

### Appendix 4.4-3 INTEGRATED OD MATRIX

The OD matrices shown in this section are integrated ones from 138 zones to 68 zones which are basically corresponding to municipalities. Zones are integrated following the zoning system shown in the table below.

#### CORRESPONDENCE OF 138, 100 AND 68 ZONE SYSTEMS

138 Zone		100	68	138 Zone		100	68	138 Zone		100	68
No.	Node	Zone	Zone	No.	Node	Zone	Zone	No.	Node	Zone	Zone
1	100	1	1	47	3304	37	26	93	5100	64	46
2	200	2	2	48	3305	37	26	94	5200	65	47
3	301	3	3	49	3306	37	26	95	5300	66	48
4	302	3	3	50	3307	37	26	96	5400	67	49
5	303	3	3	51	3308	37	26	97	5501	68	50
6	304	4	3	52	3309	37	26	98	5502	69	50
7	305	4	3	53	3310	37	26	99	5503	70	50
8	306	5	3	54	3311	37	26	100	5601	71	51
9	400	6	4	55	3312	37	26	101	5602	72	51
10	500	7	5	56	3313	38	26	102	5603	73	51
11	601	8	6	57	3314	38	26	103	5604	73	51
12	602	9	6	58	3315	38	26	104	5605	74	51
13	603	10	6	59	3316	38	26	105	5606	71	51
14	700	11	7	60	3317	38	26	106	5700	75	52
15	800	12	8	61	3318	38	26	107	5801	76	53
16	900	13	9	62	3319	39	26	108	5802	77	53
17	1000	14	10	63	3320	39	26	109	5803	78	53
18	1101	15	11	64	3321	37	26	110	5804	79	53
19	1102	16	11	65	3322	37	26	111	5901	80	54
20	1201	17	12	66	3400	40	27	112	5902	81	54
21	1202	17	12	67	3500	41	28	113	6001	83	56
22	1203	18	12	68	3600	42	29	114	6002	84	56
23	1204	18	12	69	3700	43	30	115	6003	85	56
24	1301	19	13	70	3801	44	31	116	6004	86	56
25	1302	20	13	71	3802	44	31	117	6100	87	57
26	1401	21	14	72	3803	44	31	118	6200	88	58
27	1402	21	14	73	3804	45	31	119	7100	90	60
28	1403	21	14	74	3805	44	31	120	7200	91	61
29	1404	22	14	75	3806	45	31	121	7301	92	62
30	1500	23	15	76	3807	45	31	122	7302	93	62
31	1601	24	16	77	3808	46	31	123	7303	94	62
32	1602	24	16	78	3900	47	32	124	7400	95	63
33	1603	24	16	79	4000	49	34	125	7500	96	64
34	1604	24	16	80	4100	50	35	126	7600	97	65
35	1605	25	16	81	4200	51	36	127	7700	98	66
36	1606	24	16	82	4300	52	37	128	7800	99	67
37	1607	26	16	83	4400	53	38	129	1999	30	19
38	1701	27	17	84	4500	54	39	130	2019	31	20
39	1702	28	17	85	4600	55	40	131	2029	32	21
40	1800	29	18	86	4701	56	41	132	2039	33	22
41	100	1	1	87	4702	57	41	133	2049	34	23
42	3100	35	24	88	4703	58	41	134	3999	48	33
43	3200	36	25	89	4704	59	41	135	4999	62	44
44	3301	37	26	90	4800	60	42	136	5999	82	55
45	3302	37	26	91	4900	61	43	137	6999	89	59
46	3303	37	26	92	5000	63	45	138	7999	100	68

OD MATRIX OF VEHICLE TRAFFIC VOLUME OF ALL VEHICLE TYPES FOR INTEGRATED ZONES (1998)-1

(Unit: Vehicle/Den)

Table with columns for Origin (Zone No., Description) and Destination (Zone No., Description). Rows represent 94 origin zones and 94 destination zones. Data cells contain numerical values representing traffic volume. A summary row at the bottom shows totals for origin and destination zones.







OD MATRIX OF VEHICLE TRAFFIC VOLUME OF ALL VEHICLE TYPES FOR INTEGRATED ZONES (2010)-1

(Unit: Vehicle/Day)

Origin		Destination																																						
No.	Zone	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35				
1	100	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182	182

Final summary row (row 99):

| 99 | 7989 | 4402 | 4303 | 5107 | 17885 | 18920 | 16323 | 17717 | 3304 | 8385 | 18075 | 14687 | 16768 | 14897 | 11297 | 9413 | 28904 | 7429 | 8660 | 6600 | 5845 | 3077 | 37 | 470 | 635 | 7462 | 1013 | 24930 | 4756 | 486 | 113 | 142 | 7852 | 1394 | 4937 | 8 | 5 | 432 | 0 | 5 | 23 | 464 |









## APPENDIX 4.6-1 AXLE LOAD DISTRIBUTION DATA

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
STA. RITA, FLARIDEL - SAN JOSE SECTION )

STA. NO. 2 - DIR 1 :  
VEHICLE TYPE : 4 - BUS

A X L E L O A D (ton)	ALEFT(A)	ALEFT(B)	NO. OF AXLE (C)	A x C
0 <= (0.9) < 1.35	0.0002	0.0001	0	0.0000
1.35 <= (1.8) < 2.25	0.002	0.0005	0	0.000
2.25 <= (2.7) < 3.15	0.010	0.002	4	0.040
3.15 <= (3.6) < 4.05	0.032	0.005	17	0.544
4.05 <= (4.5) < 4.95	0.092	0.013	48	3.936
4.95 <= (5.4) < 5.85	0.176	0.026	31	5.456
5.85 <= (6.3) < 6.75	0.341	0.048	11	3.751
6.75 <= (7.2) < 7.70	0.604	0.082	9	5.436
7.70 <= (8.2) < 8.65	1.00	0.133	25	25.000
8.65 <= (9.1) < 9.55	1.57	0.206	23	36.11
9.55 <= (10.0) < 10.45	2.34	0.308	18	42.12
10.45 <= (10.9) < 11.35	3.36	0.444	4	13.44
11.35 <= (11.8) < 12.25	4.67	0.622	0	0.00
12.25 <= (12.7) < 13.15	6.29	0.850	0	0.00
13.15 <= (13.6) < 14.05	8.28	1.14	0	0.00
14.05 <= (14.5) < 14.95	10.70	1.49	0	0.00
14.95 <= (15.4) < 15.85	13.60	1.92	0	0.00
15.85 <= (16.3) < 16.75	17.10	2.43	0	0.00
16.75 <= (17.2) < 17.65	21.30	3.03	0	0.00
17.65 <= (18.1) < 18.55	26.3	3.74	0	0.0
18.55 <= (19.0) < 19.50	32.20	4.55	0	0.0
19.50 <= (20.0) < 20.40	39.20	5.48	0	0.0
20.40 <= (20.8) < 21.25	47.30	6.53	0	0.0
21.25 <= (21.7) < 22.20	56.80	7.73	0	0.0
22.20 <= (22.7) < 23.2	67.80	9.07	0	0.0
<hr/>				
23.2 <= (23.6) < 24.1		10.6		
24.1 <= (24.5) < 25.0		12.3		
25.0 <= (25.4) < 25.9		14.2		
25.9 <= (26.3) < 26.8		16.3		
26.8 <= (27.2) < 27.7		18.7		
27.7 <= (28.1) < 28.6		21.4		
28.6 <= (29.0) < 29.5		24.4		
29.5 <= (29.9) < 30.4		27.6		
30.4 <= (30.8) < 31.3		31.3		
31.3 <= (31.7) < 32.6		35.3		
32.6 <= (32.6) < 33.1		39.8		
33.1 <= (33.5) < 34.0		44.7		
34.0 <= (34.4) < 34.9		50.1		
34.9 <= (35.3) < 35.8		56.1		
35.8 <= (36.2) < 36.7		62.5		
36.7 <= (37.1) < 37.6		69.6		
37.6 <= (38.1) < 38.6		77.3		
38.6 <= (39.0) < 39.5		86.0		
39.5 <= (40.0) < 40.4		95.0		
40.4 <= (40.8) < 41.5		105.0		
<hr/>				
TOTAL AXLES			190	
TOTAL A x C				135.8330
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No. of Buses Weighted =	95			
( 2 days count )				
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FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, FLARIDEL - SAN JOSE SECTION )

STA. NO. 2 DIR 1 :  
VEHICLE TYPE : 5 - Trucks-11

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF AXLE (C)	A x C
0 <= (0.9) < 1.35	0.0002	0.0001	9	0.0018
1.35 <= (1.8) < 2.25	0.002	0.0005	59	0.118
2.25 <= (2.7) < 3.15	0.010	0.002	102	1.020
3.15 <= (3.6) < 4.05	0.032	0.005	31	0.992
4.05 <= (4.5) < 4.95	0.092	0.013	29	2.378
4.95 <= (5.4) < 5.85	0.176	0.026	10	1.760
5.85 <= (6.3) < 6.75	0.341	0.048	13	4.433
6.75 <= (7.2) < 7.70	0.694	0.082	5	3.020
7.70 <= (8.2) < 8.65	1.00	0.133	7	7.000
8.65 <= (9.1) < 9.55	1.57	0.206	4	6.28
9.55 <= (10.0) < 10.45	2.34	0.308	9	21.06
10.45 <= (10.9) < 11.35	3.36	0.444	4	13.44
11.35 <= (11.8) < 12.25	4.67	0.622	3	14.01
12.25 <= (12.7) < 13.15	6.29	0.850	1	6.29
13.15 <= (13.6) < 14.05	8.28	1.14	1	8.28
14.05 <= (14.5) < 14.95	10.70	1.49	1	10.70
14.95 <= (15.4) < 15.85	13.60	1.92	0	0.00
15.85 <= (16.3) < 16.75	17.10	2.43	0	0.00
16.75 <= (17.2) < 17.65	21.30	3.03	0	0.00
17.65 <= (18.1) < 18.55	26.3	3.74	0	0.0
18.55 <= (19.0) < 19.50	32.20	4.55	0	0.0
19.50 <= (20.0) < 20.40	39.20	5.48	0	0.0
20.40 <= (20.8) < 21.25	47.30	6.53	0	0.0
21.25 <= (21.7) < 22.20	56.80	7.73	0	0.0
22.20 <= (22.7) < 23.2	67.80	9.07	0	0.0
23.2 <= (23.6) < 24.1		10.6		
24.1 <= (24.5) < 25.0		12.3		
25.0 <= (25.4) < 25.9		14.2		
25.9 <= (26.3) < 26.8		16.3		
26.8 <= (27.2) < 27.7		18.7		
27.7 <= (28.1) < 28.6		21.4		
28.6 <= (29.0) < 29.5		24.4		
29.5 <= (29.9) < 30.4		27.6		
30.4 <= (30.8) < 31.3		31.3		
31.3 <= (31.7) < 32.6		35.3		
32.6 <= (32.6) < 33.1		39.8		
33.1 <= (33.5) < 34.0		44.7		
34.0 <= (34.4) < 34.9		50.1		
34.9 <= (35.3) < 35.8		56.1		
35.8 <= (36.2) < 36.7		62.5		
36.7 <= (37.1) < 37.6		69.6		
37.6 <= (38.1) < 38.6		77.3		
38.6 <= (39.0) < 39.5		86.0		
39.5 <= (40.0) < 40.4		95.0		
40.4 <= (40.8) < 41.5		105.0		
TOTAL AXLES			288	
TOTAL A x C				100.7828
No. of Single Trucks Weighted =		144		
( 2 days count )				

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, FLARIGEL - SAN JOSE SECTION )

STA. NO. 2 DIR 1 :  
VEHICLE TYPE : 6 / TRUCK-12

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF SINGLE AXLE (C)	NO. OF TANDEM AXLE (D)	A x C	B x D
0 <= (0.9) < 1.35	0.0002	0.0001	0	0	0.0000	0.0000
1.35 <= (1.9) < 2.25	0.002	0.0005	1	0	0.002	0.0000
2.25 <= (2.7) < 3.15	0.010	0.002	2	0	0.020	0.000
3.15 <= (3.6) < 4.05	0.032	0.005	14	0	0.448	0.000
4.05 <= (4.5) < 4.95	0.082	0.013	52	3	4.264	0.039
4.95 <= (5.4) < 5.85	0.176	0.026	11	5	1.936	0.130
5.85 <= (6.3) < 6.75	0.341	0.048	25	17	8.525	0.816
6.75 <= (7.2) < 7.70	0.604	0.082	8	18	4.832	1.476
7.70 <= (8.2) < 8.65	1.00	0.133	2	8	2.000	1.064
8.65 <= (9.1) < 9.55	1.57	0.206	0	4	0.00	0.824
9.55 <= (10.0) < 10.45	2.34	0.308	0	1	0.00	0.308
10.45 <= (10.9) < 11.35	3.36	0.444	0	4	0.00	1.776
11.35 <= (11.8) < 12.25	4.67	0.622	0	1	0.00	0.622
12.25 <= (12.7) < 13.15	6.29	0.850	0	3	0.00	2.550
13.15 <= (13.6) < 14.05	8.28	1.14	0	2	0.00	2.28
14.05 <= (14.5) < 14.95	10.70	1.49	0	1	0.00	1.49
14.95 <= (15.4) < 15.85	13.60	1.92	0	2	0.00	3.84
15.85 <= (16.3) < 16.75	17.10	2.43	0	2	0.00	4.86
16.75 <= (17.2) < 17.65	21.30	3.03	0	1	0.00	3.03
17.65 <= (18.1) < 18.55	26.3	3.74	0	1	0.0	3.74
18.55 <= (19.0) < 19.50	32.20	4.55	0	5	0.0	22.75
19.50 <= (20.0) < 20.40	39.20	5.48	0	1	0.0	5.48
20.40 <= (20.8) < 21.25	47.30	6.53	0	1	0.0	6.53
21.25 <= (21.7) < 22.20	56.80	7.73	0	2	0.0	15.46
22.20 <= (22.7) < 23.2	67.80	9.07	0	3	0.0	27.21
23.2 <= (23.6) < 24.1		10.6	0	1	0.00	10.6
24.1 <= (24.5) < 25.0		12.3	0	3	0.00	36.90
25.0 <= (25.4) < 25.9		14.2	0	4	0.00	56.8
25.9 <= (26.3) < 26.8		16.3	0	6	0.00	97.8
26.8 <= (27.2) < 27.7		18.7	0	3	0.00	56.1
27.7 <= (28.1) < 28.6		21.4	0	3	0.00	64.2
28.6 <= (29.0) < 29.5		24.4	0	4	0.00	97.6
29.5 <= (29.9) < 30.4		27.6	0	2	0.00	55.2
30.4 <= (30.8) < 31.3		31.3	0	1	0.00	31.3
31.3 <= (31.7) < 32.6		35.3	0	1	0.00	35.3
32.6 <= (32.6) < 33.1		39.8	0	0	0.00	0.0
33.1 <= (33.5) < 34.0		44.7	0	1	0.00	44.7
34.0 <= (34.4) < 34.9		50.1	0	0	0.00	0.0
34.9 <= (35.3) < 35.8		56.1	0	0	0.00	0.0
35.8 <= (36.2) < 36.7		62.5	0	1	0.00	62.5
36.7 <= (37.1) < 37.6		69.6	0	0	0.00	0.0
37.6 <= (38.1) < 38.6		77.3	0	0	0.00	0.0
38.6 <= (39.0) < 39.5		86.0	0	0	0.00	0.0
39.5 <= (40.0) < 40.4		95.0	0	0	0.00	0.0
40.4 <= (40.8) < 41.5		105.0	0	0	0.00	0.0

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TOTAL SINGLE AXLES	115		
TOTAL TANDEM AXLES		115	
TOTAL A x C			22.0270
TOTAL B x D			755.2750

Total No. of 3-Axle Trucks = 115

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, FLORDEL - SAN JOSE SECTION )

STA. NO. 2 010 1 :  
VEHICLE TYPE : 7/8/9/10/11/12/13/14

A X L E L O A D (ton)	ALEFT(A)	ALEFT(B)	NO. OF SINGLE AXLE(C)	NO. OF TANDEM AXLE(D)	A x C	B x D
0	0	0	0	0	0.0000	0.0000
1.35	0.002	0.0005	0	0	0.000	0.0000
2.70	0.010	0.002	2	0	0.020	0.000
4.05	0.032	0.005	6	0	0.192	0.000
5.40	0.082	0.013	11	0	0.902	0.000
6.75	0.176	0.026	8	0	1.408	0.000
8.10	0.341	0.043	1	2	0.341	0.086
9.45	0.604	0.082	0	2	0.000	0.164
10.80	1.00	0.133	1	6	1.000	0.798
12.15	1.57	0.206	0	2	0.00	0.412
13.50	2.34	0.308	3	1	7.02	0.308
14.85	3.36	0.444	0	0	0.00	0.000
16.20	4.67	0.622	1	1	4.67	0.622
17.55	6.29	0.850	0	1	0.00	0.850
18.90	8.28	1.14	2	0	16.56	0.00
20.25	10.70	1.49	0	0	0.00	0.00
21.60	13.60	1.92	0	0	0.00	0.00
22.95	17.10	2.43	0	3	0.00	7.29
24.30	21.30	3.03	0	1	0.00	3.03
25.65	26.3	3.74	0	0	0.0	0.0
27.00	32.20	4.55	0	1	0.0	4.55
28.35	39.20	5.48	0	0	0.0	0.00
29.70	47.30	6.53	0	4	0.0	26.12
31.05	56.80	7.73	0	3	0.0	23.19
32.40	67.80	9.07	0	0	0.0	0.00
23.2		10.6	0	2	0.00	21.2
24.1		12.3	0	1	0.00	12.30
25.0		14.2	0	1	0.00	14.2
25.9		16.3	0	3	0.00	48.9
26.8		18.7	0	0	0.00	0.0
27.7		21.4	0	1	0.00	21.4
28.6		24.4	0	0	0.00	0.0
29.5		27.6	0	1	0.00	27.6
30.4		31.3	0	1	0.00	31.3
31.3		35.3	0	0	0.00	0.0
32.6		39.8	0	0	0.00	0.0
33.1		44.7	0	0	0.00	0.0
34.0		50.1	0	0	0.00	0.0
34.9		56.1	0	0	0.00	0.0
35.8		62.5	0	0	0.00	0.0
36.7		69.6	0	0	0.00	0.0
37.6		77.3	0	0	0.00	0.0
38.6		86.0	0	0	0.00	0.0
39.5		95.0	0	0	0.00	0.0
40.4		105.0	0	0	0.00	0.0
TOTAL SINGLE AXLES			35			
TOTAL TANDEM AXLES				37		
TOTAL A x C					32.1130	
TOTAL B x D						244.3300
Summary of 2 Days Count / Vehicle Type :						
No. of 7-Truck-Trailer	11-11	Weighted =	0			
No. of 8-Truck-Trailer	11-12	Weighted =	0			
No. of 9-Truck-Trailer	12-11	Weighted =	0			
No. of 10-Truck-Trailer	12-12	Weighted =	0			
No. of 11-Truck-Trailer	11-1	Weighted =	0			
No. of 12-Truck-Trailer	11-2	Weighted =	0			
No. of 13-Truck-Trailer	12-1	Weighted =	11			
No. of 14-Truck-Trailer	12-2	Weighted =	13			
( 2 days count )						

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
 STA. RITA, FLARIDEL - SAN JOSE SECTION )

STA. NO. 2 - DIR 2 :  
 VEHICLE TYPE : 4 - BUS

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF AXLE (C)	A x C
0 <= (0.9) < 1.35	0.0002	0.0001	0	0.0000
1.35 <= (1.8) < 2.25	0.002	0.0005	0	0.000
2.25 <= (2.7) < 3.15	0.010	0.002	1	0.010
3.15 <= (3.6) < 4.05	0.032	0.005	19	0.608
4.05 <= (4.5) < 4.95	0.082	0.013	30	2.460
4.95 <= (5.4) < 5.85	0.176	0.026	24	4.224
5.85 <= (6.3) < 6.75	0.341	0.048	5	1.705
6.75 <= (7.2) < 7.70	0.604	0.082	7	4.228
7.70 <= (8.2) < 8.65	1.00	0.133	23	23.000
8.65 <= (9.1) < 9.55	1.57	0.206	27	42.39
9.55 <= (10.0) < 10.45	2.34	0.308	11	25.74
10.45 <= (10.9) < 11.35	3.36	0.444	3	10.08
11.35 <= (11.8) < 12.25	4.67	0.622	0	0.00
12.25 <= (12.7) < 13.15	6.29	0.850	0	0.00
13.15 <= (13.6) < 14.05	8.28	1.14	0	0.00
14.05 <= (14.5) < 14.95	10.70	1.49	0	0.00
14.95 <= (15.4) < 15.85	13.60	1.92	0	0.00
15.85 <= (16.3) < 16.75	17.10	2.43	0	0.00
16.75 <= (17.2) < 17.65	21.30	3.03	0	0.00
17.65 <= (18.1) < 18.55	26.3	3.74	0	0.0
18.55 <= (19.0) < 19.50	32.20	4.55	0	0.0
19.50 <= (20.0) < 20.40	39.20	5.48	0	0.0
20.40 <= (20.8) < 21.25	47.30	6.53	0	0.0
21.25 <= (21.7) < 22.20	56.80	7.73	0	0.0
22.20 <= (22.7) < 23.2	67.80	9.07	0	0.0
23.2 <= (23.6) < 24.1		10.6		
24.1 <= (24.5) < 25.0		12.3		
25.0 <= (25.4) < 25.9		14.2		
25.9 <= (26.3) < 26.8		16.3		
26.8 <= (27.2) < 27.7		18.7		
27.7 <= (28.1) < 28.6		21.4		
28.6 <= (29.0) < 29.5		24.4		
29.5 <= (29.9) < 30.4		27.6		
30.4 <= (30.8) < 31.3		31.3		
31.3 <= (31.7) < 32.6		35.3		
32.6 <= (32.6) < 33.1		39.8		
33.1 <= (33.5) < 34.0		44.7		
34.0 <= (34.4) < 34.9		50.1		
34.9 <= (35.3) < 35.8		56.1		
35.8 <= (35.2) < 36.7		62.5		
36.7 <= (37.1) < 37.6		69.6		
37.6 <= (38.1) < 38.6		77.3		
38.6 <= (39.0) < 39.5		86.0		
39.5 <= (40.0) < 40.4		95.0		
40.4 <= (40.8) < 41.5		105.0		
TOTAL AXLES				150
TOTAL A x C				114.4450
No. of Buses Weighted = 75				
( 2 days count )				

