 12% Discount Rate)

Unit: Million Rupiah

Year \ Alternative	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1985	139.0	155.6
1986	124.1	139.0
1987	110.8	124.1
1988	99.0	110.8
1989	88.4	98.9
1990	87.5	114.3
1991	78.2	102.0
1992	69.8	91.1
1993	62.3	81.3
1994	55.6	72.6
1995	90.8	118.5
1996	81.0	105.8
1997	72.4	94.5
1998	64.6	84.4
1999	57.7	75.3
2000	55.7	71.4
2001	49.7	63.8
2002	44.4	56.9
2003	39.7	50.8
2004	35.4	45.4
Sub-total	1,506.1	1,856.5
2005	31.6	40.5
2006	28.2	36.2
2007	25.2	32.3
2008	22.5	28.8
2009	20.1	25.7

Table 12-7

(Table 9-26-1) ANNUAL ECONOMIC OPERATION COST

(in case of a tollway) at 15% Discount Rate

Unit: Million Rupiah

Alternative / Year	Total Construction (Flat Tariff)	Total Construction (Zone Tariff)
1986	207.3	217.8
1987	180.3	189.4
1988	156.8	164.7
1989	136.3	143.2
1990	118.5	124.5
1991	115.8	124.9
1992	100.7	108.6
1993	87.6	94.4
1994	76.1	82.1
1995	66.2	71.4
1996	67.8	88.6
1997	59.0	77.0
1998	51.3	67.0
1999	44.6	58.2
2000	38.8	50.6
2001	36.5	46.8
2002	31.8	40.7
2003	27.6	35.4
2004	24.0	30.8
2005	20.9	26.8
Sub-total	1,647.9	1,842.9
2006	18.1	23.3
2007	15.8	20.3
2008	13.7	17.7
2009	11.9	15.4
2010	10.4	13.4

Table 12-8

(Table 9-26-2) ANNUAL ECONOMIC OPERATION COST

(in cases of a tollway) at 15% Discount Rate

Unit: Million Rupiah

Alternative / Year	Stage Construction (Flat Tariff)	Stage Construction (Zone Tariff)
1985	135.4	151.6
1986	117.7	131.8
1987	102.4	114.6
1988	89.0	99.7
1989	77.4	86.7
1990	74.7	97.5
1991	65.0	84.8
1992	56.5	73.7
1993	49.1	64.1
1994	42.7	55.8
1995	67.8	88.6
1996	59.0	77.0
1997	51.3	67.0
1998	44.6	58.2
1999	38.8	50.6
2000	36.5	46.8
2001	31.8	40.7
2002	27.6	35.4
2003	24.0	30.8
2004	20.9	26.8
Sub-total	1,212.2	1,482.2
2005	18.1	23.3
2006	15.8	20.3
2007	13.7	17.7
2008	11.9	15.4
2009	10.4	13.4

Table 13-2

(Table 9-28-2) ANNUAL ECONOMIC BENEFIT AT 10% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Stage Construction (Toll Free)	Stage Construction (Flat:300 Rp)	Stage Construction (Zone:13.5Rp)	Stage Construction (Zone:20Rp)
1985	5,181.8	380.2	2,594.8	1,491.3
1986	5,497.9	891.4	3,310.3	2,373.8
1987	5,714.2	1,306.6	3,874.6	3,083.6
1988	5,845.6	1,638.9	4,308.8	3,644.7
1989	5,905.8	1,900.0	4,632.0	4,078.3
1990	5,907.3	2,100.2	4,861.2	4,403.3
1991	6,243.1	2,479.5	5,892.6	4,746.9
1992	6,468.2	2,772.1	6,695.5	4,991.0
1993	6,601.4	2,991.3	7,304.4	5,152.1
1994	6,656.1	3,147.3	7,846.2	5,241.9
1995	16,058.5	7,449.3	12,149.4	6,613.6
1996	14,654.0	7,059.5	13,190.5	7,131.1
1997	13,368.9	6,678.2	13,939.1	7,498.2
1998	12,200.5	6,309.5	14,447.0	7,742.0
1999	11,128.8	5,950.1	14,741.3	7,876.2
2000	10,155.2	5,605.9	14,867.7	7,924.8
2001	9,414.2	5,198.2	13,784.2	7,347.4
2002	8,724.5	4,818.6	12,775.5	6,809.8
2003	8,086.8	4,467.5	11,842.9	6,312.7
2004	7,487.5	4,137.5	10,966.4	5,845.5
Sub-Total	171,300.2	77,282.4	183,924.4	110,309.3
2005	6,930.6	3,830.7	10,151.5	5,411.3
2006	6,415.1	3,546.5	9,397.1	5,009.2
2007	5,934.6	3,281.6	8,694.0	4,634.5
2008	5,492.5	3,037.8	8,046.9	4,289.5
2009	5,076.6	2,808.4	7,438.2	3,965.1

Table 13-1

(Table 9-28-1) ANNUAL ECONOMIC BENEFIT AT 10% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Total Construction (Toll Free)	Total Construction (Flat:300Rp)	Total Construction (Flat:400Rp)	Total Construction (Zone:13.5Rp)	Total Construction (Zone:20Rp)
1986	15,677.9	3,447.9	1,528.4	5,524.2	1,907.1
1987	16,381.6	4,228.9	2,406.2	6,481.4	2,515.7
1988	16,829.2	4,839.9	3,112.1	7,219.5	2,998.2
1989	17,059.6	5,304.7	3,669.6	7,769.5	3,372.0
1990	17,108.7	5,644.9	4,100.0	8,159.8	3,653.1
1991	17,617.0	6,505.5	4,929.8	9,848.8	4,787.6
1992	17,890.9	7,162.9	5,574.8	11,163.2	5,685.3
1993	17,967.2	7,646.1	6,061.0	12,155.7	6,380.1
1994	17,883.6	7,983.0	6,413.4	12,876.7	6,901.8
1995	17,664.3	8,194.3	6,650.7	13,364.3	7,275.0
1996	16,119.4	7,765.9	6,941.5	14,509.6	7,844.2
1997	14,705.8	7,346.0	7,123.0	15,333.0	8,248.0
1998	13,420.5	6,940.5	7,216.3	15,891.7	8,516.2
1999	12,241.7	6,545.1	7,230.7	16,215.4	8,663.8
2000	11,170.7	6,166.5	7,185.5	16,354.5	8,717.3
2001	10,355.6	5,718.0	6,661.8	15,162.6	8,082.1
2002	9,596.9	5,300.5	6,174.4	14,053.1	7,490.8
2003	8,895.5	4,914.3	5,723.6	13,027.2	6,944.0
2004	8,236.3	4,551.3	5,300.0	12,063.0	6,430.1
2005	7,623.7	4,213.8	4,906.3	11,166.7	5,952.4
Sub-Total	284,446.1	120,420.0	108,909.1	238,339.7	146,086.4
2006	7,056.6	3,901.2	4,541.6	10,336.8	5,510.1
2007	6,528.1	3,609.8	4,201.9	9,563.4	5,097.9
2008	6,041.7	3,341.6	3,889.1	8,851.6	4,718.5
2009	5,584.3	3,089.2	3,594.9	8,182.0	4,361.6
2010	5,163.8	2,857.1	3,324.5	7,566.5	4,033.5

Table 13-3

(Table 9-29-1) ANNUAL ECONOMIC BENEFIT AT 12% DISCOUNT RATE

Unit: Million Rupiah

Alter-native / Year	Total Construction (Toll Free)	Total Construction (Flat:300Rp)	Total Construction (Flat:400Rp)	Total Construction (Zone:13.5Rp)	Total Construction (Zone:20Rp)
1986	15,398.5	3,386.4	1,501.1	5,425.8	1,873.1
1987	15,802.7	4,079.5	2,321.2	6,252.4	2,426.8
1988	15,944.4	4,585.4	2,948.5	6,839.9	2,840.6
1989	15,873.1	4,935.7	3,414.4	7,229.2	3,137.5
1990	15,634.5	5,158.5	3,746.7	7,456.7	3,338.4
1991	15,810.0	5,838.3	4,418.9	8,838.7	4,291.5
1992	15,767.9	6,312.9	4,913.2	9,838.5	5,010.7
1993	15,556.2	6,620.1	5,247.7	10,524.5	5,523.9
1994	15,205.9	5,787.7	5,453.1	10,948.6	5,868.4
1995	14,754.6	6,844.6	5,555.2	11,162.9	6,076.7
1996	13,222.0	6,370.1	5,693.8	11,901.6	6,434.3
1997	11,848.7	5,918.8	5,739.1	12,354.0	6,645.5
1998	10,617.8	5,491.0	5,709.3	12,572.9	6,737.7
1999	9,512.6	5,085.9	5,618.7	12,600.3	6,732.3
2000	8,525.0	4,706.0	5,483.6	12,481.6	6,652.7
2001	7,761.9	4,285.9	4,993.3	11,365.0	6,057.8
2002	7,064.3	3,901.7	4,544.9	10,344.5	5,513.9
2003	6,428.1	3,551.2	4,136.0	9,413.7	5,017.9
2004	5,848.6	3,231.9	3,763.5	8,565.8	4,566.0
2005	5,320.2	2,940.6	3,423.8	7,792.6	4,153.9
Sub-Total	241,897.3	100,032.2	88,626.0	193,908.7	98,899.6
2006	4,936.7	2,673.9	3,112.9	7,085.0	3,776.7
2007	4,391.1	2,428.1	2,826.3	6,432.7	3,429.1
2008	3,991.8	2,207.8	2,569.5	5,848.2	3,117.5
2009	3,625.7	2,005.7	2,334.1	5,312.2	2,831.8
2010	3,289.6	1,820.1	2,117.9	4,820.2	2,569.6

Table 13-4

(Table 9-29-2) ANNUAL ECONOMIC BENEFIT AT 12% DISCOUNT RATE

Unit: Million Rupiah

Alter-native / Year	Stage Construction (Toll Free)	Stage Construction (Flat:300 Rp)	Stage Construction (Zone:13.5Rp)	Stage Construction (Zone:20Rp)
1985	5,089.4	373.4	2,548.6	1,464.7
1986	5,303.6	859.9	3,193.3	2,289.9
1987	5,413.8	1,237.9	3,670.9	2,921.5
1988	5,439.1	1,524.9	4,009.1	3,391.2
1989	5,396.9	1,736.2	4,232.9	3,726.9
1990	5,301.4	1,884.8	4,362.6	3,951.6
1991	5,502.2	2,185.2	5,193.4	4,183.6
1992	5,600.2	2,400.1	5,797.1	4,321.3
1993	5,613.0	2,543.4	6,210.8	4,380.6
1994	5,559.7	2,628.9	6,470.3	4,378.4
1995	13,173.7	6,111.2	9,966.9	5,425.6
1996	11,805.4	5,687.6	10,626.4	5,744.9
1997	10,579.2	5,284.6	11,030.4	5,933.5
1998	9,480.2	4,902.7	11,225.8	6,015.8
1999	8,493.4	4,541.0	11,250.3	6,011.0
2000	7,611.6	4,201.8	11,143.8	5,939.9
2001	6,930.3	3,826.7	10,147.3	5,408.7
2002	6,307.4	3,483.7	9,236.2	4,923.1
2003	5,739.4	3,170.7	8,405.1	4,480.3
2004	5,222.0	2,885.6	7,648.0	4,076.8
Sub-Total	139,561.8	61,470.3	146,369.2	88,969.3
2005	4,750.2	2,625.5	6,957.7	3,708.8
2006	4,229.2	2,387.4	6,325.9	3,372.1
2007	3,920.6	2,167.9	5,743.5	3,061.7
2008	3,564.1	1,971.2	5,221.6	2,783.5
2009	3,237.2	1,790.8	4,743.0	2,528.4

Table 13-6

(Table 9-30-2) ANNUAL ECONOMIC BENEFIT AT 15% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Stage Construction (Toll Free)	Stage Construction (Flat:300 Rp)	Stage Construction (Zone:13.5Rp)	Stage Construction (Zone:20Rp)
1985	4,956.6	363.7	2,482.1	1,426.5
1986	5,030.2	815.6	3,028.7	2,171.8
1987	5,000.8	1,143.4	3,390.9	2,698.6
1988	4,893.9	1,372.1	3,607.3	3,051.3
1989	4,729.2	1,521.4	3,709.2	3,265.8
1990	4,523.8	1,608.4	3,722.8	3,372.1
1991	4,572.8	1,816.1	4,316.1	3,476.9
1992	4,532.6	1,942.6	4,691.9	3,497.5
1993	4,425.3	2,005.3	4,896.6	3,453.7
1994	4,268.2	2,018.2	4,967.2	3,361.3
1995	9,849.7	4,569.2	7,452.0	4,056.6
1996	8,594.1	4,140.4	7,735.8	4,182.2
1997	7,501.7	3,747.3	7,821.6	4,207.4
1998	6,546.0	3,385.3	7,751.4	4,153.8
1999	5,712.6	3,054.3	7,567.0	4,043.0
2000	4,986.7	2,752.8	7,300.8	3,891.5
2001	4,423.8	2,442.7	6,477.3	3,452.6
2002	3,919.5	2,164.8	5,739.4	3,059.3
2003	3,474.2	1,919.3	5,087.8	2,712.0
2004	3,079.5	1,701.7	4,510.2	2,404.2
Sub-Total	105,021.1	44,484.5	106,256.0	65,938.0
2005	2,725.8	1,506.6	3,992.5	2,128.3
2006	2,411.7	1,333.3	3,532.9	1,883.2
2007	2,135.7	1,181.0	3,128.7	1,667.8
2008	1,890.8	1,045.7	2,770.1	1,476.7
2009	1,669.7	923.7	2,446.3	1,304.1

Table 13-5

(Table 9-30-1) ANNUAL ECONOMIC BENEFIT AT 15% DISCOUNT RATE

Unit: Million Rupiah

Alternative / Year	Total Construction (Toll Free)	Total Construction (Flat:300Rp)	Total Construction (Flat:400Rp)	Total Construction (Zone:13.5Rp)	Total Construction (Zone:20Rp)
1986	14,996.7	3,298.0	1,462.0	5,284.2	1,824.2
1987	14,988.0	3,869.2	2,201.5	5,930.0	2,301.7
1988	14,728.1	4,235.6	2,723.6	6,318.1	2,623.9
1989	14,282.1	4,441.0	3,072.2	6,504.6	2,823.0
1990	13,700.2	4,520.2	3,283.2	6,534.2	2,925.3
1991	13,491.3	4,982.0	3,775.3	7,542.3	3,666.4
1992	13,104.4	5,246.6	4,083.3	8,176.6	4,164.5
1993	12,590.5	5,358.0	4,247.3	8,518.1	4,470.8
1994	11,988.4	5,351.5	4,299.3	8,632.0	4,626.7
1995	11,327.1	5,254.6	4,264.7	8,569.8	4,665.1
1996	9,883.2	4,761.5	4,256.0	8,896.2	4,809.5
1997	8,626.9	4,309.4	4,178.5	8,994.8	4,838.5
1998	7,527.9	3,893.1	4,047.8	8,914.1	4,776.9
1999	6,569.5	3,512.4	3,880.4	8,702.0	4,649.4
2000	5,734.	3,165.7	3,688.8	8,395.9	4,475.2
2001	5,087.4	2,809.1	3,272.7	7,448.9	3,970.5
2002	4,507.4	2,489.5	2,899.9	6,600.3	3,518.2
2003	3,995.3	2,207.2	2,570.7	5,851.0	3,118.8
2004	3,541.4	1,956.9	2,278.9	5,186.7	2,764.8
2005	3,134.7	1,732.6	2,017.3	4,591.4	2,447.5
Sub-Total	193,805.2	77,394.1	66,485.4	145,591.2	73,460.9
2006	2,773.5	1,533.3	1,785.1	4,062.8	2,165.7
2007	2,456.0	1,358.1	1,580.8	3,598.0	1,918.0
2008	2,174.4	1,202.6	1,399.7	3,185.6	1,698.2
2009	1,920.1	1,062.2	1,236.1	2,813.3	1,499.7
2010	1,700.8	941.0	1,095.0	2,492.1	1,328.5

Table 14-1 CONSTRUCTION COST (2-LANE, 2-WAY)
(2-STAGE CONSTRUCTION)

Unit: Million Rp.

Year	1977 Price	Economic Cost	Discounted Economic Cost		
			10%	12%	15%
1978	376.3	321.2	292.0	286.8	279.3
1979	2,835.9	2,092.1	1,729.0	1,667.8	1,581.9
1980	5,739.1	4,132.2	3,104.6	2,941.2	2,717.0
1981	5,593.5	5,102.4	3,485.0	3,242.7	2,917.3
1982	7,085.3	6,463.3	4,013.2	3,667.4	3,213.4
1983	5,966.4	5,442.6	3,072.2	2,757.4	2,353.0
1984					
1985					
1986	1,766.7	1,545.8	655.6	557.4	439.4
1987	5,766.0	4,151.5	1,600.6	1,336.7	1,026.2
1988	5,766.0	4,151.5	1,455.1	1,193.5	892.3
1989	9,266.5	8,429.6	2,685.9	2,163.7	1,575.6
1990	9,781.3	8,897.9	2,577.4	2,039.2	1,446.2
1991	11,325.9	10,303.0	2,713.1	2,108.2	1,456.1
1992	11,840.7	10,771.3	2,578.6	1,967.9	1,323.7
1993	9,266.5	8,429.6	1,834.5	1,375.0	900.8
Total:	92,376.1	80,234.0	31,796.8	27,304.9	21,122.2

Table 14-2 CONSTRUCTION COST (2-LANE, 2-WAY)
(3-STAGE CONSTRUCTION)

Unit: Million Rp.

Year	1977 Price	Economic Cost	Discounted Economic Cost		
			10%	12%	15%
1978	376.3	321.2	292.0	286.8	279.3
1979	2,835.9	2,092.1	1,729.0	1,667.8	1,581.9
1980	5,739.1	4,132.2	3,104.6	2,941.2	2,717.0
1981	5,593.5	5,102.4	3,485.0	3,242.7	2,917.3
1982	7,085.3	6,463.3	4,013.2	3,667.4	3,213.4
1983	5,966.4	5,442.6	3,072.2	2,757.4	2,353.0
1984					
1985					
1986					
1987	1,766.7	1,545.8	596.0	497.7	382.1
1988	5,766.0	4,151.5	1,455.1	1,193.5	892.3
1989	5,766.0	4,151.5	1,322.8	1,065.6	775.9
1990	9,424.4	8,574.7	2,483.8	1,965.1	1,393.6
1991	10,281.3	9,354.4	2,463.3	1,914.1	1,322.0
1992	11,994.9	10,913.5	2,612.6	1,993.9	1,341.2
1993	11,138.1	10,133.9	2,205.4	1,653.1	1,083.0
1994					
1995					
1996					
1997	2,592.7	2,356.5	350.3	244.3	144.0
1998	6,049.5	5,498.5	743.0	508.9	292.1
Total:	92,376.1	80,234.1	29,928.3	25,599.5	19,688.1

Table 15-1 ANNUAL ECONOMIC BENEFITS (2-LANE, 2-WAY)
(2-STAGE CONSTRUCTION)

Unit: Million Rp.

