

SUPPLEMENT A
ROADWAY LINK ANALYSIS

MAGWALA DRIVE
CHESTERFIELD COUNTY, VIRGINIA

WILGAIN SMITH ASSOCIATES

September 27, 1991

SUPPLEMENT A

ROADWAY LINK ANALYSIS

**Magnolia Green
Chesterfield County, Virginia**

This document is a supplement to the traffic report titled "Traffic Impact Study, Magnolia Green, August 1991". The purpose of this analysis is to determine roadway capacity in the year 2010 of existing and proposed roadway links in the study area of Magnolia Green. The following are technical papers summarizing the results of this link analysis.

YEAR 2000 TRAFFIC ASSUMPTIONS

Traffic assumptions utilized in this analysis are similar to those stated in the Traffic Impact study with the following clarifications:

- o Traffic projections used for link analysis are those developed in August 1991 Traffic Impact Study and its addendums;
- o Site turning movements are increased by 20% to reflect internal traffic interaction;
- o Link volumes are an average of turning movements from each node of the link;
- o Existing Otterdale Road is sub-standard and will be upgraded from 9-foot lane width to the standard 12-foot lane width and 6-foot shoulder. Otterdale Road shall remain two-lane roadway section;
- o Woolridge and Duval Roads are two-lane roadways with no roadway improvement except for intersection improvements (i.e., turn lanes);
- o Route 360 is a four-lane roadway with no roadway improvement except for intersection improvements (i.e., turn lanes); and,
- o Powhite Parkway is extended past the project site and is a four-lane limited access facility.

TRAFFIC PROJECTION SUMMARY

Total link traffic projections for the study area are summarized in Table S-1. These projections are an average of the turning movements from each node of the roadway links and are based on Figures 3-8(R1) through 3-14(R1) of the Traffic Study. These traffic projection figures are included in Appendix S-1 for references. For comparison purposes between Magnolia Green and background traffic projections on external roadway links in the study area, these figures can be determined from Traffic Study Figures 3-8(R1) through 3-12(R1).

CAPACITY ANALYSIS METHODOLOGY

Link capacity analysis was performed based on techniques outlined in the 1985 Highway Capacity Manual (HCM). These procedures provide a quantified level of service (LOS) which describes traffic conditions for different roadway types -- two-lane rural highway, multi-lane highway, and freeway facilities. It should be noted that for two-lane rural highway, the capacity analysis technique assumes a rural roadway condition with the allowance for passing zones a significant factor in determining the capacity of a roadway section. No other technique was provided to accommodate shorter two-lane roadway sections where passing zones will not be as critical.

One of the primary factors HCM used to determine the LOS for all the roadway facilities was the average running speed. The LOS are based on significant running speed. For example, to obtain an acceptable LOS D for a two-lane roadway, the average travel speed for an ideal condition is greater or equal to 50 MPH. For a continuous rural two-lane highway that stretches for miles, this is not an unreasonable requirement. However, the characteristics of the adjacent roadway network in the vicinity of the proposed Magnolia Green are not typical rural characteristics and thus will require other considerations in evaluating the capacity of a two-lane versus a four-lane roadway facility. This is especially important for this particular project where average speeds on the adjacent roadways will not be more than 45 MPH due to the proximity of adjacent intersections as well as adjacent residential land uses. Thus, in evaluating the operating conditions of the surrounding roadway network, consideration should be given to both average running speeds and LOS.

ROADWAY LINK ANALYSIS FINDINGS

Based on the HCM techniques and traffic assumptions described above, link capacity was performed for critical roadway sections in the study area. Tables S-2 through S-7 summarize the findings of link analysis and Figure S-1 graphically depicts the recommended roadway improvements.

It was determined that Route 360, Duval, and Woolridge Roads can adequately accommodate the projected background and local traffic in the year 2010 with intersection improvements shown on Figure S-1. For the segment of Route 360 from Intersection #1 to Intersection #2, some additional roadway improvements besides turning lane improvements may be required at build-out to accommodate the projected link volumes on that segment. It is anticipated that if additional through lanes are to be required, if at all based on future traffic counts, it will not be necessary until the last phase of the study period.

Otterdale Road, from Route 360 north, will require traffic lane and shoulder width widening to accommodate both the projected background and Magnolia Green traffic. Even without the development of the subject project, it is anticipated that some lane-width improvements will be required to accommodate the background traffic projections, since with the existing roadway characteristics of Otterdale Road, the maximum capacity for an acceptable LOS D is approximately 950 vehicles per hour, based on the HCM two-lane highway methodology.

Internally, it is recommended that the following roadway segments be four-lane facilities with turn lanes to maintain desirable LOS:

- o Loop Road "A"
 - Intersection #2 to Intersection #11; and,
 - Intersection #4 to Intersection #14.
- o Site Road "E"
 - Intersection #12 to intersection #15.

Capacity analysis worksheets are included in Appendix S-2 through S-4 for two lane, multi-lane and freeway facilities analyzed for the study area.

CONCLUSION AND RECOMMENDATION

Based on the findings of the Traffic Impact Study and this supplementary Roadway Link Analysis, it is concluded that the roadway improvements shown on Figure S-1 (or Figure 4-1(R)) will adequately handle the projected traffic conditions in the year 2010, including development of Magnolia Green and other projects assumed in the background traffic estimations. The findings of this Supplement are similar to the findings stated in the Traffic Impact Study. Recommendation Figure 4-1 of the Traffic Impact Study has been revised to coincide with the recommendations of this Link Analysis. As mentioned in the Traffic Impact Study, a periodic traffic study update, based on actual traffic data, should be performed to verify the validity of the recommendations stated in these reports.

Table S-1

ROADWAY LINKS DIRECTIONAL SPLIT SUMMARY

PEAKS	STREET SEG	FROM	TO	#1 DIRECT.	#2 DIRECT.	TOT. 2-WAY	% SPLIT
AM							
OFF-SITE ROADWAY LINKS							
	HULL ST	1	2	1742	1799	3541	49% / 51%
		2	3	1312	1547	2859	46% / 54%
	OTTERDALE RD	1	4	411	702	1113	37% / 63%
		4	5	606	576	1182	51% / 49%
		5	6	683	544	1227	56% / 44%
		6	NORTH	751	563	1314	57% / 43%
	DUVAL RD	5	7	351	451	802	44% / 56%
		7	POWHITE	375	386	761	49% / 51%
	WOOLRIDGE	4	NORTH	410	333	743	55% / 45%
	POWHITE	17	18	1220	1066	2286	53% / 47%
		17	NORTH	1579	1473	3052	52% / 48%
		18	SOUTH	736	1050	1786	41% / 59%
ON-SITE ROADWAYS LINKS							
	LOOP RD "A"	2	9	450	593	1043	43% / 57%
		9	10	437	678	1115	39% / 61%
		10	11	368	788	1156	32% / 68%
		11	12	423	593	1016	42% / 58%
		12	13	522	470	992	53% / 47%
		13	14	530	359	889	60% / 40%
		14	4	889	478	1367	65% / 35%
	SITE RD "B"	11	13	235	147	382	62% / 38%
	SITE RD "C"	9	14	355	490	845	42% / 58%
	SITE RD "D"	3	10	176	152	328	54% / 46%
	SITE RD "E"	12	17	784	742	1526	51% / 49%
		15	17	903	1017	1920	47% / 53%
		15	16	446	618	1064	42% / 58%
		16	NORTH	247	366	613	40% / 60%
	SITE RD "F"	6	8	95	123	218	44% / 56%
	SITE RD "G"	7	8	98	126	224	44% / 56%
	SITE RD "H"	POWHITE	MOSELEY	70	200	270	26% / 74%
	SITE RD "I"	15	SITE RD H	582	592	1174	50% / 50%
		SITE RD H	SITE RD H	100	260	360	28% / 72%
		SITE RD H	16	45	156	201	22% / 78%
PM							
OFF-SITE ROADWAY LINKS							
	HULL ST	1	2	2124	2112	4236	50% / 50%
		2	3	1688	1515	3203	53% / 47%
	OTTERDALE RD	1	4	771	487	1258	61% / 39%
		4	5	704	727	1431	49% / 51%
		5	6	682	843	1525	45% / 55%
		6	NORTH	726	934	1660	44% / 56%
	DUVAL RD	5	7	612	475	1087	56% / 44%
		7	POWHITE	540	489	1029	52% / 48%
	WOOLRIDGE	4	NORTH	475	576	1051	45% / 55%
	POWHITE	17	18	1261	1384	2645	48% / 52%
		17	NORTH	1783	1956	3739	48% / 52%
		18	SOUTH	1125	797	1922	59% / 41%
ON-SITE ROADWAY LINK							
	LOOP RD "A"	2	9	777	622	1399	56% / 44%
		9	10	721	955	1676	43% / 57%
		10	11	1000	643	1643	61% / 39%
		11	12	782	637	1419	55% / 45%
		12	13	636	706	1342	47% / 53%
		13	14	515	686	1201	43% / 57%
		14	4	742	1163	1905	39% / 61%
	SITE RD "B"	11	13	236	310	546	43% / 57%
	SITE RD "C"	9	14	577	705	1282	45% / 55%
	SITE RD "D"	3	10	229	252	481	48% / 52%
	SITE RD "E"	12	17	1032	1044	2076	50% / 50%
		15	17	1377	1352	2729	50% / 50%
		15	16	722	772	1494	48% / 52%
		16	NORTH	495	328	823	60% / 40%
	SITE RD "F"	6	8	185	126	311	59% / 41%
	SITE RD "G"	7	8	168	115	283	59% / 41%
	SITE RD "H"	POWHITE	MOSELEY	250	150	400	63% / 37%
	SITE RD "I"	15	SITE RD H	908	929	1837	49% / 51%
		SITE RD H	SITE RD H	320	175	495	65% / 35%
		SITE RD H	16	249	175	424	59% / 41%