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, FLARIDEL - SAN JOSE SECTION )

STA. NO. 2 DIR 2 :  
VEHICLE TYPE : 5 - Trucks-11

A X L E L O A D (ton)	ALEFT(A)	ALEFT(B)	NO. OF AXLE (C)	A x C
0 <= (0.9) < 1.35	0.0002	0.0001	2	0.0004
1.35 <= (1.8) < 2.25	0.002	0.0005	39	0.078
2.25 <= (2.7) < 3.15	0.010	0.002	56	0.560
3.15 <= (3.6) < 4.05	0.032	0.005	45	1.440
4.05 <= (4.5) < 4.95	0.082	0.013	17	1.394
4.95 <= (5.4) < 5.85	0.176	0.026	13	2.268
5.85 <= (6.3) < 6.75	0.341	0.048	14	4.774
6.75 <= (7.2) < 7.70	0.604	0.082	6	3.624
7.70 <= (8.2) < 8.65	1.00	0.133	5	5.000
8.65 <= (9.1) < 9.55	1.57	0.206	5	7.85
9.55 <= (10.0) < 10.45	2.34	0.308	4	9.36
10.45 <= (10.9) < 11.35	3.36	0.444	7	23.52
11.35 <= (11.8) < 12.25	4.67	0.622	3	14.01
12.25 <= (12.7) < 13.15	6.29	0.850	0	0.00
13.15 <= (13.6) < 14.05	8.28	1.14	2	16.56
14.05 <= (14.5) < 14.95	10.70	1.49	1	10.70
14.95 <= (15.4) < 15.85	13.60	1.92	1	13.60
15.85 <= (16.3) < 16.75	17.10	2.43	0	0.00
16.75 <= (17.2) < 17.65	21.30	3.03	2	42.60
17.65 <= (18.1) < 18.55	26.3	3.74	0	0.0
18.55 <= (19.0) < 19.50	32.20	4.55	0	0.0
19.50 <= (20.0) < 20.40	39.20	5.48	0	0.0
20.40 <= (20.8) < 21.25	47.30	6.53	0	0.0
21.25 <= (21.7) < 22.20	56.80	7.73	0	0.0
22.20 <= (22.7) < 23.2	67.80	9.07	0	0.0
23.2 <= (23.6) < 24.1		10.6		
24.1 <= (24.5) < 25.0		12.3		
25.0 <= (25.4) < 25.9		14.2		
25.9 <= (26.3) < 26.8		16.3		
26.8 <= (27.2) < 27.7		18.7		
27.7 <= (28.1) < 28.6		21.4		
28.6 <= (29.0) < 29.5		24.4		
29.5 <= (29.9) < 30.4		27.6		
30.4 <= (30.8) < 31.3		31.3		
31.3 <= (31.7) < 32.6		35.3		
32.6 <= (32.6) < 33.1		39.8		
33.1 <= (33.5) < 34.0		44.7		
34.0 <= (34.4) < 34.9		50.1		
34.9 <= (35.3) < 35.8		56.1		
35.8 <= (35.2) < 36.7		62.5		
36.7 <= (37.1) < 37.6		69.6		
37.6 <= (38.1) < 38.6		77.3		
38.6 <= (39.0) < 39.5		86.0		
39.5 <= (40.0) < 40.4		95.0		
40.4 <= (40.8) < 41.5		105.0		
TOTAL AXLES				222
TOTAL A x C				157.3584
No. of Single Trucks Weighted =				111
( 2 days count )				

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. PITA, FLARIDEL - SAN JOSE SECTION )

STA. NO. 2 (IP 2 )  
VEHICLE TYPE : 6 / TRUCK-12

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF SINGLE AXLE (C)	NO. OF TANDEN AXLE (D)	A x C	B x D
0 <= (0.9) < 1.35	0.0002	0.0001	0	0	0.0000	0.0000
1.35 <= (1.8) < 2.25	0.002	0.0005	3	0	0.006	0.0000
2.25 <= (2.7) < 3.15	0.010	0.002	2	0	0.020	0.000
3.15 <= (3.6) < 4.05	0.032	0.005	15	0	0.480	0.000
4.05 <= (4.5) < 4.95	0.082	0.013	43	2	3.526	0.026
4.95 <= (5.4) < 5.85	0.176	0.026	18	6	3.168	0.156
5.85 <= (6.3) < 6.75	0.341	0.048	22	20	7.502	0.360
6.75 <= (7.2) < 7.70	0.604	0.082	13	20	7.852	1.640
7.70 <= (8.2) < 8.65	1.00	0.133	6	7	6.000	0.931
8.65 <= (9.1) < 9.55	1.57	0.206	1	3	1.57	0.618
9.55 <= (10.0) < 10.45	2.34	0.308	0	6	0.00	1.848
10.45 <= (10.3) < 11.35	3.35	0.444	0	1	0.00	0.444
11.35 <= (11.8) < 12.25	4.67	0.622	0	2	0.00	1.244
12.25 <= (12.7) < 13.15	6.29	0.850	0	1	0.00	0.850
13.15 <= (13.6) < 14.05	8.28	1.14	0	2	0.00	2.28
14.05 <= (14.5) < 14.95	10.70	1.49	0	0	0.00	0.00
14.95 <= (15.4) < 15.85	13.60	1.92	0	0	0.00	0.00
15.85 <= (16.3) < 16.75	17.10	2.43	0	0	0.00	0.00
16.75 <= (17.2) < 17.65	21.30	3.03	0	2	0.00	6.06
17.65 <= (18.1) < 18.55	26.3	3.74	0	0	0.0	0.00
18.55 <= (19.0) < 19.50	32.20	4.55	0	1	0.0	4.55
19.50 <= (20.0) < 20.40	39.20	5.48	0	3	0.0	16.44
20.40 <= (20.8) < 21.25	47.30	6.53	0	2	0.0	13.06
21.25 <= (21.7) < 22.20	56.80	7.73	0	2	0.0	15.46
22.20 <= (22.7) < 23.2	67.80	9.07	0	3	0.0	27.21
23.2 <= (23.6) < 24.1		10.6	0	2	0.00	21.2
24.1 <= (24.5) < 25.0		12.3	0	5	0.00	61.50
25.0 <= (25.4) < 25.9		14.2	0	4	0.00	56.8
25.9 <= (26.3) < 26.8		16.3	0	5	0.00	81.5
26.8 <= (27.2) < 27.7		18.7	0	5	0.00	93.5
27.7 <= (28.1) < 28.6		21.4	0	6	0.00	128.4
28.6 <= (29.0) < 29.5		24.4	0	5	0.00	122.0
29.5 <= (29.9) < 30.4		27.6	0	5	0.00	138.0
30.4 <= (30.8) < 31.3		31.3	0	1	0.00	31.3
31.3 <= (31.7) < 32.6		35.3	0	2	0.00	70.6
32.6 <= (32.6) < 33.1		39.8	0	0	0.00	0.0
33.1 <= (33.5) < 34.0		44.7	0	0	0.00	0.0
34.0 <= (34.4) < 34.9		50.1	0	0	0.00	0.0
34.9 <= (35.3) < 35.8		56.1	0	0	0.00	0.0
35.8 <= (36.2) < 36.7		62.5	0	0	0.00	0.0
36.7 <= (37.1) < 37.6		69.6	0	0	0.00	0.0
37.6 <= (38.1) < 38.6		77.3	0	0	0.00	0.0
38.6 <= (39.0) < 39.5		86.0	0	0	0.00	0.0
39.5 <= (40.0) < 40.4		95.0	0	0	0.00	0.0
40.4 <= (40.8) < 41.5		105.0	0	0	0.00	0.0

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TOTAL SINGLE AXLES 123  
TOTAL TANDEN AXLES 123  
TOTAL A x C 30.1240  
TOTAL B x D 898.5770

Total No. of 3-Axle Trucks = 123  
( 2 days count )



FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, PLARIDEL - SAN JOSE SECTION )

STA. NO. 2 DIR 2 :  
VEHICLE TYPE : 7/8/9/10/11/12/13/14

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF SINGLE AXLE(C)	NO. OF TANDEM AXLE(D)	A x C	B x D
0 <= (0.9) < 1.35	0.0002	0.0001	0	0	0.0000	0.0000
1.35 <= (1.8) < 2.25	0.002	0.0005	1	0	0.002	0.0000
2.25 <= (2.7) < 3.15	0.010	0.002	2	0	0.020	0.000
3.15 <= (3.6) < 4.05	0.032	0.005	2	0	0.064	0.000
4.05 <= (4.5) < 4.95	0.082	0.013	17	2	1.334	0.026
4.95 <= (5.4) < 5.85	0.176	0.026	11	5	1.336	0.130
5.85 <= (6.3) < 6.75	0.341	0.048	0	6	0.000	0.288
6.75 <= (7.2) < 7.70	0.604	0.082	1	4	0.604	0.328
7.70 <= (8.2) < 8.65	1.00	0.133	1	4	1.000	0.532
8.65 <= (9.1) < 9.55	1.57	0.206	1	2	1.57	0.412
9.55 <= (10.0) < 10.45	2.34	0.308	0	2	0.00	0.616
10.45 <= (10.9) < 11.35	3.26	0.444	0	0	0.00	0.000
11.35 <= (11.8) < 12.25	4.67	0.622	1	0	4.67	0.000
12.25 <= (12.7) < 13.15	6.29	0.850	0	0	0.00	0.000
13.15 <= (13.6) < 14.05	8.28	1.14	1	0	8.28	0.00
14.05 <= (14.5) < 14.95	10.70	1.49	1	0	10.70	0.00
14.95 <= (15.4) < 15.85	13.60	1.92	0	2	0.00	3.84
15.85 <= (16.3) < 16.75	17.10	2.43	1	1	17.10	2.43
16.75 <= (17.2) < 17.65	21.30	3.03	0	2	0.00	6.06
17.65 <= (18.1) < 18.55	26.3	3.74	0	1	0.0	3.74
18.55 <= (19.0) < 19.50	32.20	4.55	0	1	0.0	4.55
19.50 <= (20.0) < 20.40	39.20	5.48	0	0	0.0	0.00
20.40 <= (20.8) < 21.25	47.30	6.53	0	1	0.0	6.53
21.25 <= (21.7) < 22.20	56.80	7.73	0	0	0.0	0.00
22.20 <= (22.7) < 23.2	67.80	9.07	0	0	0.0	0.00
23.2 <= (23.6) < 24.1		10.6	0	1	0.00	10.6
24.1 <= (24.5) < 25.0		12.3	0	0	0.00	0.00
25.0 <= (25.4) < 25.9		14.2	0	1	0.00	14.2
25.9 <= (26.3) < 26.8		16.3	0	2	0.00	32.6
26.8 <= (27.2) < 27.7		18.7	0	1	0.00	18.7
27.7 <= (28.1) < 28.6		21.4	0	1	0.00	21.4
28.6 <= (29.0) < 29.5		24.4	0	0	0.00	0.0
29.5 <= (29.9) < 30.4		27.6	0	2	0.00	55.2
30.4 <= (30.8) < 31.3		31.3	0	0	0.00	0.0
31.3 <= (31.7) < 32.6		35.3	0	1	0.00	35.3
32.6 <= (32.6) < 33.1		39.8	0	0	0.00	0.0
33.1 <= (33.5) < 34.0		44.7	0	1	0.00	44.7
34.0 <= (34.4) < 34.9		50.1	0	1	0.00	50.1
34.9 <= (35.3) < 35.8		56.1	0	0	0.00	0.0
35.8 <= (36.2) < 36.7		62.5	0	0	0.00	0.0
36.7 <= (37.1) < 37.6		69.6	0	0	0.00	0.0
37.6 <= (38.1) < 38.6		77.3	0	0	0.00	0.0
38.6 <= (39.0) < 39.5		86.0	0	0	0.00	0.0
39.5 <= (40.0) < 40.4		95.0	0	0	0.00	0.0
40.4 <= (40.8) < 41.5		105.0	0	0	0.00	0.0
TOTAL SINGLE AXLES			40			
TOTAL TANDEM AXLES				44		
TOTAL A x C					47,3400	
TOTAL B x D						312.2820
Summary of 2 Days Count / Vehicle Type :						
No. of 7-Truck-Trailer	11-11 Weighted	=	0			
No. of 8-Truck-Trailer	11-12 Weighted	=	0			
No. of 9-Truck-Trailer	12-11 Weighted	=	0			
No. of 10-Truck-Trailer	12-12 Weighted	=	0			
No. of 11-Truck-Trailer	11-1 Weighted	=	0			
No. of 12-Truck-Trailer	11-2 Weighted	=	1			
No. of 13-Truck-Trailer	12-1 Weighted	=	11			
No. of 14-Truck-Trailer	12-2 Weighted	=	16			
( 2 days count )						

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
STA. RITA, FLARIDEL - SAN JOSE SECTION )

STA. NO. 5 - DIR 1 :  
VEHICLE TYPE : 4 - BUS

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF AXLE (C)	A x C
0 <= (0.9) < 1.35	0.0002	0.0001	0	0.0000
1.35 <= (1.8) < 2.25	0.002	0.0005	3	0.006
2.25 <= (2.7) < 3.15	0.010	0.002	6	0.060
3.15 <= (3.6) < 4.05	0.032	0.005	51	1.632
4.05 <= (4.5) < 4.95	0.082	0.013	61	5.002
4.95 <= (5.4) < 5.85	0.176	0.026	31	5.456
5.85 <= (6.3) < 6.75	0.341	0.048	5	1.705
6.75 <= (7.2) < 7.70	0.604	0.082	15	9.060
7.70 <= (8.2) < 8.65	1.00	0.133	16	16.000
8.65 <= (9.1) < 9.55	1.57	0.206	26	40.82
9.55 <= (10.0) < 10.45	2.34	0.308	8	18.72
10.45 <= (10.9) < 11.35	3.36	0.444	4	13.44
11.35 <= (11.8) < 12.25	4.67	0.622	0	0.00
12.25 <= (12.7) < 13.15	6.29	0.850	0	0.00
13.15 <= (13.6) < 14.05	8.28	1.14	0	0.00
14.05 <= (14.5) < 14.95	10.70	1.49	0	0.00
14.95 <= (15.4) < 15.85	13.60	1.92	0	0.00
15.85 <= (16.3) < 16.75	17.10	2.43	0	0.00
16.75 <= (17.2) < 17.65	21.30	3.03	0	0.00
17.65 <= (18.1) < 18.55	26.3	3.74	0	0.0
18.55 <= (19.0) < 19.50	32.20	4.55	0	0.0
19.50 <= (20.0) < 20.40	39.20	5.48	0	0.0
20.40 <= (20.8) < 21.25	47.30	6.53	0	0.0
21.25 <= (21.7) < 22.20	56.80	7.73	0	0.0
22.20 <= (22.7) < 23.2	67.80	9.07	0	0.0
23.2 <= (23.6) < 24.1		10.6		
24.1 <= (24.5) < 25.0		12.3		
25.0 <= (25.4) < 25.9		14.2		
25.9 <= (26.3) < 26.8		16.3		
26.8 <= (27.2) < 27.7		18.7		
27.7 <= (28.1) < 28.6		21.4		
28.6 <= (29.0) < 29.5		24.4		
29.5 <= (29.9) < 30.4		27.6		
30.4 <= (30.8) < 31.3		31.3		
31.3 <= (31.7) < 32.6		35.3		
32.6 <= (32.6) < 33.1		39.8		
33.1 <= (33.5) < 34.0		44.7		
34.0 <= (34.4) < 34.9		50.1		
34.9 <= (35.3) < 35.8		56.1		
35.8 <= (36.2) < 36.7		62.5		
36.7 <= (37.1) < 37.6		69.6		
37.6 <= (38.1) < 38.6		77.3		
38.6 <= (39.0) < 39.5		86.0		
39.5 <= (40.0) < 40.4		95.0		
40.4 <= (40.8) < 41.5		105.0		
TOTAL AXLES			226	
TOTAL A x C				111.9010
No. of Buses Weighted = 113 ( 2 days count )				

FS ON UPGRADE INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, PLARIDEL - SAN JOSE SECTION )

STA. NO. S DIR 1 :  
VEHICLE TYPE : S - Trucks-11

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF AXLE (C)	A x C
0 <= (0.9) < 1.35	0.0002	0.0001	10	0.0020
1.35 <= (1.8) < 2.25	0.002	0.0005	113	0.226
2.25 <= (2.7) < 3.15	0.010	0.002	95	0.950
3.15 <= (3.6) < 4.05	0.032	0.005	37	1.184
4.05 <= (4.5) < 4.95	0.092	0.013	28	2.296
4.95 <= (5.4) < 5.85	0.176	0.026	13	2.288
5.85 <= (6.3) < 6.75	0.341	0.048	6	2.046
6.75 <= (7.2) < 7.70	0.604	0.082	4	2.416
7.70 <= (8.2) < 8.65	1.00	0.133	4	4.000
8.65 <= (9.1) < 9.55	1.57	0.206	5	7.85
9.55 <= (10.0) < 10.45	2.34	0.308	3	7.02
10.45 <= (10.9) < 11.35	3.36	0.444	3	10.08
11.35 <= (11.8) < 12.25	4.67	0.622	5	23.35
12.25 <= (12.7) < 13.15	6.29	0.850	1	6.29
13.15 <= (13.6) < 14.05	8.28	1.14	0	0.00
14.05 <= (14.5) < 14.95	10.70	1.49	0	0.00
14.95 <= (15.4) < 15.85	13.60	1.92	1	13.60
15.85 <= (16.3) < 16.75	17.10	2.43	0	0.00
16.75 <= (17.2) < 17.65	21.30	3.03	0	0.00
17.65 <= (18.1) < 18.55	26.3	3.74	0	0.0
18.55 <= (19.0) < 19.50	32.20	4.55	0	0.0
19.50 <= (20.0) < 20.40	39.20	5.48	0	0.0
20.40 <= (20.8) < 21.25	47.30	6.53	0	0.0
21.25 <= (21.7) < 22.20	56.80	7.73	0	0.0
22.20 <= (22.7) < 23.2	67.60	9.07	0	0.0
23.2 <= (23.6) < 24.1		10.6		
24.1 <= (24.5) < 25.0		12.3		
25.0 <= (25.4) < 25.9		14.2		
25.9 <= (26.3) < 26.8		16.3		
26.8 <= (27.2) < 27.7		18.7		
27.7 <= (28.1) < 28.6		21.4		
28.6 <= (29.0) < 29.5		24.4		
29.5 <= (29.9) < 30.4		27.6		
30.4 <= (30.8) < 31.3		31.3		
31.3 <= (31.7) < 32.6		35.3		
32.6 <= (32.6) < 33.1		39.8		
33.1 <= (33.5) < 34.0		44.7		
34.0 <= (34.4) < 34.9		50.1		
34.9 <= (35.3) < 35.8		56.1		
35.8 <= (36.2) < 36.7		62.5		
36.7 <= (37.1) < 37.6		69.6		
37.6 <= (38.1) < 38.6		77.3		
38.6 <= (39.0) < 39.5		85.0		
39.5 <= (40.0) < 40.4		95.0		
40.4 <= (40.8) < 41.5		105.0		

TOTAL AXLES 328  
TOTAL A x C 83.5980

No. of Single Trucks Weighed = 164  
( 2 days count )

PS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, PLARIDEL - SAN JOSE SECTION )