Year	1977 Price	Discounted Economic Benefits for 1977		
		10%	12%	15%
1984	695.0	357.0	314.7	261.5
1985	930.0	433.9	375.6	304.0
1986	1,164.4	493.8	419.9	331.0
1987	1,398.8	539.3	450.4	345.8
1988	1,633.2	572.4	469.5	351.0
1989	1,867.6	595.1	479.4	349.1
1990	2,102.0	608.9	481.7	341.6
1991	2,186.9	575.9	447.5	309.1
1992	2,259.8	541.0	412.9	277.7
1993	2,342.3	509.8	382.1	250.3
1994	30,362.3	6,007.0	4,422.1	2,821.4
1995	34,667.4	6,235.2	4,508.1	2,801.3
1996	41,396.9	6,768.7	4,806.5	2,908.8
1997	48,126.3	7,153.7	4,989.1	2,940.5
1998	54,855.8	7,412.7	5,077.4	2,914.5
1999	61,585.2	7,565.5	5,089.6	2,845.3
2000	68,314.7	7,629.5	5,041.1	2,744.6
2001	69,690.9	7,073.5	4,590.1	2,435.1
2002	71,047.1	6,555.9	4,178.0	2,157.7
2003	72,413.4	6,077.3	3,802.0	1,912.7
2004	43,677.5	3,331.5	2,048.1	1,003.8
2005	44,486.3	3,083.9	1,863.2	888.6
2006	45,295.1	2,854.7	1,694.0	786.3
2007	46,103.9	2,641.1	1,536.1	696.3
2008	46,912.7	2,444.6	1,398.3	616.5
2009	47,721.5	2,259.6	1,270.1	545.4
2010	48,530.3	2,087.7	1,152.5	482.3
2011	49,339.1	1,931.3	1,046.6	426.1
2012	50,147.9	1,784.5	947.8	376.6
2013	50,956.8	1,648.4	861.7	332.7
Total:	1,042,211.7	97,775.4	64,560.1	35,757.6

Table 15-2 ANNUAL ECONOMIC BENEFITS (2-LANE, 2-WAY)
(3-STAGE CONSTRUCTION)

Unit: Million Rp.

Year	1977 Price	Discounted Economic Benefits for 1977		
		10%	12%	15%
1984	695.0	357.0	314.7	261.5
1985	930.0	433.9	375.6	304.0
1986	1,164.4	493.8	419.9	331.0
1987	1,398.8	539.3	450.4	345.8
1988	1,633.2	572.4	469.5	351.0
1989	1,867.6	595.1	479.4	349.1
1990	2,102.0	608.9	481.7	341.6
1991	2,186.9	575.9	447.5	309.1
1992	2,259.8	541.0	412.9	277.7
1993	2,342.3	509.8	382.1	250.3
1994	18,048.0	3,570.7	2,628.6	1,677.1
1995	19,285.8	3,468.7	2,507.9	1,558.4
1996	20,447.7	3,343.4	2,374.1	1,436.8
1997	21,507.9	3,197.0	2,229.7	1,314.1
1998	22,590.5	3,052.7	2,091.0	1,200.3
1999	61,585.2	7,565.5	5,089.0	2,845.3
2000	68,314.7	7,629.5	5,041.1	2,744.6
2001	69,690.9	7,073.5	4,590.1	2,435.1
2002	71,047.1	6,555.9	4,178.0	2,157.5
2003	72,413.4	6,077.3	3,802.0	1,912.7
2004	43,677.5	3,331.5	2,048.1	1,003.8
2005	44,486.3	3,083.9	1,863.2	888.6
2006	45,295.1	2,854.7	1,694.0	786.3
2007	46,103.9	2,641.1	1,538.1	696.3
2008	46,912.7	2,444.6	1,398.3	616.5
2009	47,721.5	2,259.6	1,270.1	545.4
2010	48,530.3	2,089.7	1,152.5	482.3
2011	49,339.1	1,931.3	1,046.6	426.1
2012	50,147.9	1,784.5	947.8	376.0
2013	50,956.8	1,648.4	861.7	332.7
Total:	934,682.9	80,830.0	52,588.2	28,557.8

7. FORMULA FOR CALCULATION OF THE NUMBER OF LANES AT THE TOLL GATE

This section sets forth the criteria for determination of the number of lanes at the toll gate which was described in Sec. 4-3-4 of Chapter 4 of the Main Report. (Refer to Table 4-6 of the Main Report.)

To determine the optimum number of lanes at the toll gate, it is necessary to clarify three factors, that is, traffic volume, service time and service level. If the number of lanes is inadequate, vehicles must wait at the toll gate for a long time when traffic is congested, while if the lanes at the toll gate are too many, the operation cost will unnecessarily increase. The measure of the service level is the average waiting time at the toll gate.

The problem of handling the vehicles which arrive at the toll gate one after another is solved with the aid of a mathematical procedure based on the so-called queuing theory. The queuing theory has it that the waiting queue can be expressed by three variables:

1) Statistical distribution of vehicles that enter the toll gate during a fixed period of time (average vehicle interval)

2) Statistical distribution of the time the vehicles stay in the toll gate to pay the tolls (service time)

3) Relationship between the number of vehicles that enter the toll gate for a fixed period of time and the time the vehicles stay in the toll gate to pay the tolls

Now let a be average entering vehicle interval (seconds), b be average service time (seconds) and S be number of lanes (toll lanes), and the relationship between the number of vehicle arrivals and the time the vehicles stay in the toll gate can be expressed by the equation

$$P = b/a \quad \text{(capacity of traffic handling)}$$

The capacity of traffic handling per lane can be expressed by the equation

$$u = b/Sa$$

The following equations hold true, when the statistic of the entering vehicle interval has Poisson distribution and that of the service time exponential, distribution (as demonstrated by measurements).

$$\text{Average waiting time} = \omega = \frac{Ps}{S \cdot S!} \cdot \frac{b}{(1-u)} \cdot K$$

$$\text{Average number of waiting vehicles} = q = \frac{1}{(1-u)^2} \cdot \frac{Ps}{S} \cdot K = \frac{\omega}{b} \cdot S$$

$$\text{Average number of waiting vehicles per lane (length of the waiting queue)} = \frac{q}{s} = \frac{\omega}{b}$$

where,

$$K = \frac{1}{1 + P + \frac{P^2}{2!} + \cdots\cdots + \frac{Ps-1}{(S-1)!} + \frac{Ps}{S!} \cdot \frac{1}{1-P/S}}$$

$$= P(0) \quad \text{(Probability that the toll gate is not occupied at all)}$$

The service level (average number of waiting vehicles) number of lanes at the toll gate and capacity of traffic handling which were calculated by the above equations are shown in Table 16.

Table 16 Capacity of Traffic Handling per Lane vs. Service Level

Number of Lanes (S) \ Service Level (q/S)	0.5	1.0	1.5	2.0
1	0.23	0.50	0.61	0.68
2	0.57	0.71	0.76	0.85
3	0.70	0.79	0.85	0.88
4	0.75	0.83	0.87	0.90
5	0.80	0.86	0.89	0.92
6	0.83	0.88	0.92	0.94
7	0.85	0.90	0.93	0.95
8	0.86	0.91	0.93	0.95

As is clear from Table 16, the service level being equal, the capacity of traffic handling per lane increases with increasing number of lanes. The values of K and D should be the same as those to be chosen for the main road, but a little greater values should be chosen for K and D to provide an extra margin of capacity for the toll gates in the amusement areas where seasonal traffic congestion is expected or any other areas where extreme traffic congestion is expected to occur on weekends.

The assumption was made in the calculation of the average number of waiting vehicles that the vehicles would be evenly distributed at the toll gate. In actuality, however, people who drive vehicles generally have a sort of preference. Vehicles tend

to choose the central lanes at the toll gate even when traffic is congested there so that the outside lanes have relatively light traffic. When the toll gate has many lanes, the number of waiting vehicles in the central lanes is, as is often the case, larger than the theoretical value. This propensity of drivers should therefore be taken into consideration in the calculation of the number of waiting vehicles at the toll gate.

8. STAGE CONSTRUCTION FOR THE INTERCHANGE WITH SURFACE ROAD (2ND INTERCHANGE)

This section sets forth the criteria for proposition of an interchange with surface road (No. 2 interchange) at the crossing of the ring road and the surface road which was described in Sec. 4-3-6 of Chapter 4 of the Main Report. (Figs. 10 and 11 were reproduced from the Main Report; Fig. 4-14 and 4-15.)

Fig. 10 Stage Construction for the Interchange with Surface Road

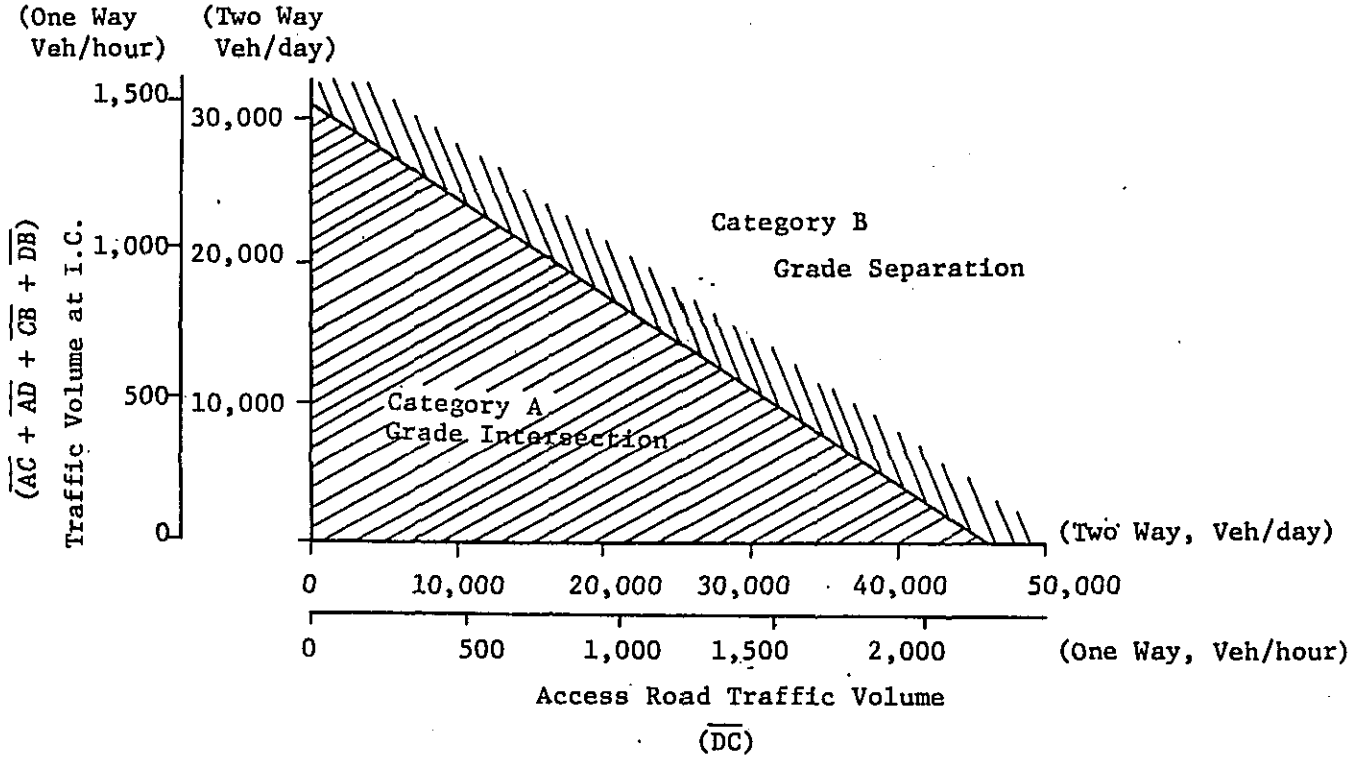
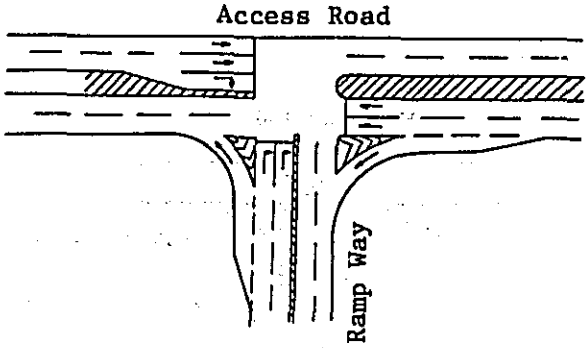
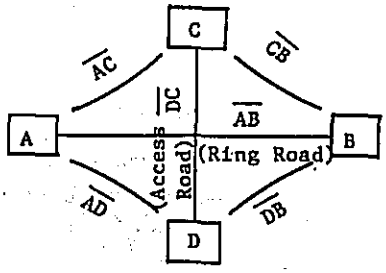


Fig. 11 At Grade Intersection



Peak Hourly Traffic Flow (One Way)



(1) Assumption of Grade Intersection (Fig. 11)

1) Number of lanes : 4 for the access road (separated)

1 to 4 for the ramp (separated)

2) Left turn

The vehicles are allowed to make a left turn at all entry points at all times.

3) The strip width, island dimensions, ramp radius, lane width and shoulder width should be adequate so that the traffic handling capacity of the main road is not reduced at the intersection.

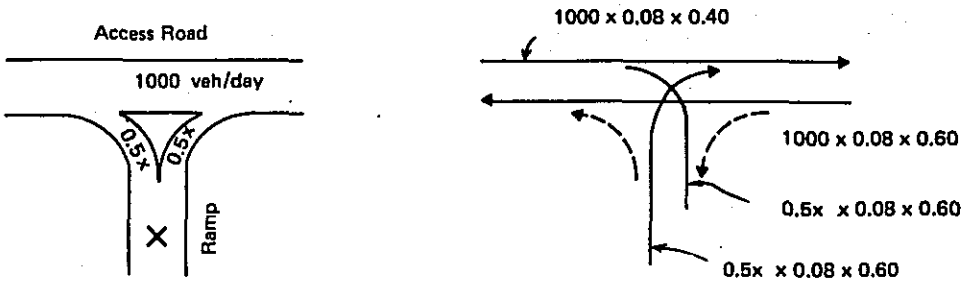
4) Special lanes for making left and right turns should be added.

(2) Estimation of the Traffic Volume at Each Entry Point

(Double direction concentration of traffic D = 60% and peak hour rate K = q%)

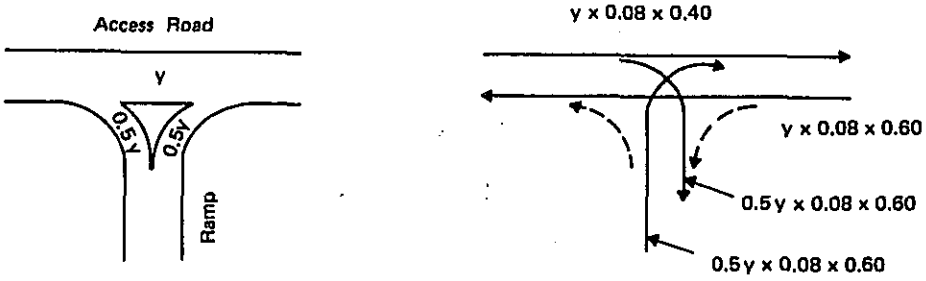
1) Condition (a) ..... (Traffic Volumes at Interchange Entry and Exit)

Daily Traffic Volume (veh/day) Peak Hourly Traffic Volume (veh/hour)



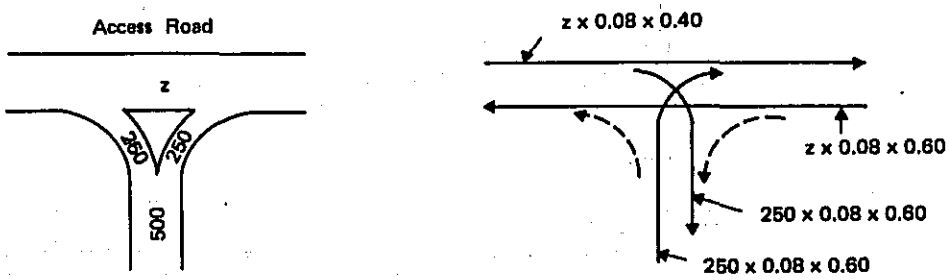
2) Condition (b) ..... (Traffic Volumes at Interchange Entry and Exit + Access Road Traffic Volume)

Daily Traffic Volume (veh/day) Peak Hourly Traffic Volume (veh/hour)



3) Condition (c) ..... (Access Road Traffic Volume)

Daily Traffic Volume (veh/day) Peak Hourly Traffic Volume (veh/hour)



(3) Estimation of the Possible Traffic Volume (Cp) (Large Vehicle Proportion 10%)

Possible traffice volume = (Basic traffic volume) x (Decrease in traffic volume due to large vehicles)

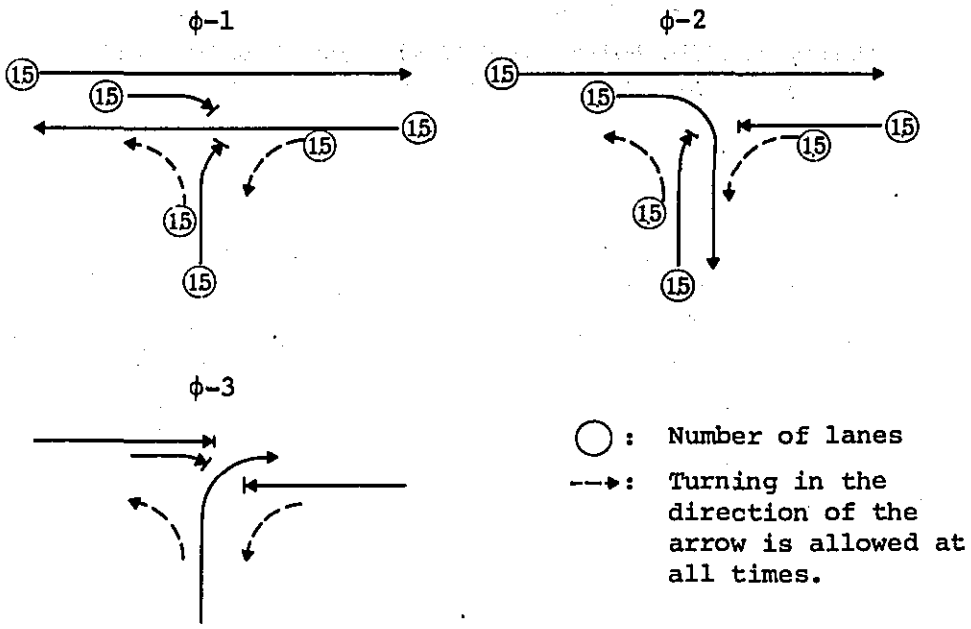
Throughway = 1,800 (Vehicles/green light/lane) x 0.925

= 1,665 (Vehicles/green light/lane)

Ramps or noses = 1,200 (Vehicles/green light/lane) x 0.925

= 1,110 (Vehicles/green light/lane)

(4) Signal System



The signal system is of the three-light type.