Note: Directional volumes are average of two node volumes at the ends of each link, in the same travel direction.
LINK% 9-26-91

Table S-2

**TWO-LANE ROADWAY LINK CAPACITY ANALYSIS SUMMARY
YEAR 2010 AM PEAK HOUR**

**Magnolia Green
Chesterfield County, Virginia**

STUDY LINK NO.	ROADWAY SEGMENT NAME	A M P E A K			
		(1) LOS	(2) SPEED	(3) ACTUAL FLOW	(4) CAPACITY FLOW
ON-SITE ROADWAY LINKS					
1	Loop Rd. "A" – B/T Intersections #11 & #12 (*)	D	> 46 mph	1,016	1,490
2	Loop Rd. "A" – B/T Intersections #12 & #13 (*)	D	> 46 mph	1,342	1,537
3	Loop Rd. "A" – B/T Intersections #13 & #14 (*)	D	> 46 mph	889	1,471
4	Site Rd. "B" – B/T Intersections #11 & #13 (*)	B	> 51 mph	382	1,455
5	Site Rd. "C" – B/T Intersections #9 & #14 (*)	D	> 46 mph	845	1,490
6	Site Rd. "D" – B/T Intersections #3 & #10 (*)	B	> 51 mph	328	1,527
7	Site Rd. "E" – B/T Intersections #15 & #16 (*)	D	> 46 mph	1,064	1,490
8	Site Rd. "E" – North of Intersection #16 (*)	C	> 48 mph	613	1,471
9	Site Rd. "F" – B/T Intersections #6 & #8 (*)	B	> 51 mph	218	1,508
10	Site Rd. "G" – B/T Intersections #7 & #8 (*)	B	> 51 mph	224	1,508
11	Site Rd. "H" – B/T Powhite Pkwy & Moseley Rd. (*)	B	> 51 mph	270	1,355
12	Site Rd. "I" – B/T Intersections Site Rd H & Site Rd H (*)	B	> 51 mph	360	1,374
13	Site Rd. "I" – B/T Intersections Site Rd. H & #16 (*)	B	> 51 mph	201	1,317
OFF-SITE ROADWAY LINKS					
14	Duval Rd. – B/T Powhite Pkwy & Intersection #7	D	> 46 mph	761	1,198
15	Duval Rd. – B/T Intersections #5 & #7	D	> 46 mph	802	1,161
16	Woolridge Rd. – East of Intersection #4	D	> 46 mph	743	1,169
17	Otterdale Rd. – B/T Intersections #1 & #4	D	> 46 mph	1,113	1,447
18	Otterdale Rd. – B/T Intersections #4 & #5	D	> 46 mph	1,182	1,555
19	Otterdale Rd. – B/T Intersections #5 & #6	D	> 46 mph	1,227	1,508
20	Otterdale Rd. – North of Intersection #6	D	> 46 mph	1,314	1,499

(1) LOS = Level of service.

(2) Speed indicates the average travel speed on the study roadway section, based on criteria of Table 8-1 of 1985 HCM.

(3) Actual flow rate indicates projected flow rate during peak 15 minutes of flow in vehicles per hour.

(4) Capacity flow rate indicates the maximum flow in vehicles per hour, under an acceptable LOS "D" condition.

(*) Denotes internal site intersections analyzed with an increase of 20% for site traffic shown on Figures 3-8(R1) and 3-9(R1).

NOTE: Capacity analysis based on roadway geometrics shown on Figure S-1.

Worksheets for capacity analysis include in Appendix S-2.

Table S-3

**TWO-LANE ROADWAY LINK CAPACITY ANALYSIS SUMMARY
YEAR 2010 PM PEAK HOUR**

**Magnolia Green
Chesterfield County, Virginia**

STUDY LINK NO.	ROADWAY SEGMENT NAME	P M P E A K			
		(1) LOS	(2) SPEED	(3) ACTUAL FLOW	(4) CAPACITY FLOW
ON-SITE ROADWAY LINKS					
1	Loop Rd. "A" – B/T Intersections #11 & #12 (*)	D	> 46 mph	1,419	1,518
2	Loop Rd. "A" – B/T Intersections #12 & #13 (*)	D	> 46 mph	1,342	1,537
3	Loop Rd. "A" – B/T Intersections #13 & #14 (*)	D	> 46 mph	1,209	1,499
4	Site Rd. "B" – B/T Intersections #11 & #13 (*)	B	> 51 mph	546	1,499
5	Site Rd. "C" – B/T Intersections #9 & #14 (*)	D	> 46 mph	1,282	1,518
6	Site Rd. "D" – B/T Intersections #3 & #10 (*)	B	> 51 mph	481	1,546
7	Site Rd. "E" – B/T Intersections #15 & #16 (*)	D	> 46 mph	1,494	1,546
8	Site Rd. "E" – North of Intersection #16 (*)	C	> 48 mph	823	1,471
9	Site Rd. "F" – B/T Intersections #6 & #8 (*)	B	> 51 mph	311	1,480
10	Site Rd. "G" – B/T Intersections #7 & #8 (*)	B	> 51 mph	283	1,480
11	Site Rd. "H" – B/T Powhite Pkwy & Moseley Rd. (*)	B	> 51 mph	400	1,447
12	Site Rd. "I" – B/T Intersections Site Rd H & Site Rd H (*)	C	> 48 mph	495	1,432
13	Site Rd. "I" – B/T Intersections Site Rd. H & #16 (*)	C	> 48 mph	424	1,480
OFF-SITE ROADWAY LINKS					
14	Duval Rd. – B/T Powhite Pkwy & Intersection #7	D	> 46 mph	1,029	1,190
15	Duval Rd. – B/T Intersections #5 & #7	D	> 46 mph	1,087	1,161
16	Woolridge Rd. – East of Intersection #4	D	> 46 mph	1,051	1,169
17	Otterdale Rd. – B/T Intersections #1 & #4	D	> 46 mph	1,258	1,463
18	Otterdale Rd. – B/T Intersections #4 & #5	D	> 46 mph	1,431	1,555
19	Otterdale Rd. – B/T Intersections #5 & #6	D/E	> 41 mph	1,525	1518/2663
20	Otterdale Rd. – North of Intersection #6	D/E	> 41 mph	1,660	1508/2646

(1) LOS = Level of service.

(2) Speed indicates the average travel speed on the study roadway section, based on criteria of Table 8-1 of 1985 HCM.

(3) Actual flow rate indicates projected flow rate during peak 15 minutes of flow in vehicles per hour.

(4) Capacity flow rate indicates the maximum flow in vehicles per hour, under an acceptable LOS "D" condition.

(*) Denotes internal site intersections analyzed with an increase of 20% for site traffic shown on Figures 3-8(R1) and 3-9(R1).

NOTE: Capacity analysis based on roadway geometrics shown on Figure S-1.