STA. NO. 5 OF 1 :  
VEHICLE TYPE : 6 / TRUCK-12

AXLE	LOAD (TON)	ALEFT(A)	ALEFT(B)	NO. OF SINGLE AXLE (C)	NO. OF TANDEM AXLE (D)	A x C	B x D
0	<= (0.3) < 1.35	0.0002	0.0001	0	0	0.0000	0.0000
1.35	<= (1.8) < 2.25	0.002	0.0005	0	0	0.000	0.0000
2.25	<= (2.7) < 3.15	0.010	0.002	1	0	0.010	0.000
3.15	<= (3.6) < 4.05	0.032	0.005	4	0	0.128	0.000
4.05	<= (4.5) < 4.95	0.082	0.013	22	0	1.804	0.000
4.95	<= (5.4) < 5.85	0.176	0.026	23	1	4.048	0.026
5.85	<= (6.3) < 6.75	0.341	0.043	13	9	4.433	0.432
6.75	<= (7.2) < 7.70	0.604	0.082	13	4	7.852	0.338
7.70	<= (8.2) < 8.65	1.00	0.133	1	4	1.000	0.532
8.65	<= (9.1) < 9.55	1.57	0.206	0	2	0.00	0.412
9.55	<= (10.0) < 10.45	2.34	0.308	0	2	0.00	0.616
10.45	<= (10.9) < 11.35	3.36	0.444	0	1	0.00	0.444
11.35	<= (11.8) < 12.25	4.67	0.622	0	1	0.00	0.622
12.25	<= (12.7) < 13.15	6.29	0.850	0	1	0.00	0.850
13.15	<= (13.6) < 14.05	8.28	1.14	0	1	0.00	1.14
14.05	<= (14.5) < 14.95	10.70	1.43	0	0	0.00	0.00
14.95	<= (15.4) < 15.85	13.60	1.92	0	3	0.00	5.76
15.85	<= (16.3) < 16.75	17.10	2.43	0	2	0.00	4.86
16.75	<= (17.2) < 17.65	21.30	3.03	0	3	0.00	9.09
17.65	<= (18.1) < 18.55	26.3	3.74	0	4	0.0	14.96
18.55	<= (19.0) < 19.50	32.20	4.55	0	2	0.0	9.10
19.50	<= (20.0) < 20.40	39.20	5.43	0	5	0.0	27.40
20.40	<= (20.8) < 21.25	47.30	6.53	0	3	0.0	19.59
21.25	<= (21.7) < 22.20	56.80	7.73	0	7	0.0	54.11
22.20	<= (22.7) < 23.2	67.80	9.07	0	1	0.0	9.07
23.2	<= (23.6) < 24.1		10.6	0	3	0.00	31.8
24.1	<= (24.5) < 25.0		12.3	0	3	0.00	36.90
25.0	<= (25.4) < 25.9		14.2	0	3	0.00	42.6
25.9	<= (26.3) < 26.8		16.3	0	4	0.00	65.2
26.8	<= (27.2) < 27.7		18.7	0	1	0.00	18.7
27.7	<= (28.1) < 28.6		21.4	0	3	0.00	64.2
28.6	<= (29.0) < 29.5		24.4	0	1	0.00	24.4
29.5	<= (29.9) < 30.4		27.6	0	1	0.00	27.6
30.4	<= (30.8) < 31.3		31.3	0	2	0.00	62.6
31.3	<= (31.7) < 32.6		35.3	0	0	0.00	0.0
32.6	<= (32.6) < 33.1		39.8	0	0	0.00	0.0
33.1	<= (33.5) < 34.0		44.7	0	0	0.00	0.0
34.0	<= (34.4) < 34.9		50.1	0	0	0.00	0.0
34.9	<= (35.3) < 35.8		56.1	0	0	0.00	0.0
35.8	<= (36.2) < 36.7		62.5	0	0	0.00	0.0
36.7	<= (37.1) < 37.6		69.6	0	0	0.00	0.0
37.6	<= (38.1) < 38.6		77.3	0	0	0.00	0.0
38.6	<= (39.0) < 39.5		86.0	0	0	0.00	0.0
39.5	<= (40.0) < 40.4		95.0	0	0	0.00	0.0
40.4	<= (40.8) < 41.5		105.0	0	0	0.00	0.0
TOTAL SINGLE AXLES				77			
TOTAL TANDEM AXLES					77		
TOTAL A x C						19.2750	
TOTAL B x D							533.3420
Total No. of 3-Axle Trucks =			77				
( 2 days count )							

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. 61TA, MARIDEL - SAN JOSE SECTION )

STA. NO. 5 DIR 1 :  
VEHICLE TYPE : 7/8/9/10/11/12/13/14

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF SINGLE AXLE(C)	NO. OF TANDEM AXLE(D)	A x C	B x D
0 <= (0.9) < 1.35	0.0002	0.0001	0	0	0.0000	0.0000
1.35 <= (1.8) < 2.25	0.002	0.0005	0	0	0.000	0.0000
2.25 <= (2.7) < 3.15	0.010	0.002	1	0	0.010	0.000
3.15 <= (3.6) < 4.05	0.032	0.005	5	0	0.160	0.000
4.05 <= (4.5) < 4.95	0.082	0.013	25	2	2.050	0.026
4.95 <= (5.4) < 5.85	0.176	0.026	21	1	3.696	0.026
5.85 <= (6.3) < 6.75	0.341	0.049	3	3	1.023	0.144
6.75 <= (7.2) < 7.70	0.604	0.082	3	3	1.812	0.246
7.70 <= (8.2) < 8.65	1.00	0.133	3	1	3.000	0.133
8.65 <= (9.1) < 9.55	1.57	0.206	1	1	1.57	0.206
9.55 <= (10.0) < 10.45	2.34	0.308	1	0	2.34	0.000
10.45 <= (10.9) < 11.35	3.26	0.444	1	0	3.26	0.000
11.35 <= (11.8) < 12.25	4.67	0.622	1	0	4.67	0.000
12.25 <= (12.7) < 13.15	6.23	0.850	3	3	18.67	2.550
13.15 <= (13.6) < 14.05	8.28	1.14	4	1	33.12	1.14
14.05 <= (14.5) < 14.95	10.70	1.49	0	1	0.00	1.49
14.95 <= (15.4) < 15.85	13.60	1.92	2	3	27.20	5.76
15.85 <= (16.3) < 16.75	17.10	2.43	2	2	34.20	4.86
16.75 <= (17.2) < 17.65	21.30	3.03	1	2	21.30	6.06
17.65 <= (18.1) < 18.55	26.3	3.74	1	5	26.3	18.70
18.55 <= (19.0) < 19.50	32.20	4.55	0	3	0.0	13.65
19.50 <= (20.0) < 20.40	39.20	5.48	0	4	0.0	21.92
20.40 <= (20.8) < 21.25	47.30	6.53	0	5	0.0	32.65
21.25 <= (21.7) < 22.20	56.80	7.73	0	4	0.0	30.92
22.20 <= (22.7) < 23.2	67.80	9.07	0	6	0.0	54.42
23.2 <= (23.6) < 24.1		10.6	0	2	0.00	21.2
24.1 <= (24.5) < 25.0		12.3	0	5	0.00	61.50
25.0 <= (25.4) < 25.9		14.2	0	4	0.00	56.8
25.9 <= (26.3) < 26.8		16.3	0	6	0.00	97.8
26.8 <= (27.2) < 27.7		18.7	0	5	0.00	93.5
27.7 <= (28.1) < 28.6		21.4	0	3	0.00	64.2
28.6 <= (29.0) < 29.5		24.4	0	2	0.00	48.8
29.5 <= (29.9) < 30.4		27.6	0	2	0.00	55.2
30.4 <= (30.8) < 31.3		31.3	0	2	0.00	62.6
31.3 <= (31.7) < 32.6		35.3	0	0	0.00	0.0
32.6 <= (32.6) < 33.1		39.8	0	0	0.00	0.0
33.1 <= (33.5) < 34.0		44.7	0	0	0.00	0.0
34.0 <= (34.4) < 34.9		50.1	0	0	0.00	0.0
34.9 <= (35.3) < 35.8		56.1	0	0	0.00	0.0
35.8 <= (36.2) < 36.7		62.5	0	0	0.00	0.0
36.7 <= (37.1) < 37.6		69.6	0	0	0.00	0.0
37.6 <= (38.1) < 38.6		77.3	0	0	0.00	0.0
38.6 <= (39.0) < 39.5		86.0	0	0	0.00	0.0
39.5 <= (40.0) < 40.4		95.0	0	0	0.00	0.0
40.4 <= (40.8) < 41.5		105.0	0	0	0.00	0.0
TOTAL SINGLE AXLES			78			
TOTAL TANDEM AXLES				81		
TOTAL A x C					184.6810	
TOTAL B x D						756.5010
Summary of 2 Days Count / Vehicle Type :						
No. of 7-Truck-Trailer 11-11 Weighted =			0			
No. of 8-Truck-Trailer 11-12 Weighted =			0			
No. of 9-Truck-Trailer 12-11 Weighted =			0			
No. of 10-Truck-Trailer 12-12 Weighted =			0			
No. of 11-Truck-Trailer 11-1 Weighted =			0			
No. of 12-Truck-Trailer 11-2 Weighted =			25			
No. of 13-Truck-Trailer 12-1 Weighted =			0			
No. of 14-Truck-Trailer 12-2 Weighted =			28			
( 2 days count )						

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
STA. RITA, FLARIDEL - SAN JOSE SECTION )

STA. NO. 5 - DIR 2 :  
VEHICLE TYPE : 4 - BUS

A X L E L O A D (ton)			ALEFT(A)	ALEFT(B)	NO. OF AXLE (C)	A x C
0	<= (0.9)	< 1.35	0.0002	0.0001	0	0.0000
1.35	<= (1.8)	< 2.25	0.002	0.0005	6	0.012
2.25	<= (2.7)	< 3.15	0.010	0.002	8	0.080
3.15	<= (3.6)	< 4.05	0.032	0.005	19	0.608
4.05	<= (4.5)	< 4.95	0.082	0.013	50	4.100
4.95	<= (5.4)	< 5.85	0.176	0.026	29	5.104
5.85	<= (6.3)	< 6.75	0.341	0.048	5	1.705
6.75	<= (7.2)	< 7.70	0.604	0.082	6	3.624
7.70	<= (8.2)	< 8.65	1.00	0.133	13	13.000
8.65	<= (9.1)	< 9.55	1.57	0.206	16	25.12
9.55	<= (10.0)	< 10.45	2.34	0.308	13	30.42
10.45	<= (10.9)	< 11.35	3.36	0.444	5	16.80
11.35	<= (11.8)	< 12.25	4.67	0.622	1	4.67
12.25	<= (12.7)	< 13.15	6.29	0.850	0	0.00
13.15	<= (13.6)	< 14.05	8.28	1.14	0	0.00
14.05	<= (14.5)	< 14.95	10.70	1.49	0	0.00
14.95	<= (15.4)	< 15.85	13.60	1.92	0	0.00
15.85	<= (16.3)	< 16.75	17.10	2.43	0	0.00
16.75	<= (17.2)	< 17.65	21.30	3.03	0	0.00
17.65	<= (18.1)	< 18.55	26.3	3.74	0	0.0
18.55	<= (19.0)	< 19.50	32.20	4.55	0	0.0
19.50	<= (20.0)	< 20.40	39.20	5.48	1	39.2
20.40	<= (20.8)	< 21.25	47.30	6.53	0	0.0
21.25	<= (21.7)	< 22.20	56.80	7.73	0	0.0
22.20	<= (22.7)	< 23.2	67.80	9.07	0	0.0
23.2	<= (23.6)	< 24.1		10.6		
24.1	<= (24.5)	< 25.0		12.3		
25.0	<= (25.4)	< 25.9		14.2		
25.9	<= (26.3)	< 26.8		16.3		
26.8	<= (27.2)	< 27.7		18.7		
27.7	<= (28.1)	< 28.6		21.4		
28.6	<= (29.0)	< 29.5		24.4		
29.5	<= (29.9)	< 30.4		27.6		
30.4	<= (30.8)	< 31.3		31.3		
31.3	<= (31.7)	< 32.6		35.3		
32.6	<= (32.6)	< 33.1		39.8		
33.1	<= (33.5)	< 34.0		44.7		
34.0	<= (34.4)	< 34.9		50.1		
34.9	<= (35.2)	< 35.8		56.1		
35.8	<= (36.2)	< 36.7		62.5		
36.7	<= (37.1)	< 37.6		69.6		
37.6	<= (38.1)	< 38.6		77.3		
38.6	<= (39.0)	< 39.5		85.0		
39.5	<= (40.0)	< 40.4		95.0		
40.4	<= (40.8)	< 41.5		105.0		
TOTAL AXLES					172	
TOTAL A x C						144.4430
No. of Buses Weighted = 85						
( 2 days count )						

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, FLARIDEL - SAN JOSE SECTION )

STA. NO. 5 DIR 2 :  
VEHICLE TYPE : 5 - Trucks-11

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF AXLE (C)	A x C
0 <= (0.9) < 1.35	0.0002	0.0001	3	0.0006
1.35 <= (1.8) < 2.25	0.002	0.0005	55	0.110
2.25 <= (2.7) < 3.15	0.010	0.002	50	0.500
3.15 <= (3.6) < 4.05	0.032	0.005	21	0.672
4.05 <= (4.5) < 4.95	0.082	0.013	18	1.476
4.95 <= (5.4) < 5.85	0.176	0.026	6	1.056
5.85 <= (6.3) < 6.75	0.341	0.048	5	1.705
6.75 <= (7.2) < 7.70	0.604	0.082	5	3.020
7.70 <= (8.2) < 8.65	1.00	0.133	3	3.000
8.65 <= (9.1) < 9.55	1.57	0.206	2	3.14
9.55 <= (10.0) < 10.45	2.34	0.308	2	4.68
10.45 <= (10.9) < 11.35	3.36	0.444	3	10.08
11.35 <= (11.8) < 12.25	4.67	0.622	1	4.67
12.25 <= (12.7) < 13.15	6.29	0.850	1	6.29
13.15 <= (13.6) < 14.05	8.29	1.14	1	8.29
14.05 <= (14.5) < 14.95	10.70	1.49	1	10.70
14.95 <= (15.4) < 15.85	13.60	1.92	0	0.00
15.85 <= (16.3) < 16.75	17.10	2.43	0	0.00
16.75 <= (17.2) < 17.65	21.30	3.03	1	21.30
17.65 <= (18.1) < 18.55	26.3	3.74	0	0.0
18.55 <= (19.0) < 19.50	32.20	4.55	0	0.0
19.50 <= (20.0) < 20.40	39.20	5.48	0	0.0
20.40 <= (20.8) < 21.25	47.30	6.53	0	0.0
21.25 <= (21.7) < 22.20	56.80	7.73	0	0.0
22.20 <= (22.7) < 23.2	67.80	9.07	0	0.0
23.2 <= (23.6) < 24.1		10.6		
24.1 <= (24.5) < 25.0		12.3		
25.0 <= (25.4) < 25.9		14.2		
25.9 <= (26.3) < 26.8		16.3		
26.8 <= (27.2) < 27.7		18.7		
27.7 <= (28.1) < 28.6		21.4		
28.6 <= (29.0) < 29.5		24.4		
29.5 <= (29.9) < 30.4		27.6		
30.4 <= (30.8) < 31.3		31.3		
31.3 <= (31.7) < 32.6		35.3		
32.6 <= (32.6) < 33.1		39.8		
33.1 <= (33.5) < 34.0		44.7		
34.0 <= (34.4) < 34.9		50.1		
34.9 <= (35.3) < 35.8		56.1		
35.8 <= (36.2) < 36.7		62.5		
36.7 <= (37.1) < 37.6		69.6		
37.6 <= (38.1) < 38.6		77.3		
38.6 <= (39.0) < 39.5		86.0		
39.5 <= (40.0) < 40.4		95.0		
40.4 <= (40.8) < 41.5		105.0		
TOTAL AXLES				178
TOTAL A x C				80.6796
No. of Single Trucks Weighted =				83
( 2 days count )				

FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, FLAVIOEL - SAN JOSE SECTION )

STA. NO. 5 DIP 2 :  
VEHICLE TYPE : 6 / TRUCK-12

AXLE LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF SINGLE AXLE (C)	NO. OF TANDEM AXLE (D)	A x C	B x D
0 <= (0.9) < 1.35	0.0002	0.0000	0	0	0.0000	0.0000
1.35 <= (1.8) < 2.25	0.002	0.0005	1	0	0.002	0.0000
2.25 <= (2.7) < 3.15	0.010	0.002	1	0	0.010	0.000
3.15 <= (3.6) < 4.05	0.032	0.005	3	0	0.096	0.000
4.05 <= (4.5) < 4.95	0.082	0.013	24	0	1.368	0.000
4.95 <= (5.4) < 5.85	0.176	0.026	10	4	1.760	0.104
5.85 <= (6.3) < 6.75	0.341	0.049	22	10	7.502	0.480
6.75 <= (7.2) < 7.70	0.604	0.082	11	9	6.644	0.656
7.70 <= (8.2) < 8.65	1.00	0.133	1	5	1.000	0.665
8.65 <= (9.1) < 9.55	1.57	0.206	0	2	0.00	0.412
9.55 <= (10.0) < 10.45	2.34	0.308	0	1	0.00	0.308
10.45 <= (10.9) < 11.35	3.36	0.444	0	0	0.00	0.000
11.35 <= (11.8) < 12.25	4.67	0.622	0	1	0.00	0.622
12.25 <= (12.7) < 13.15	6.23	0.850	1	0	6.23	0.000
13.15 <= (13.6) < 14.05	8.28	1.14	0	1	0.00	1.14
14.05 <= (14.5) < 14.95	10.70	1.49	0	1	0.00	1.49
14.95 <= (15.4) < 15.85	13.60	1.92	0	1	0.00	1.92
15.85 <= (16.3) < 16.75	17.10	2.43	0	3	0.00	7.29
16.75 <= (17.2) < 17.65	21.30	3.03	0	0	0.00	0.00
17.65 <= (18.1) < 18.55	26.3	3.74	0	1	0.0	3.74
18.55 <= (19.0) < 19.50	32.20	4.55	0	1	0.0	4.55
19.50 <= (20.0) < 20.40	39.20	5.48	0	2	0.0	10.96
20.40 <= (20.8) < 21.25	47.30	6.53	0	0	0.0	0.00
21.25 <= (21.7) < 22.20	56.80	7.73	0	0	0.0	0.00
22.20 <= (22.7) < 23.2	67.80	9.07	0	1	0.0	9.07
23.2 <= (23.6) < 24.1		10.6	0	1	0.00	10.6
24.1 <= (24.5) < 25.0		12.3	0	1	0.00	12.30
25.0 <= (25.4) < 25.9		14.2	0	4	0.00	56.8
25.9 <= (26.3) < 26.8		16.3	0	5	0.00	81.5
26.8 <= (27.2) < 27.7		18.7	0	5	0.00	93.5
27.7 <= (28.1) < 28.6		21.4	0	4	0.00	85.6
28.6 <= (29.0) < 29.5		24.4	0	3	0.00	73.2
29.5 <= (29.9) < 30.4		27.6	0	3	0.00	82.8
30.4 <= (30.8) < 31.3		31.3	0	2	0.00	62.6
31.3 <= (31.7) < 32.6		35.3	0	2	0.00	70.6
32.6 <= (32.6) < 33.1		39.8	0	1	0.00	39.8
33.1 <= (33.5) < 34.0		44.7	0	0	0.00	0.0
34.0 <= (34.4) < 34.9		50.1	0	0	0.00	0.0
34.9 <= (35.3) < 35.8		56.1	0	1	0.00	56.1
35.8 <= (36.2) < 36.7		62.5	0	0	0.00	0.0
36.7 <= (37.1) < 37.6		69.6	0	0	0.00	0.0
37.6 <= (38.1) < 38.6		77.3	0	0	0.00	0.0
38.6 <= (39.0) < 39.5		85.0	0	0	0.00	0.0
39.5 <= (40.0) < 40.4		95.0	0	0	0.00	0.0
40.4 <= (40.8) < 41.5		105.0	0	0	0.00	0.0
TOTAL SINGLE AXLES			74			
TOTAL TANDEM AXLES				74		
TOTAL A x C					25.2720	
TOTAL B x D						768.8070
Total No. of 3-Axle Trucks =			74			
( 2 days count )						



FS ON UPGRADING INTER-URBAN HIGHWAY SYSTEM ALONG THE PAN-PHILIPPINE HIGHWAY  
( STA. RITA, FLARIDEL - SAN JOSE SECTION )