(5) Calculation of the Maximum Necessary Green Light Time Ratio (V/Cp)

Let the maximum green light time ratios of ϕ-1, ϕ-2 and ϕ-3 be ρ_1, ρ_2 and ρ_3, respectively.

1) Condition (a) ..... (Traffic Volumes at Interchange T Entry and Exit)

$$\rho_1 = \frac{1000 \times 0.08 \times 0.60}{1665 \times 1.5} = 0.019219$$

$$\rho_2 = \frac{0.5x \times 0.08 \times 0.60}{1110 \times 1.5} = 0.0000144x$$

$$\rho_3 = \frac{0.5x \times 0.08 \times 0.60}{1110 \times 1.5} = 0.0000144x$$

2) Condition (b) ..... (Traffic Volumes at Interchange Entry and Exit + Access Road Traffic Volume)

$$\rho_1 = \frac{y \times 0.08 \times 0.60}{1665 \times 1.5} = 0.0000192y$$

$$\rho_2 = \frac{0.5y \times 0.08 \times 0.60}{1110 \times 1.5} = 0.0000144y$$

$$\rho_3 = \frac{0.5y \times 0.08 \times 0.60}{1110 \times 1.5} = 0.0000144y$$

3) Condition (c) ..... (Access Road Traffic)

$$\rho_1 = \frac{z \times 0.08 \times 0.60}{1665 \times 1.5} = 0.0000192z$$

$$\rho_2 = \frac{250 \times 0.08 \times 0.60}{1110 \times 1.5} = 0.0072072$$

$$\rho_3 = \frac{250 \times 0.08 \times 0.60}{1110 \times 1.5} = 0.0072072$$

(6) Critical Signal-controlled Traffic Capacity

The control system is of the cyclical type and the limit of the signal system is considered to have been reached when the sum of ρ_1, ρ_2 and ρ_3 calculated in Para. (3) above is 0.9.

$$\rho_1 + \rho_2 + \rho_3 = 0.90$$

The unknown can be known by the above equation as follows.

1) When condition (a) is used

$\rho_1 = 0.019219$, $\rho_2 = 0.0000144x$, $\rho_3 = 0.0000144x$

$0.019219 + 0.0000144x + 0.0000144x = 0.900000$

Hence, $x = 30,583$ vehicles/day

2) When condition (b) is used

$\rho_1 = 0.0000192y$, $\rho_2 = 0.0000144y$, $\rho_3 = 0.0000144y$

$0.0000192y + 0.0000144y + 0.0000144y = 0.900000$

$y = 18,750$ vehicles/day

(Traffic volumes at interchange entry and exit + Across raod traffic volume)

Hence, $2y = 37,500$ vehicles/day

3) When condition (c) is used

$\rho_1 = 0.0000192z$, $\rho_2 = 0.0072072$, $\rho_3 = 0.0072072$

$0.0000192z + 0.0072072 + 0.0072072 = 0.900000$

Hence, $z = 46,124$ vehicles/day

9. CRITICAL TRAFFIC CAPACITY OF THE DIAMOND TYPE INTERCHANGE

This section sets forth the criteria for determination of the critical traffic capacity of the diamond type interchange connecting the ring road to the surface road which was described in Sec. 4-3-7 of Chapter 4 of the Main Report. (Figs. 12 and 13 were reproduced from the Main Report; Fig. 4-16 and Fig. 4-17.)

Fig. 12 Traffic Capacity of a Diamond Type Interchange

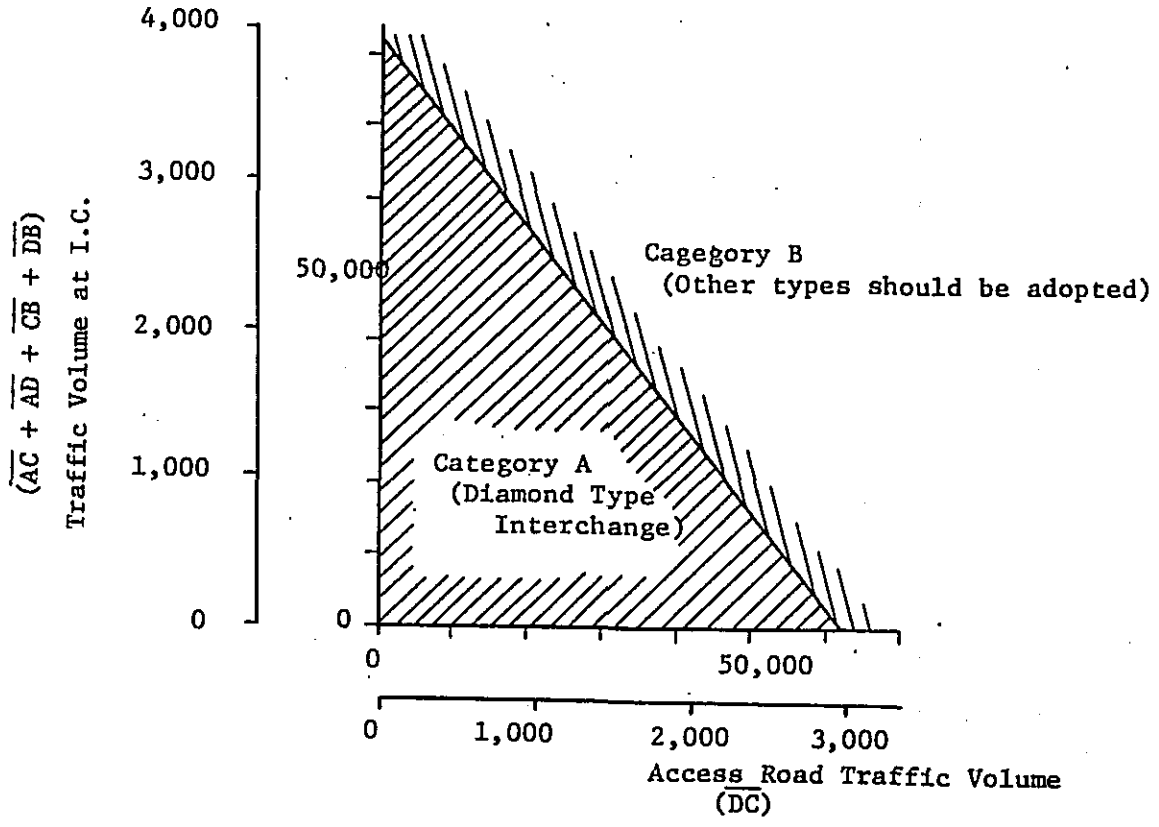
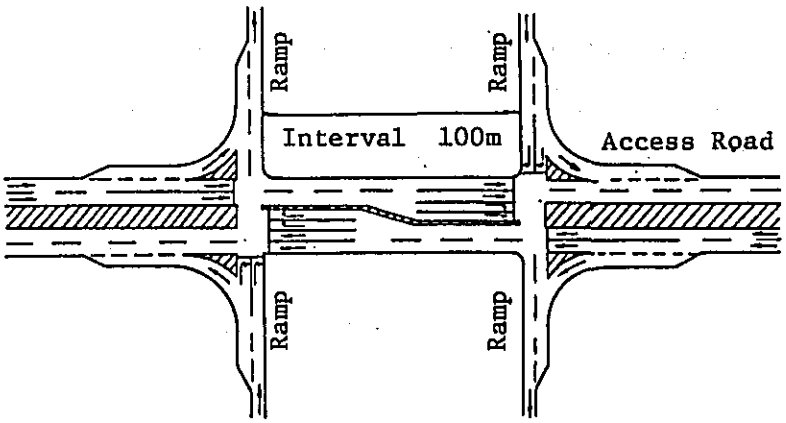
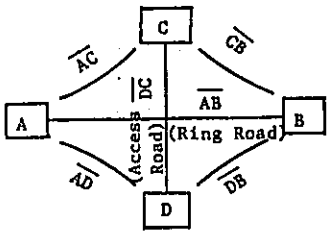


Fig. 13 At Grade Intersection

Peak Hourly Traffic Flow (One Way)





(1) Assumption of Grade Intersection (Fig. 13)

1) Number of lanes : 4 for the access road (separated)

1 to 4 for the lamp (separated)

2) Left turn

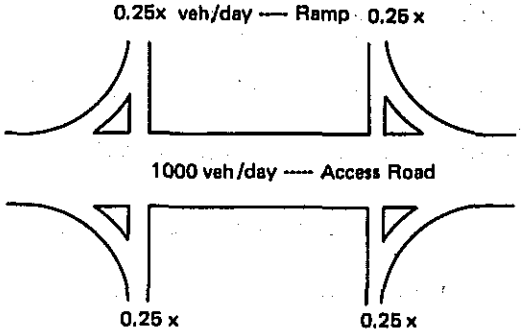
The vehicles are allowed to make a left turn at all entry points at all times.

3) The strip width, island dimensions, ramp radius, lane width and shoulder width should be adequate so that the traffic handling capacity of the main road is not reduced at the intersection.

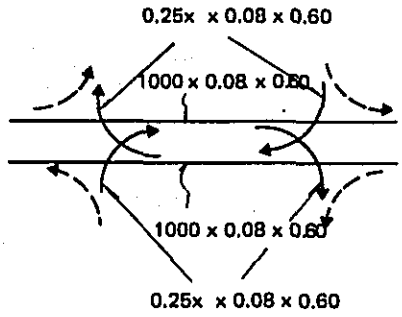
4) Special lanes for making left and right turns should be added.

1) Condition (1) ..... (Traffic Volumes at Interchange Entry and Exit)

Daily Traffic Volume (Veh/day)

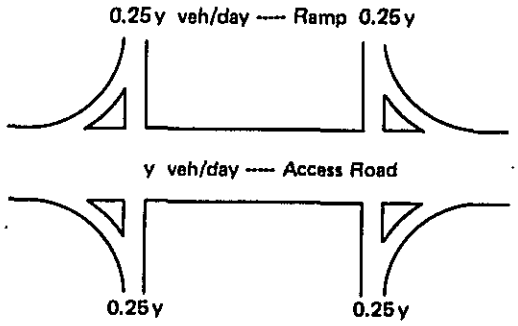


Peak Hourly Traffic Volume (Veh/hour)

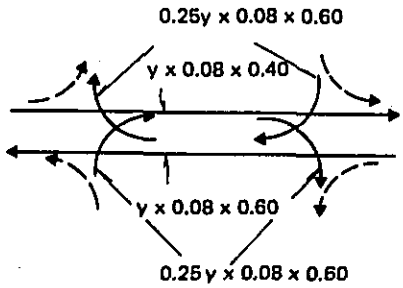


2) Condition (2) ..... (Traffic Volumes at Interchange Entry and Exit + Access Road Traffic Volume)

Daily Traffic Volume (Veh/day)

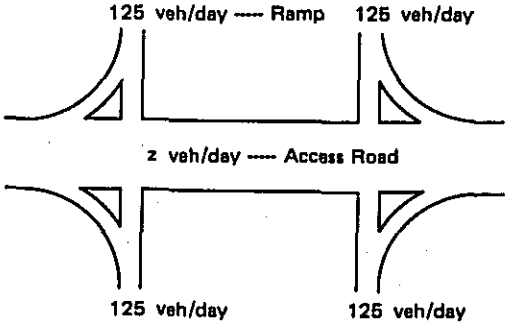


Peak Hourly Traffic Volume (Veh/hour)

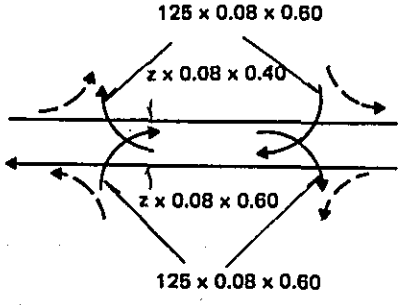


3) Condition (3) ..... (Access Road Traffic Volume)

Daily Traffic Volume (Veh/day)



Peak Hourly Traffic Volume (Veh/hour)



(3) Estimation of the Possible Traffic Volume (Cp) (Large Vehicle Proportion 10%)

Possible traffic volume = (Basic traffic volume) x (Decrease in traffic volume due to large vehicles)

Throughway = 1,800 (vehicles/green light/lane) x 0.925

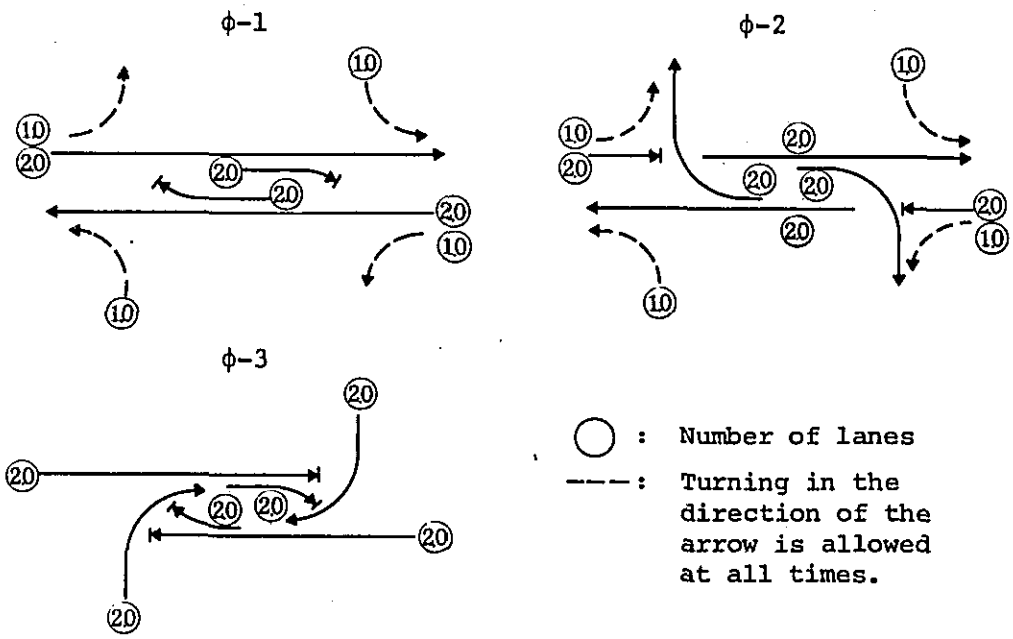
= 1,665 (vehicles/green light/lane)

Ramps or noses = 1,200 (vehicles/green light/lane) x 0.925

= 1,110 (vehicles/green light/lane)

(4) Signal System

The signal system is of the three-light type.



(5) Calculation of the Maximum Necessary Green Light Time Ratio (V/Cp)

Let the maximum green light time ratios of ϕ-1, ϕ-2 and ϕ-3 be ρ_1, ρ_2 and ρ_3, respectively.

1) Condition (1) ..... (Traffic Volumes at Interchange Entry and Exit)

$$\rho_1 = \frac{1000 \times 0.08 \times 0.60}{1665 \times 2.0} = 0.014414$$

$$\rho_2 = \frac{0.25x \times 0.08 \times 0.60}{1110 \times 2.0} = 0.00000541x$$

$$\rho_3 = \frac{0.25x \times 0.08 \times 0.60}{1110 \times 2.0} = 0.00000541x$$

2) Condition (2) ..... (Traffic Volumes at Interchange Entry and Exit + Access Road Traffic Volume)

$$\rho_1 = \frac{y \times 0.008 \times 0.60}{1665 \times 2.0} = 0.0000144y$$

$$\rho_2 = \frac{0.25y \times 0.08 \times 0.60}{1110 \times 2.0} = 0.00000541y$$

$$\rho_3 = \frac{0.25y \times 0.08 \times 0.60}{1110 \times 2.0} = 0.00000541y$$

3) Condition (3) ..... (Access Road Traffic)

$$\rho_1 = \frac{z \times 0.08 \times 0.60}{1665 \times 2.0} = 0.0000144z$$

$$\rho_2 = \frac{125 \times 0.08 \times 0.60}{1110 \times 2.0} = 0.0027027$$

$$\rho_3 = \frac{125 \times 0.07 \times 0.60}{1110 \times 2.0} = 0.0027027$$

(6) Critical Signal-controlled Traffic Capacity

The control system is of the cyclic type and the limit of the signal system is considered to have been reached when the sum of ρ_1, ρ_2 and ρ_3 calculated in Para. (3) above is 0.9.

$$\rho_1 + \rho_2 + \rho_3 = 0.9$$

The unknown can be known by the above equation as follows.