Worksheets for capacity analysis include in Appendix S-2.

Table S-4

**MULTI-LANE ROADWAY LINK CAPACITY ANALYSIS SUMMARY
YEAR 2010 AM PEAK HOUR**

**Magnolia Green
Chesterfield County, Virginia**

STUDY LINK NO.	ROADWAY SEGMENT NAME	A M P E A K			
		(1) LOS	(2) SPEED	(3) ACTUAL FLOW	(4) V/C RATIO
ON-SITE ROADWAY LINKS					
21	Loop Rd. "A" – B/T Intersections #2 & #9 (*)	B	> 44 mph	1,043	0.28
22	Loop Rd. "A" – B/T Intersections #9 & #10 (*)	B	> 44 mph	1,115	0.30
23	Loop Rd. "A" – B/T Intersections #10 & #11 (*)	B	> 43 mph	1,153	0.31
24	Loop Rd. "A" – B/T Intersections #4 & #14 (*)	B	> 43 mph	1,367	0.36
25	Site Rd. "E" – B/T Intersections #12 & #17 (*)	B	> 43 mph	1,526	0.41
26	Site Rd. "E" – B/T Intersections #15 & #17 (*)	C	> 40 mph	1,920	0.51
27	Site Rd. "I" – B/T Intersections #15 & Site Rd H (*)	B	> 43 mph	1173	0.31
OFF-SITE ROADWAY LINKS					
28	Hull St. – B/T Intersections #1 & #2	D/E	> 35 mph	1,820	0.91
29	Hull St. – B/T Intersections #2 & #3	D	> 42 mph	2,859	0.73

(1) LOS = Level of service.

(2) Speed indicates the average travel speed on the study roadway section.

(3) Actual flow rate indicates projected flow rate during peak 15 minutes of flow in vehicles per hour.

(4) V/C Ratio indicates the volume over capacity ratio of the roadway section. As the ratio approaches 1, the capacity of the study roadway will be reached.

(*) Denotes internal site intersections analyzed with an increase of 20% for site traffic shown on Figures 3-8(R1) and 3-9(R1).

NOTE: Capacity analysis based on roadway geometrics shown on Figure S-1.

Worksheets for capacity analysis include in Appendix S-3.

GPSEG4 – 9-27-91

Table S-5

**MULTI-LANE ROADWAY LINK CAPACITY ANALYSIS SUMMARY
YEAR 2010 PM PEAK HOUR**

**Magnolia Green
Chesterfield County, Virginia**

STUDY LINK NO.	ROADWAY SEGMENT NAME	P M P E A K			
		(1) LOS	(2) SPEED	(3) ACTUAL FLOW	(4) V/C RATIO
ON-SITE ROADWAY LINKS					
21	Loop Rd. "A" – B/T Intersections #2 & #9 (*)	B	> 42 mph	1,399	0.37
22	Loop Rd. "A" – B/T Intersections #9 & #10 (*)	B	> 41 mph	1,676	0.45
23	Loop Rd. "A" – B/T Intersections #10 & #11 (*)	B	> 41 mph	1,643	0.44
24	Loop Rd. "A" – B/T Intersections #4 & #14 (*)	B	> 40 mph	1,905	0.51
25	Site Rd. "E" – B/T Intersections #12 & #17 (*)	C	> 39 mph	2,076	0.55
26	Site Rd. "E" – B/T Intersections #15 & #17 (*)	D	> 36 mph	2,729	0.73
27	Site Rd. "I" – B/T Intersections #15 & Site Rd H (*)	C	> 40 mph	1,837	0.49
OFF-SITE ROADWAY LINKS					
28	Hull St. – B/T Intersections #1 & #2	E/F	< 30 mph	4,236	1.09
29	Hull St. – B/T Intersections #2 & #3	D/E	> 42 mph	3,203	0.82

(1) LOS = Level of service.

(2) Speed indicates the average travel speed on the study roadway section.

(3) Actual flow rate indicates projected flow rate during peak 15 minutes of flow in vehicles per hour.

(4) V/C Ratio indicates the volume over capacity ratio of the roadway section. As the ratio approaches 1, the capacity of the study roadway will be reached.

(*) Denotes internal site intersections analyzed with an increase of 20% for site traffic shown on Figures 3-8(R1) and 3-9(R1).

NOTE: Capacity analysis based on roadway geometrics shown on Figure S-1.

Worksheets for capacity analysis include in Appendix S-3.

GPSEG4P – 9-27-91

Table S-6

FREEWAY LINK CAPACITY ANALYSIS SUMMARY
YEAR 2010 AM PEAK HOUR

Magnolia Green
Chesterfield County, Virginia

STUDY LINK NO.	ROADWAY SEGMENT NAME	A M P E A K			
		(1) LOS	(2) SPEED	(3) ACTUAL FLOW	(4) V/C RATIO
POWHITE PARKWAY EXTENSION					
30	Powhite Parkway – B/T Interchange #17 & #18	C	> 55 mph	2,286	0.59
31	Powhite Parkway – B/T Interchange #17 & North	D	> 52 mph	3,052	0.78
32	Powhite Parkway – B/T Interchange #18 & South	B	> 57 mph	1,786	0.46

(1) LOS = Levels of service

(2) Speed indicates average travel speed on freeway segment.

(3) Actual flow indicates average projected peak hour traffic on freeway in vehicles per hour.

(4) V/C Ratio indicates the volume over capacity ratio of the study freeway segment.

As the ratio approaches 1, capacity of the freeway link will be reached.

NOTE: Capacity analysis based on roadway geometrics shown on Figure S-1.

Worksheets for capacity analysis include in Appendix S-4.

GPSEGF – 9-27-91

Table S-7

**FREEWAY LINK CAPACITY ANALYSIS SUMMARY
YEAR 2010 PM PEAK HOUR**

**Magnolia Green
Chesterfield County, Virginia**

STUDY LINK NO.	ROADWAY SEGMENT NAME	P M P E A K			
		(1) LOS	(2) SPEED	(3) ACTUAL FLOW	(4) V/C RATIO
POWHITE PARKWAY EXTENSION					
30	Powhite Parkway – B/T Interchange #17 & #18	D	> 52 mph	3,052	0.78
31	Powhite Parkway – B/T Interchange #17 & North	D/E	> 40 mph	3,729	0.96
32	Powhite Parkway – B/T Interchange #18 & South	B	> 56 mph	1,922	0.49

(1) LOS = Levels of service

(2) Speed indicates average travel speed on freeway segment.

(3) Actual flow indicates average projected peak hour traffic on freeway in vehicles per hour.

(4) V/C Ratio indicates the volume over capacity ratio of the study freeway segment.

As the ratio approaches 1, capacity of the freeway link will be reached.

NOTE: Capacity analysis based on roadway geometrics shown on Figure S-1.

Worksheets for capacity analysis include in Appendix S-4.