STA. NO. 5 DTP 2 :  
VEHICLE TYPE : 7/8/9/10/11/12/13/14

AXLE	LOAD (ton)	ALEFT(A)	ALEFT(B)	NO. OF SINGLE AXLE(C)	NO. OF TANDEM AXLE(D)	A x C	B x D
0	=( 0.0) < 1.35	0.0002	0.0001	0	0	0.0000	0.0000
1.35	=( 1.8) < 2.25	0.002	0.0005	2	0	0.004	0.0000
2.25	=( 2.7) < 3.15	0.010	0.002	2	0	0.020	0.000
3.15	=( 3.6) < 4.05	0.032	0.005	12	0	0.384	0.000
4.05	=( 4.5) < 4.95	0.082	0.013	35	5	2.870	0.065
4.95	=( 5.4) < 5.85	0.176	0.026	20	7	3.520	0.182
5.85	=( 6.3) < 6.75	0.311	0.048	3	13	1.023	0.624
6.75	=( 7.2) < 7.70	0.604	0.082	1	13	0.604	1.066
7.70	=( 8.2) < 8.65	1.00	0.133	3	10	3.000	1.330
8.65	=( 9.1) < 9.55	1.57	0.206	3	1	4.71	0.206
9.55	=( 10.0) < 10.45	2.34	0.308	0	2	0.00	0.616
10.45	=( 10.9) < 11.35	3.36	0.441	0	0	0.00	0.000
11.35	=( 11.8) < 12.25	4.67	0.622	1	0	4.67	0.000
12.25	=( 12.7) < 13.15	6.29	0.850	0	0	0.00	0.000
13.15	=( 13.6) < 14.05	8.28	1.14	1	3	8.28	3.42
14.05	=( 14.5) < 14.95	10.70	1.49	5	0	53.50	0.00
14.95	=( 15.4) < 15.85	13.60	1.92	2	0	27.20	0.00
15.85	=( 16.3) < 16.75	17.10	2.43	0	2	0.00	4.86
16.75	=( 17.2) < 17.65	21.30	3.03	0	1	0.00	3.03
17.65	=( 18.1) < 18.55	26.3	3.74	2	0	52.6	0.00
18.55	=( 19.0) < 19.50	32.20	4.55	1	4	32.2	18.20
19.50	=( 20.0) < 20.40	39.20	5.48	0	2	0.0	10.96
20.40	=( 20.8) < 21.25	47.30	6.53	0	1	0.0	6.53
21.25	=( 21.7) < 22.20	56.80	7.73	0	1	0.0	7.73
22.20	=( 22.7) < 23.2	67.80	9.07	0	2	0.0	18.14
23.2	=( 23.6) < 24.1		10.6	0	2	0.00	21.2
24.1	=( 24.5) < 25.0		12.3	0	1	0.00	12.30
25.0	=( 25.4) < 25.9		14.2	0	0	0.00	0.0
25.9	=( 26.3) < 26.8		16.3	0	0	0.00	0.0
26.8	=( 27.2) < 27.7		18.7	0	2	0.00	37.4
27.7	=( 28.1) < 28.6		21.4	0	2	0.00	42.8
28.6	=( 29.0) < 29.5		24.4	0	3	0.00	73.2
29.5	=( 29.9) < 30.4		27.6	0	1	0.00	27.6
30.4	=( 30.8) < 31.3		31.3	0	3	0.00	93.9
31.3	=( 31.7) < 32.6		35.3	0	1	0.00	35.3
32.6	=( 32.6) < 33.1		39.8	0	0	0.00	0.0
33.1	=( 33.5) < 34.0		44.7	0	0	0.00	0.0
34.0	=( 34.4) < 34.9		50.1	0	0	0.00	0.0
34.9	=( 35.3) < 35.8		56.1	0	0	0.00	0.0
35.8	=( 36.2) < 36.7		62.5	0	0	0.00	0.0
36.7	=( 37.1) < 37.6		69.6	0	0	0.00	0.0
37.6	=( 38.1) < 38.6		77.3	0	0	0.00	0.0
38.6	=( 39.0) < 39.5		85.0	0	0	0.00	0.0
39.5	=( 40.0) < 40.4		95.0	0	0	0.00	0.0
40.4	=( 40.9) < 41.5		105.0	0	0	0.00	0.0
TOTAL SINGLE AXLES				93			
TOTAL TANDEM AXLES					82		
TOTAL A x C						194.5850	
TOTAL B x D							420.6590
Summary of 2 Days Count / Vehicle Type :							
No. of 7-Truck-Trailer 11-11 Weighted =	0						
No. of 8-Truck-Trailer 11-12 Weighted =	0						
No. of 9-Truck-Trailer 12-11 Weighted =	0						
No. of 10-Truck-Trailer 12-12 Weighted =	1						
No. of 11-Truck-Trailer 11-1 Weighted =	0						
No. of 12-Truck-Trailer 11-2 Weighted =	24						
No. of 13-Truck-Trailer 12-1 Weighted =	10						
No. of 14-Truck-Trailer 12-2 Weighted =	23						
( 2 days count )							

## APPENDIX 4.7-1 LEVEL OF SERVICE ANALYSIS

### The Feasibility Study on Upgrading Inter-Urban Highway System Along the Pan-Philippine Highway (Sta. Rita, Plaridel-San Jose Section)

Station Number	Road Name	Location	Filename
MC-1	Brgy. Banga 1st.	Tabang , Plaridel	MC-01.WK4
MC-2	Brgy. Antayan, km. 68	San Ildefonso, San Miguel	MC-02.WK4
MC-3	Brgy. Tabuating, Km. 104	Gapan, Sta. Rosa	MC-03.WK4
MC-4	Brgy. Baloc, km. 135	Talavera, Munoz	MC-04.WK4
MC-5	Brgy. Malasin, Km. 161	Aritao, San Jose City	MC-05.WK4
RTC-2	Brgy. Krus-Na-Daan, Km. Post 60	San Rafael, Bulacan	RTC-2.WK4
RTC-3	Km. Post, 66	San Ildefonso Town Proper, Bulacan	RTC-3.WK4
RTC-6	Brgy. Marcos, District, Talavera Nueva Ecija	Cabanuan, Munoz Road	RTC-6.WK4

Travel Time Survey

T-TIME2.XLS

Table LEVEL-OF-SERVICE CRITERIA FOR GENERAL TWO-LANE HIGHWAY SEGMENTS

LOS	PERCENT TIME DELAY	v/c RATIO <sup>a</sup>																							
		LEVEL TERRAIN						ROLLING TERRAIN						MOUNTAINOUS TERRAIN											
		AVG <sup>b</sup> SPEED	PERCENT NO PASSING ZONES					AVG <sup>b</sup> SPEED	PERCENT NO PASSING ZONES					AVG <sup>b</sup> SPEED	PERCENT NO PASSING ZONES										
	0	20	40	60	80	100	0	20	40	60	80	100	0	20	40	60	80	100							
A	≤ 30	≥ 93	0.13	0.12	0.09	0.07	0.05	0.04	≥ 92	0.15	0.10	0.07	0.05	0.04	0.03	≥ 90	0.14	0.09	0.07	0.04	0.02	0.01			
B	≤ 45	≥ 88	0.27	0.24	0.21	0.19	0.17	0.16	≥ 87	0.26	0.23	0.19	0.17	0.15	0.13	≥ 87	0.25	0.20	0.16	0.13	0.12	0.10			
C	≤ 60	≥ 84	0.43	0.39	0.36	0.34	0.33	0.32	≥ 82	0.42	0.39	0.35	0.32	0.30	0.28	≥ 79	0.39	0.33	0.28	0.23	0.20	0.16			
D	≤ 75	≥ 80	0.64	0.61	0.60	0.59	0.58	0.57	≥ 79	0.62	0.57	0.52	0.48	0.46	0.43	≥ 72	0.58	0.50	0.45	0.40	0.37	0.33			
E	> 75	≥ 72	1.00	1.00	1.00	1.00	1.00	1.00	≥ 64	0.97	0.94	0.92	0.91	0.90	0.90	≥ 66	0.91	0.87	0.84	0.82	0.80	0.78			
F	100	< 72	—	—	—	—	—	—	< 64	—	—	—	—	—	—	< 66	—	—	—	—	—	—			

<sup>a</sup> Ratio of flow rate to an ideal capacity of 2,800 pcph in both directions.  
<sup>b</sup> Average travel speed of all vehicles (in mph) for highways with design speed ≥ 96 kph; for highways with lower design speeds, reduce speed by 6 kph for each 16 kph reduction in design speed below 96 kph; assumes that speed is not restricted to lower values by regulation.

Table ADJUSTMENT FACTORS FOR DIRECTIONAL DISTRIBUTION ON GENERAL TERRAIN SEGMENTS

Directional Distribution	100/0	90/10	80/20	70/30	60/40	50/50
Adjustment Factor, $f_d$	0.71	0.75	0.83	0.89	0.94	1.00

Table 3.2-3 ADJUSTMENT FACTORS FOR THE COMBINED EFFECT OF NARROW LANES AND RESTRICTED SHOULDER WIDTH,  $f_s$

USABLE <sup>a</sup> SHOULDER WIDTH (FT)	3.65m LANES		3.35m LANES		3.05m LANES		2.75m LANES	
	LOS A-D	LOS <sup>b</sup> E	LOS A-D	LOS <sup>b</sup> E	LOS A-D	LOS <sup>b</sup> E	LOS A-D	LOS <sup>b</sup> E
≥ 18	1.00	1.00	0.93	0.94	0.84	0.87	0.70	0.76
12	0.92	0.97	0.85	0.92	0.77	0.85	0.65	0.74
0.6	0.81	0.93	0.75	0.88	0.68	0.81	0.57	0.70
0	0.70	0.88	0.65	0.82	0.58	0.75	0.49	0.66

<sup>a</sup> Where shoulder width is different on each side of the roadway, use the average shoulder width.  
<sup>b</sup> Factor applies for all speeds less than 72 kph

Table 3.2-4 AVERAGE PASSENGER-CAR EQUIVALENTS FOR TRUCKS, RV'S, AND BUSES ON TWO-LANE HIGHWAYS OVER GENERAL TERRAIN SEGMENTS

VEHICLE TYPE	LEVEL OF SERVICE	TYPE OF TERRAIN		
		LEVEL	ROLLING	MOUNTAINOUS
Trucks, $E_7$	A	2.0	4.0	7.0
	B and C	2.2	5.0	10.0
	D and E	2.0	5.0	12.0
RV's, $E_8$	A	2.2	3.2	5.0
	B and C	2.5	3.9	5.2
	D and E	1.6	3.3	5.2
Buses, $E_9$	A	1.8	3.0	5.7
	B and C	2.0	3.4	6.0
	D and E	1.6	2.9	6.5

SOURCE: HCM 4

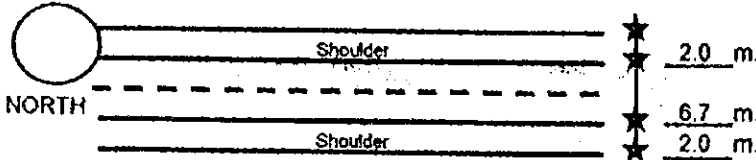
TABLE 3.2-5 AVERAGE PASSENGER CAR EQUIVALENT FOR JEEPNEYS, MOTORCYCLES AND MOTORTRICYCLES

Vehicle Type	Level of Service	Roadside Environment	Terrain Level
Jeepney, $E_{10}$	all	Rural	1.5
		Residential	1.5
		Commercial	1.5
Motorcycle, $E_{11}$	all	Rural	0.5
		Residential	0.5
		Commercial	0.5
Motortricyc., $E_{12}$	all	Rural	1.0
		Residential	1.0
		Commercial	1.0

**WORKSHEET FOR GENERAL TERRAIN SEGMENTS**

Site Identification: PLARIDEL(MC-1) Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 Name: \_\_\_\_\_ Checked by: \_\_\_\_\_

**I. GEOMETRIC DATA**



Roadside Environment: Rural, Residential, Commercial  
 Design Speed: 70 kph  
 % No Passing: 0 %  
 Terrain (L.R.M.): L  
 Segment Length: 5 km

**II. TRAFFIC DATA**

Total Volume: Both Dir. 1375 vph  
 Flow Rate = Volume / PHF = 1462.77  
 Directional Distribution: 50 / 50 = 1.00  
 Traffic Composition: Car= 32.0 Jny= 40.0 Mcy= 1.90 %  
 PHF: 0.94 Mtr= 7.6 Trk= 13.6 Bus= 5.10 %

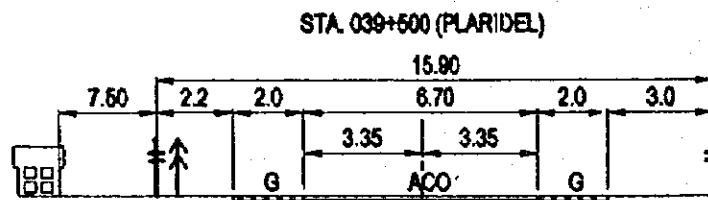
**III. LEVEL OF SERVICE ANALYSIS**

SF =  $2,800 \times (v/c) \times x_{fd} \times x_{fw} \times x_{fnv}$

$F_{nv} = 1 / (P_{car} + P_{jny} E_{jny} + P_{mcy} E_{mcy}) + P_{mtr} E_{mtr} + P_{trk} E_{trk} + P_{bus} E_{bus}$

LOS	SF = 2,800 X	(v/c)	x <sub>fd</sub>	x <sub>fw</sub>	x <sub>fnv</sub>	P <sub>car</sub>	P <sub>jny</sub>	E <sub>jny</sub>	P <sub>mcy</sub>	E <sub>mcy</sub>	P <sub>mtr</sub>	E <sub>mtr</sub>	P <sub>trk</sub>	E <sub>trk</sub>	P <sub>bus</sub>	E <sub>bus</sub>	
																	T.3.2-1
A	285	2800	0.15	1.00	0.93	0.730	0.32	0.40	1.5	0.02	0.5	0.06	1.0	0.14	2.0	0.05	1.8
B	500	2800	0.27	1.00	0.93	0.711	0.32	0.40	1.5	0.02	0.5	0.08	1.0	0.14	2.2	0.05	2.0
C	796	2800	0.43	1.00	0.93	0.711	0.32	0.40	1.5	0.02	0.5	0.08	1.0	0.14	2.2	0.05	2.0
D	1226	2800	0.64	1.00	0.93	0.736	0.32	0.40	1.5	0.02	0.5	0.08	1.0	0.14	2.0	0.05	1.8
E	1937	2800	1.0	1.00	0.94	0.736	0.32	0.40	1.5	0.02	0.5	0.08	1.0	0.14	2.0	0.05	1.8

IV. COMMENTS Flow Rate : 1463 vph LOS = E



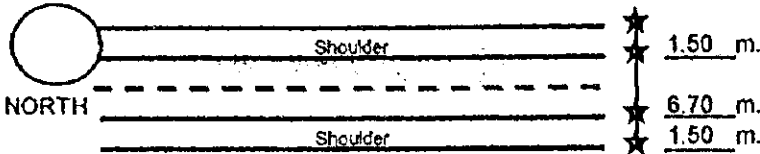
TWO-LANE HIGHWAYS

**WORKSHEET FOR GENERAL TERRAIN SEGMENTS**

Site Identification: SAN RAFAEL (RTC-2) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Name: \_\_\_\_\_ Checked by: \_\_\_\_\_

**I. GEOMETRIC DATA**



Roadside Environment: Rural, Residential, Commercial  
 Design Speed: 70 kph  
 % No Passing: 0 %  
 Terrain (L.R.M.): L  
 Segment Length: 5.0 km

**II. TRAFFIC DATA**

Total Volume: Both Dir. 1125 vph Directional Distribution: 50 / 50 = 1.00  
 Flow Rate = Volume / PHF = 1210 Traffic Composition: Car= 30.3 Jny= 35.7 Mcy= 4.8 %  
 PHF: 0.93 Mtr= 14.4 Trk= 9.6 Bus= 5.2 %

**III. LEVEL OF SERVICE ANALYSIS**

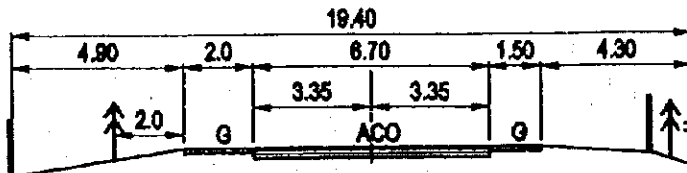
SF = 2,800 x (v/c), x fd x fw x fhw

Fhv = 1 / (Pcar+PjnyEjny+PmcyEmcy) + Pmtr Emtr + Ptrk Etrk + Pbus Ebus)

LOS	SF	= 2,800 X (v/c)	X fd	X fw	X fhw	Pcar	Pjny	Ejny	Pmcy	Emcy	Pmtr	Emtr	Ptrk	Etrk	Pbus	Ebus	
																	T.3.2-1
A	276	2800	0.15	1.00	0.85	0.774	0.30	0.36	1.5	0.05	0.5	0.14	1.0	0.10	2.0	0.05	1.8
B	486	2800	0.27	1.00	0.85	0.757	0.30	0.36	1.5	0.05	0.5	0.14	1.0	0.10	2.2	0.05	2.0
C	774	2800	0.43	1.00	0.85	0.757	0.30	0.36	1.5	0.05	0.5	0.14	1.0	0.10	2.2	0.05	2.0
D	1188	2800	0.84	1.00	0.85	0.780	0.30	0.36	1.5	0.05	0.5	0.14	1.0	0.10	2.0	0.05	1.8
E	2010	2800	1.0	1.00	0.92	0.780	0.30	0.36	1.5	0.05	0.5	0.14	1.0	0.10	2.0	0.05	1.8

IV. COMMENTS Flow Rate : 1210 vph LOS = E

STA. 061+630 (SAN RAFAEL - SAN ILDEFONSO)



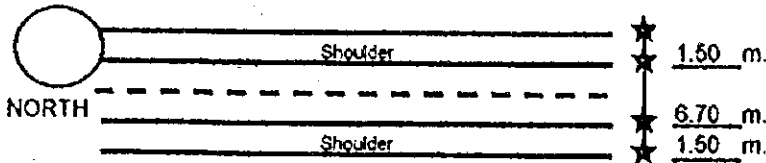
TWO-LANE HIGHWAYS

**WORKSHEET FOR GENERAL TERRAIN SEGMENTS**

Site Identification: SAN ILDEFONSO(RTC-3) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Name: \_\_\_\_\_ Checked by: \_\_\_\_\_

**I. GEOMETRIC DATA**



Roadside Environment: Rural, Residential, Commercial  
 Design Speed: 70 kph  
 % No Passing: 0 %  
 Terrain (L.R.M.): L  
 Segment Length: 5.0 km

**II. TRAFFIC DATA**

Total Volume: Both Dir. 1171 vph  
 Flow Rate = Volume / PHF = 1246  
 Directional Distribution: 60 / 40 = 0.94  
 Traffic Composition: Car= 24.4 Jny= 29.4 Mcy= 3.0 %  
 PHF: 0.94 Mtr= 22.8 Trk= 15.8 Bus= 3.8 %

**III. LEVEL OF SERVICE ANALYSIS**

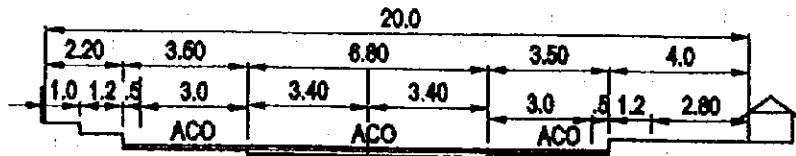
$$SF = 2,800 \times (v/c) \times f_d \times f_w \times f_{hv}$$

$$f_{hv} = 1 / (P_{car} + P_{jny} E_{jny} + P_{mcy} E_{mcy} + P_{mtr} E_{mtr} + P_{trk} E_{trk} + P_{bus} E_{bus})$$

LOS	SF	= 2,800	X (v/c)	X f <sub>d</sub>	X f <sub>w</sub>	X f <sub>hv</sub>	P <sub>car</sub>	P <sub>jny</sub>	E <sub>jny</sub>	P <sub>mcy</sub>	E <sub>mcy</sub>	P <sub>mtr</sub>	E <sub>mtr</sub>	P <sub>trk</sub>	E <sub>trk</sub>	P <sub>bus</sub>	E <sub>bus</sub>
			T. 3.2-1	T. 3.2-2	T. 3.2-3												
A	255	2800	0.15	0.94	0.85	0.759	0.24	0.29	1.5	0.04	0.5	0.23	1.0	0.16	2.0	0.04	1.8
B	445	2800	0.27	0.94	0.85	0.737	0.24	0.29	1.5	0.04	0.5	0.23	1.0	0.16	2.2	0.04	2.0
C	709	2800	0.43	0.94	0.85	0.737	0.24	0.28	1.5	0.04	0.5	0.23	1.0	0.16	2.2	0.04	2.0
D	1094	2800	0.64	0.94	0.85	0.764	0.24	0.29	1.5	0.04	0.5	0.23	1.0	0.16	2.0	0.04	1.6
E	1849	2800	1.0	0.94	0.92	0.764	0.24	0.29	1.5	0.04	0.5	0.23	1.0	0.16	2.0	0.04	1.6

IV. COMMENTS Flow Rate : 1246 vph LOS = E

STA. 065+740 (SAN ILDEFONSO)



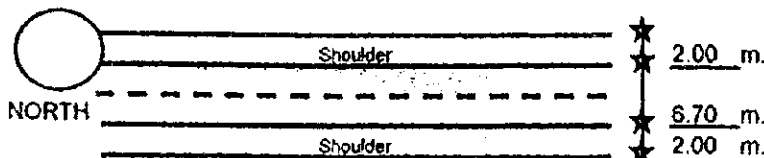
TWO-LANE HIGHWAYS

**WORKSHEET FOR GENERAL TERRAIN SEGMENTS**

Site Identification: ILDEFONSO - SAN MIGUEL(MC-2) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Name: \_\_\_\_\_ Checked by: \_\_\_\_\_