1) When condition (1) is used

$\rho_1 = 0.014414$, $\rho_2 = 0.00000541x$, $\rho_3 = 0.00000541x$

$0.014414 + 0.00000541x + 0.00000541x = 0.900000$

Hence, $x = 81,847$ vehicles/day

2) When condition (2) is used

$\rho_1 = 0.0000144y$, $\rho_2 = 0.0000054ly$, $\rho_3 = 0.0000054ly$

$0.0000144 + 0.0000054ly + 0.0000054ly = 0.900000$

Hence, $y = 35,686$ vehicles/day

(Traffic Volumes at Interchange Entry and Exit + Access Road Traffic Volume)

$2y = 71,372$ vehicles/day

3) When condition (3) is used

$\rho_1 = 0.0000144z$, $\rho_2 = 0.0027027$, $\rho_3 = 0.0027027$

$0.0000144 + 0.0027027 + 0.0027027 = 0.900000$

Hence, $z = 62,125$ vehicles/day

10. EARTHWORK AND PAVEMENT PLANNING

This section sets forth the equipment requirements for earthwork and pavement work based on the construction schedule (Alternative No. T-01, Toll-Flat-120 km/h-All) which was described in Section 8-2-1 of Chapter 8 of the Main Report.
(Refer to Figure 8-7 of the Main Report)

(1) Earthwork (Common Excavation and Embankment)

1) Conditions

-	Weight of material	1.60 t/m^3
-	Load Factor	0.72
-	Average hauling distance	1 Km (70%) 5 Km (30%)
-	Average hauling road grade	± 3.0%

2) Production adjustments

-	Effective Work Hour	50 mins 83%
-	Operational Environment	75%
-	Net combined	62%

3) Production requirement per schedule

- Estimated quantities 5,617,000 m^3
- Number of working days

  Dry season - 17 x 22 = 374 days

  Rainy season - 12 x 15 = 180 days

  Total 29 months - 554 days
- Spreads 3-spreads

- Production requirement per month

Ave.	193,700	m^3
Dry season	223,000	m^3
Rainy season	152,100	m^3

- Production requirement per day - 10,140 m^3
  - 3,380 m^3/1-spread

- Production requirement per hour

3,380 ÷ 0.62 ÷ 7 = 779 m^3

x 0.7 = 545 m^3 (1 Km haul)

x 0.3 = 234 m^3 (5 Km haul)

4) Equipment requirements

- Motor scraper -

Load per scraper - 15.3 x 0.72 = 11 m^3

Hourly loads - 545 ÷ 11 = 50 ± Required

Scraper cycle - Load 0.80 min

Travel 4.70 (Empty 1.70)

Wait 0.30

Spread 0.50

Total cycle 6.30 min

60 ÷ 6.30 = 9.5 cycles/Hr

Scrapers required = 50 ÷ 9.5 = 5 units

- Pushers (Bulldozer 31 ton class) -

Loading cycle Load 0.80 min

Boost 0.10

Return 0.60

Wait 0.20

1.70 min/Load

60 ÷ 1.70 = 35 + Loads/Hr

Required 779 ÷ 11 ÷ 35 = 2.02 - Use 2 Pushers

Allow 1D8K to serve both cut and fill

Total D8K - 3 units

- 15 ton Truck -

Load per one unit 9.4 m^3

Hourly loads 234 ÷ 9.4 = 25 ± Required

Damp truck cycles

Load	3.60 min
Wait	1.00
Dump	1.00
Travel	23.50
	29.10 min

60 ÷ 29.1 = 2.06 cycles/Hr

Required 25 ÷ 2.06 = 12 unit

- Compactor (18 ton class) -

$$\text{Capacity in } M^3 = \frac{1000 \times V \times W \times H \times f \times E}{N} \ (m^3/Hr)$$

V = 10 km/hr
W = 4.32 - 2 = 2.16 m
H = 0.20 m
f = 0.90
E = 0.80
N = 5.5

$$= \frac{1000 \times 10 \times 2.16 \times 0.20 \times 0.9 \times 0.8}{5.5}$$

$$= 563 > 545 \ m^3/Hr$$

Use 1-Compactor

1 - Tamdem Road Roller (For top compaction)

1 - Tire Roller (For top compaction)

2 - Motor Grader (at Cut & Fill)

Summary : Equipment required per 1-spread

Motor Scraper (15.3 m^3)	5
Bulldozer (D8K)	3
Motor Grader	2
Tructor Shovel	1
Dump Truck	12
Compactor	1
Tire Roller	1
Tandem Roller	1

(2) Pavement (Asphalt Concrete Surface & Asphalt Treated Base Course)

1) Condition

- Weight of materials - A.C. Surface 2.35 t/m^3
  - A.T. Base C. 2.30 t/m^3
- Average hauling distance

  Plant to paver 5 Km

2) Production requirement per schedule

- Estimated quantities
  - A.C. Surface 913,800 m^2 (107,400 ton)
  - A.T. Base C. 262,000 m^3 (602,600 ton)
- Number of working day
  - A.C. Surface 203 days
  - A.T. Base C. 411 days
- Spreads 3 - spread
- Production requirement per day
  - A.C. Surface 350 m (2-lane/day)
  - A.T. Base. C 600 m (2-lane/day)

3) Equipment requirements

- Asphalt plant -

$$\text{Capacity C (t/Hr)} = \frac{A(m^3) \times H(m) \times d(t/m^3)}{T \text{ (days)} \times t \text{ (Hr)}}$$

$$\text{A.C. Surface} = \frac{913{,}800 \times 0.05 \times 2.35}{203 \times 7} = 75.6 \text{ t/Hr}$$

$$\text{A.T. Base C} = \frac{262{,}000 \times 2.30}{411 \times 7} = 209.5 \text{ t/Hr}$$

(Use 3 - 100 t/Hr plant)

- Dump Truck (15 ton) -

Load per one unit 129 ton/day

Scheduled daily rate

209.5t/Hr x 7 Hr x 1/3 = 500 t/1-plant

Dump truck required 500 ÷ 129 ÷ 0.62 = 6.2 - Say 7 Trucks

Summary : Equipment required per 1-spread

Asphalt Mixing Plant (100t/Hr)	1
Finisher (10 feet type)	1
Macadam Roller (10 t)	1
Tire Roller	1
Distributor	1
Dump truck	7

11. BUS STOP PLANNING

As city planning in Jakarta city and its vicinity broadens and the roads in the metropolitan area are improved, the sphere of various activities of people from commuting between home and business to amusement will also broaden, thus increading their dependence on motor transport from year to year. Among other public transports, buses will acquire increasing importance and the bus service will be improved and broadened to cover not only the ordinary roads but the expressways such as inter-city toll road and ring road.

Bus stops will have to be built along the expressways, if they are to be served by buses. The basic considerations for building bus stops along the ring road and the types of bus stop will be discussed in this section, assuming that the ring road will be served by buses.

Bus stops which are built by a motor road are divisible into two types: stop built alone and one built with an interchange. In either case a special bus lane for acceleration and deceleration and a platform must be built so as to avoid an adverse effect of the bus on the flow of other vehicles. The bus stops which are built by a motor road are therefore by far more costly than those built by an ordinary road.

Needless to mention, the greater the number of bus stops, the greater convenience they offer to the bus users. In this case, however, various problems arise: high construction cost, influence

on the flow of other vehicles than buses, and time loss in bus service.

The bus stop spacings should therefore be decided in consideration of the convenience of users, safety of traffic, economics, and other problems. The following six considerations will serve as criteria for siting of bus stops.

(1) Criteria for Siting of Bus Stops

1) At the intersection where buses serve the connecting road with high frequency.

2) Locations having a population of 20,000 or more.

3) Sections where bus stops are 5 km or more apart from each other.

4) Interchange or intersection with a main road where the bus can be easily changed for a connecting one.

5) The alignment of the road line favors the bus stop.

6) Locations offering easy connection to other traffic means or tourist stops.

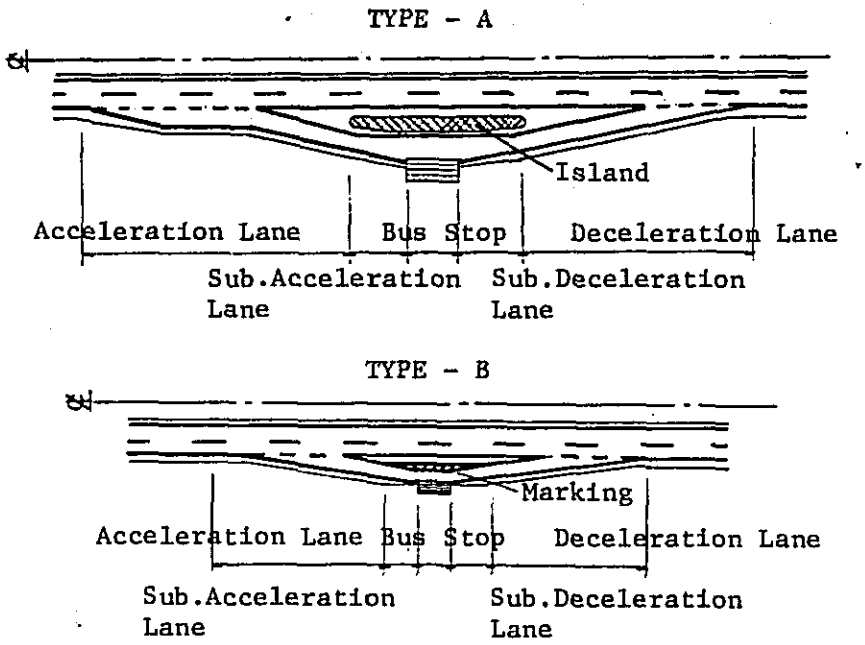
(2) Types of Bus Stop

1) Bus Stop Built Alone

a) Separated from the Through-way by an Island (Type-A)

b) Separated from the Through-way by a Marking or Chatter Bars (Type-B)

Fig. 14 Bus Stop Built Along the Through-way



2) Bus Stop Built with an Interchange

a) Bus stop built between the entry and exit of a toll gate (type A)

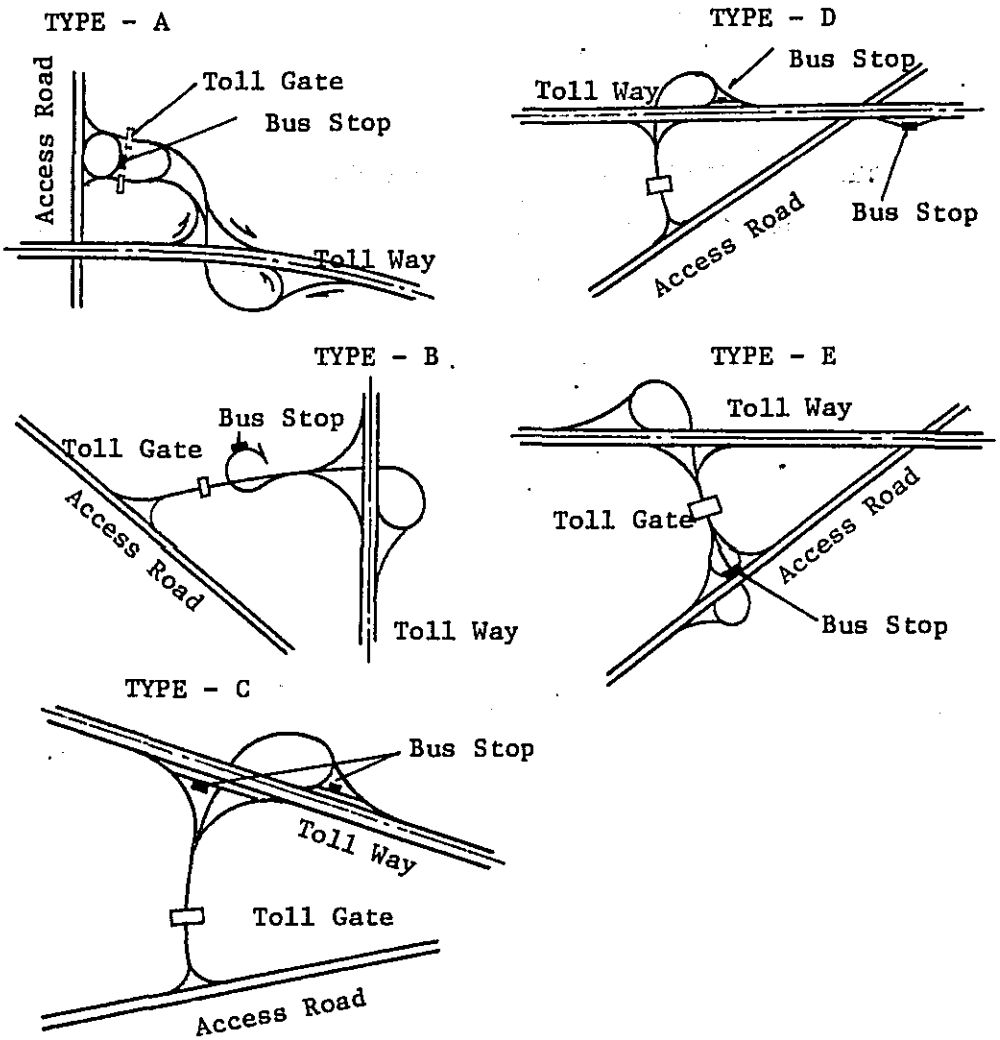
b) Bus stop built between the main road and the toll gate (type B)

c) Bus stop built by the main road with the bus acceleration and deceleration lane forming part of an interchange.

d) Bus stop built on one side or bus stops built on either side of the main road apart from an interchange (type D)

e) Bus stop built outside of the toll gate (type E)

Fig. 15 Bus Stop Built at an Interchange



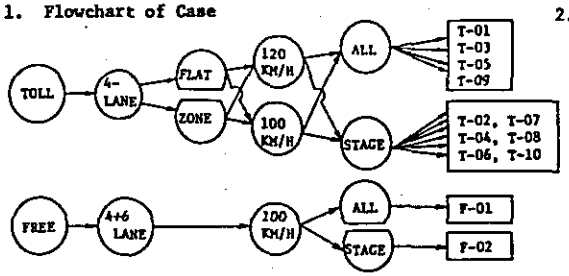
12. ESTIMATE OF THE CONSTRUCTION COSTS (COMPUTER OUTPUT)

TABLE 17-1 SUMMARY OF CONSTRUCTION COST (1977 PRICE)

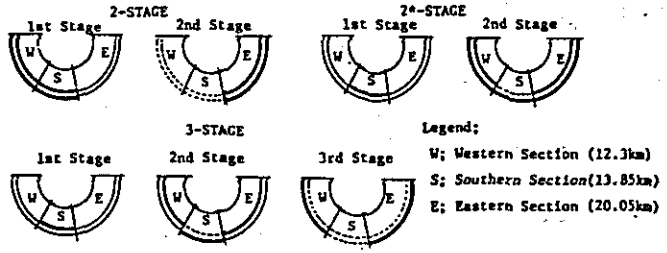
TOLL FREE	NUMBER OF LANE	COLLECTING SYSTEM	DESIGN SPEED	CONSTRUCTION SECTION	CASE NO. (F: FREE) (T: TOLL)	PROJECT ROAD LENGTH (KM)	CONSTRUCTION COST ESTIMATE (MILLION Rp) HIGHWAY	LAND A&C	*OTHERS	TOTAL	FOREIGN COMPONENT / LOCAL COMPONENT (BILLION Rp)	COST/Km	THR-WAY I-C (%)	EARTHWORK VOLUME (x 10^3 m^3) COMMON Ex.&Emb.	BORROW Ex.	EXCAV DISPOSAL
FREE	4+6 LANE	X	100 Km/H	ALL	F-01	48.20	47 756.1	16 092.5	20 431.7	84 280.3	$ 51.2% Rp 48.8%	1.75	67.7/32.3	5 439	0	195
				2-STAGE	F-02	W: 26.15	29 170.1	12 329.4	13 279.8	54 779.3	48.5 / 51.5	2.09	64.3/36.6	3 536	0	458
						E: 22.05	18 988.9	3 763.2	7 280.6	30 032.7	56.7 / 43.3	1.36	72.5/27.5	1 640	262	0
TOLL	4-LANE	FLAT	120 Km/H	ALL	T-01 (T-01)	48.20 (48.20)	50 203.8 / 56 071.2	14 094.8 / (14 043.2)	20 575.6 / (22 436.6)	84 874.2 / (92 551.0)	53.7 / 46.3 / 55.1 / 44.9	1.76 / 1.92	65.2 / 62.9 / 34.8 (37.1)	5 617 (5 711)	397 (510)	0 (0)
				2-STAGE	T-02	W: 26.15	30 444.2	10 323.2	13 045.6	53 813.0	51.5 / 48.5	2.06	62.2/37.8	3 843	115	0
						E: 22.05	19 759.6	3 771.6	7 530.0	31 061.2	57.3 / 42.7	1.41	70.3/29.7	1 774	282	0
			100 Km/H	ALL	T-03	48.20	49 444.8	14 081.9	20 328.5	83 855.2	53.4 / 46.6	1.74	69.2/30.8	5 591	0	184
				2-STAGE	T-04	W: 26.15	30 302.1	10 341.5	13 006.0	53 649.6	51.6 / 48.5	2.05	66.8/33.2	3 682	0	450
						E: 22.05	19 550.5	3 740.3	7 453.1	30 743.9	57.2 / 42.8	1.39	70.1/29.9	1 643	266	0
		ZONE	120 Km/H	ALL	T-05 (T-05)	48.20 (48.20)	53 292.5 (59 160.0)	16 442.2 (16 390.7)	22 315.1 (24 176.1)	92 049.8 (99 926.8)	52.9 / 47.1 / 54.3 / 45.7	1.91 (2.07)	60.6 (58.8) / 39.4 (41.2)	5 632 (5 726)	575 (688)	0 (0)
				2-STAGE	T-06	W: 26.15	33 584.6	12 670.6	14 801.7	61 056.9	50.7 / 49.3	2.33	55.6/44.4	3 858	293	0
						E: 22.05	19 707.9	4 695.9	6 589.1	30 992.9	57.3 / 42.7	1.41	70.5/29.5	1 774	282	0
				2-STAGE (2-LANE)	T-07	S 13.85	14 074.1	6 832.3	6 690.0	27 596.4	47.7 / 52.3	1.99	68.4/31.6	1 839	416	0
						S 13.85 W&E 34.35	39 465.7	9 609.9	15 704.1	64 779.7	55.3 / 44.7	1.34	60.8/39.2	3 794	159	0
				3-STAGE (2-LANE)	T-08	S 13.85	14 074.1	6 832.3	6 690.0	27 596.4	47.7 / 52.3	1.99	68.4/31.6	1 839	416	0
						W&E 34.35 S 13.85	32 735.0	9 609.9	13 550.3	55 895.2	53.4 / 46.6	1.16	47.4/52.6	3 794	159	0
						W 12.30 E 22.05	6 730.7	0	2 153.8	8 884.5	$ 67.5% Rp 32.5%	0.26	100.0/0	0	0	0
			100 Km/H	ALL	T-09	48.20	52 260.5	16 429.3	21 980.7	90 670.5	52.6 / 47.4	1.88	64.5/35.5	5 784	0	6
				2-STAGE	T-10	W: 26.15	33 169.5	12 689.0	14 674.6	60 533.1	50.5 / 49.5	2.31	60.1/39.9	3 875	0	272
						E: 22.05	19 498.8	3 740.3	7 436.6	30 675.7	57.2 / 42.8	1.39	70.3/39.7	1 643	266	0

Notes,

1. Flowchart of Case



2. Case of Stage Construction



3. Item "OTHERS" includes engineering services and contingencies.

4. Case No. "(T-01) and (T-05)" means Turbine Type Interchange instead of Modified Cloverleaf Type which is applied to IC-1, IC-9 and IC-11.