GPSEGFP – 9-27-91

SUPPLEMENT APPENDICES

APPENDIX S-1
REVISED TRAFFIC PROJECTIONS

PROJECTED SITE
TRAFFIC VOLUMES
AM PEAK HOUR - 2010

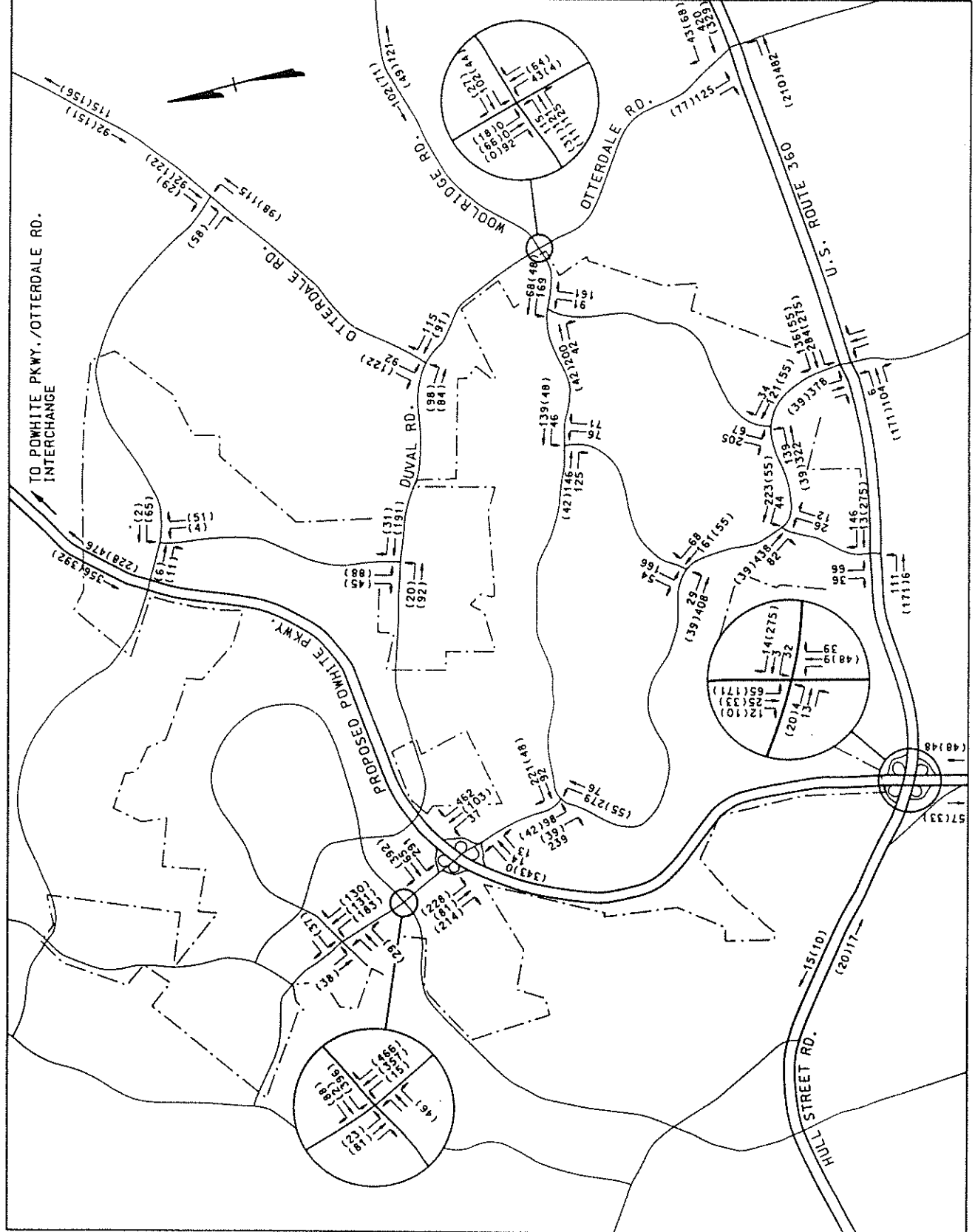
MAGNOLIA GREEN
CHESTERFIELD CO.
VIRGINIA

LEGEND:
00 = AREA 1 TOTAL AM
(00) = AREA 2 TOTAL AM



WILBUR SMITH ASSOCIATES

FIGURE #3-8 (R1)



**PROJECTED BACKGROUND
TRAFFIC VOLUMES
AM PEAK HOUR - 2010**

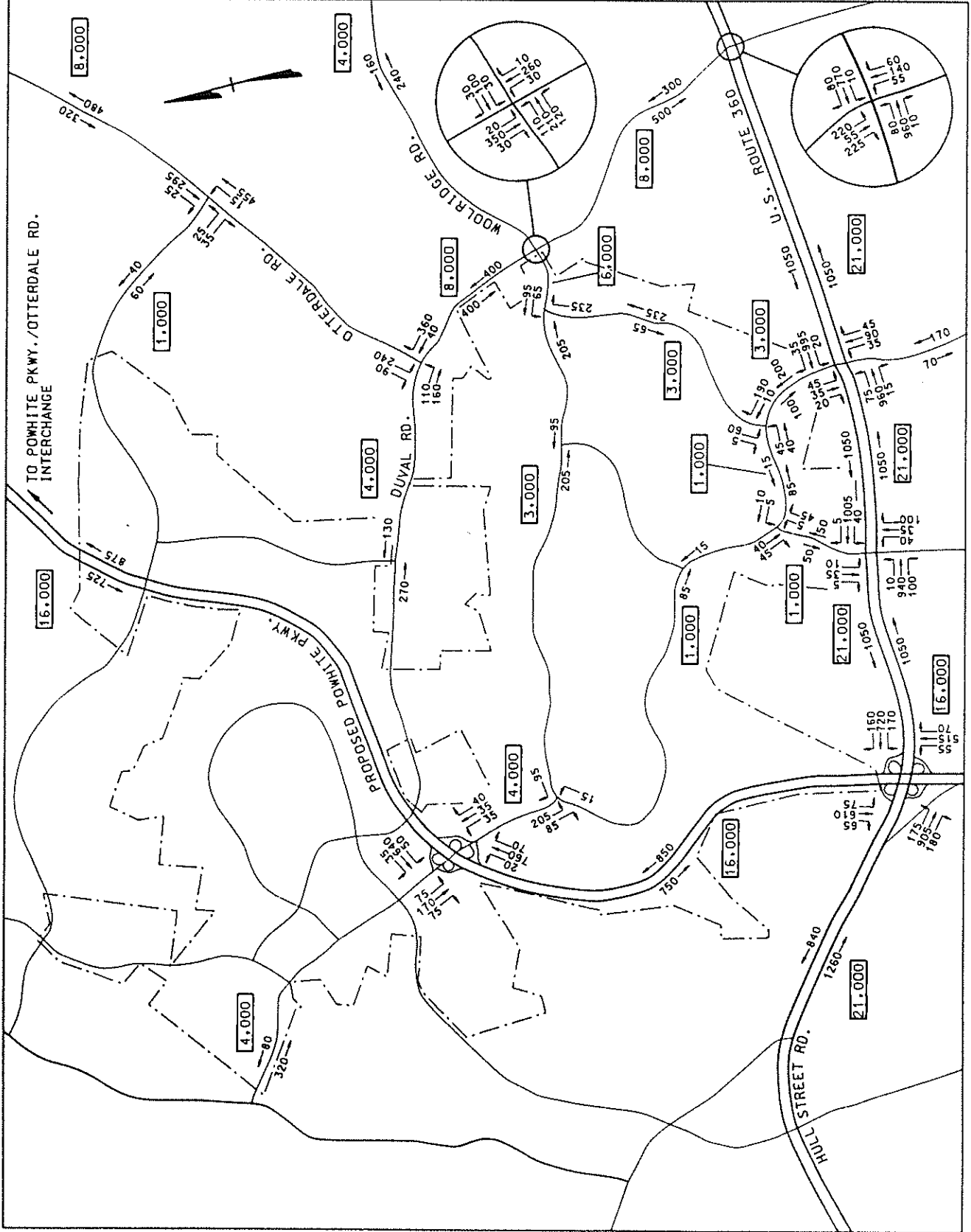
MAGNOLIA GREEN
CHESTERFIELD CO.
VIRGINIA

LEGEND:

[1.000] = PROJECTED ADT



FIGURE #3-11 (R1)