**I. GEOMETRIC DATA**



Roadside Environment: Rural, Residential, Commercial

Design Speed: 70 kph

% No Passing: 0 %

Terrain (L.R.M.): L

Segment Length: 5.0 km

**II. TRAFFIC DATA**

Total Volume: Both Dir. 1116 vph  
Flow Rate = Volume / PHF = 1187.23

Directional Distribution: 50 / 50 = 1.00

Traffic Composition: Car= 23.5 Jny= 26.9 Mcy= 3.3 %

PHF: 0.94 Mtr= 18.0 Trk= 22.5 Bus= 5.9 %

**III. LEVEL OF SERVICE ANALYSIS**

$$SF = 2,800 \times (v/c) \times f_d \times f_w \times f_{hv}$$

$$f_{hv} = 1 / (P_{car} + P_{jny} E_{jny} + P_{mcy} E_{mcy} + P_{mtr} E_{mtr} + P_{trk} E_{trk} + P_{bus} E_{bus})$$

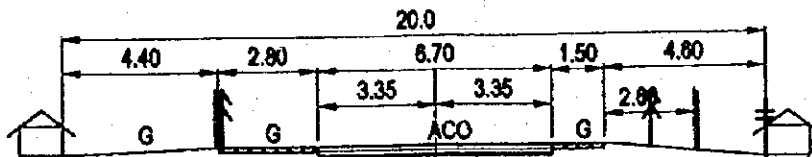
LOS	SF	= 2,800 X (v/c)	X f <sub>d</sub>	X f <sub>w</sub>	X f <sub>hv</sub>	P <sub>car</sub>	P <sub>jny</sub>	E <sub>jny</sub>	P <sub>mcy</sub>	E <sub>mcy</sub>	P <sub>mtr</sub>	E <sub>mtr</sub>	P <sub>trk</sub>	E <sub>trk</sub>	P <sub>bus</sub>	E <sub>bus</sub>
A	281	2800	0.15	1.00	0.93	0.24	0.27	1.5	0.03	0.5	0.18	1.0	0.23	2.0	0.06	1.8
B	486	2800	0.27	1.00	0.93	0.24	0.27	1.5	0.03	0.5	0.18	1.0	0.23	2.2	0.06	2.0
C	773	2800	0.43	1.00	0.93	0.24	0.27	1.5	0.03	0.5	0.18	1.0	0.23	2.2	0.06	2.0
D	1208	2800	0.64	1.00	0.93	0.24	0.27	1.5	0.03	0.5	0.18	1.0	0.23	2.0	0.06	1.8
E	1908	2800	1.0	1.00	0.94	0.24	0.27	1.5	0.03	0.5	0.18	1.0	0.23	2.0	0.06	1.8

**IV. COMMENTS**

Flow Rate : 1187.23 vph

LOS = D

STA. 068+100 (SAN ILDEFONSO - SAN MIGUEL)



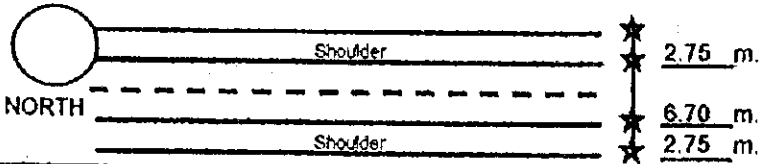
TWO-LANE HIGHWAYS

**WORKSHEET FOR GENERAL TERRAIN SEGMENTS**

Site Identification: GAPAN-Sat.ROSA(MC-3) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Name: \_\_\_\_\_ Checked by: \_\_\_\_\_

**I. GEOMETRIC DATA**



Roadside Environment: Rural, Residential, Commercial

Design Speed: 70 kph  
 % No Passing: 0 %  
 Terrain (L.R.M.): L  
 Segment Length: 5.0 km

**II. TRAFFIC DATA**

Total Volume: Both Dir. 908 vph  
 Flow Rate = Volume / PHF = 976

Directional Distribution: 50 / 50 = 0.94  
 Traffic Composition: Car= 36 Jny= 39 Mcy= 3.5 %  
 PHF : 0.93 Mtr= 4.5 Trk= 12.5 Bus= 4.5 %

**III. LEVEL OF SERVICE ANALYSIS**

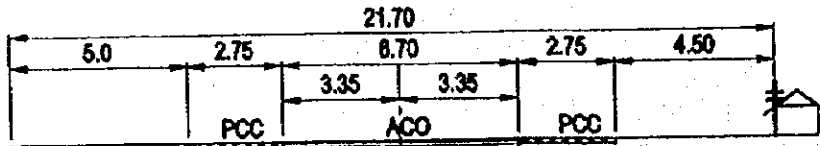
$$SF = 2,800 \times (v/c) \times f_d \times f_w \times f_{hv}$$

$$f_{hv} = 1 / (P_{car} + P_{jny} E_{jny} + P_{mcy} E_{mcy} + P_{mtr} E_{mtr} + P_{trk} E_{trk} + P_{bus} E_{bus})$$

LOS	SF	= 2,800	X (v/c)	X f <sub>d</sub>	X f <sub>w</sub>	X f <sub>hv</sub>	P <sub>car</sub>	P <sub>jny</sub>	E <sub>jny</sub>	P <sub>mcy</sub>	E <sub>mcy</sub>	P <sub>mtr</sub>	E <sub>mtr</sub>	P <sub>trk</sub>	E <sub>trk</sub>	P <sub>bus</sub>	E <sub>bus</sub>
A	274	2800	0.15	0.94	0.93	0.747	0.36	0.39	1.5	0.04	0.5	0.05	1.0	0.13	2.0	0.05	1.8
B	482	2800	0.27	0.94	0.93	0.729	0.36	0.39	1.5	0.04	0.5	0.05	1.0	0.13	2.2	0.05	2.0
C	767	2800	0.43	0.94	0.93	0.729	0.36	0.39	1.5	0.04	0.5	0.05	1.0	0.13	2.2	0.05	2.0
D	1178	2800	0.64	0.94	0.93	0.752	0.36	0.39	1.5	0.04	0.5	0.05	1.0	0.13	2.0	0.05	1.6
E	1861	2800	1.0	0.94	0.94	0.752	0.36	0.39	1.5	0.04	0.5	0.05	1.0	0.13	2.0	0.05	1.6

**IV. COMMENTS** Flow Rate : 976 vph LOS = D

STA 100+270 (GAPAN - STA. ROSA)





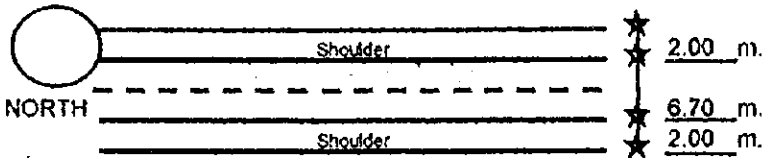
TWO-LANE HIGHWAYS

**WORKSHEET FOR GENERAL TERRAIN SEGMENTS**

Site Identification: TALAVERA(RTC-6) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Name: \_\_\_\_\_ Checked by: \_\_\_\_\_

**I. GEOMETRIC DATA**



Roadside Environment: Rural, Residential, Commercial  
 Design Speed: 70 kph  
 % No Passing: 0 %  
 Terrain (L.R.M.): L  
 Segment Length: 5.0 km

**II. TRAFFIC DATA**

Total Volume: Both Dir. 1898 vph  
 Flow Rate = Volume / PHF = 1998

Directional Distribution: 50 / 50 = 1.00  
 Traffic Composition: Car= 12.5 Jny= 23.4 Mcy= 3.9 %  
 PHF : 0.95 Mtr= 55.0 Trk= 4.3 Bus= 0.9 %

**III. LEVEL OF SERVICE ANALYSIS**

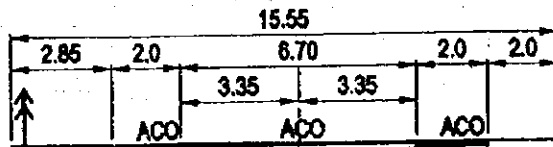
SF =  $2,800 \times (v/c) \times x_{fd} \times x_{fw} \times x_{flw}$

$F_{hv} = 1 / (P_{car} + P_{jny} E_{jny} + P_{mcy} E_{mcy} + P_{mtr} E_{mtr} + P_{trk} E_{trk} + P_{bus} E_{bus})$

LOS	SF	= 2,800 X (v/c)	X $f_d$	X $f_w$	X $f_{lw}$	$P_{car}$	$P_{jny}$	$E_{jny}$	$P_{mcy}$	$E_{mcy}$	$P_{mtr}$	$E_{mtr}$	$P_{trk}$	$E_{trk}$	$P_{bus}$	$E_{bus}$	
			T.3.2-1	T.3.2-2	T.3.2-3												
A	340	2800	0.15	1.00	0.93	0.871	0.13	0.23	1.5	0.04	0.5	0.55	1.0	0.04	2.0	0.01	1.8
B	607	2800	0.27	1.00	0.93	0.863	0.13	0.23	1.5	0.04	0.5	0.55	1.0	0.04	2.2	0.01	2.0
C	967	2800	0.43	1.00	0.93	0.863	0.13	0.23	1.5	0.04	0.5	0.55	1.0	0.04	2.2	0.01	2.0
D	1454	2800	0.64	1.00	0.93	0.873	0.13	0.23	1.5	0.04	0.5	0.55	1.0	0.04	2.0	0.01	1.6
E	2297	2800	1.0	1.00	0.94	0.873	0.13	0.23	1.5	0.04	0.5	0.55	1.0	0.04	2.0	0.01	1.6

**IV. COMMENTS** Flow Rate : 1998 vph LOS = E

STA 129+100 (TALAVERA)



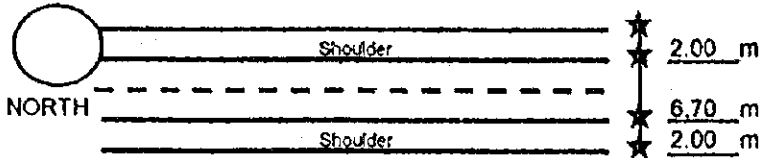
TWO-LANE HIGHWAYS

**WORKSHEET FOR GENERAL TERRAIN SEGMENTS**

Site Identification: TALAVERA - MUNOZ(MC-4) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Name: \_\_\_\_\_ Checked by: \_\_\_\_\_

**I. GEOMETRIC DATA**



Roadside Environment: Rural, Residential, Commercial  
 Design Speed: 70 kph  
 % No Passing: 0 %  
 Terrain (L.R.M.): L  
 Segment Length: 5.0 km

**II. TRAFFIC DATA**

Total Volume: Both Dir. 827 vph  
 Flow Rate = Volume / PHF = 889

Directional Distribution: 50 / 50 = 1.00  
 Traffic Composition: Car= 18.6 Jny= 34.6 Mcy= 6.1 %  
 PHF : 0.93 Mtr= 28.8 Trk= 12.1 Bus= 1.9 %

**III. LEVEL OF SERVICE ANALYSIS**

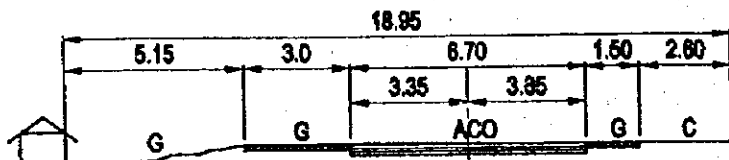
SF =  $2,800 \times (v/c) \times f_d \times f_w \times f_{hv}$

$F_{hv} = 1 / (P_{car} + P_{jny} E_{jny} + P_{mcy} E_{mcy} + P_{mtr} E_{mtr} + P_{trk} E_{trk} + P_{bus} E_{bus})$

LOS	SF	= 2,800	X (v/c)	X f <sub>d</sub>	X f <sub>w</sub>	X f <sub>hv</sub>	P <sub>car</sub>	P <sub>jny</sub>	E <sub>jny</sub>	P <sub>mcy</sub>	E <sub>mcy</sub>	P <sub>mtr</sub>	E <sub>mtr</sub>	P <sub>trk</sub>	E <sub>trk</sub>	P <sub>bus</sub>	E <sub>bus</sub>
			T. 3.2-1	T. 3.2-2	T. 3.2-3												
A	305'	2800	0.15	1.00	0.93	0.781	0.17	0.35	1.5	0.06	0.5	0.29	1.0	0.12	2.0	0.02	1.8
B	538	2800	0.27	1.00	0.93	0.765	0.17	0.35	1.5	0.06	0.5	0.29	1.0	0.12	2.2	0.02	2.0
C	856	2800	0.43	1.00	0.93	0.765	0.17	0.35	1.5	0.06	0.5	0.29	1.0	0.12	2.2	0.02	2.0
D	1306	2800	0.64	1.00	0.93	0.784	0.17	0.35	1.5	0.06	0.5	0.29	1.0	0.12	2.0	0.02	1.8
E	2053	2800	1.0	1.00	0.94	0.784	0.17	0.35	1.5	0.06	0.5	0.29	1.0	0.12	2.0	0.02	1.8

IV. COMMENTS Flow Rate : 889 vph LOS = D

**STA. 138+130 (TALAVERA - MUÑOZ)**

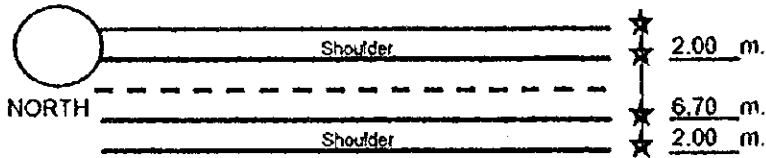


**WORKSHEET FOR GENERAL TERRAIN SEGMENTS**

Site Identification: SAN JOSE ( MC-5 ) Date: \_\_\_\_\_ Time: \_\_\_\_\_

Name: \_\_\_\_\_ Checked by: \_\_\_\_\_

**I. GEOMETRIC DATA**



Roadside Environment: Rural, Residential, Commercial

Design Speed: 70 kph  
 % No Passing: 0 %  
 Terrain (L.R.M.): L  
 Segment Length: 5.0 km

**II. TRAFFIC DATA**

Total Volume: Both Dir. 500 vph  
 Flow Rate = Volume / PHF = 538

Directional Distribution: 50 / 50 = 1.00  
 Traffic Composition: Car= 13.6 Jny= 15.2 Mcy= 2.5 %  
 PHF : 0.93 Mtr= 59.0 Trk= 9.0 Bus= 0.7 %

**III. LEVEL OF SERVICE ANALYSIS**

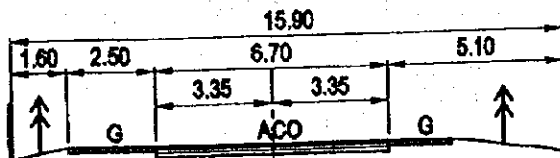
SF =  $2,800 \times (v/c) \times f_d \times f_w \times f_{lv}$

$F_{hv} = 1 / (P_{car} + P_{jny} E_{jny} + P_{mcy} E_{mcy} + P_{mtr} E_{mtr} + P_{trk} E_{trk} + P_{bus} E_{bus})$

LOS	SF	= 2,800 X (v/c)	X f <sub>d</sub>	X f <sub>w</sub>	X f <sub>lv</sub>	P <sub>car</sub>	P <sub>jny</sub>	E <sub>jny</sub>	P <sub>mcy</sub>	E <sub>mcy</sub>	P <sub>mtr</sub>	E <sub>mtr</sub>	P <sub>trk</sub>	E <sub>trk</sub>	P <sub>bus</sub>	E <sub>bus</sub>	
			T. 3.2-1	T. 3.2-2	T. 3.2-3												
A	337	2800	0.15	1.00	0.93	0.863	0.14	0.15	1.5	0.03	0.5	0.59	1.0	0.09	2.0	0.01	1.8
B	597	2800	0.27	1.00	0.93	0.849	0.14	0.15	1.5	0.03	0.5	0.59	1.0	0.09	2.2	0.01	2.0
C	950	2800	0.43	1.00	0.93	0.849	0.14	0.15	1.5	0.03	0.5	0.59	1.0	0.09	2.2	0.01	2.0
D	1440	2800	0.64	1.00	0.93	0.864	0.14	0.15	1.5	0.03	0.5	0.59	1.0	0.09	2.0	0.01	1.6
E	2273	2800	1.0	1.00	0.94	0.864	0.14	0.15	1.5	0.03	0.5	0.58	1.0	0.09	2.0	0.01	1.6

IV. COMMENTS Flow Rate : 538 vph LOS = B

STA. 152+860 (MUÑOZ - SAN JOSE)



**The Feasibility Study on  
Upgrading Inter-Urban Highway System Along the Pan-Philippine Highway  
( Sta. Rita, Plaridel-San Jose Section )**

Station Number	Flow Number	Flow Direction	Location	Filename	Intersection Summary
ITC-1	1	Malolos - Baliuag	Plaridel Intersection	ITC11.WK4	ITSUM1.WK4
	2	Malolos - Angat	Plaridel Intersection		
	3	Malolos - NLE - Sta. Rita	Plaridel Intersection		
ITC-1	4	NLE, Sta. Rita - Malolos	Plaridel Intersection	ITC14.WK4	
	5	NLE, Sta. Rita - Baliuag	Plaridel Intersection		
	6	NLE, Sta. Rita, Angat	Plaridel Intersection		
ITC-1	7	Angat - NLE, Sta. Rita	Plaridel Intersection	ITC17.WK4	
	8	Angat - Malolos	Plaridel Intersection		
	9	Angat - Baliuag	Plaridel Intersection		
ITC-1	10	Baliuag - Angat	Plaridel Intersection	ITC110.WK4	
	11	Baliuag - NLE, Sta. Rita	Plaridel Intersection		
	12	Baliuag - Malolos	Plaridel Intersection		
ITC-2	1	Candaba - San Rafael	Baliuag Intersection	ITC21.WK4	ITSUM2.WK4
	2	Candaba - Baliuag	Baliuag Intersection		
	3	Candaba - Plaridel	Baliuag Intersection		
ITC-2	4	Plaridel - Candaba	Baliuag Intersection	ITC24.WK4	
	5	Plaridel - San Rafael	Baliuag Intersection		
	6	Plaridel - Baliuag	Baliuag Intersection		
ITC-2	7	Baliuag - Plaridel	Baliuag Intersection	ITC27.WK4	
	8	Baliuag - Candaba	Baliuag Intersection		
	9	Baliuag - San Rafael	Baliuag Intersection		
ITC-2	10	San Rafael - Baliuag	Baliuag Intersection	ITC210.WK4	
	11	San Rafael - Plaridel	Baliuag Intersection		
	12	San Rafael - Candaba	Baliuag Intersection		
ITC-3	1	Gapan - San Miguel	San Miguel Junction	ITC31.WK4	ITSUM3.WK4
	2	Gapan - San Idefonso	San Miguel Junction		
ITC-3	3	San Idefonso - Gapan	San Miguel Junction	ITC33.WK4	
	4	San Idefonso - San Miguel	San Miguel Junction		
ITC-3	5	San Miguel - San Idefonso	San Miguel Junction	ITC35.WK4	
	6	San Miguel - Gapan	San Miguel Junction		
ITC-4	1	San Isidro - San Leonardo	Gapan Intersection	ITC41.WK4	ITSUM4.WK4
	2	San Isidro - Gapan - T.P. Penaranda	Gapan Intersection		
	3	San Isidro - San Miguel	Gapan Intersection		
ITC-4	4	San Miguel - San Isidro	Gapan Intersection	ITC44.WK4	
	5	San Miguel - San Leonardo	Gapan Intersection		
	6	San Miguel - Gapan - T.P. Penaranda	Gapan Intersection		
ITC-4	7	San Leonardo - Gapan T.P. Penaranda	Gapan Intersection	ITC47.WK4	
	8	San Leonardo - San Miguel	Gapan Intersection		
	9	San Leonardo - San Isidro	Gapan Intersection		

**The Feasibility Study on  
Upgrading Inter-Urban Highway System Along the Pan-Philippine Highway  
(Sta. Rita, Plaridel-San Jose Section)**