JAKARTA OUTER RING ROAD

Table 17-2 S U M M A R Y O F P R O J E C T

CASE NO. F-01

100KM/H - FREE - 4 LANES

BEGIN STAT. 0+700
END STAT. 47+500

ROAD LENGTH. 48.200 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND										*			
	D.TRUMPET IV									III		III		
	CLOVER		*	*			*		*					*
	TURBINE													

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US,D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US,D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US,D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	5446800	1861200000	4121622000
0200	EARTHWORKS	12858501	1320982594	1959898	377089640	14818399	1698072234	7847708000
0300	DRAINAGE STRUCTURE	891312	710703432	111800	133546200	1003112	844249632	1260541000
0400	PAVEMENT	11377850	2047844818	4930350	918254280	16308200	2966099098	9734002000
0500	BRIDGE STRUCTURE	25047188	4493695215	6697801	1187769558	31744990	5681464773	18855635000
0600	MISCELLANEOUS	1098204	1009028262	7492114	802761501	8590318	1811789763	5376772000
0700	FRONTAGE ROAD	877298	195787125	0	0	877298	195787125	559866000
0001	TOTAL HIGHWAY CONSTRUCTION COST	52150353	9778041446	21191963	3419421179	78789117	15058662626	47756146000
0800	LAND ACQUISITION	0	8513429000	0	6562551000	0	15075980000	15075980000
0900	LAND COMPENSATION	0	503593000	0	512955000	0	1016548000	1016548000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	9017022000	0	7075506000	0	16092528000	16092528000
0003	CONTINGENCIES	*	*	*	*	15757823	6230238125	12769735000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	9454694	3738142875	7661841000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	104001634	41119571626	84280250000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	6260329.	CU.M
1200	TOTAL FILL VOLUME	5439035.	CU.M
1300	TOTAL NUMBER OF BRIDGES	33.	PLACES
1400	TOTAL LENGTH OF BRIDGES	1950.	M
1500	OVER BRIDGE	38.	PLACES
1600	BOX CULVERTS	22.	PLACES
1700	PIPE CULVERTS	32.	PLACES
1800	INTERCHANGE	9.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	30896308.	LIT
2200	REINFORCING BAR	4844.	M.T
2300	PRESTRESSING BAR	161.	M.T
2400	STRUCTURAL STEEL	21164.	M.T
2500	FINE AGGREGATE	487950.	CU.M
2600	COURSE AGGREGATE	498759.	CU.M
2700	CEMENT	31480.	M.T
2800	ASPHALT	35678.	M.T

JAKARTA OUTER RING ROAD

Table 17-3 S U M M A R Y O F P R O J E C T

CASE NO. F-02 (1st Stage)

100KM/H - FREE - 4 LANES

BEGIN STAT. 0+700
END STAT. 25+450

ROAD LENGTH. 26.150 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND													
	D.TRUMPET IV									III				
	CLOVER	*	*				*		*					
	TURBINE													

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US,D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US,D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US,D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	3267200	1115800000	2471688000
0200	EARTHWORKS	9292764	802517950	1108718	140877640	9401482	943395590	4945111000
0300	DRAINAGE STRUCTURE	511731	383297615	83926	100251120	595657	483548735	730746000
0400	PAVEMENT	6214822	1118747992	3567552	662078780	9782374	1780826772	5840512000
0500	BRIDGE STRUCTURE	14240602	2573014275	4708506	835956414	18949108	3408970689	11272850000
0600	MISCELLANEOUS	628234	585108352	5122804	564368973	5751038	1149477325	3536158000
0700	FRONTAGE ROAD	741210	165416445	0	0	741210	165416445	473019000
0001	TOTAL HIGHWAY CONSTRUCTION COST	30629363	5628222628	14591506	2303532927	48488070	9047535555	29170084000
0800	LAND ACQUISITION	0	6042434000	0	5451063000	0	11493497000	11493497000
0900	LAND COMPENSATION	0	359766000	0	476105000	0	835871000	835871000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	6402200000	0	5927168000	0	12329368000	12329368000
0003	CONTINGENCIES	*	*	*	*	9697614	4275380711	8299890000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	5818568	2565228427	4979934000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	64004252	28217512693	54779277000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	4437708.	CU.M
1200	TOTAL FILL VOLUME	3536054.	CU.M
1300	TOTAL NUMBER OF BRIDGES	22.	PLACES
1400	TOTAL LENGTH OF BRIDGES	1080.	M
1500	OVER BRIDGE	27.	PLACES
1600	BOX CULVERTS	13.	PLACES
1700	PIPE CULVERTS	13.	PLACES
1800	INTERCHANGE	6.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	19273104.	LIT
2200	REINFORCING BAR	2960.	M.T
2300	PRESTRESSING BAR	90.	M.T
2400	STRUCTURAL STEEL	12573.	M.T
2500	FINE AGGREGATE	243961.	CU.M
2600	COURSE AGGREGATE	303657.	CU.M
2700	CEMENT	19397.	M.T
2800	ASPHALT	21592.	M.T

JAKARTA OUTER RING ROAD

Table 17-4 S U M M A R Y O F P R O J E C T

CASE NO. F-02 (2nd Stage)

100KM/H - FREE - 4 LANES

BEGIN STAT. 25+450
END STAT. 47+500

ROAD LENGTH. 22.050 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND										*			
	D.TRUMPET											III		
	CLOVER													*
	TURBINE													

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US.D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US.D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	2179600	745400000	1649934000
0200	EARTHWORKS	3766208	452759220	2454330	371149491	6220539	823908711	3405432000
0300	DRAINAGE STRUCTURE	379592	327455817	27973	33295080	407455	360700897	529795000
0400	PAVEMENT	5163028	929095827	1362798	256175500	6525826	1185272327	3389349000
0500	BRIDGE STRUCTURE	10906587	1920680940	1989295	351813144	12795882	2272494084	7582785000
0600	MISCELLANEOUS	469970	423919910	2369310	238392528	2839280	662312438	1940614000
0700	FRONTAGE ROAD	136097	30370680	0	0	136087	30370680	86847000
0001	TOTAL HIGHWAY CONSTRUCTION COST	20721462	4084233394	8203607	1259825743	31104669	6090459137	18988897000
0800	LAND ACQUISITION	0	2470995000	0	1111488000	0	3582483000	3582483000
0900	LAND COMPENSATION	0	143927000	0	36850000	0	180677000	180677000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	2614322000	0	1148338000	0	3763160000	3763160000
0003	CONTINGENCIES	*	*	*	*	6220934	1968723827	4550411000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	3732560	1181234296	2730247000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	41058163	12993577261	30032715000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	1822621.	CU.M
1200	TOTAL FILL VOLUME	1902981.	CU.M
1300	TOTAL NUMBER OF BRIDGES	11.	PLACES
1400	TOTAL LENGTH OF BRIDGES	0.	M
1500	OVER BRIDGE	970.	PLACES
1600	BOX CULVERTS	11.	PLACES
1700	PIPE CULVERTS	9.	PLACES
1800	INTERCHANGE	19.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	11988248.	LIT
2200	REINFORCING BAR	1884.	M.T
2300	PRESTRESSING BAR	70.	M.T
2400	STRUCTURAL STEEL	8591.	M.T
2500	FINE AGGREGATE	243989.	CU.M
2600	COURSE AGGREGATE	195102.	CU.M
2700	CEMENT	12082.	M.T
2800	ASPHALT	14085.	M.T

JAKARTA OUTER RING ROAD

Table 17-5 S U M M A R Y O F P R O J E C T

CASE NO. T-01

120KM/H - TOLL - 4 LANES

BEGIN STAT. 0+700
END STAT. 47+500

ROAD LENGTH. 48.200 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND			*							*			
	D,TRUMPET		II				IV		IV					
	CLOVER	#(B)								*		*		#(B)
	TURBINE													

REMARKS (B)I SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS; SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY FOREIGN US.D.	THROUGHWAY LOCAL RP	INTERCHANGE FOREIGN US.D.	INTERCHANGE LOCAL RP	TOTAL FOREIGN US.D.	TOTAL LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	544680	186120000	4121622000
0200	EARTHWORKS	895612	1031570031	8227642	1140775181	17183764	2172345212	9303609000
0300	DRAINAGE STRUCTURE	983920	746502182	104142	124399200	1088062	870901382	1322447000
0400	PAVEMENT	11369448	2046335832	4473133	869878100	15842581	2936213932	9510885000
0500	BRIDGE STRUCTURE	25971406	4665090300	5604247	999564720	31575652	5664655020	18768551000
0600	MISCELLANEOUS	1194326	1019329326	9912846	983938830	11107172	2003268156	6612745000
0700	FRONTAGE ROAD	883755	197228250	0	0	883755	197228250	563987000
0001	TOTAL HIGHWAY CONSTRUCTION COST	49358982	9706055921	28322010	4138556031	83127792	15705611952	50203946000
0800	LAND ACQUISITION	0	8524629000	0	4754506000	0	13279135000	13279135000
0900	LAND COMPENSATION	0	505299000	0	310350000	0	815649000	815649000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	9029928000	0	5064856000	0	14094784000	14094784000
0003	CONTINGENCIES	*	*	*	*	16625558	5960119190	12859726000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	9975335	3576071514	7715836000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	109728685	39336786656	84874191000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	6241417.	CU.M
1200	TOTAL FILL VOLUME	6013853.	CU.M
1300	TOTAL NUMBER OF BRIDGES	35.	PLACES
1400	TOTAL LENGTH OF BRIDGES	2460.	M
1500	OVER BRIDGE	39.	PLACES
1600	BOX CULVERTS	22.	PLACES
1700	PIPE CULVERTS	32.	PLACES
1800	INTERCHANGE	9.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	31717542.	LIT
2200	REINFORCING BAR	4892.	M.T
2300	PRESTRESSING CABLE	158.	M.T
2400	STRUCTURAL STEEL	21152.	M.T
2500	FINE AGGREGATE	629782.	CU.M
2600	COURSE AGGREGATE	495581.	CU.M
2700	CEMENT	36090.	M.T
2800	ASPHALT	34092.	M.T

JAKARTA OUTER RING ROAD

Table 12-6 S U M M A R Y O F P R O J E C T | CASE NO.(T-01).

120K4/H - TOLL - 4 LANES

BEGIN STAT, 0+700
END STAT, 47+500

ROAD LENGTH, 48.200 KM
ROAD WIDTH, 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND			*							*			
	D,TRUMPET		II				IV		IV					
	CLOVER											*		*(B)
	TURBINE *(8)									#				

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US.D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US.D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	5446609	1861200000	4121622000
0200	EARTHWORKS	8755613	1015991447	9214129	1277199855	17969742	2293191302	9750634000
0300	DRAINAGE STRUCTURE	983920	746502102	98322	11744780	1082244	863949662	1313080000
0400	PAVEMENT	11206425	2031417891	4777948	944169500	16064373	2975587391	9642302000
0500	BRIDGE STRUCTURE	30038211	5379389340	9986436	1770856800	40024646	7150246140	23760474000
0600	MISCELLANEOUS	1175400	1034341554	10514337	1033491669	11689737	2067833223	6919074000
0700	FRONTAGE ROAD	883755	197228250	0	0	883755	197228250	563987000
0001	TOTAL HIGHWAY CONSTRUCTION COST	53123324	10404870664	34591172	5143165305	93101296	17409235968	56071174000
0800	LAND ACQUISITION	0	8524629000	0	4711506000	0	13236135000	13236135000
0900	LAND COMPENSATION	0	505299000	0	301800000	0	807099000	807099000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	9029928000	0	5013306000	0	14043234000	14043234000
0003	CONTINGENCIES	*	*	*	*	18632259	6290493994	14022882000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	11179355	3774296396	8413729000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	122972910	41517200358	92551018000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	6345862.	CU.M
1200	TOTAL FILL VOLUME	6221275.	CU.M
1300	TOTAL NUMBER OF BRIDGES	51.	PLACES
1400	TOTAL LENGTH OF BRIDGES	4185.	M
1500	OVER BRIDGE	37.	PLACES
1600	BOX CULVERTS	24.	PLACES
1700	PIPE CULVERTS	32.	PLACES
1800	INTERCHANGE	9.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	34757942.	LIT
2200	REINFORCING BAR	6075.	M.T
2300	PRESTRESSING BAR	206.	M.T
2400	STRUCTURAL STEEL	26806.	M.T
2500	FINE AGGREGATE	667111.	CU.M
2600	COURSE AGGREGATE	515369.	CU.M
2700	CEMENT	41691.	M.T
2800	ASPHALT	3496.	M.T

JAKARTA OUTER RING ROAD

Table 13-7 S U M M A R Y O F P R O J E C T

CASE NO. T-02 (1st Stage)

120KM/H - TOLL - 4 LANES

BEGIN STAT, 0+700
END STAT, 25+450

ROAD LENGTH, 26.150 KM
ROAD WIDTH, 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND			*										
	O,TRUMPET		II				IV		IV					
	CLOVER	*(B)								*				
	TURBINE													

REMARKS (B)I SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US,D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US,D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US,D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	326720	1115800000	2471688000
0200	EARTHWORKS	4947428	566879694	5402329	657877176	10349757	1224756870	5515906000
0300	DRAINAGE STRUCTURE	561974	403172542	71360	85250040	633341	488422582	751259000
0400	PAVEMENT	6204641	1116939441	3103831	611728500	9308472	1728667941	5591684000
0500	BRIDGE STRUCTURE	15328692	2773589880	3431162	613878840	18759854	3387468720	11172808000
0600	MISCELLANEOUS	671655	5976525B1	6860659	728076304	7532314	1325728885	4451639000
0700	FRONTAGE ROAD	760398	169698645	0	0	760398	169698645	485264000
0001	TOTAL HIGHWAY CONSTRUCTION COST	28474788	5627932783	18869349	2696810860	50611337	9440543644	30444248000
0800	LAND ACQUISITION	0	6024610000	0	3664605000	0	9689215000	9689215000
0900	LAND COMPENSATION	0	359265000	0	274725000	0	633990000	633990000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	6383875000	0	3939330000	0	10323205000	10323205000
0003	CONTINGENCIES	*	*	*	*	10122267	3952749729	8153491000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	607336	2371649837	4892094000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	66806965	26088148210	53813038000

1 US,D,= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	4269907,	CU,M
1200	TOTAL FILL VOLUME	3957605,	CU,M
1300	TOTAL NUMBER OF BRIDGES	22,	PLACES
1400	TOTAL LENGTH OF BRIDGES	1345,	M
1500	OVER BRIDGE	28,	PLACES
1600	BOX CULVERTS	14,	PLACES
1700	PIPE CULVERTS	13,	PLACES
1800	INTERCHANGE	5,	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	19381004,	LIT
2200	REINFORCING BAR	2943,	M.T
2300	PRESTRESSING BAR	87,	M.T
2400	STRUCTURAL STEEL	12512,	M.T
2500	FINE AGGREGATE	346008,	CU.M
2600	COURSE AGGREGATE	300128,	CU.M
2700	CEMENT	22191,	M.T
2800	ASPHALT	20238,	M.T

JAKARTA OUTER RING ROAD

Table 17-8 SUMMARY OF PROJECT

CASE NO. T-02 (2nd Stage)

120KM/H - TOLL - 4 LANES

BEGIN STAT. 25+450
END STAT. 47+500

ROAD LENGTH. 22.050 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND										*			
	D,TRUMPET													#(B)
	CLOVER												*	
	TURBINE													

REMARKS (B)I SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALSI SHOWS QUADRANTS OF KEY MAP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US.D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US.D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL IDR	TOTAL COST TOTAL RP
0100	GENERAL	*	*	*	*	217960	745400000	1649934000
0200	EARTHWORKS	4008698	464690337	2825313	482098005	6834012	9475[illegible]342	3783703000
0300	DRAINAGE STRUCTURE	421947	343329640	32774	39149160	454721	3824[illegible]800	571188000
0400	PAVEMENT	5164807	92939[illegible]391	1369302	278149600	6534109	12075[illegible]5991	3919201000
0500	BRIDGE STRUCTURE	10642713	1891500420	2173085	385685880	12815798	2277186300	7595743000
0600	MISCELLANEOUS	522671	42167[illegible]745	3052187	255862526	3574858	677539270	2161105000
0700	FRONTAGE ROAD	123357	27529605	0	0	123357	27529605	78723000
0001	TOTAL HIGHWAY CONSTRUCTION COST	20884194	4078123138	9452061	1441745170	32516455	4265[illegible]8308	19759597000
0800	LAND ACQUISITION	0	2500019000	0	1089901000	0	3589920000	3589920000
0900	LAND COMPENSATION	0	146034000	0	35625000	0	181659000	181659000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	2646053000	0	1125526000	0	3771579000	3771579000
0003	CONTINGENCIES	*	*	*	*	6503291	20073[illegible]9462	4706235000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	3[illegible]01975	1204421477	2823741000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	42921721	13248638447	31061152000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	1971510.	CU.M
1200	TOTAL FILL VOLUME	2056248.	CU.M
1300	TOTAL NUMBER OF BRIDGES	14.	PLACES
1400	TOTAL LENGTH OF BRIDGES	1210.	M
1500	OVER BRIDGE	11.	PLACES
1600	BOX CULVERTS	10.	PLACES
1700	PIPE CULVERTS	19.	PLACES
1800	INTERCHANGE	9.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	12336538.	LIT
2200	REINFORCING BAR	1948.	M.T
2300	PRESTRESSING BAR	70.	M.T
2400	STRUCTURAL STEEL	8640.	M.T
2500	FINE AGGREGATE	283774.	CU.M
2600	COURSE AGGREGATE	195453.	CU.M
2700	CEMENT	13898.	M.T
2800	ASPHALT	13853.	M.T

JAKARTA OUTER RING ROAD

Table 17-9 S U M M A R Y O F P R O J E C T

CASE NO. T-03

100KM/H - TOLL - 4 LANES

BEGIN STAT. 0+700
END STAT. 47+500

ROAD LENGTH. 48.200 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND			*							*			
	D.TRUMPET		II				IV		IV					
	CLOVER	*(B)								*		*		*(B)
	TURBINE													

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US.D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US.D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	5290800	1808200000	4003882000
0200	EARTHWORKS	13142566	1343389604	2953510	716468000	16096076	2059857604	8739729000
0300	DRAINAGE STRUCTURE	876582	704589480	104142	124399200	980724	828907680	1235908000
0400	PAVEMENT	11370180	2046490812	4473133	889878100	15843313	2936368912	9511344000
0500	BRIDGE STRUCTURE	26086393	4686280800	5604247	999564720	31690639	5685845520	18837461000
0600	MISCELLANEOUS	1080349	1011227946	9912846	983938830	10993195	1995166776	6557343000
0700	FRONTAGE ROAD	876191	195540075	0	0	876191	195540075	559159000
0001	TOTAL HIGHWAY CONSTRUCTION COST	53432260	9987437717	23047877	3714248850	81770938	15509886567	49444826000
0800	LAND ACQUISITION	0	8513429000	0	4754506000	0	13267935000	13267935000
0900	LAND COMPENSATION	0	503593000	0	310350000	0	813943000	813943000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	9017022000	0	5064856000	0	14081878000	14081878000
0003	CONTINGENCIES	*	*	*	*	16354188	5918352913	12705341000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	9812513	3551011748	7623204000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	107937638	39061129228	83855249000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	6416310.	CU.M
1200	TOTAL FILL VOLUME	5590867.	CU.M
1300	TOTAL NUMBER OF BRIDGES	36.	PLACES
1400	TOTAL LENGTH OF BRIDGES	2495.	M
1500	OVER BRIDGE	41.	PLACES
1600	BOX CULVERTS	22.	PLACES
1700	PIPE CULVERTS	32.	PLACES
1800	INTERCHANGE	9.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	31195892.	LIT
2200	REINFORCING BAR	4823.	M.T
2300	PRESTRESSING BAR	158.	M.T
2400	STRUCTURAL STEEL	21225.	M.T
2500	FINE AGGREGATE	623513.	CU.M
2600	COURSE AGGREGATE	494961.	CU.M
2700	CEMENT	35946.	M.T
2800	ASPHALT	34087.	M.T

JAKARTA OUTER RING ROAD

Table 17-10 S U M M A R Y O F P R O J E C T

CASE NO. T-04 (1st Stage)

100KM/H - TOLL - 4 LANES

BEGIN STAT. 0+700
END STAT. 25+450

ROAD LENGTH. 26.150 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND			#										
	D.TRUMPET		II				IV		IV					
	CLOVER	*(B)								*				
	TURBINE													