PROJECTED BACKGROUND
TRAFFIC VOLUMES
PM PEAK HOUR - 2010

MAGNOLIA GREEN
CHESTERFIELD CO.
VIRGINIA

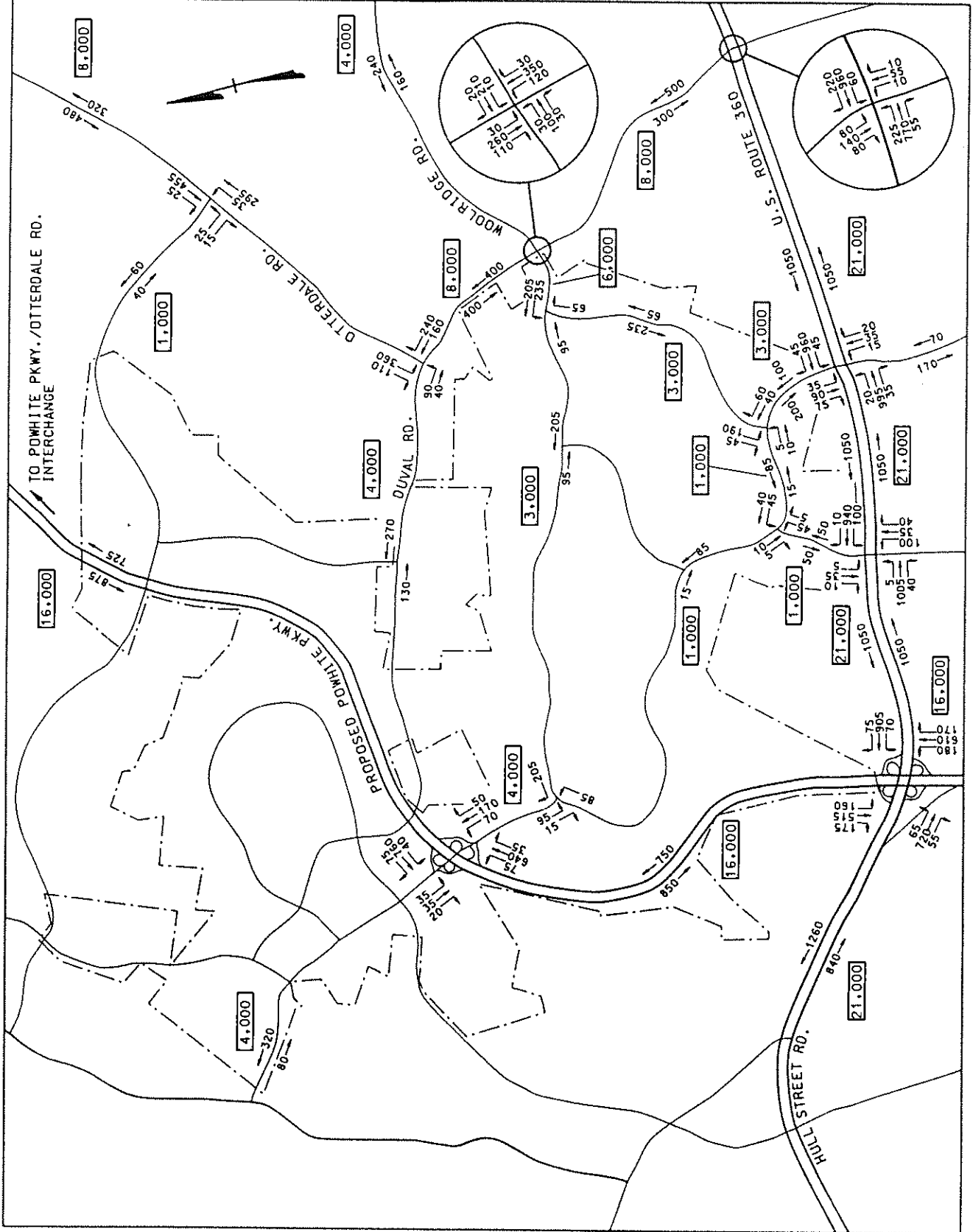
LEGEND:

1.000 = PROJECTED ADT



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FIGURE #3-12 (R1)



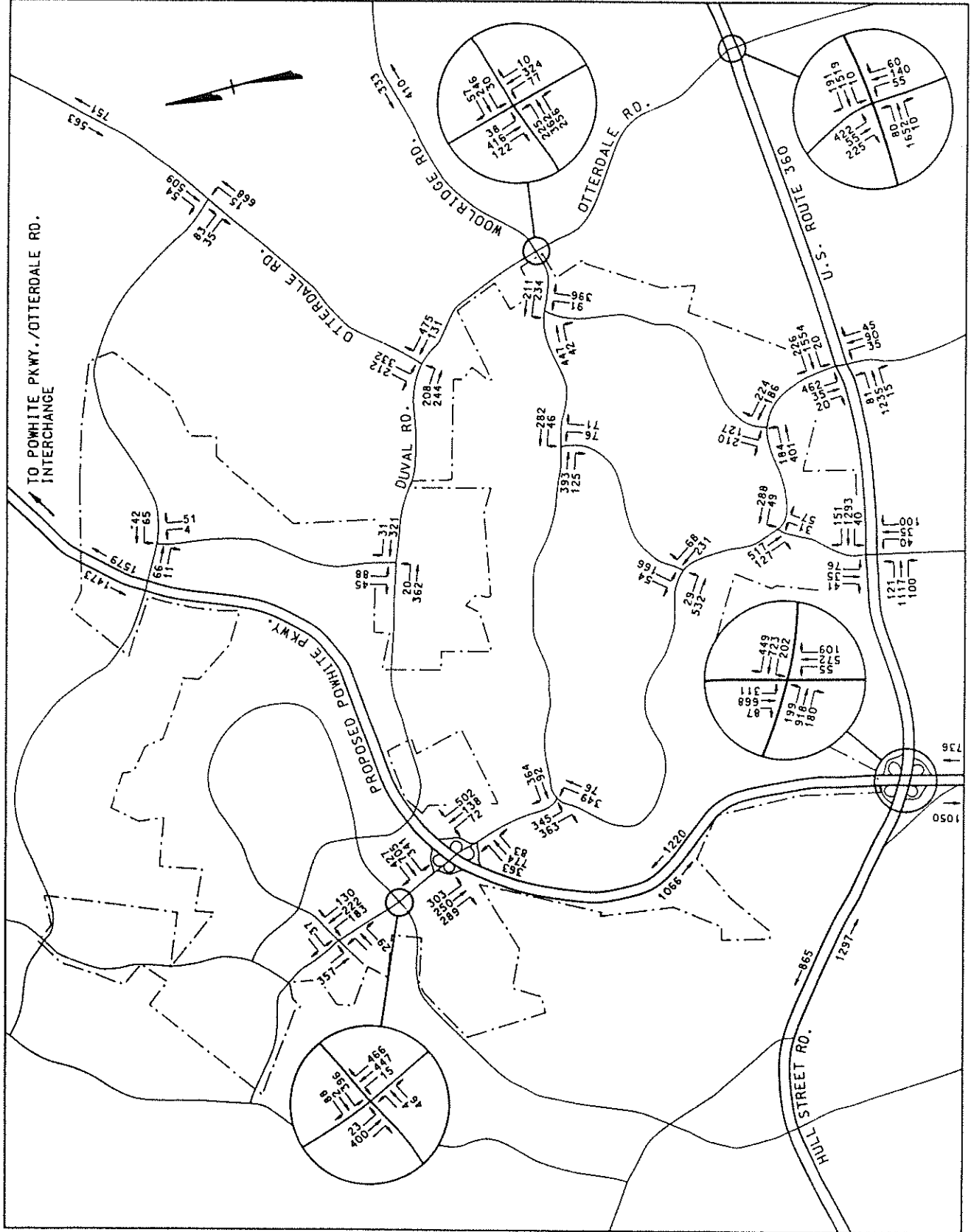
PROJECTED TOTAL
TRAFFIC VOLUMES
AM PEAK HOUR - 2010

MAGNOLIA GREEN
CHESTERFIELD CO.
VIRGINIA



WILBUR SMITH ASSOCIATES

FIGURE #3-13 (R1)