Station Number	Flow Number	Flow Direction	Location	Filename	Summary
ITC-5	1	Zaragosa - Cabanatuan	Sta. Rosa - Intersection	ITC51.WK4	ITSUM5.WK4
	2	Zaragosa - Fort Magsaysay	Sta. Rosa - Intersection		
	3	Zaragosa - San Leonardo	Sta. Rosa - Intersection		
ITC-5	4	San Leonardo - Zaragosa	Sta. Rosa - Intersection	ITC54.WK4	
	5	San Leonardo - Cabanatuan	Sta. Rosa - Intersection		
	6	San Leonardo - Fort Magsaysay	Sta. Rosa - Intersection		
ITC-5	7	Fort Magsaysay - San Leonardo	Sta. Rosa - Intersection	ITC57.WK4	
	8	Fort Magsaysay - Zaragosa	Sta. Rosa - Intersection		
	9	Fort Magsaysay - Cabanatuan	Sta. Rosa - Intersection		
ITC-5	10	Cabanatuan - Fort Magsaysay	Sta. Rosa - Intersection	ITC510.WK4	
	11	Cabanatuan - San Leonardo	Sta. Rosa - Intersection		
	12	Cabanatuan - Zaragoza	Sta. Rosa - Intersection		
ITC-6	1	Cabanatuan - Talavera	Cabanatuan Intersection 1	ITC61.WK4	ITSUM6.WK4
	2	Cabanatuan - Sta. Rosa	Cabanatuan Intersection 1		
ITC-6	3	Sta. Rosa - Cabanatuan	Cabanatuan Intersection 1	ITC63.WK4	
	4	Sta. Rosa - Talavera	Cabanatuan Intersection 1		
ITC-6	5	Talavera - Sta. Rosa	Cabanatuan Intersection 1	ITC65.WK4	
	6	Talavera - Cabanatuan	Cabanatuan Intersection 1		
ITC-7	1	Sta. Rosa - City Interior	Cabanatuan - 2 Intersection	ITC71.WK4	ITSUM7.WK4
	2	Sta. Rosa - Talavera	Cabanatuan - 2 Intersection		
	3	Sta. Rosa - Palayan City	Cabanatuan - 2 Intersection		
ITC-7	4	Palayan City - Sta. Rosa	Cabanatuan - 2 Intersection	ITC74.WK4	
	5	Palayan City - City Interior	Cabanatuan - 2 Intersection		
	6	Palayan City - Talavera	Cabanatuan - 2 Intersection		
ITC-7	7	Talavera - Palayan City	Cabanatuan - 2 Intersection	ITC77.WK4	
	8	Talavera - Sta. Rosa	Cabanatuan - 2 Intersection		
	9	Talavera - City Interior	Cabanatuan - 2 Intersection		
ITC-8	1	Lupao - Carranglan	San Jose Intersection	ITC81.WK4	ITSUM8.WK4
	2	Lupao - Llanera	San Jose Intersection		
	3	Lupao - Munoz	San Jose Intersection		
ITC-8	4	Munoz - Lupao	San Jose Intersection	ITC84.WK4	
	5	Munoz - Carranglan	San Jose Intersection		
	6	Munoz - Llanera	San Jose Intersection		
ITC-8	7	Llanera - Munoz	San Jose Intersection	ITC87.WK4	
	8	Llanera - Lupao	San Jose Intersection		
	9	Llanera - Carranglan	San Jose Intersection		
ITC-8	10	Carranglan - Llanera	San Jose Intersection	ITC810.WK4	
	11	Carranglan - Munoz	San Jose Intersection		
	12	Carranglan - Lupao	San Jose Intersection		

URBAN STREETS

Table . . . ADJUSTMENT FACTOR FOR LANE WIDTH

Lane Width, ft	8	9	10	11	12	13	14	15	≥ 16
Lane Width Factor, $f_w$	0.87	0.90	0.93	0.97	1.00	1.03	1.07	1.10	Use 2 Lanes

Table . . . ADJUSTMENT FACTOR FOR HEAVY VEHICLES

Percent Heavy Vehicles, %HV	0	2	4	6	8	10	15	20	25	30
Heavy Vehicle Factor, $f_{HV}$	1.00	0.99	0.98	0.97	0.96	0.95	0.93	0.91	0.89	0.87

Table . . . ADJUSTMENT FACTOR FOR GRADE

Grade, %	DOWNHILL			LEVEL	UPHILL		
	-6	-4	-2	0	+2	+4	+6
Grade Factor, $f_g$	1.03	1.02	1.01	1.00	0.99	0.98	0.97

Table . . . ADJUSTMENT FACTOR FOR PARKING,  $f_p$

NO. OF LANES IN LANE GROUP	NO PKG	NUMBER OF PARKING MANEUVERS PER HOUR, $N_p$				
		0	10	20	30	40
1	1.00	0.90	0.85	0.80	0.75	0.70
2	1.00	0.95	0.92	0.89	0.87	0.85
3	1.00	0.97	0.95	0.93	0.91	0.89

Table . . . ADJUSTMENT FACTOR FOR BUS BLOCKAGE,  $f_b$

NO. OF LANES IN LANE GROUP	NUMBER OF BUSES STOPPING PER HOUR, $N_b$				
	0	10	20	30	40
1	1.00	0.96	0.92	0.88	0.83
2	1.00	0.98	0.96	0.94	0.92
3	1.00	0.99	0.97	0.96	0.94

Table . . . ADJUSTMENT FACTOR FOR AREA TYPE

TYPE OF AREA	FACTOR $f_a$
CBD	0.90
All other areas	1.00

SIGNALIZED INTERSECTIONS

Table ADJUSTMENT FACTOR FOR RIGHT TURNS

CASE	TYPE OF LANE GROUP	RIGHT-TURN FACTORS, $f_{RT}$							
1	EXCLUSIVE RT LANE; PROTECTED RT PHASING	0.85							
2	EXCLUSIVE RT LANE; PERMITTED RT PHASING	$f_{RT} = 0.85 - (\text{peds}/2,100)$ peds $\leq$ 1,700 $f_{RT} = 0.05$ peds $>$ 1,700							
		No. of Conf. Pedestrians (peds)	0	50 (Low)	100	200 (Mod)	300	400 (High)	500
		Factor	0.85	0.83	0.80	0.75	0.71	0.66	0.61
		No. of Conf. Pedestrians (peds)	600	800	1,000	1,200	1,400	1,600	$\geq$ 1,700
		Factor	0.56	0.47	0.37	0.28	0.18	0.05	0.05
3	EXCLUSIVE RT LANE; PROTECTED PLUS PERMITTED PHASING	$f_{RT} = 0.85 - (1 - P_{RT}) (\text{peds}/2,100)$ $f_{RT} = 0.05$ (minimum)							
		No. of Conf. Pedestrians (peds)	Prop. of RT Using Prot. Phase, $P_{RT}$						
			0.00	0.20	0.40	0.60	0.80	1.00	
		0	0.85	0.85	0.85	0.85	0.85	0.85	
		50 (Low)	0.83	0.83	0.84	0.84	0.85	0.85	
		100	0.80	0.81	0.82	0.83	0.84	0.85	
		200 (Mod)	0.75	0.77	0.79	0.81	0.83	0.85	
		300	0.71	0.74	0.76	0.79	0.82	0.85	
		400 (High)	0.66	0.70	0.74	0.77	0.81	0.85	
		600	0.56	0.62	0.68	0.74	0.79	0.85	
800	0.47	0.55	0.62	0.70	0.77	0.85			
1,000	0.37	0.47	0.56	0.66	0.75	0.85			
1,400	0.18	0.32	0.45	0.58	0.72	0.85			
$\geq$ 1,700	0.05	0.20	0.36	0.53	0.69	0.85			
4	SHARED RT LANE; PROTECTED PHASING	$f_{RT} = 1.0 - 0.15 P_{RT}$							
		Prop. of RT in Lane, $P_{RT}$	0.00	0.20	0.40	0.60	0.80	1.00	
		Factor	1.00	0.97	0.94	0.91	0.88	0.85	
5	SHARED RT LANE; PERMITTED PHASING	$f_{RT} = 1.0 - P_{RT} [0.15 + (\text{peds}/2,100)]$ $f_{RT} = 0.05$ (minimum)							
		No. of Conf. Pedestrians (peds)	Prop. of RT in Lane Group, $P_{RT}$						
			0.00	0.20	0.40	0.60	0.80	1.00	
		0	1.00	0.97	0.94	0.91	0.88	0.85	
		50 (Low)	1.00	0.97	0.93	0.90	0.86	0.83	
		100	1.00	0.96	0.92	0.88	0.84	0.80	
		200 (Mod)	1.00	0.95	0.90	0.85	0.80	0.75	
		400 (High)	1.00	0.93	0.86	0.80	0.73	0.66	
		600	1.00	0.91	0.83	0.74	0.65	0.56	
		800	1.00	0.89	0.79	0.68	0.58	0.47	
1,000	1.00	0.87	0.75	0.62	0.50	0.37			
1,400	1.00	0.84	0.67	0.51	0.35	0.18			
$\geq$ 1,700	1.00	0.81	0.62	0.42	0.23	0.05			

URBAN STREETS

Table ADJUSTMENT FACTOR FOR RIGHT TURNS  
CONTINUED

CASE	TYPE OF LANE GROUP	RIGHT-TURN FACTORS, $f_{RT}$							
		$f_{RT} = 1.0 - P_{RT} [0.15 + (peds/2,100) (1 - P_{RT})]$ $f_{RT} = 0.05$ (minimum)							
6	SHARED RT LANE; PROTECTED PLUS PERMITTED PHASING	Prop. RT's Using Prot. Phase $P_{RT}$	No. of Conf. Peds. (peds)	Prop. of RT's in Lane Group $P_{RT}$					
				0.00	0.20	0.40	0.60	0.80	1.00
		0.00	All	Same as Case 5					
		0.20	0	1.00	0.97	0.94	0.91	0.88	0.85
			50	1.00	0.97	0.93	0.90	0.86	0.83
			200	1.00	0.95	0.91	0.86	0.82	0.77
			400	1.00	0.94	0.88	0.82	0.76	0.70
			600	1.00	0.92	0.85	0.77	0.70	0.62
			1,000	1.00	0.89	0.79	0.68	0.58	0.47
			≥ 1,700	1.00	0.86	0.73	0.59	0.45	0.32
		0.40	0	1.00	0.97	0.94	0.91	0.88	0.85
			50	1.00	0.97	0.94	0.91	0.87	0.84
200	1.00		0.96	0.92	0.88	0.83	0.79		
400	1.00		0.95	0.89	0.84	0.79	0.74		
600	1.00		0.94	0.87	0.81	0.74	0.68		
1,000	1.00		0.91	0.83	0.74	0.65	0.56		
≥ 1,700	1.00		0.89	0.78	0.67	0.56	0.45		
0.60	0	1.00	0.97	0.94	0.91	0.88	0.85		
	50	1.00	0.97	0.94	0.90	0.87	0.84		
	200	1.00	0.96	0.92	0.89	0.85	0.81		
	400	1.00	0.95	0.91	0.86	0.82	0.77		
	600	1.00	0.94	0.89	0.84	0.79	0.74		
	1,000	1.00	0.93	0.86	0.80	0.73	0.66		
	≥ 1,700	1.00	0.92	0.83	0.75	0.67	0.58		
0.80	0	1.00	0.97	0.94	0.91	0.88	0.85		
	50	1.00	0.97	0.94	0.91	0.88	0.85		
	200	1.00	0.97	0.93	0.90	0.86	0.83		
	400	1.00	0.96	0.92	0.89	0.85	0.81		
	600	1.00	0.96	0.92	0.88	0.83	0.79		
	1,000	1.00	0.95	0.90	0.85	0.80	0.75		
	≥ 1,700	1.00	0.94	0.89	0.83	0.77	0.72		
1.00	All	Same as Case 4							
7	SINGLE LANE APPROACH	$f_{RT} = 0.90 - P_{RT} [0.135 + (peds/2,100)]$ $f_{RT} = 0.05$ (minimum)							
		No. of Conf. Peds. (peds)	Prop. of RT's in Single Lane $P_{RT}$						
			0.00	0.20	0.40	0.60	0.80	1.00	
		0	1.00	0.87	0.85	0.82	0.79	0.77	
		50 (Low)	1.00	0.87	0.84	0.81	0.77	0.74	
		100	1.00	0.86	0.83	0.79	0.76	0.72	
		200 (Mod)	1.00	0.86	0.81	0.77	0.72	0.68	
		300	1.00	0.85	0.79	0.74	0.69	0.64	
		400 (High)	1.00	0.84	0.78	0.72	0.65	0.59	
		600	1.00	0.82	0.74	0.66	0.59	0.51	
		800	1.00	0.80	0.71	0.61	0.52	0.42	
		1,000	1.00	0.79	0.67	0.56	0.45	0.34	
1,200	1.00	0.77	0.64	0.51	0.38	0.25			
1,400	1.00	0.75	0.61	0.46	0.31	0.16			
≥ 1,700	1.00	0.73	0.55	0.38	0.21	0.05			
8	DOUBLE EXCLUSIVE RT LANE; PROTECTED PHASING	0.75							



SIGNALIZED INTERSECTIONS

Table 9-10 ADJUSTMENT FACTOR FOR LEFT TURNS

CASE	TYPE OF LANE GROUP	LEFT-TURN FACTOR, $f_{LT}$						
		1	EXCLUSIVE LT LANE; PROTECTED PHASING	0.95				
2	EXCLUSIVE LT LANE; PERMITTED PHASING	Special Procedure; See Worksheet Fig. 9-9						
3	EXCLUSIVE LT LANE; PROTECTED PLUS PERMITTED PHASING	0.95*						
4	SHARED LT LANE; PROTECTED PHASING	$f_{LT} = 1.0 / (1.0 + 0.05 P_{LT})$						
		Prop. of LT's in Lane, $P_{LT}$	0.00	0.20	0.40	0.60	0.80	1.00
		Factor	1.00	0.99	0.98	0.97	0.96	0.95
5	SHARED LT LANE; PERMITTED PHASING	Special Procedure; See Worksheet Fig. 9-9						
6	SHARED LT LANE; PROTECTED PLUS PERMITTED PHASING	$f_{LT} = (1,400 - V_o) / [(1,400 - V_o) + (235 + 0.435 V_o) P_{LT}] \quad V_o \leq 1,220 \text{ vph}$						
		$f_{LT} = 1 / [1 + 4.525 P_{LT}] \quad V_o \geq 1,220 \text{ vph}$						
		Opposing Volume $V_o$	Prop. of Left Turns, $P_{LT}$					
			0.00	0.20	0.40	0.60	0.80	1.00
	0	1.00	0.97	0.94	0.91	0.88	0.86	
	200	1.00	0.95	0.90	0.86	0.82	0.78	
	400	1.00	0.92	0.85	0.80	0.75	0.70	
	600	1.00	0.88	0.79	0.72	0.66	0.61	
	800	1.00	0.83	0.71	0.62	0.55	0.49	
	1,000	1.00	0.74	0.58	0.48	0.41	0.36	
	1,200	1.00	0.55	0.38	0.29	0.24	0.20	
	$\geq 1,220$	1.00	0.52	0.36	0.27	0.22	0.18	
7	SINGLE LANE APPROACH	Special Procedures; See Worksheet Fig. 9-9						
8	DOUBLE EXCLUSIVE LT LANE; PROTECTED PHASING	0.92						

\* This value is a starting estimate. Solutions are iterated for this case.

01T1. Plaridel (case1)

OPhasing Cycle = 90.0 sec

G = 21.3 (Phase-1): Green Time  
 21.2 (Phase-2):  
 15.0 (Phase-3):  
 26.5 (Phase-4):

Lane Grp.	Mvt. vol	PHF	Flow Rate	Ideal Sat. of Flow Lane	No. of Flow Lane	fw	fhw	fg	fbb	frrt	flt	Adj. Sat. Flow	v/s	g/C	c	v/c	d1	d2	d LOS	
1	456.8	.95	480.8	1800	1	.88	.976	1.000	1.000	.954	.989	1467.5	.328	.237	348.0	1.382	29.6	277.2	306.8	F
2	505.6	.95	532.2	1800	1	1.03	.909	1.000	1.000	.977	.989	1634.7	.326	.236	385.1	1.382	29.6	275.0	304.6	F
3	267.5	.95	281.6	1800	1	.92	.974	1.000	1.000	.985	.989	1577.6	.179	.294	463.7	.607	20.8	1.6	22.4	C
4	637.4	.95	670.9	1800	1	1.03	.940	1.000	1.000	.947	.996	1651.7	.406	.294	485.5	1.382	28.7	270.6	299.3	F

Appr. No.	Appr. Delay	Appr. LOS
1	306.8	F
2	304.6	F
3	22.4	C
4	299.3	F

Whole Intersect. delay time (sec)

Peak hour factor

IT1. Plaridel (case1)	0.075	0.95	90	6	15
1 L	0	851	446	3	116
1 T	0	2442	258	3	120
1 R	0	749	1057	1	44
2 L	Grade	458	433	0	637
2 T	0	1348	2148	537	158
2 R	0	874	114	0	34
3 L	0	591	141	4	32
3 T	0	2019	287	0	132
3 R	0	234	106	1	20
4 L	0	513	106	0	17
4 T	0	1193	2766	570	338
4 R	0	2384	484	0	127
1 1 8.5	1	PC	Jay	Truck	Bus
2 113.1	1			1	
3 19.8					
4 113.1					
0					

size time of signal

base time until signal changed

Minimum green time

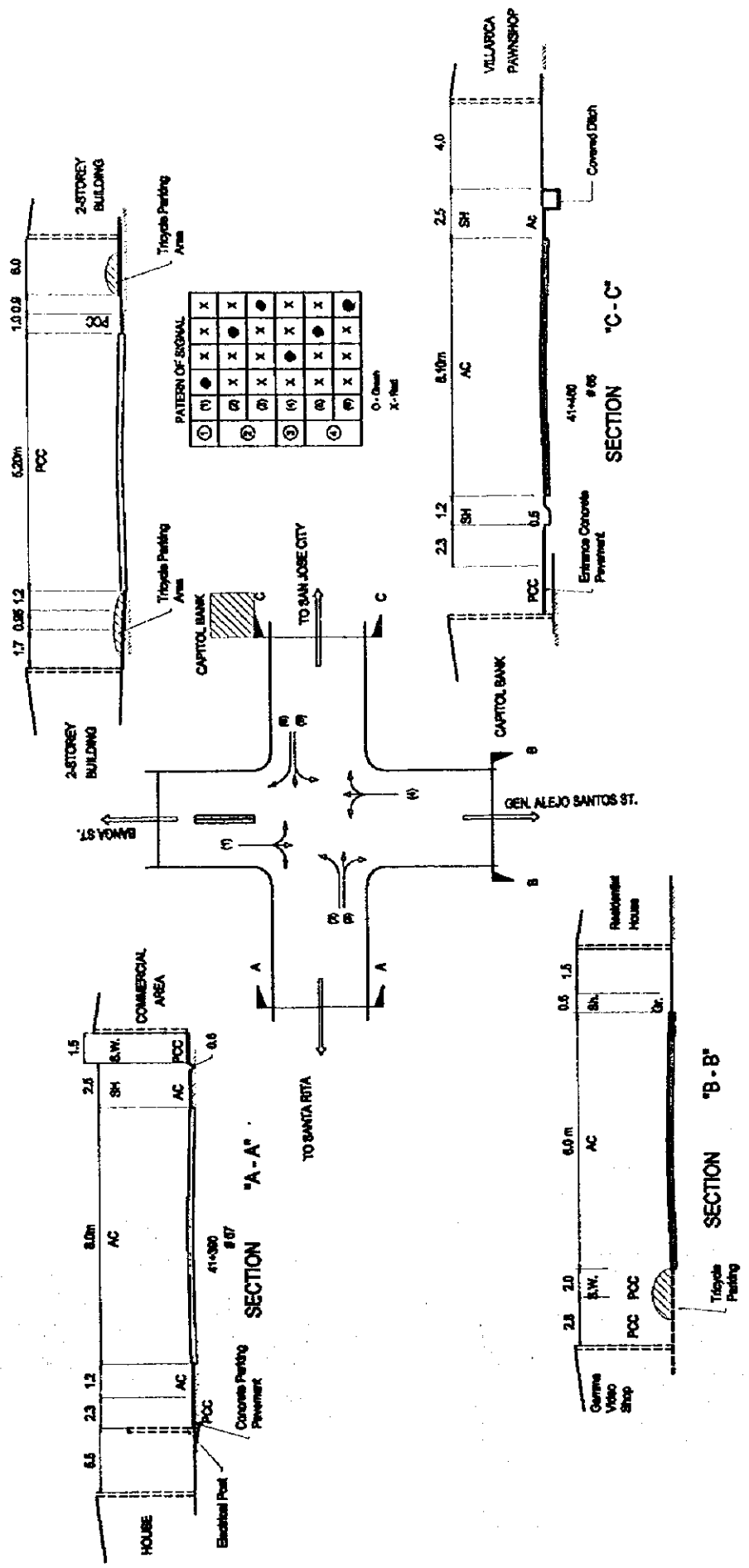
Traffic Volume of each vehicle type

(AADT, PC, Jay, Truck, Bicycle)

Traffic signal patterns

1: Green

number of lane Lane width (feet)



**BANGA ST. / GEN. ALEJO SANTOS ST. INTERSECTION (PLARIDEL)**  
 STA. 41+430 (IT - 1)

0IT2. Baliuag(case1)

OPhasing Cycle= 90.0 sec

- G= 25.8 (Phase-1)
- 15.0 (Phase-2)
- 19.4 (Phase-3)
- 23.8 (Phase-4)