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US.D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US.D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	3173200	1083800000	2400678000
0200	EARTHWORKS	8575373	824813862	1789900	373842000	10365273	1198655862	5500244000
0300	DRAINAGE STRUCTURE	497000	377102663	71368	85250040	568368	462352703	698225000
0400	PAVEMENT	6204746	1116961581	3103831	611728500	9308577	1728690081	5591749000
0500	BRIDGE STRUCTURE	15397685	2786374190	3431162	613878840	18828846	3400183020	11214154000
0600	MISCELLANEOUS	613030	595114136	6860659	728076304	7473689	1323190441	4424771000
0700	FRONTAGE ROAD	740103	165169395	0	0	740103	165169395	472312000
0001	TOTAL HIGHWAY CONSTRUCTION COST	32027936	5865465818	15256920	2412775684	50458056	9362041502	30302135000
0800	LAND ACQUISITION	0	6042434000	0	3664605000	0	9707039000	9707039000
0900	LAND COMPENSATION	0	359766000	0	274725000	0	634491000	634491000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	6402200000	0	3939330000	0	10341530000	10341530000
0003	CONTINGENCIES	*	*	*	*	10091611	3940714300	8128733000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	6054967	2364428580	4877240000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	66604634	26008714383	53649637000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	4590355.	CU.M
1200	TOTAL FILL VOLUME	3681634.	CU.M
1300	TOTAL NUMBER OF BRIDGES	22.	PLACES
1400	TOTAL LENGTH OF BRIDGES	1345.	M
1500	OVER BRIDGE	29.	PLACES
1600	BOX CULVERTS	13.	PLACES
1700	PIPE CULVERTS	13.	PLACES
1800	INTERCHANGE	5.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	19447792.	LIT
2200	REINFORCING BAR	2902.	M.T
2300	PRESTRESSING BAR	88.	M.T
2400	STRUCTURAL STEEL	12556.	M.T
2500	FINE AGGREGATE	336282.	CU.M
2600	COURSE AGGREGATE	299549.	CU.M
2700	CEMENT	22102.	M.T
2800	ASPHALT	20220.	M.T

JAKARTA OUTER RING ROAD

Table 17-11 S U M M A R Y O F P R O J E C T

CASE NO. T-04 (2nd Stage)

100KM/H - TOLL - 4 LANES

BEGIN STAT. 25+450
END STAT. 47+500

ROAD LENGTH. 22.050 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND										*			
	D.TRUMPET													
	CLOVER												*	*(B)
	TURBINE													

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US,D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US,D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	2117600	724400000	1603204000
0200	EARTHWORKS	3740203	450900610	2804174	480591842	6544377	931392452	3647309000
0300	DRAINAGE STRUCTURE	379582	32740581?	32774	39149160	412356	366554977	537683000
0400	PAVEMENT	5165435	929529231	1369302	278149600	6534737	1207678831	3919595000
0500	BRIDGE STRUCTURE	10688708	1899976620	2173085	385685880	12861793	2285662500	7623307000
0600	MISCELLANEOUS	467320	4161138?9	3052187	255862526	3519506	671976335	2132572000
0700	FRONTAGE ROAD	136087	30370680	0	0	136087	30370680	86847000
0001	TOTAL HIGHWAY CONSTRUCTION COST	20577335	4054196767	9431521	1439439008	32126456	6218035775	19550515000
0800	LAND ACQUISITION	0	2470995000	0	1089901000	0	3560896000	3560896000
0900	LAND COMPENSATION	0	143027000	0	35625000	0	179452000	179452000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	2614822000	0	1125526000	0	3740348000	3740348000
0003	CONTINGENCIES	*	*	*	*	6425291	1991676755	4658173000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	3855175	1195006053	2794904000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	42406922	13145066583	30743939000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	1825955.	CU.M
1200	TOTAL FILL VOLUME	1909233.	CU.M
1300	TOTAL NUMBER OF BRIDGES	14.	PLACES
1400	TOTAL LENGTH OF BRIDGES	1150.	M
1500	OVER BRIDGE	12.	PLACES
1600	BOX CULVERTS	9.	PLACES
1700	PIPE CULVERTS	18.	PLACES
1800	INTERCHANGE	3.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	12117665.	LIT
2200	REINFORCING BAR	1921.	M.T
2300	PRESTRESSING BAR	70.	M.T
2400	STRUCTURAL STEEL	8669.	M.T
2500	FINE AGGREGATE	287231.	CU.M
2600	COURSE AGGREGATE	195412.	CU.M
2700	CEMENT	13844.	M.T
2800	ASPHALT	13866.	M.T

JAKARTA OUTER RING ROAD

Table 17-12 S U M M A R Y O F P R O J E C T

CASE NO. T-05

120KM/H - TOLL - 4 LANES

BEGIN STAT. 0+700
END STAT. 47+500

ROAD LENGTH. 48.200 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND										*			
	D.TRUMPET		II	III			IV		IV					
	CLOVER	*(B)								*		*		*(B)
	TURBINE													

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US,D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US,D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US,D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	5446800	1861200000	4121622000
0200	EARTHWORKS	8956126	1031570031	8890912	1207073181	17847038	2238643212	9645164000
0300	DRAINAGE STRUCTURE	983920	746502182	114250	136473240	1098170	882975422	1338716000
0400	PAVEMENT	11369448	2046335832	5283762	1038993660	16653210	3085329492	9996412000
0500	BRIDGE STRUCTURE	26829975	4823312700	6618408	1178548620	33448383	6001861320	19982940000
0600	MISCELLANEOUS	1194573	1027972716	12332669	1101896672	13527242	2129869388	7743675000
0700	FRONTAGE ROAD	883755	197228250	0	0	883755	197228250	563987000
0001	TOTAL HIGHWAY CONSTRUCTION COST	50217798	9872921711	33240001	4662985373	88904599	16397107084	55292516000
0800	LAND ACQUISITION	0	8524529000	0	6983056000	0	15507685000	15507685000
0900	LAND COMPENSATION	0	505299000	0	429225000	0	934524000	934524000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	9029929000	0	7412281000	0	16442209000	16442209000
0003	CONTINGENCIES	*	*	*	*	17780920	6567863217	13946945000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	10668552	3940717930	8368167000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	117354070	43347897230	92049836000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	6258084.	CU.M
1200	TOTAL FILL VOLUME	6206853.	CU.M
1300	TOTAL NUMBER OF BRIDGES	34.	PLACES
1400	TOTAL LENGTH OF BRIDGES	2320.	M
1500	OVER BRIDGE	39.	PLACES
1600	BOX CULVERTS	24.	PLACES
1700	PIPE CULVERTS	32.	PLACES
1800	INTERCHANGE	9.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	33113632.	LIT
2200	REINFORCING BAR	5198.	M.T
2300	PRESTRESSING BAR	166.	M.T
2400	STRUCTURAL STEEL	22564.	M.T
2500	FINE AGGREGATE	643532.	CU.M
2600	COURSE AGGREGATE	520265.	CU.M
2700	CEMENT	38358.	M.T
2800	ASPHALT	35811.	M.T

JAKARTA OUTER RING ROAD Table 17-13 S U M M A R Y O F P R O J E C T CASE NO.(T-05)

120KM/H - TOLL - 4 LANES

BEGIN STAT. 0+700
END STAT. 47+500

ROAD LENGTH. 48.200 KM
ROAD WIDTH. 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND										*			
	D,TRUMPET		II	III			IV		IV					
	CLOVER													*(B)
	TURBINE *(B)									*		*		

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US,D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US,D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US,D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	5446800	1861200000	4121622000
0200	EARTHWORKS	8755613	1015991447	9877399	1343497855	18633012	2359489302	10092189000
0300	DRAINAGE STRUCTURE	93392U	746502182	108430	129521520	1092351	876023702	1329349000
0400	PAVEMENT	11286425	2031417891	5588577	1093285060	16875001	3124702951	10127829000
0500	BRIDGE STRUCTURE	30896780	5537611740	11000597	1949840700	41897377	7487452440	24874864000
0600	MISCELLANEOUS	1175647	1042984944	12934415	1151451256	14110061	2194436200	8050112000
0700	FRONTAGE ROAD	883755	197228250	0	0	883755	197228250	563987000
0001	TOTAL HIGHWAY CONSTRUCTION COST	53982140	10571736454	39509417	5667396391	98938357	18100532845	59159951000
0800	LAND ACQUISITION	0	8524629000	0	6940056000	0	15464685000	15464685000
0900	LAND COMPENSATION	0	505299000	0	420675000	0	925974000	925974000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	9029928000	0	7360731000	0	16390659000	16390659000
0003	CONTINGENCIES	*	*	*	*	19787671	6898238369	15110122000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	11872603	4138943021	9066073000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	130598632	45528373235	99726805000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	6362529.	CU.M
1200	TOTAL FILL VOLUME	6414275.	CU.M
1300	TOTAL NUMBER OF BRIDGES	50.	PLACES
1400	TOTAL LENGTH OF BRIDGES	4065.	M
1500	OVER BRIDGE	40.	PLACES
1600	BOX CULVERTS	24.	PLACES
1700	PIPE CULVERTS	32.	PLACES
1800	INTERCHANGE	9.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	36154038.	LIT
2200	REINFORCING BAR	6581.	M.T
2300	PRESTRESSING BAR	215.	M.T
2400	STRUCTURAL STEEL	28218.	M.T
2500	FINE AGGREGATE	680862.	CU.M
2600	COURSE AGGREGATE	540053.	CU.M
2700	CEMENT	43959.	M.T
2800	ASPHALT	36415.	M.T

JAKARTA OUTER RING ROAD

Table 17-14 S U M M A R Y O F P R O J E C T

CASE NO. T-06 (1st Stage)

120KM/H - TOLL - 4 LANES

BEGIN STAT. 0+700
END STAT. 25+450

ROAD LENGTH, 26.150 KM
ROAD WIDTH, 34 M

		I.C. NO												
COMBINATION OF INTERCHANGE	I,C TYPE DIAMOND D,TRUMPET CLOVER TURBINE	1	2	3	4	5	6	7	8	9	10	11	12	13
			II	III			IV		V					
		#(B)								#				

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY MAP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US.D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US.D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	#	#	#	#	326720	1115F00000	2471688000
0200	EARTHWORKS	4947428	566879694	6065599	724175176	11013027	1291054870	5861461000
0300	DRAINAGE STRUCTURE	561974	403172542	81476	97324080	643449	500496622	767528000
0400	PAVEMENT	6204641	1116939441	3934256	768202100	10138897	1885141541	6092784000
0500	BRIDGE STRUCTURE	16187262	2931812280	4445323	792862740	20632585	3724675020	12287198000
0600	MISCELLANEOUS	671901	606295971	9361094	848715662	1003299e	1455011633	5618705000
0700	FRONTAGE ROAD	760398	169698645	0	0	760398	169698645	485264000
0001	TOTAL HIGHWAY CONSTRUCTION COST	29333604	5794798573	23887748	3231279758	56488552	19141873331	33584628000
0800	LAND ACQUISITION	0	6024610000	0	5893155000	0	11917765000	11917765000
0900	LAND COMPENSATION	0	359265000	0	393600000	0	752865000	752865000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	6383875000	0	6286755000	0	12670630000	12670630000
0003	CONTINGENCIES	#	#	#	#	1129771e	456256146e	9251052000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	#	#	#	#	677862e	2737501030	5550631000
0000	TOTAL PROJECT AMOUNT	#	#	#	#	74564889	30112510997	61056940000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	4286574,	CU.M
1200	TOTAL FILL VOLUME	4150605,	CU.M
1300	TOTAL NUMBER OF BRIDGES	22,	PLACES
1400	TOTAL LENGTH OF BRIDGES	1270,	M
1500	OVER BRIDGE	28,	PLACES
1600	BOX CULVERTS	14,	PLACES
1700	PIPE CULVERTS	13,	PLACES
1800	INTERCHANGE	6,	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	20780934,	LIT
2200	REINFORCING BAR	3255,	M.T
2300	PRESTRESSING BAR	96,	M.T
2400	STRUCTURAL STEEL	13931,	M.T
2500	FINE AGGREGATE	359995,	CU.M
2600	COURSE AGGREGATE	325356,	CU.M
2700	CEMENT	24794,	M.T
2800	ASPHALT	21957,	M.T

JAKARTA OUTER RING ROAD — Table 17-15 S U M M A R Y O F P R O J E C T — CASE NO. T-06 (2nd Stage)

120KM/H - TOLL - 4 LANES

BEGIN STAT. 25+450
END STAT. 47+500

ROAD LENGTH, 22.050 KM
ROAD WIDTH, 34 M

COMBINATION OF INTERCHANGE	I.C. TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND										*			
	D.TRUMPET													
	CLOVER											*		*(B)
	TURBINE													

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US.D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US.D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL RP	TOTAL R
0100	GENERAL	*	*	*	*	2179600	745400000	1649934000
0200	EARTHWORKS	4008698	464690337	2825313	482898005	6834012	947588342	3783703000
0300	DRAINAGE STRUCTURE	421947	343329640	32774	39149160	454721	382478800	571188000
0400	PAVEMENT	5164807	929396391	1349506	270791560	6514313	1200187951	3903628000
0500	BRIDGE STRUCTURE	10642713	1891500420	2173085	385685880	12815798	2277186300	7505743000
0600	MISCELLANEOUS	522671	421676745	2971575	253181010	3494246	674857755	2124970000
0700	FRONTAGE ROAD	123357	27529605	0	0	123357	27529605	78723000
0001	TOTAL HIGHWAY CONSTRUCTION COST	20884194	4078123138	9352253	1431705615	32416046	6255228753	19707888000
0800	LAND ACQUISITION	0	2500019000	0	1089901000	0	3589920000	3589920000
0900	LAND COMPENSATION	0	146034000	0	35625000	0	181659000	181659000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	2646053000	0	1125526000	0	3771579000	3771579000
0003	CONTINGENCIES	*	*	*	*	6483209	2005361551	4695893000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	3889926	1203216930	2817536000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	42789181	13235386234	30992896000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	1971510.	CU.M
1200	TOTAL FILL VOLUME	2056248.	CU.M
1300	TOTAL NUMBER OF BRIDGES	12.	PLACES
1400	TOTAL LENGTH OF BRIDGES	1050.	M
1500	OVER BRIDGE	11.	PLACES
1600	BOX CULVERTS	10.	PLACES
1700	PIPE CULVERTS	19.	PLACES
1800	INTERCHANGE	3.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

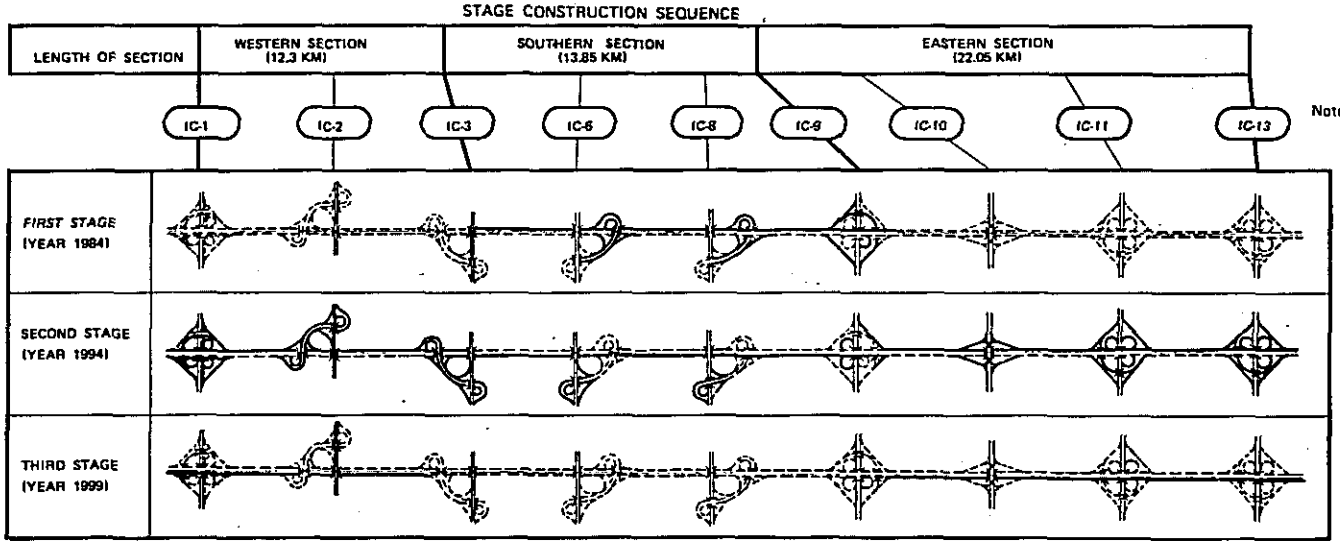
2100	FUEL	12332698.	LIT
2200	REINFORCING BAR	1942.	M.T
2300	PRESTRESSING BAR	70.	M.T
2400	STRUCTURAL STEEL	8633.	M.T
2500	FINE AGGREGATE	283538.	CU.M
2600	COURSE AGGREGATE	194909.	CU.M
2700	CEMENT	13564.	M.T
2800	ASPHALT	13853.	M.T

Table 17-16 CONSTRUCTION COST

CASE NO. T-07
T-08

ITEM NO.	DESCRIPTION	FIRST STAGE (YEAR 1984)			SECOND STAGE (YEAR 1994)			THIRD STAGE (YEAR 1999)			TOTAL
		FOREIGN IN U.S.D	LOCAL IN Rp.	TOTAL Rp.	FOREIGN IN U.S.D	LOCAL IN Rp.	TOTAL Rp.	FOREIGN IN U.S.D	LOCAL IN Rp.	TOTAL Rp.	Rp.
0100	GENERAL	1,432,264	489,259,000	1,083,648,560	3,330,608	1,139,723,000	2,521,925,320	683,928	232,218,000	516,048,120	4,121,622,000
0200	EARTHWORKS	5,917,621	618,706,680	3,074,519,395	11,929,418	1,619,936,532	6,570,645,002	0	0	0	9,645,164,397
0300	DRAINAGE STRUCTURE	521,593	249,618,669	466,079,764	568,238	462,473,586	698,292,356	9,275	171,337,800	175,186,925	1,339,559,045
0400	PAVEMENT	2,958,188	553,410,803	1,781,058,823	9,637,740	1,801,659,939	5,801,322,039	4,057,383	730,279,076	2,414,093,021	9,996,473,883
0500	BRIDGE STRUCTURE	8,273,668	1,499,378,700	4,932,950,920	19,730,824	3,541,538,940	11,729,830,900	5,443,892	960,943,680	3,220,158,860	19,882,940,680
0600	MISCELLANEOUS	4,320,215	562,620,202	2,355,509,427	9,022,919	1,484,724,879	5,229,236,264	747,931	94,839,132	405,230,497	7,989,976,188
0700	FRONTAGE ROAD	595,898	132,987,015	380,284,685	287,857	64,241,235	183,701,890	0	0	0	563,986,575
0001	TOTAL HYW.CONST. COST	24,019,447	4,105,981,069	14,074,051,574	54,507,604	10,114,298,111	32,734,953,771	10,942,409	2,189,617,688	6,730,717,423	53,539 722,768
0800	LAND ACQUISITION	0	6,494,125,000	6,494,125,000	0	9,013,560,000	9,013,560,000	0	0	0	15,507,685,000
0900	LAND COMPENSATION	0	338,192,000	338,192,000	0	596,332,000	596,332,000	0	0	0	934,524,000
0002	TOTAL LAND A & C COST	0	6,832,317,000	6,832,317,000	0	9,609,892,000	9,609,892,000	0	0	0	16,442,209,000
0003	CONTINGENCIES	4,803,889	2,187,659,614	4,181,273,715	10,901,521	3,944,838,022	8,468,969,154	2,188,482	437,923,538	1,346,143,465	13,996,386,354
0004	FINAL ENGR., SUPERU. ADMI AND OTHERS	2,882,334	1,312,595,768	2,508,764,229	6,540,913	2,366,902,813	5,081,381,493	1,313,089	262,754,123	807,686,091	8,397,831,812
000	TOTAL PROJECT AMOUNT	31,705,670	14,438,553,451	27,596,406,518	71,950,038	26,035,930,946	55,895,196,418	14,443,980	2,890,295,349	8,884,546,999	92,376,149,934

STAGE CONSTRUCTION SEQUENCE



Notes: The figures and table show the area of the case of 3-Stage Construction (T-08).
In case of 2-Stage Construction (T-07), 2nd Stage (1994) and 3rd Stage (1999) of 3-Stage Construction completed at the same time by 1994.
And the above table of the case of 3-Stage Construction is divided one of All-Construction (T-05).