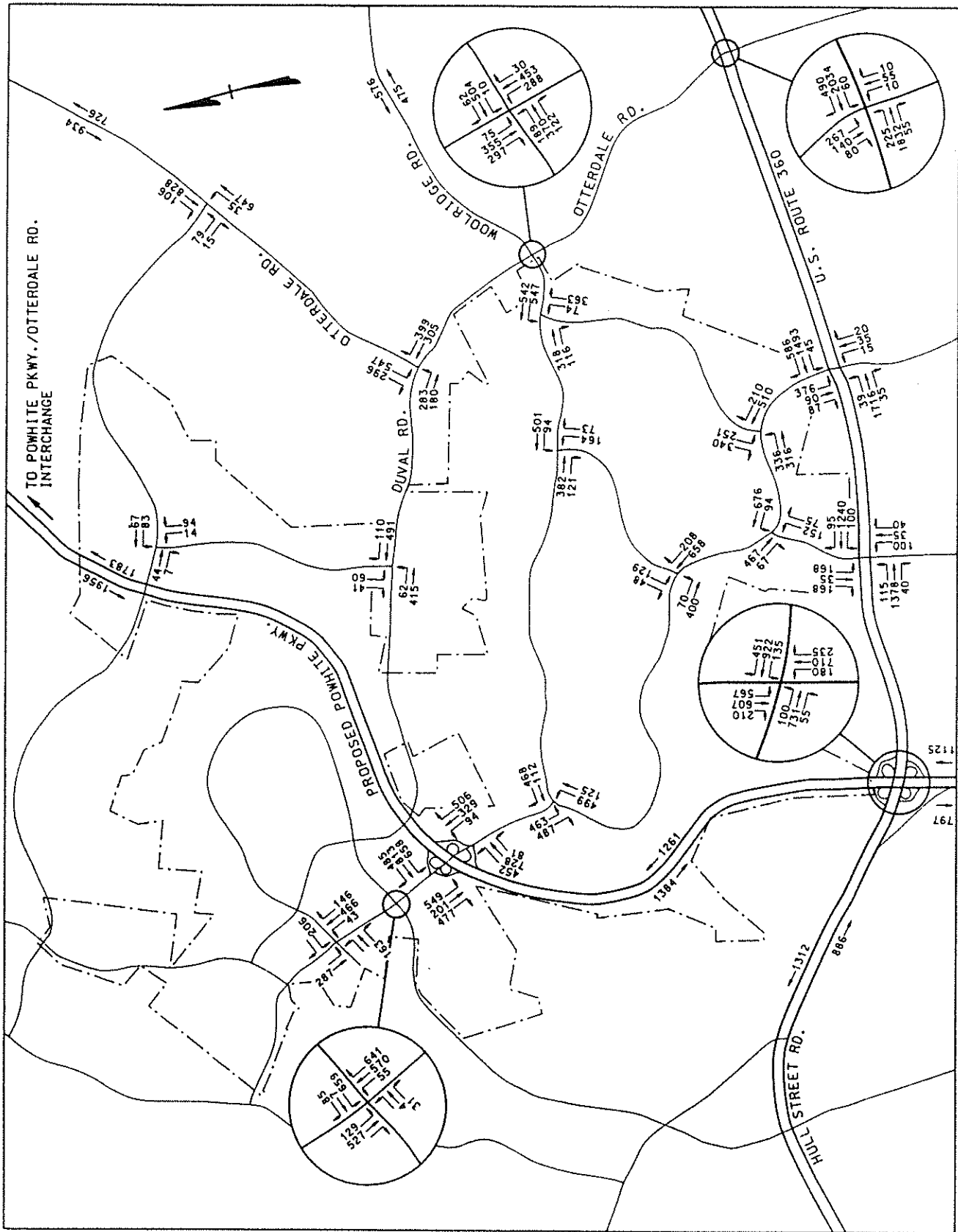


PROJECTED TOTAL
TRAFFIC VOLUMES
PM PEAK HOUR - 2010

MAGNOLIA GREEN
CHESTERFIELD CO.
VIRGINIA



FIGURE #3-14 (R1)



**RECOMMENDED ROADWAY
GEOMETRICS - 2010**

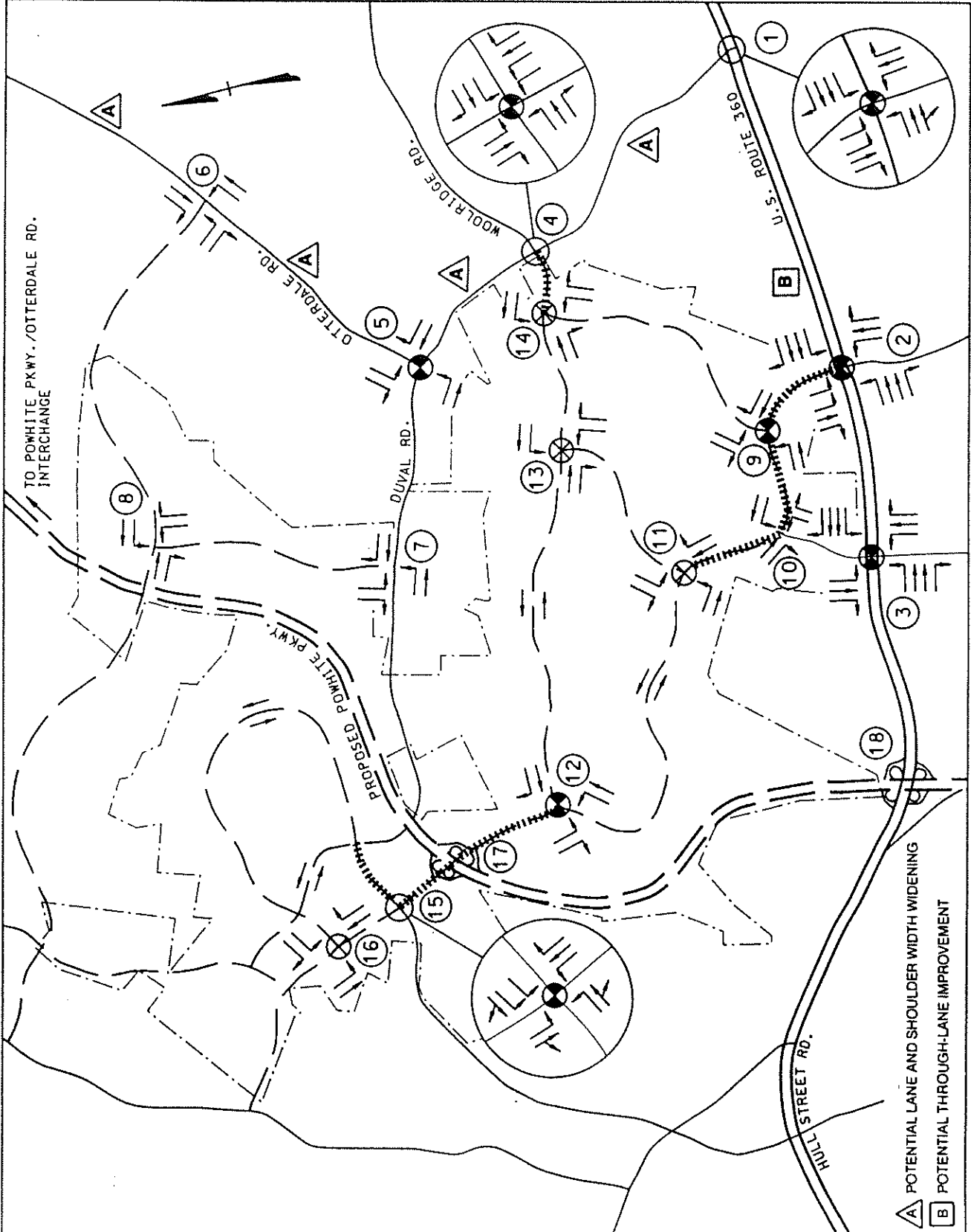
MAGNOLIA GREEN
CHESTERFIELD CO.
VIRGINIA

LEGEND:

- ⊗ PROPOSED SIGNALIZED INTERSECTION
- ⊗ POTENTIAL SIGNALIZED INTERSECTION
- RECOMMENDED TRAFFIC LANE
- PROPOSED ROADWAY
- EXISTING ROADWAY
- ||||| 4-LANE SITE ROAD
- ① STUDY LOCATIONS



FIGURE #4-1 (R1)



△ POTENTIAL LANE AND SHOULDER WIDTH WIDENING
 □ POTENTIAL THROUGH-LANE IMPROVEMENT

APPENDIX S-2

CAPACITY ANALYSIS WORKSHEETS: TWO-LANE HIGHWAY

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... LOOP RD A #11-#12
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... LA1112A

A) ADJUSTMENT FACTORS

 PERCENTAGE OF TRUCKS..... 2
 PERCENTAGE OF BUSES..... 0
 PERCENTAGE OF RECREATIONAL VEHICLES..... 0
 DESIGN SPEED (MPH)..... 50
 PEAK HOUR FACTOR..... 1
 DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 42 / 58
 LANE WIDTH (FT)..... 12
 USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 6
 PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

 LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.95	.98
B	2.2	2	2.5	1	.95	.98
C	2.2	2	2.5	1	.95	.98
D	2	1.6	1.6	1	.95	.98
E	2	1.6	1.6	1	.95	.98

C) LEVEL OF SERVICE RESULTS

 INPUT VOLUME(vph): 1016
 ACTUAL FLOW RATE: 1016

LOS	SERVICE FLOW RATE	V/C
A	105	.04
B	416	.16
C	833	.32
D	1490	.57
E	2613	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... LOOP RD A #11-#12
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... LA1112P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES..... 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 45 / 55
LANE WIDTH (FT)..... 12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 6
PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.97	.98
B	2.2	2	2.5	1	.97	.98
C	2.2	2	2.5	1	.97	.98
D	2	1.6	1.6	1	.97	.98
E	2	1.6	1.6	1	.97	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1419
ACTUAL FLOW RATE: 1419