Lane Grp.	Mvt. vol	PHF	Flow Rate	Ideal Sat. of Flow Lane	No	fw	fhw	fg	fbb	frrt	flt	Adj. Sat. Flow	v/s	g/c	c	v/c	d1	d2	d LOS	
1	834.1	.95	878.1	1800	1	.93	.965	1.000	1.000	.979	.989	1563.5	.582	.287	448.8	1.957	39.71290	71330.4	F	
2	122.3	.95	128.8	1800	1	.92	.907	1.000	1.000	1.000	.950	1423.6	.090	.167	237.3	.543	26.1	2.0	28.1	D
3	544.1	.95	572.8	1800	1	.92	.889	1.000	1.000	.977	1.000	1435.1	.399	.215	309.0	1.853	35.01046	61081.6	F	
4	782.1	.95	823.3	1800	1	.93	.992	1.000	1.000	.964	.995	1592.1	.517	.264	420.8	1.957	38.31292	31330.6	F	
5	156.3	.95	164.5	1800	1	.92	.989	1.000	1.000	1.000	.950	1552.8	.106	.167	258.8	.636	26.6	3.5	30.1	D
6	569.3	.95	599.3	1800	1	.92	.902	1.000	1.000	.954	1.000	1422.4	.421	.215	306.3	1.957	36.41301	51337.9	F	

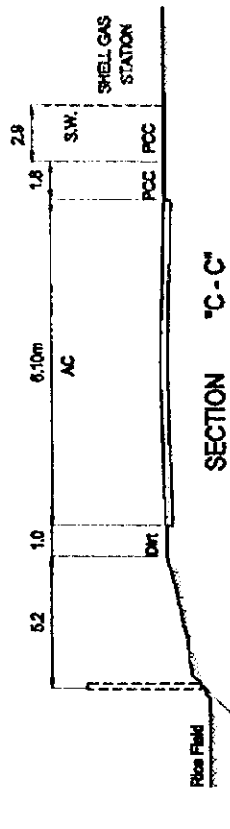
Appr. Delay LOS

1	1330.4	F
2	888.2	F
3	1330.6	F
4	1056.2	F

Whole Intersect. 1166.3 F

IT2. Baliuag(case1)

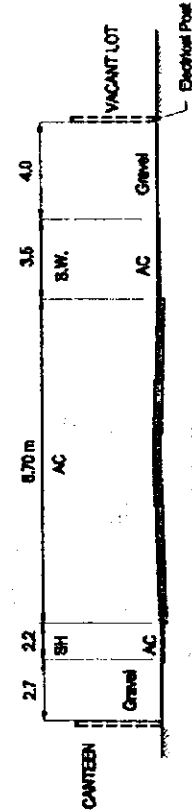
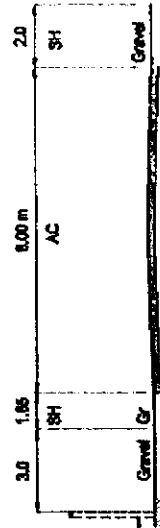
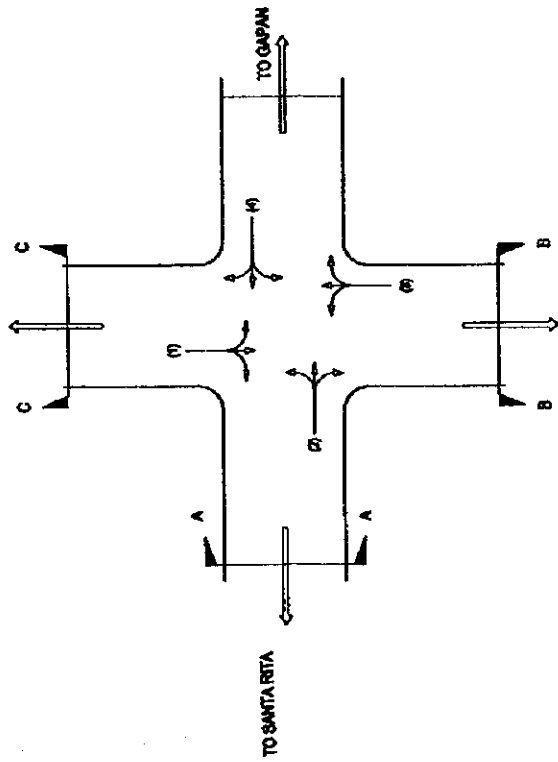
1	L	1	0	1205	0.95	90	6	15	-1
2	R	1	0	6325	0.95	772	0	38	
3	L	2	0	717	0.95	506	0	365	
4	T	3	0	644	0.95	648	0	339	
5	R	3	0	1943	0.95	2411	382	1410	
6	L	4	0	760	0.95	307	2	40	
7	T	4	0	669	0.95	363	3	47	
8	R	4	0	6093	0.95	676	0	77	
9	L	5	0	2042	0.95	411	3	44	
10	T	6	0	1756	0.95	283	1	44	
11	R	6	0	1962	0.95	1952	378	995	
12	L	6	0	1182	0.95	822	2	298	
13	T	0	1						
14	R	1	1						
15	L	1	1						
16	T	1	1						
17	R	1	1						
18	L	1	1						
19	T	1	1						
20	R	1	1						



PATTERN OF SIGNAL

(1)	●	X	X	X	X	X	●
(2)	X	X	X	X	X	X	X
(3)	X	X	●	X	X	X	X
(4)	X	X	X	X	X	X	●

● - Cross  
X - Rail



**BALIUG SECTION**  
STA. 50+840 (IT-2)

0 IT3. Miguel (case1)  
 0 Phasing Cycle= 90.0 sec

G= 31.2 (Phase-1)  
 15.0 (Phase-2)  
 37.8 (Phase-3)

Lane Grp.	Mvt. vol	PHF	Flow Rate	Ideal Sat.	No of Flow Lane	fw	fhw	fg	fbb	frrt	fltt	Adj. Sat. Flow	v/s	g/C	c	v/c	d1	d2	d LOS	
1	345.5	.95	363.7	1800	1	.97	.897	1.000	1.000	1.000	.999	1564.3	.233	.347	542.4	.671	19.0	2.2	21.3	C
2	403.7	.95	425.0	1800	1	.97	.893	1.000	1.000	.968	1.000	1509.2	.282	.420	633.8	.671	16.0	1.9	17.9	C
3	94.7	.95	99.6	1800	1	.97	.965	1.000	1.000	.978	.959	1580.5	.063	.167	263.4	.378	25.3	.5	25.8	D

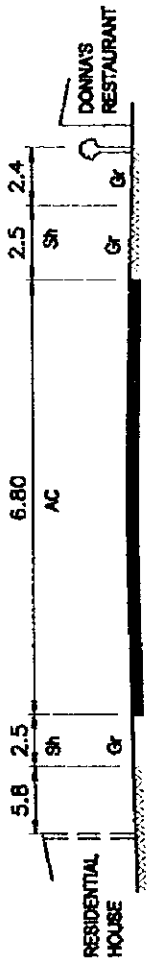
Appr. No. Delay

1 21.3 C  
 2 17.9 C  
 3 25.8 D

Whole inter-sect. 20.2 C

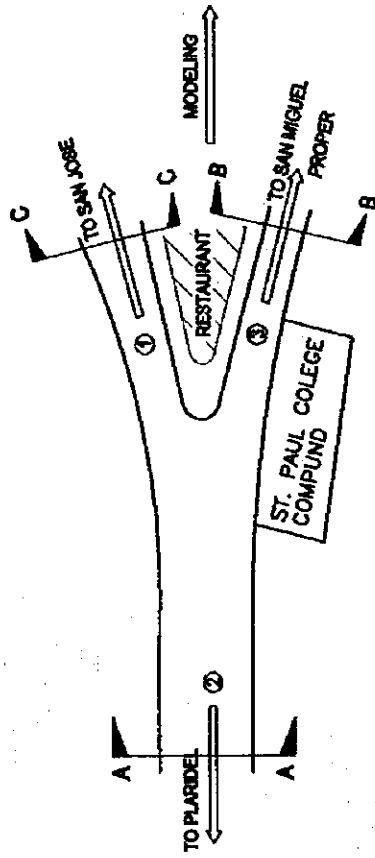
IT3. Miguel (case1)

1	L	1	0	0.95	90	6	15	-1
1	T	1	0	60	70	0	0	
2	L	2	0	1823	1585	473	590	
2	T	2	0	0	0	0	0	
3	L	3	0	0	0	0	0	
3	T	3	0	1586	1424	382	831	
1	R	1	0	734	337	12	77	
2	R	2	0	780	229	1	71	
3	R	3	0	0	0	0	0	
1	R	3	0	113	46	15	2	
2	R	3	1	1	1			
3	R	3	1	1	1			
0								



STA. 72+600

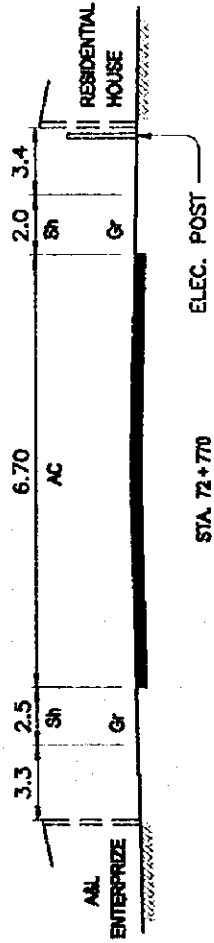
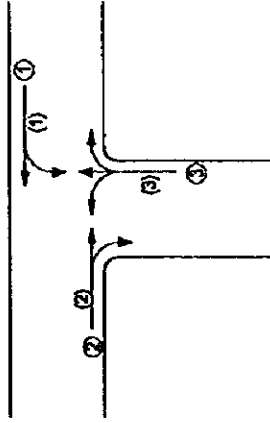
"C - C"



PATERNES OF SIGNAL

①	●	X	X
②	X	●	X
③	X	X	●

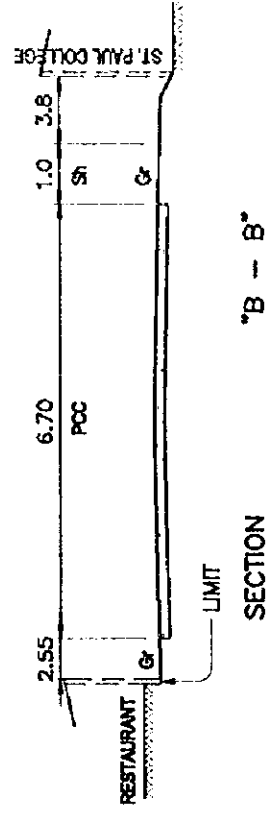
○ - Green  
X - Red



STA. 72+770

"A - A"

SECTION



"B - B"

SECTION

SAN MIGUEL INTERSECTION  
STA. 72+880 ( IT-3 )

01T4. Gapan (case1)

OPhasing Cycle= 90.0 sec

G= 27.2 (Phase-1)  
 22.4 (Phase-2)  
 34.4 (Phase-3)

Lane Grp.	Mvt. vol	PHF	Flow Rate	Ideal Sat.	No of Flow Lane	fw	fhw	fg	fbb	frt	flt	Adj. Sat. Flow	v/s	g/c	c	v/c	d1	d2	d LOS	
1	680.4	.95	716.2	1800	1	.93	.974	1.000	1.000	.962	.993	1556.5	.460	.302	469.8	1.525	30.9	440.8	471.7	F
2	563.4	.95	593.1	1800	1	.97	.917	1.000	1.000	1.000	.977	1563.2	.379	.249	389.0	1.525	31.1	444.6	475.7	F
3	463.1	.95	487.5	1800	1	.93	.982	1.000	1.000	.850	1.000	1397.3	.349	.654	913.5	.534	6.3	.5	6.8	B
4	846.0	.95	890.5	1800	1	.97	.941	1.000	1.000	.945	.983	1526.6	.583	.383	584.1	1.525	31.3	437.2	468.5	F

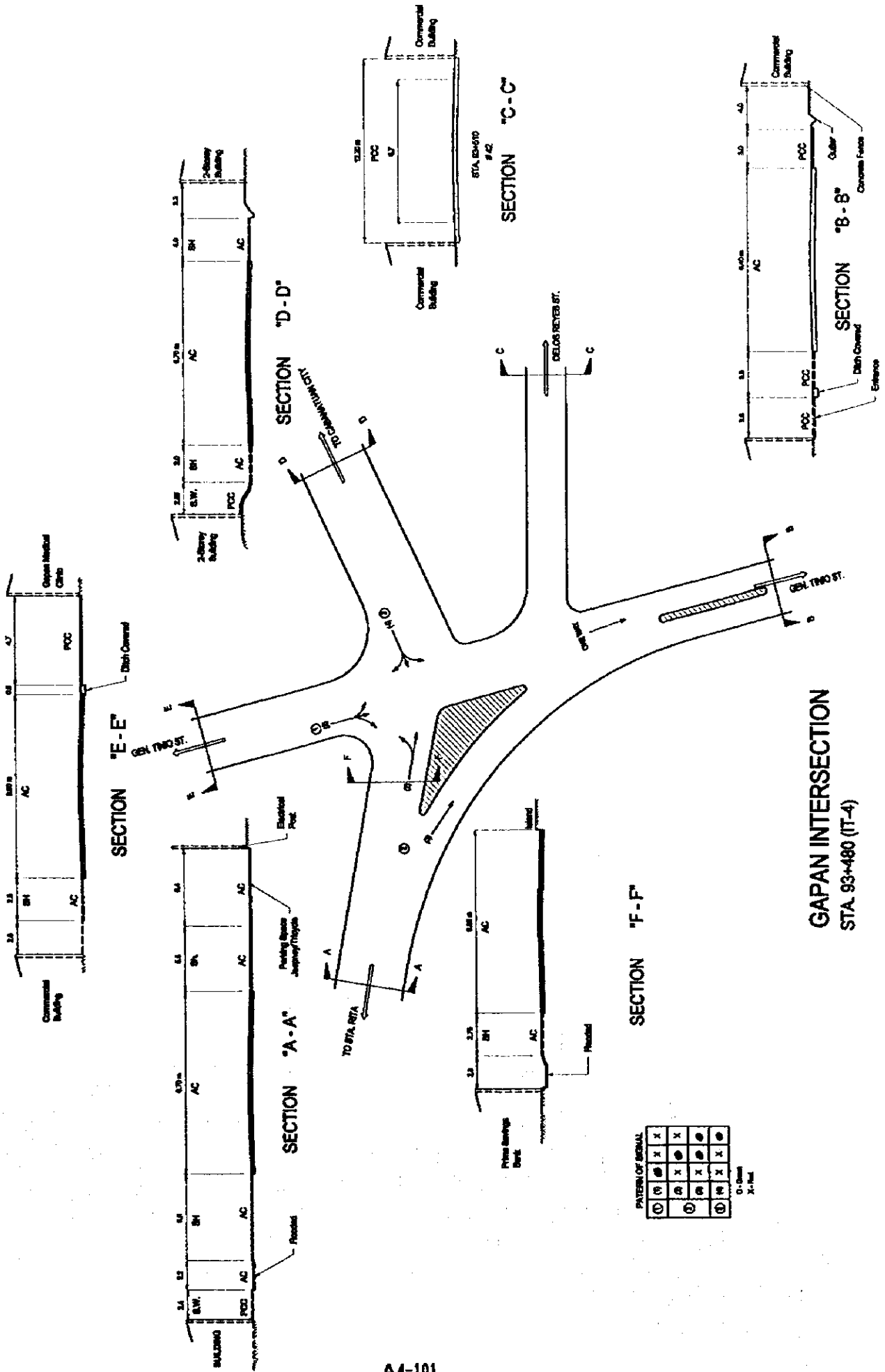
Appr. No.	Appr. Delay	Appr. LOS
1	471.7	F
2	264.1	F
3	468.5	F

Whole Inter-sect. 387.2 F

IT4. Gapan (case1)

1	L	3	0.075	0.95	90	6	15	-1
	T	1	0	387	752	66	104	
	R	1	0	4695	613	0	129	
2	L	2	0	1617	536	5	168	
	T	2	0	2505	732	32	303	
	R	3	0	1700	1196	354	690	
3	L	4	0	5162	791	4	218	
	T	4	0	3256	547	2	129	
	R	4	0	1166	1059	432	562	
	R	4	0	2673	1204	74	176	
1		110.0	1					
2		111.0	1					
3		110.0	1					
4		111.0	1					
0								





**GAPAN INTERSECTION  
STA 93+480 (IT-4)**

**PATTERN OF SIGNAL**

(1)	(2)	(3)	(4)	(5)	(6)
(7)	(8)	(9)	(10)	(11)	(12)
(13)	(14)	(15)	(16)	(17)	(18)
(19)	(20)	(21)	(22)	(23)	(24)

O - Green  
 X - Red

OIT5. Rosa (case1)

PHasing Cycle= 90.0 sec

- G= 15.0 (Phase-1)
- 27.9 (Phase-2)
- 15.0 (Phase-3)
- 26.1 (Phase-4)

Lane Grp.	Mvt. vol	PHF	Flow Rate	Ideal Sat.	No of Flow Lane	fw	fhw	fg	fbb	frr	flt	Adj. Sat. Flow	v/s	g/C	c	v/c	d1	d2	d LOS	
1	275.0	.95	289.4	1800	1	.92	.938	1.000	1.000	.953	.974	1448.5	.200	.167	241.4	1.199	29.7	135.2	164.9	F
2	641.9	.95	675.7	1800	1	.97	.914	1.000	1.000	.995	.996	1582.4	.427	.310	490.9	1.377	28.4	265.1	293.5	F
3	128.7	.95	135.5	1800	1	.88	.967	1.000	1.000	.910	.992	1375.6	.098	.167	229.3	.591	26.3	2.9	29.2	D
4	588.6	.95	619.6	1800	1	.97	.918	1.000	1.000	.974	.995	1553.0	.399	.290	450.1	1.377	28.7	266.6	295.3	F

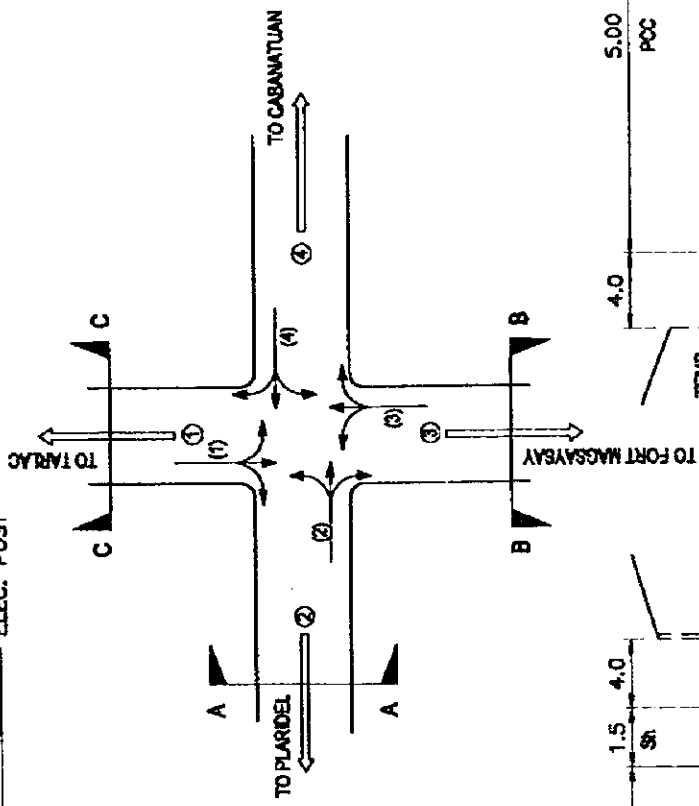
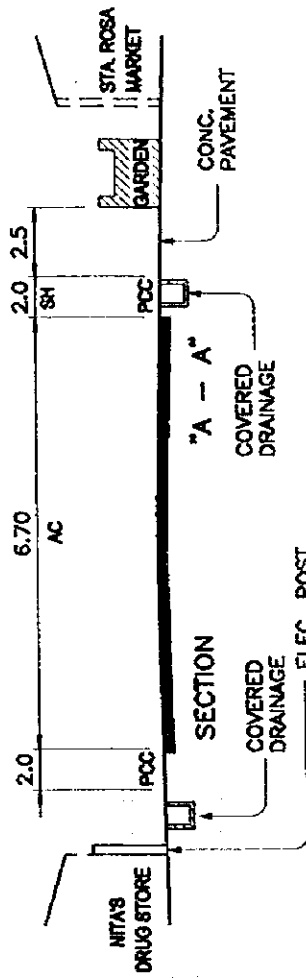
Appr. Delay LOS

1	164.9	F
2	293.5	F
3	29.2	D
4	295.3	F

Whole Intersect. 251.7 F

IT5. Rosa (case1)