JAKARTA OUTER RING ROAD — Table 17-17 SUMMARY OF PROJECT — CASE NO. T-09

100KM/H - TOLL - 4 LANES

BEGIN STAT. 0+700
END STAT. 47+500

ROAD LENGTH, 48.200 KM
ROAD WIDTH, 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND										*			
	TRUMPET		II	III			IV		IV					
	CLOVER	*(B)								*		*		*(B)
	TURBINE													

REMARKS (B): SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US.D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US.D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	5290800	1808200000	4003882000
0200	EARTHWORKS	13201306	1350509604	3013360	728654000	16214666	2079163604	8808250000
0300	DRAINAGE STRUCTURE	876582	704500480	114250	136473240	990832	840921720	1252177000
0400	PAVEMENT	11370180	2046490812	5283762	1038993660	16653942	3085484472	9996870000
0500	BRIDGE STRUCTURE	26944962	4844503200	6618408	1178548620	3356337	6023051820	19951851000
0600	MISCELLANEOUS	1080596	1019871336	12332669	1101896672	13413265	2121763008	7688273000
0700	FRONTAGE ROAD	876191	195540075	0	0	876191	195540075	559159000
0001	TOTAL HIGHWAY CONSTRUCTION COST	54349816	10161423507	27362448	4184566192	87003065	16154189699	52260462000
0800	LAND ACQUISITION	0	8513429000	0	6983056000	0	15496485000	15496485000
0900	LAND COMPENSATION	0	503593000	0	429225000	0	932818000	932818000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	9017022000	0	7412281000	0	16429303000	16429303000
0003	CONTINGENCIES	*	*	*	*	17400613	6316698540	13737953000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	10440360	3910019124	8242772000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	114844046	43010219362	90670489000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	6432976.	CU.M
1200	TOTAL FILL VOLUME	5783867.	CU.M
1300	TOTAL NUMBER OF BRIDGES	34.	PLACES
1400	TOTAL LENGTH OF BRIDGES	2260.	M
1500	OVER BRIDGE	41.	PLACES
1600	BOX CULVERTS	22.	PLACES
1700	PIPE CULVERTS	32.	PLACES
1800	INTERCHANGE	9.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	32344562.	LIT
2200	REINFORCING BAR	5129.	M.T
2300	PRESTRESSING BAR	167.	M.T
2400	STRUCTURAL STEEL	22637.	M.T
2500	FINE AGGREGATE	637264.	CU.M
2600	COURSE AGGREGATE	519645.	CU.M
2700	CEMENT	38215.	M.T
2800	ASPHALT	35806.	M.T

JAKARTA OUTER RING ROAD

Table 17-18 S U M M A R Y O F P R O J E C T

CASE NO. T-10 (1st Stage)

100KM/H - TOLL - 4 LANES

BEGIN STAT, 0+700
END STAT, 25+450

ROAD LENGTH, 26.150 KM
ROAD WIDTH, 34 M

COMBINATION OF INTERCHANGE	I.C TYPE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
	DIAMOND													
	D,TRUMPET		II	III			IV		IV					
	CLOVER	*(B)								*				
	TURBINE													

REMARKS (B)! SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS! SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US,D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US,D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US,D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	3173200	1083600000	2400678000
0200	EARTHWORKS	8634113	831933862	1849750	386028000	10483863	1217961862	5568765000
0300	DRAINAGE STRUCTURE	497000	377102663	81476	97324080	57847u	474426743	714494000
0400	PAVEMENT	6204746	1116961581	3934256	768202100	10139002	1885163681	6092849000
0500	BRIDGE STRUCTURE	16256254	2944526580	4445323	792862740	20701577	3737389320	12328544000
0600	MISCELLANEOUS	613276	603757526	9361094	848715662	997437u	1452473188	5591837000
0700	FRONTAGE ROAD	740103	165169395	0	0	740103	165169395	472312000
0001	TOTAL HIGHWAY CONSTRUCTION COST	32945492	6039451608	19671899	2893132582	55790592	10016384190	30169480000
0800	LAND ACQUISITION	0	6042434000	0	5893155000	0	11935589000	11935589000
0900	LAND COMPENSATION	0	359766000	0	393600000	0	753366000	753366000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	6402200000	0	6286755000	0	12688955000	12688955000
0003	CONTINGENCIES	*	*	*	*	1115811u	4541067838	9171687000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	6694871	2724640703	5503012000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	73643581	29971047730	60533134000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	4607022.	CU.M
1200	TOTAL FILL VOLUME	3874634.	CU.M
1300	TOTAL NUMBER OF BRIDGES	22.	PLACES
1400	TOTAL LENGTH OF BRIDGES	1270.	M
1500	OVER BRIDGE	29.	PLACES
1600	BOX CULVERTS	13.	PLACES
1700	PIPE CULVERTS	13.	PLACES
1800	INTERCHANGE	6.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	28600302.	LIT
2200	REINFORCING BAR	3214.	M.T
2300	PRESTRESSING BAR	96.	M.T
2400	STRUCTURAL STEEL	13975.	M.T
2500	FINE AGGREGATE	350269.	CU.M
2600	COURSE AGGREGATE	324777.	CU.M
2700	CEMENT	24705.	M.T
2800	ASPHALT	21939.	M.T

JAKARTA OUTER RING ROAD

Table 17-19 S U M M A R Y O F P R O J E C T

CASE NO. T-10 (2nd Stage)

100KM/H - TOLL - 4 LANES

BEGIN STAT. 25+450
END STAT. 47+500

ROAD LENGTH, 22.050 KM
ROAD WIDTH, 34 M

COMBINATION OF INTERCHANGE	I.C. TYPE DIAMOND, TRUMPET CLOVER TURBINE	I.C. NO 1	2	3	4	5	6	7	8	9	10	11	12	13
											*			
												*		*(8)

REMARKS (8)) SHOWS BARIER ON THROUGH WAY
ARABIAN NUMERALS: SHOWS QUADRANTS OF KEY RAMP

T-3.1 CONSTRUCTION COST

ITEM NO.	DESCRIPTION	THROUGHWAY COST FOREIGN US.D.	THROUGHWAY COST LOCAL RP	INTERCHANGE COST FOREIGN US.D.	INTERCHANGE COST LOCAL RP	TOTAL COST FOREIGN US.D.	TOTAL COST LOCAL RP	TOTAL RP
0100	GENERAL	*	*	*	*	211760[illegible]	724400000	1603204000
0200	EARTHWORKS	3740203	450800610	2804174	480591842	6544377	931392452	3647309000
0300	DRAINAGE STRUCTURE	379582	327405817	32774	39149160	412356	366554977	537683000
0400	PAVEMENT	5165435	929529231	1349506	270791560	6514940	1200320791	3904021000
0500	BRIDGE STRUCTURE	10688708	1899976620	2173085	385685880	12861793	2285662500	7623307000
0600	MISCELLANEOUS	407329	416113809	2971575	253181010	3438894	669294820	2096436000
0700	FRONTAGE ROAD	136087	30370680	0	0	136087	30370680	86847000
0001	TOTAL HIGHWAY CONSTRUCTION COST	20577335	4054196767	9331113	1429399452	32026047	6207[illegible]96220	19498806000
0800	LAND ACQUISITION	0	2470995000	0	1089901000	0	3560896000	3560896000
0900	LAND COMPENSATION	0	143827000	0	35625000	0	179452000	179452000
0002	TOTAL LAND ACQUIS. AND COMPENS. COST	0	2614822000	0	1125526000	0	3740348000	3740348000
0003	CONTINGENCIES	*	*	*	*	6405209	1969[illegible]8844	4647831000
0004	FINAL ENGINEERING SUPERVISION ADMINISTRATION AND OTHERS	*	*	*	*	334312[illegible]	11930[illegible]1306	2788698000
0000	TOTAL PROJECT AMOUNT	*	*	*	*	42274383	13131814370	30675683000

1 US.D.= 415 RP

T-3.2 MAJOR QUANTITY OF PROJECT

1100	TOTAL CUT VOLUME	1825955.	CU.M
1200	TOTAL FILL VOLUME	1909233.	CU.M
1300	TOTAL NUMBER OF BRIDGES	12.	PLACES
1400	TOTAL LENGTH OF BRIDGES	990.	M
1500	OVER BRIDGE	12.	PLACES
1600	BOX CULVERTS	9.	PLACES
1700	PIPE CULVERTS	19.	PLACES
1800	INTERCHANGE	3.	PLACES

T-3.3 REQUIRED AMOUNT OF MATERIALS

2100	FUEL	12113826.	LIT
2200	REINFORCING BAR	1915.	M.T
2300	PRESTRESSING BAR	70.	M.T
2400	STRUCTURAL STEEL	8663.	M.T
2500	FINE AGGREGATE	286995.	CU.M
2600	COURSE AGGREGATE	194868.	CU.M
2700	CEMENT	13510.	M.T
2800	ASPHALT	13866.	M.T

13. REFERENCE DRAWING : TURBINE TYPE INTERCHANGE

Fig 16 IC-1 (0 + 000)

OPERATION SYSTEM ; (FLAT)

(SCALE 1 : 10 000) INTERCHANGE TYPE ; TURBINE

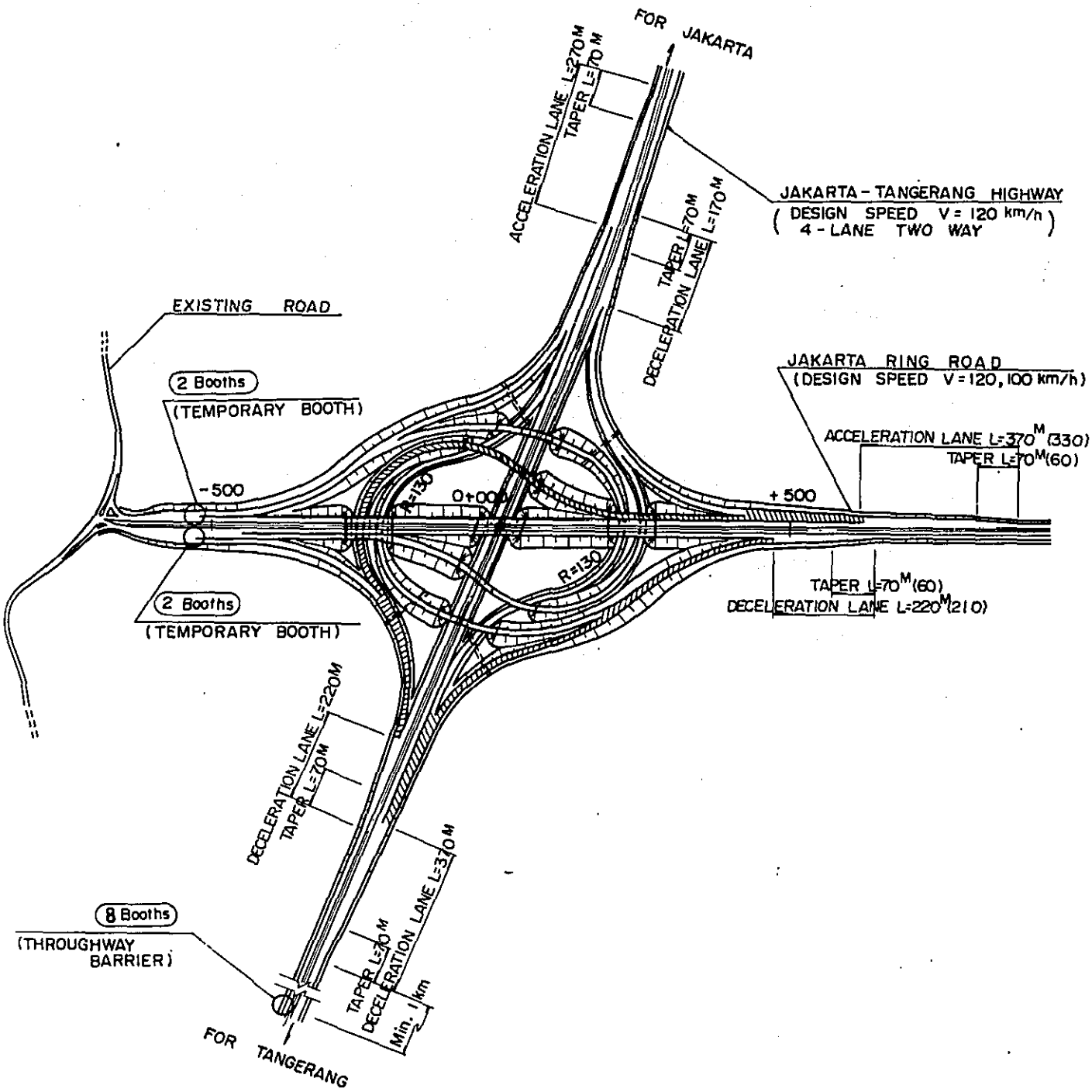


Fig 17 IC－1 (0 + 000)

OPERATION SYSTEM ; ZONE

(SCALE 1 : 10 000) INTERCHANGE TYPE ; TURBINE

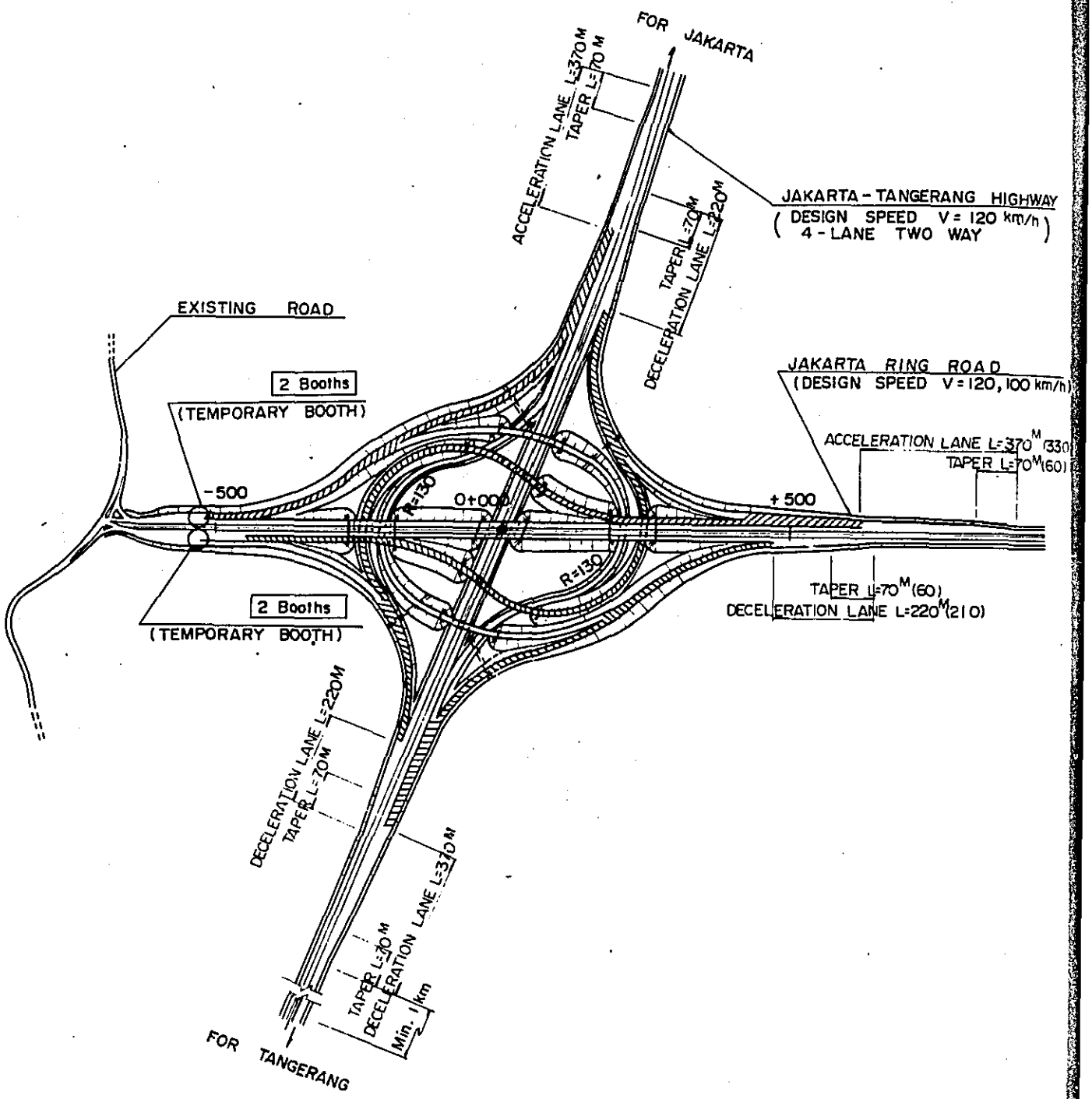


Fig 18 IC-9 (24 + 570)

OPERATION SYSTEM; (FLAT)