LOS	SERVICE FLOW RATE	V/C
A	107	.04
B	424	.16
C	849	.32
D	1518	.57
E	2663	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... LOOP RD A #12-#13
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... LA1213A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	47 / 53
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.98	.98
B	2.2	2	2.5	1	.98	.98
C	2.2	2	2.5	1	.98	.98
D	2	1.6	1.6	1	.98	.98
E	2	1.6	1.6	1	.98	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 992
 ACTUAL FLOW RATE: 992

LOS	SERVICE FLOW RATE	V/C
A	108	.04
B	430	.16
C	859	.32
D	1537	.57
E	2696	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM: TWO-LANE HIGHWAYS

FACILITY LOCATION.... LOOP RD A #12-#13
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... LA1213P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	47 / 53
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.98	.98
B	2.2	2	2.5	1	.98	.98
C	2.2	2	2.5	1	.98	.98
D	2	1.6	1.6	1	.98	.98
E	2	1.6	1.6	1	.98	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1342
ACTUAL FLOW RATE: 1342

SERVICE

LOS	FLOW RATE	V/C
A	108	.04
B	430	.16
C	859	.32
D	1537	.57
E	2696	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... LOOP RD A #13-#14
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... LA1314A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	40 / 60
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.94	.98
B	2.2	2	2.5	1	.94	.98
C	2.2	2	2.5	1	.94	.98
D	2	1.6	1.6	1	.94	.98
E	2	1.6	1.6	1	.94	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 889
 ACTUAL FLOW RATE: 889

LOS	SERVICE FLOW RATE	V/C
A	103	.04
B	411	.16
C	822	.32
D	1471	.57
E	2580	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... LOOP RD A #13-#14
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... LA1314P

A) ADJUSTMENT FACTORS

 PERCENTAGE OF TRUCKS..... 2
 PERCENTAGE OF BUSES..... 0
 PERCENTAGE OF RECREATIONAL VEHICLES..... 0
 DESIGN SPEED (MPH)..... 50
 PEAK HOUR FACTOR..... 1
 DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 43 / 57
 LANE WIDTH (FT)..... 12
 USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 6
 PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

 LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.96	.98
B	2.2	2	2.5	1	.96	.98
C	2.2	2	2.5	1	.96	.98
D	2	1.6	1.6	1	.96	.98
E	2	1.6	1.6	1	.96	.98

C) LEVEL OF SERVICE RESULTS

 INPUT VOLUME (vph): 1201
 ACTUAL FLOW RATE: 1201

LOS	SERVICE FLOW RATE	V/C
A	105	.04
B	419	.16
C	838	.32
D	1499	.57
E	2630	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD B #11-#13
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SB1113A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	38 / 62
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.93	.98
B	2.2	2	2.5	1	.93	.98
C	2.2	2	2.5	1	.93	.98
D	2	1.6	1.6	1	.93	.98
E	2	1.6	1.6	1	.93	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME(vph): 382
ACTUAL FLOW RATE: 382

LOS	SERVICE FLOW RATE	V/C
A	102	.04
B	407	.16
C	814	.32
D	1455	.57
E	2553	1

LOS FOR GIVEN CONDITIONS: B

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION... SITE RD B #11-#13
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SB1113P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	43 / 57
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.96	.98
B	2.2	2	2.5	1	.96	.98
C	2.2	2	2.5	1	.96	.98
D	2	1.6	1.6	1	.96	.98
E	2	1.6	1.6	1	.96	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 546
ACTUAL FLOW RATE: 546

LOS	SERVICE FLOW RATE	V/C
A	105	.04
B	419	.16
C	838	.32
D	1499	.57
E	2630	1

LOS FOR GIVEN CONDITIONS: C

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD C #9-#14
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... SC914A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	42 / 58
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.95	.98
B	2.2	2	2.5	1	.95	.98
C	2.2	2	2.5	1	.95	.98
D	2	1.6	1.6	1	.95	.98
E	2	1.6	1.6	1	.95	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 845
 ACTUAL FLOW RATE: 845

LOS	FLOW RATE	V/C
A	105	.04
B	416	.16
C	833	.32
D	1490	.57
E	2613	1

LOS FOR GIVEN CONDITIONS: D

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1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD C #9-#14
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SC914P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	45 / 55
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.97	.98
B	2.2	2	2.5	1	.97	.98
C	2.2	2	2.5	1	.97	.98
D	2	1.6	1.6	1	.97	.98
E	2	1.6	1.6	1	.97	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1282
ACTUAL FLOW RATE: 1282

LOS	FLOW RATE	V/C
A	107	.04
B	424	.16
C	849	.32
D	1518	.57
E	2663	1

LOS FOR GIVEN CONDITIONS: D

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1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD D #3-#10
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SD310A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	46 / 54
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.98	.98
B	2.2	2	2.5	1	.98	.98
C	2.2	2	2.5	1	.98	.98
D	2	1.6	1.6	1	.98	.98
E	2	1.6	1.6	1	.98	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph):	328	
ACTUAL FLOW RATE:	328	
SERVICE		
LOS	FLOW RATE	V/C
A	107	.04
B	427	.16
C	854	.32
D	1527	.57
E	2679	1

LOS FOR GIVEN CONDITIONS: B

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD D #3-#10
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... SD310P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	48 / 52
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.99	.98
B	2.2	2	2.5	1	.99	.98
C	2.2	2	2.5	1	.99	.98
D	2	1.6	1.6	1	.99	.98
E	2	1.6	1.6	1	.99	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 481
 ACTUAL FLOW RATE: 481

SERVICE

LOS	FLOW RATE	V/C
A	108	.04
B	432	.16
C	865	.32
D	1546	.57
E	2712	1

LOS FOR GIVEN CONDITIONS: C

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE E #15-#16
 ANALYST..... VGN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... SE1516A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	42 / 58
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.95	.98
B	2.2	2	2.5	1	.95	.98
C	2.2	2	2.5	1	.95	.98
D	2	1.6	1.6	1	.95	.98
E	2	1.6	1.6	1	.95	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1064
 ACTUAL FLOW RATE: 1064

LOS	SERVICE FLOW RATE	V/C
A	105	.04
B	416	.16
C	833	.32
D	1490	.57
E	2613	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE E #15-#16
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SE1516P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	48 / 52
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.99	.98
B	2.2	2	2.5	1	.99	.98
C	2.2	2	2.5	1	.99	.98
D	2	1.6	1.6	1	.99	.98
E	2	1.6	1.6	1	.99	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1494
ACTUAL FLOW RATE: 1494

LOS	SERVICE FLOW RATE	V/C
A	108	.04
B	432	.16
C	865	.32
D	1546	.57
E	2712	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD E #16-NORTH
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... SE16NA

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	40 / 60
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.94	.98
B	2.2	2	2.5	1	.94	.98
C	2.2	2	2.5	1	.94	.98
D	2	1.6	1.6	1	.94	.98
E	2	1.6	1.6	1	.94	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 613
 ACTUAL FLOW RATE: 613
 SERVICE

LOS	FLOW RATE	V/C
A	103	.04
B	411	.16
C	822	.32
D	1471	.57
E	2580	1

LOS FOR GIVEN CONDITIONS: C

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION... SITE RD E #16-NORTH
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION... SE16NP

A) ADJUSTMENT FACTORS

 PERCENTAGE OF TRUCKS..... 2
 PERCENTAGE OF BUSES..... 0
 PERCENTAGE OF RECREATIONAL VEHICLES..... 0
 DESIGN SPEED (MPH)..... 50
 PEAK HOUR FACTOR..... 1
 DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 40 / 60
 LANE WIDTH (FT)..... 12
 USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 6
 PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.94	.98
B	2.2	2	2.5	1	.94	.98
C	2.2	2	2.5	1	.94	.98
D	2	1.6	1.6	1	.94	.98
E	2	1.6	1.6	1	.94	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 823
 ACTUAL FLOW RATE: 823

LOS	SERVICE FLOW RATE	V/C
A	103	.04
B	411	.16
C	822	.32
D	1471	.57
E	2580	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM: TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD F #6-#8
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... SF68A