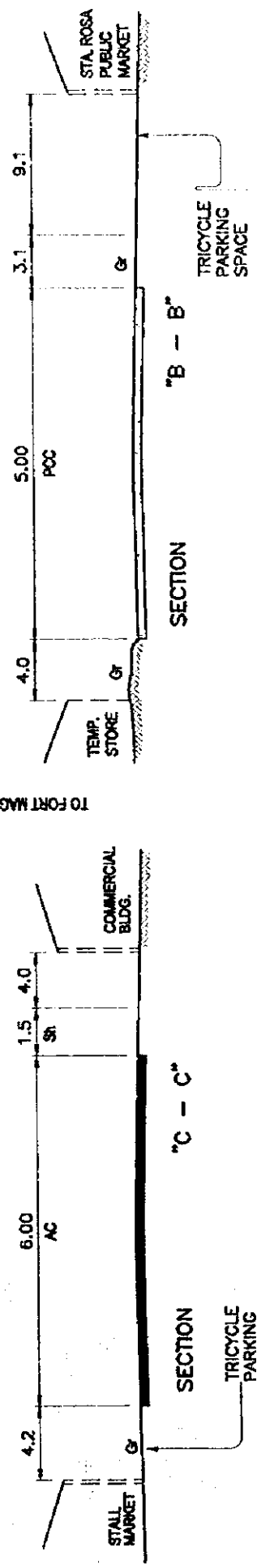
1	L	1	0	0.075	0.95	90	6	15	-1
2	T	1	0	0	915	772	38	223	
3	R	1	0	0	433	57	0	61	
4	L	1	0	0	711	296	0	150	
5	T	2	0	0	318	164	0	154	
6	R	2	0	0	3039	3159	444	1000	
7	L	3	0	0	212	45	0	24	
8	T	3	0	0	184	67	0	38	
9	R	3	0	0	291	78	0	28	
10	L	4	0	0	788	194	0	48	
11	T	4	0	0	655	151	0	45	
12	R	4	0	0	1366	3136	433	701	
13	L	4	0	0	622	509	33	197	
14	T	8	1	1					
15	R	8	1	1					
16	L	11.0	0	0					
17	T	18.2	0	0					
18	R	11.0	0	0					



**PATTERNS OF SIGNAL**

①	(1)	●	X	X	X
②	(2)	X	●	X	X
③	(3)	X	X	●	X
④	(4)	X	X	X	●

O - Green  
X - Red



**STA. ROSA INTERCHANGE**  
**STA. 107+50 ( IT-5 )**

0IT6. Caba11(case1)  
 0Phasing Cycle= 90.0 sec

G= 15.0 (Phase-1)  
 28.4 (Phase-2)  
 40.6 (Phase-3)

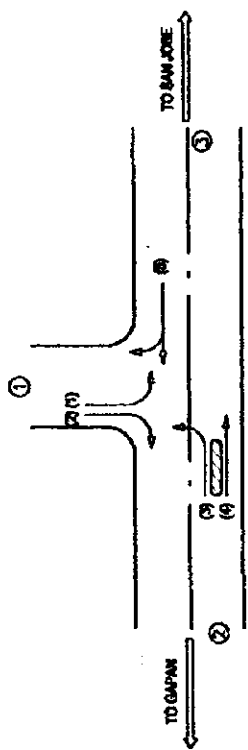
Lane Grp.	Mvt. vol	PHF	Flow Rate	Ideal Sat.	No. of Flow Lane	fw	fhw	fg	fbb	frrt	fltt	Adj. Sat. Flow	v/s	g/C	c	v/c	d1	d2	d LOS	
1	170.0	.95	178.9	1800	1	.93	.949	1.000	1.000	1.000	.950	1508.9	.119	.167	251.5	.712	26.9	6.1	33.1	D
2	709.8	.95	747.2	1800	1	.93	.978	1.000	1.000	.850	1.000	1391.0	.537	.504	701.7	1.065	18.1	45.8	63.9	F
3	727.4	.95	765.7	1800	1	.93	.977	1.000	1.000	1.000	.950	1553.6	.493	.316	490.3	1.562	31.6	492.5	524.1	F
4	896.3	.95	943.5	1800	1	.97	.952	1.000	1.000	1.000	1.000	1661.5	.568	.789	1310.7	.720	3.5	1.4	4.9	A
5	1094.4	.95	1152.0	1800	1	.97	.960	1.000	1.000	.976	1.000	1635.3	.704	.451	737.6	1.562	34.9	486.4	521.3	F

Appr. No.	Appr. Delay	Appr. LOS
1	58.0	E
2	237.5	F
3	521.3	F

Whole Intersect.	279.9	F
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IT6. Caba11(case1)

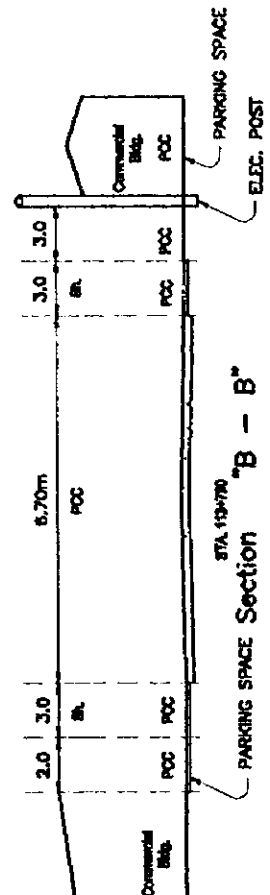
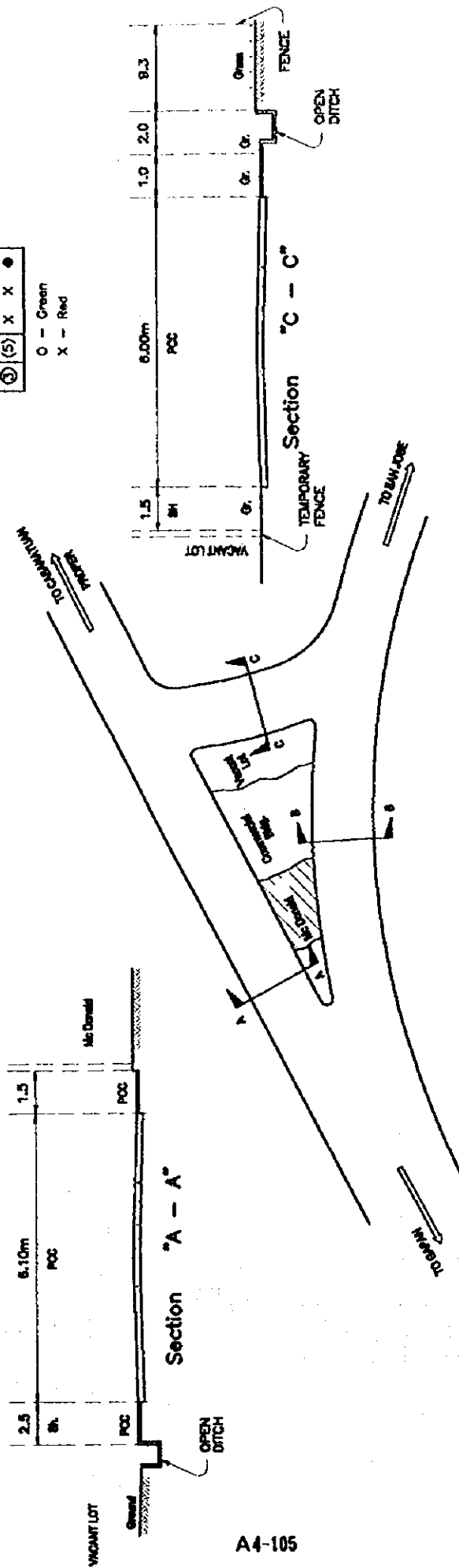
1	L	3	0.085	0.95	90	6	15	-1
1	T	1	0	1408	386	165	41	
1	R	1	0	0	0	0	0	
2	L	2	0	4429	3548	166	208	
2	T	3	0	4623	3540	166	229	
2	R	4	0	7019	2505	64	957	
3	L	4	0	0	0	0	0	
3	T	5	0	0	0	0	0	
3	R	5	0	7068	2834	108	794	
1	110.0	5	0	1568	368	95	40	
2	110.0	1	1					
3	110.0	1	1					
4	111.0	1	1					
5	111.0	1	1					
0								



PATTERNS OF SIGNAL

①	●	X	X
②	●	●	X
③	X	●	X
④	X	X	●
⑤	X	X	●

● - Green  
X - Red



**CABANATUAN INTERSECTION**  
**STA. 113+750**  
**(IT-6)**

OIT7. Caba21 (case1)

OPhasing Cycle= 90.0 sec

G= 15.0 (Phase-1)  
 24.6 (Phase-2)  
 44.4 (Phase-3)

Lane Grp.	Mvt. vol	PHF	Flow Rate	Ideal Sat.	No. of Flow Lane	fw	fhw	fg	fbb	frr	flr	Adj. Sat. Flow	v/s	g/c	c	v/c	d1	d2	d LOS	
1	196.9	.95	207.2	1800	1	.90	.992	1.000	1.000	1.000	.950	1526.7	.136	.167	254.4	.814	27.5	12.3	39.8	D
2	1191.4	.95	1254.1	1800	1	.90	.955	1.000	1.000	.965	1.000	1492.9	.840	.493	736.0	1.704	55.0	719.9	774.9	F
3	805.2	.95	847.6	1800	1	.93	1.000	1.000	1.000	.951	.994	1581.3	.536	.274	432.7	1.959	38.9	1297.5	1336.4	F
4	156.7	.95	164.9	1800	1	.90	.956	1.000	1.000	1.000	.950	1471.6	.112	.167	245.3	.672	26.7	4.8	31.5	D
5	1299.4	.95	1367.8	1800	1	.90	.960	1.000	1.000	.910	1.000	1416.3	.966	.493	698.3	1.959	256.8	1288.3	1545.0	F

Appr. No. Delay

Appr. Delay LOS

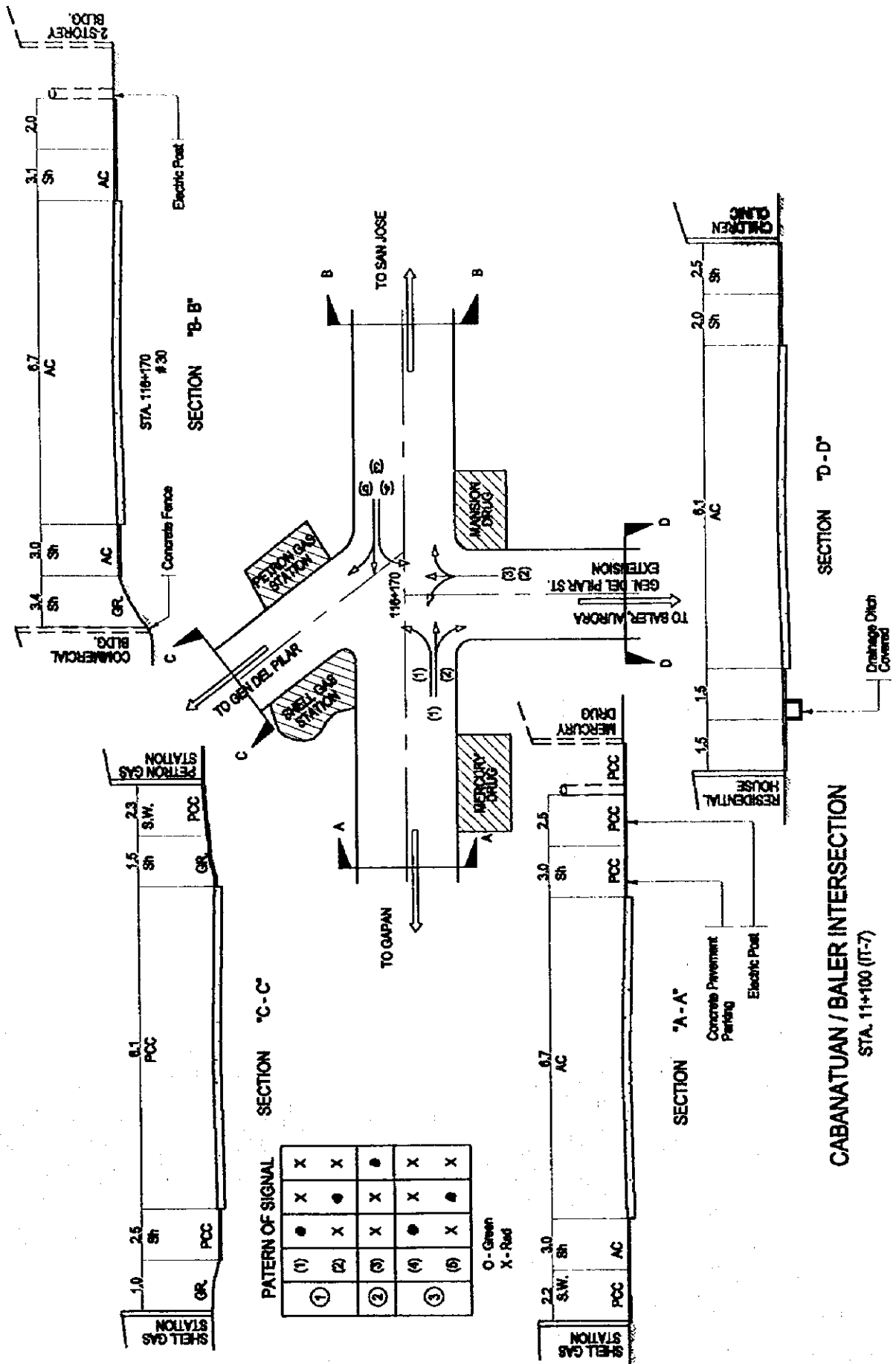
1 670.6 F  
 2 1336.4 F  
 3 1382.2 F

Whole Inter-sect.

1101.4 F

OIT7. Caba21 (case1)

1	L	3	0.075	0.95	90	6	15	-1
1	T	1	0	2251	332	0	42	
2	R	2	0	7175	3874	302	833	
2	L	2	0	2798	605	18	280	
3	T	3	0	892	501	0	1	
3	R	3	0	4143	1694	0	4	
3	L	3	0	2491	1008	1	1	
4	T	4	0	1470	436	3	180	
5	R	5	0	3487	2310	346	824	
5	L	5	0	6994	3163	0	202	
1	9.0	1	1					
2	9.0	1	1					
3	110.0	1	1					
4	9.0	1	1					
5	9.0	1	1					



SECTION "C-C"

PATTERN OF SIGNAL

(1)	(2)	(3)	(4)	(5)
●	X	X	●	X
X	●	X	X	●
X	X	●	X	X
●	X	X	●	X

○ - Green  
X - Red

SECTION "A-A"

CABANATUAN / BALER INTERSECTION

STA. 11+100 (IT-7)

01T8, Jose1(case1)  
 OPPhasing

Cycle= 90.0 sec

G= 23.6 (Phase-1)  
 16.2 (Phase-2)  
 15.0 (Phase-3)  
 29.2 (Phase-4)

Lane Grp.	Mvt. vol	PHF	Flow Rate	Ideal Sat.	No of Flow Lane	fw	ffv	fg	fbb	frr	flt	Adj. Sat. Flow	v/s	g/C	c	v/c	d1	d2	d LOS	
1	585.8	.95	616.6	1800	1	.94	.958	1.000	1.000	.959	.977	1516.0	.407	.262	397.6	1.551	31.4	481.0	512.4	F
2	61.7	.95	64.9	1800	1	.97	.936	1.000	1.000	1.000	.950	1552.0	.042	.167	258.7	.251	24.8	.1	24.9	C
3	762.7	.95	802.8	1800	1	.97	.949	1.000	1.000	.961	1.000	1593.2	.504	.325	517.6	1.551	31.4	476.0	507.4	F
4	422.7	.95	444.9	1800	1	.98	.960	1.000	1.000	.959	.979	1598.1	.278	.180	286.9	1.551	31.9	489.2	521.1	F
5	57.1	.95	60.1	1800	1	.97	.959	1.000	1.000	1.000	.950	1590.0	.038	.167	265.0	.227	24.7	.1	24.8	C
6	648.1	.95	682.3	1800	1	.97	.946	1.000	1.000	.949	1.000	1566.4	.436	.325	508.9	1.341	27.6	229.5	257.1	F

Appr. No. Delay

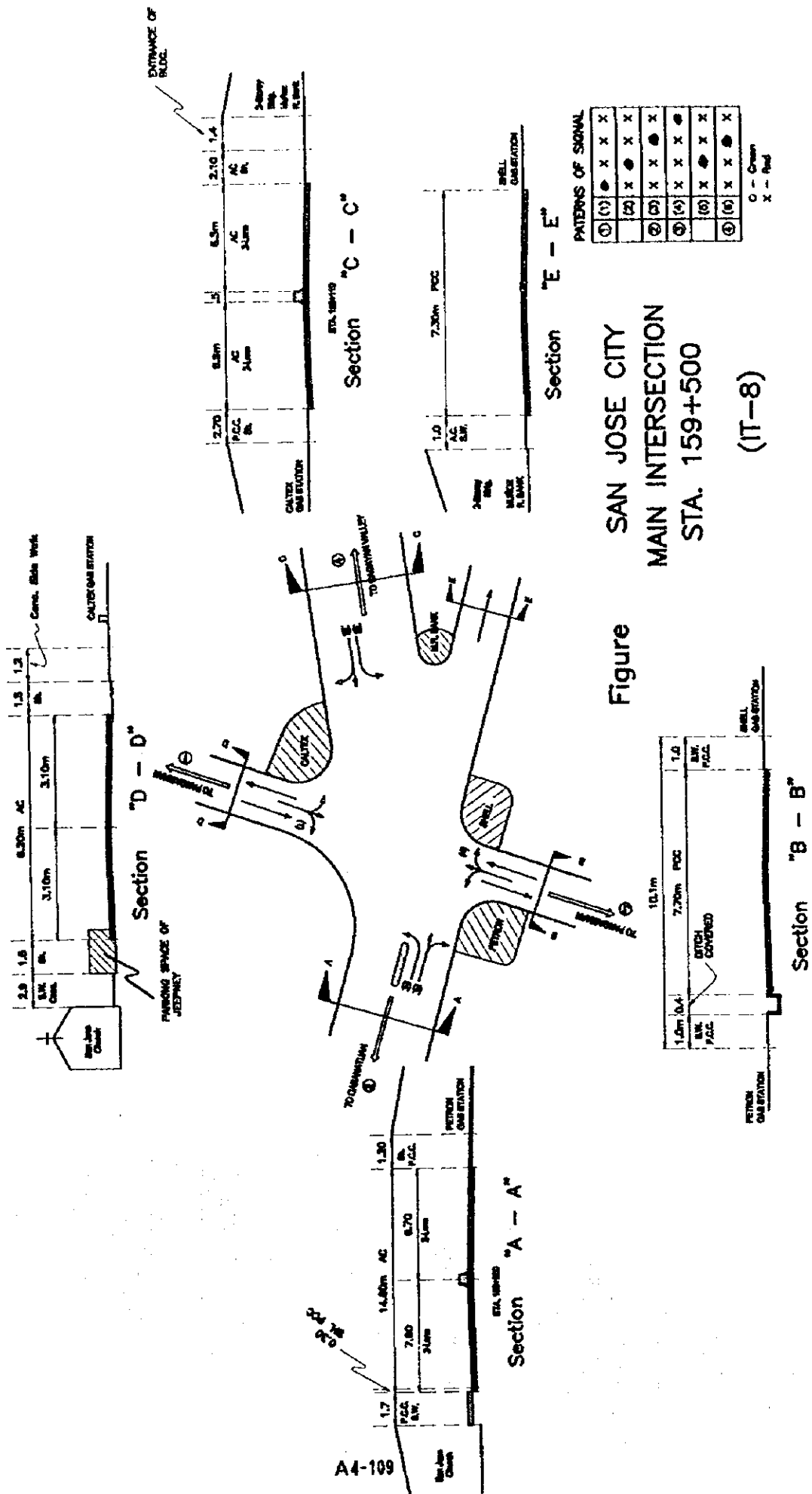
Appr. LOS  
 1 512.4 F  
 2 471.3 F  
 3 521.1 F  
 4 238.3 F

Whole Inter-sect. 424.3 F

IT8, Jose1(case1)

1	L	1	0	0.95	90	6	15	-1
2	T	1	0	3333	629	54	373	
3	R	1	0	2012	207	3	152	
4	L	2	0	1057	1284	65	129	
5	T	3	0	607	239	10	123	
6	R	3	0	6931	1164	75	791	
7	L	4	0	2409	375	0	361	
8	T	4	0	2292	423	1	205	
9	R	4	0	1477	273	4	206	
10	L	5	0	1509	201	0	118	
11	T	6	0	704	127	0	75	
12	R	6	0	5177	909	63	620	
13	L	6	0	2502	559	61	397	
14	T	0	1					
15	R	110.2	1					
16	L	111.0	1					
17	T	111.0	1					
18	R	111.5	1					
19	L	111.0	1					
20	T	111.0	1					
21	R	111.0	1					
22	L	111.0	1					
23	T	0	0					





PATTERNS OF SIGNAL

①	●	×	×	×	×	×
②	×	×	×	×	×	×
③	×	×	×	×	×	×
④	×	×	×	×	×	×
⑤	×	×	×	×	×	×
⑥	×	×	×	×	×	×
⑦	×	×	×	×	×	×

○ - Green  
 × - Red

Figure SAN JOSE CITY  
 MAIN INTERSECTION  
 STA. 159+500  
 (IT-8)