(SCALE 1 : 10 000) INTERCHANGE TYPE ; TURBINE

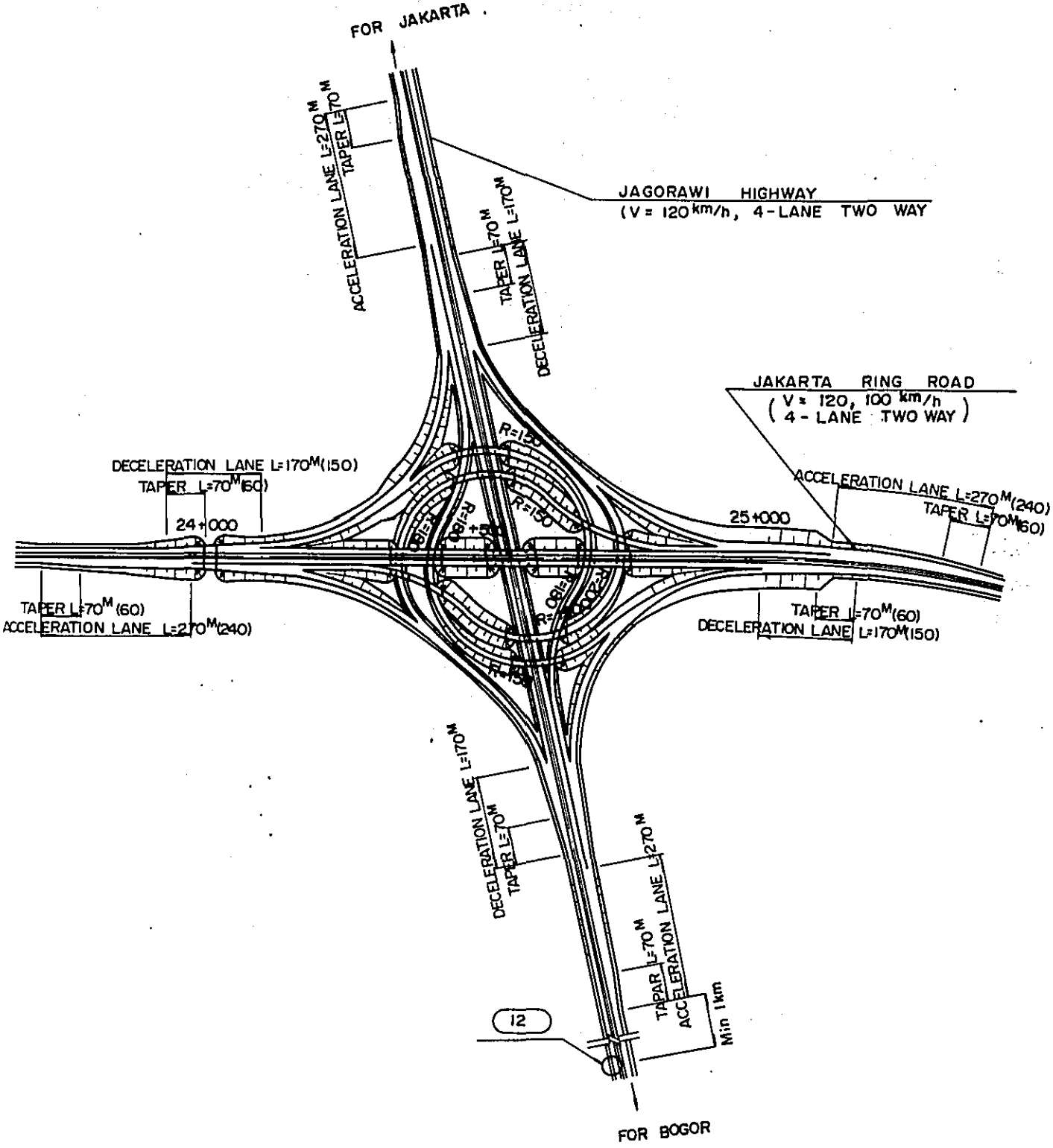


Fig 19 IC-9 (24 + 570)

OPERATION SYSTEM ; ZONE

(SCALE 1 : 10 000) INTERCHANGE TYPE ; TURBINE

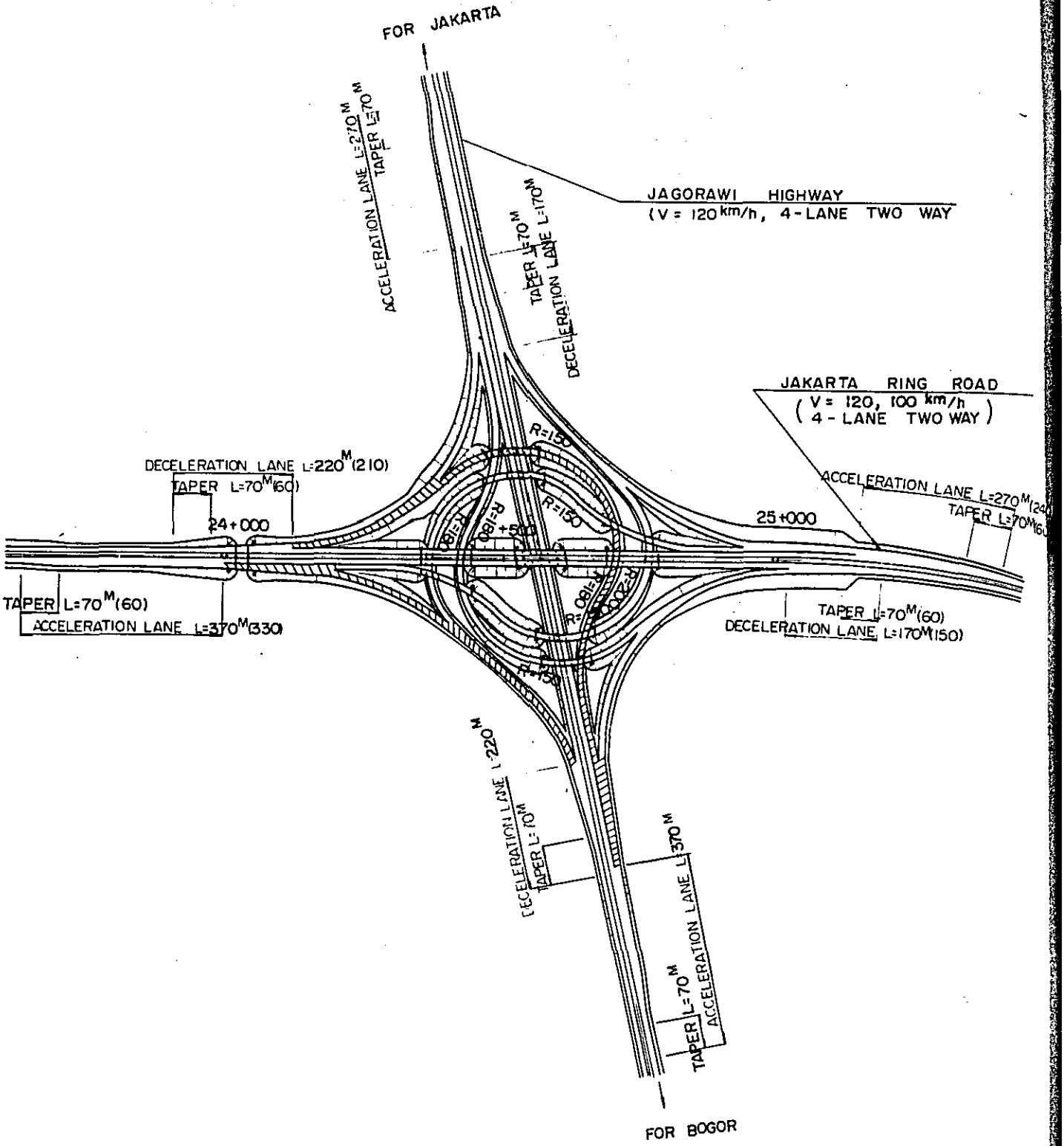


Fig 20 IC - 11 (38 + 370)

OPERATION SYSTEM; (FLAT)

(SCALE 1 : 10 000) INTERHANGE TYPE; TURBINE

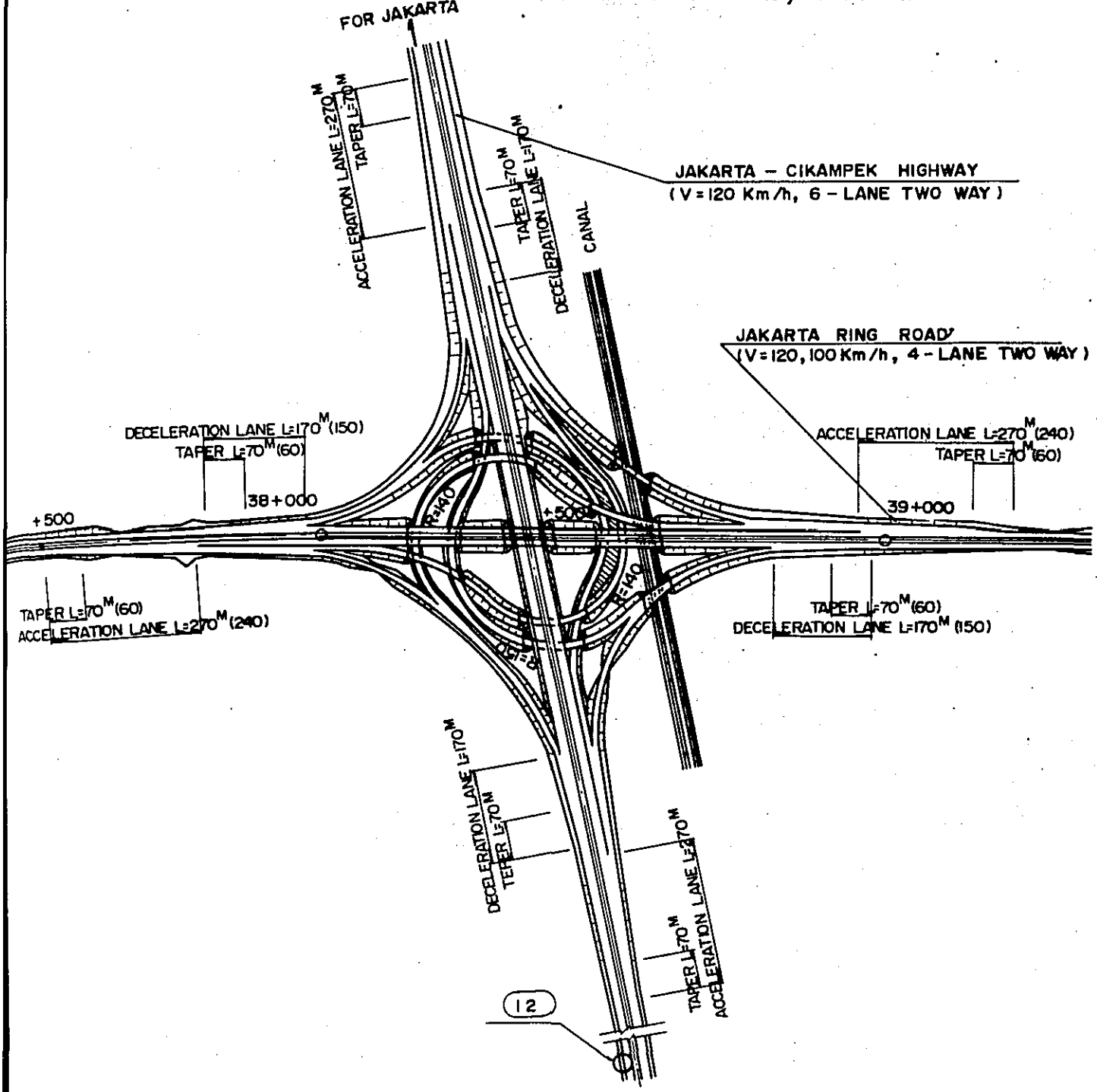
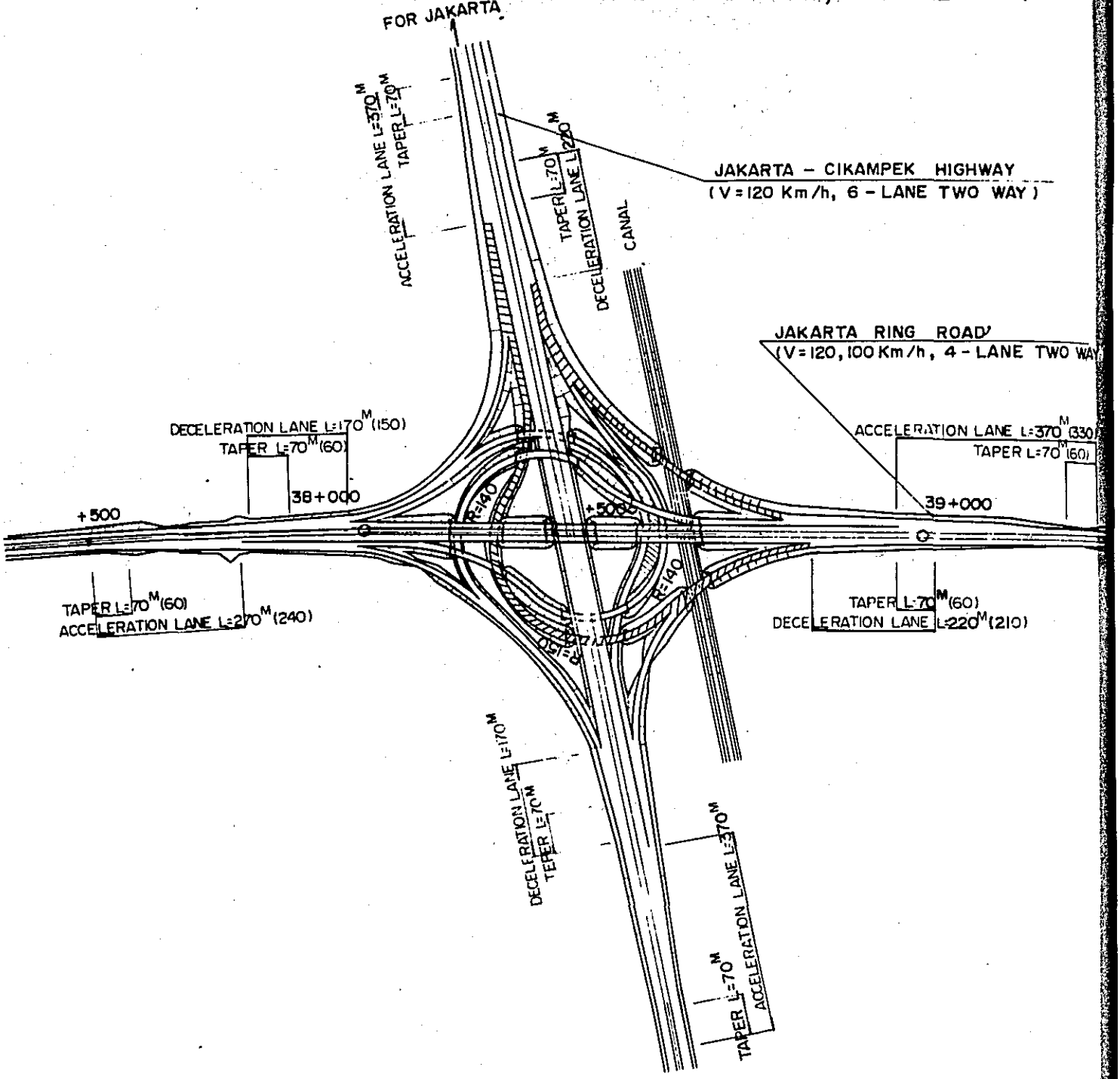


Fig 21 IC -11 (38 + 370)

OPERATION SYSTEM; ZONE

(SCALE 1 : 10 000) INTERHANGE TYPE; TURBINE



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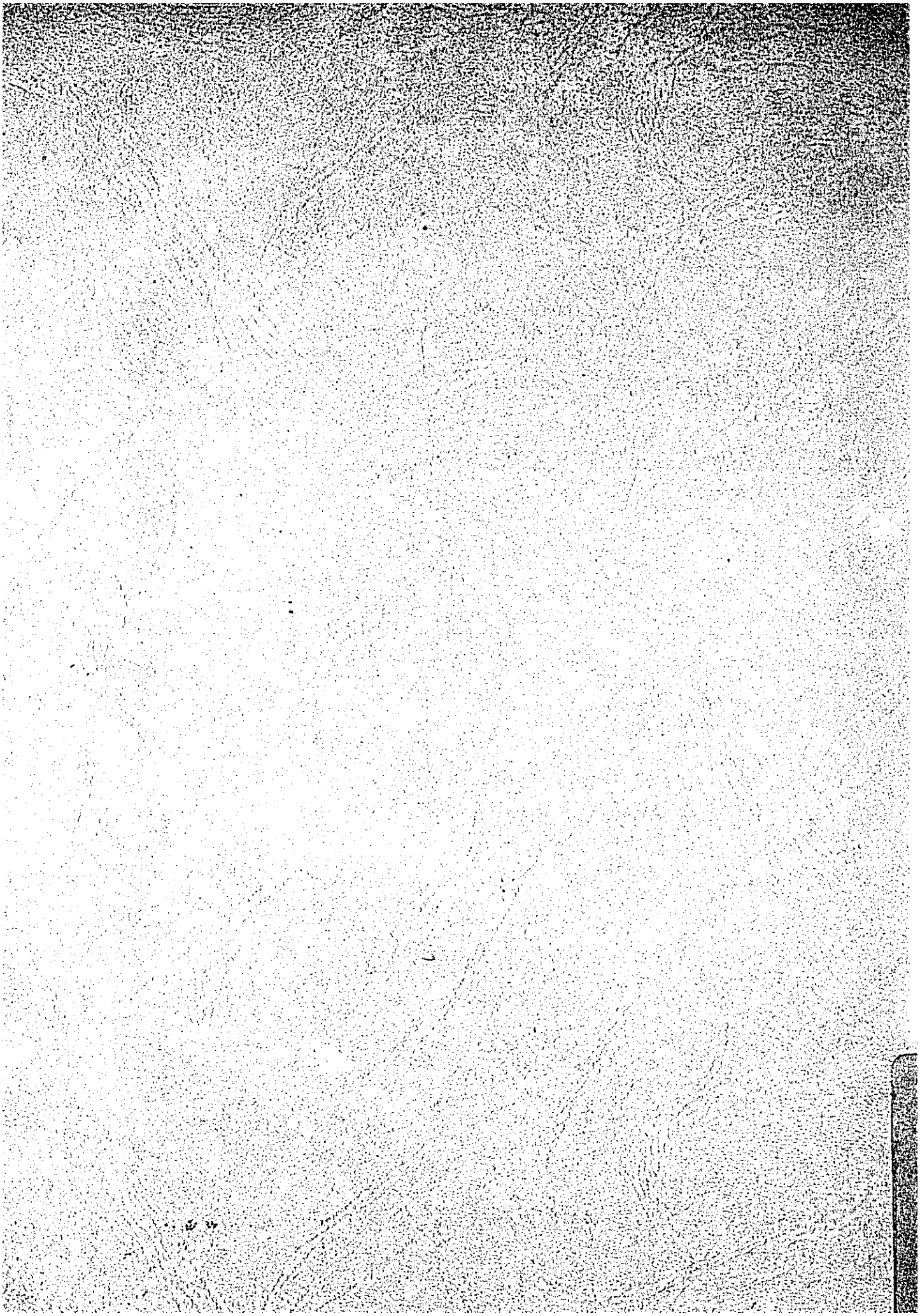
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