A) ADJUSTMENT FACTORS

 PERCENTAGE OF TRUCKS..... 2
 PERCENTAGE OF BUSES..... 0
 PERCENTAGE OF RECREATIONAL VEHICLES..... 0
 DESIGN SPEED (MPH)..... 50
 PEAK HOUR FACTOR..... 1
 DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 44 / 56
 LANE WIDTH (FT)..... 12
 USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 6
 PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

 LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.96	.98
B	2.2	2	2.5	1	.96	.98
C	2.2	2	2.5	1	.96	.98
D	2	1.6	1.6	1	.96	.98
E	2	1.6	1.6	1	.96	.98

C) LEVEL OF SERVICE RESULTS

 INPUT VOLUME (vph): 218
 ACTUAL FLOW RATE: 218

LOS	SERVICE FLOW RATE	V/C
A	106	.04
B	422	.16
C	843	.32
D	1508	.57
E	2646	1

LOS FOR GIVEN CONDITIONS: B

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD F #6-#8
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... SF68P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	41 / 59
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.95	.98
B	2.2	2	2.5	1	.95	.98
C	2.2	2	2.5	1	.95	.98
D	2	1.6	1.6	1	.95	.98
E	2	1.6	1.6	1	.95	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME(vph): 311
 ACTUAL FLOW RATE: 311

LOS	SERVICE FLOW RATE	V/C
A	104	.04
B	414	.16
C	828	.32
D	1480	.57
E	2597	1

LOS FOR GIVEN CONDITIONS: B

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD G #7-#8
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... SG78A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	44 / 56
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.96	.98
B	2.2	2	2.5	1	.96	.98
C	2.2	2	2.5	1	.96	.98
D	2	1.6	1.6	1	.96	.98
E	2	1.6	1.6	1	.96	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 224
 ACTUAL FLOW RATE: 224

LOS	SERVICE FLOW RATE	V/C
A	106	.04
B	422	.16
C	843	.32
D	1508	.57
E	2646	1

LOS FOR GIVEN CONDITIONS: B

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD G #7-#8
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SG78P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	41 / 59
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.95	.98
B	2.2	2	2.5	1	.95	.98
C	2.2	2	2.5	1	.95	.98
D	2	1.6	1.6	1	.95	.98
E	2	1.6	1.6	1	.95	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 283
ACTUAL FLOW RATE: 283

LOS	SERVICE FLOW RATE	V/C
A	104	.04
B	414	.16
C	828	.32
D	1480	.57
E	2597	1

LOS FOR GIVEN CONDITIONS: B

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD H POW PKWY-MOSELEY
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SRHPOMA

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	37 / 63
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.93	.98
B	2.2	2	2.5	1	.93	.98
C	2.2	2	2.5	1	.93	.98
D	2	1.6	1.6	1	.93	.98
E	2	1.6	1.6	1	.93	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 400
ACTUAL FLOW RATE: 400

LOS	SERVICE FLOW RATE	V/C
A	102	.04
B	405	.16
C	809	.32
D	1447	.57
E	2539	1

LOS FOR GIVEN CONDITIONS: B

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD H POW PKWY-MOSELEY
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... SRHPOMP

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	26 / 74
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.87	.98
B	2.2	2	2.5	1	.87	.98
C	2.2	2	2.5	1	.87	.98
D	2	1.6	1.6	1	.87	.98
E	2	1.6	1.6	1	.87	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 270
 ACTUAL FLOW RATE: 270

LOS	SERVICE FLOW RATE	V/C
A	95	.04
B	379	.16
C	758	.32
D	1355	.57
E	2377	1

LOS FOR GIVEN CONDITIONS: B

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION... SITE RD I SR H-SR H
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION... SRIHHA

A) ADJUSTMENT FACTORS

 PERCENTAGE OF TRUCKS..... 2
 PERCENTAGE OF BUSES..... 0
 PERCENTAGE OF RECREATIONAL VEHICLES..... 0
 DESIGN SPEED (MPH)..... 50
 PEAK HOUR FACTOR..... 1
 DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 28 / 72
 LANE WIDTH (FT)..... 12
 USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 6
 PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.88	.98
B	2.2	2	2.5	1	.88	.98
C	2.2	2	2.5	1	.88	.98
D	2	1.6	1.6	1	.88	.98
E	2	1.6	1.6	1	.88	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 360
 ACTUAL FLOW RATE: 360

LOS	SERVICE FLOW RATE	V/C
A	96	.04
B	384	.16
C	768	.32
D	1374	.57
E	2410	1

LOS FOR GIVEN CONDITIONS: B

#5-12

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION... SITE RD I SR H-SR H
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION... SRIHHP

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2
 PERCENTAGE OF BUSES..... 0
 PERCENTAGE OF RECREATIONAL VEHICLES..... 0
 DESIGN SPEED (MPH)..... 50
 PEAK HOUR FACTOR..... 1
 DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 35 / 65
 LANE WIDTH (FT)..... 12
 USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 6
 PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.92	.98
B	2.2	2	2.5	1	.92	.98
C	2.2	2	2.5	1	.92	.98
D	2	1.6	1.6	1	.92	.98
E	2	1.6	1.6	1	.92	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 495
ACTUAL FLOW RATE: 495

SERVICE

LOS	FLOW RATE	V/C
A	100	.04
B	400	.16
C	801	.32
D	1432	.57
E	2512	1

LOS FOR GIVEN CONDITIONS: C

#15-13

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD I SR H-#16
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SRI16HA

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	22 / 78
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.84	.98
B	2.2	2	2.5	1	.84	.98
C	2.2	2	2.5	1	.84	.98
D	2	1.6	1.6	1	.84	.98
E	2	1.6	1.6	1	.84	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph):	201	
ACTUAL FLOW RATE:	201	
SERVICE		
LOS	FLOW RATE	V/C
A	92	.04
B	368	.16
C	737	.32
D	1317	.57
E	2311	1

LOS FOR GIVEN CONDITIONS: B

#5-13

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... SITE RD I SR H-#16
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SRI16HP

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	41 / 59
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.95	.98
B	2.2	2	2.5	1	.95	.98
C	2.2	2	2.5	1	.95	.98
D	2	1.6	1.6	1	.95	.98
E	2	1.6	1.6	1	.95	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 424
ACTUAL FLOW RATE: 424

LOS	FLOW RATE	V/C
A	104	.04
B	414	.16
C	828	.32
D	1480	.57
E	2597	1

LOS FOR GIVEN CONDITIONS: C

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... DUVAL #7-POWHITE
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... DUVPOA

A) ADJUSTMENT FACTORS

 PERCENTAGE OF TRUCKS..... 2
 PERCENTAGE OF BUSES..... 0
 PERCENTAGE OF RECREATIONAL VEHICLES..... 0
 DESIGN SPEED (MPH)..... 50
 PEAK HOUR FACTOR..... 1
 DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 49 / 51
 LANE WIDTH (FT)..... 10
 USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 4
 PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	.77	.99	.98
B	2.2	2	2.5	.77	.99	.98
C	2.2	2	2.5	.77	.99	.98
D	2	1.6	1.6	.77	.99	.98
E	2	1.6	1.6	.85	.99	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 761
 ACTUAL FLOW RATE: 761

SERVICE

LOS	FLOW RATE	V/C
A	84	.04
B	335	.16
C	670	.32
D	1198	.57
E	2319	1

LOS FOR GIVEN CONDITIONS: D

5-14

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... DUVAL #7-POWHITE
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... DUV7POP

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	48 / 52
LANE WIDTH (FT).....	10
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	4
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	.77	.99	.98
B	2.2	2	2.5	.77	.99	.98
C	2.2	2	2.5	.77	.99	.98
D	2	1.6	1.6	.77	.99	.98
E	2	1.6	1.6	.85	.99	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1029
ACTUAL FLOW RATE: 1029

LOS	SERVICE FLOW RATE	V/C
A	84	.04
B	333	.16
C	666	.32
D	1190	.57
E	2305	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION... DUVAL #5-#7
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION... DUV57A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	44 / 56
LANE WIDTH (FT).....	10
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	4
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	.77	.96	.98
B	2.2	2	2.5	.77	.96	.98
C	2.2	2	2.5	.77	.96	.98
D	2	1.6	1.6	.77	.96	.98
E	2	1.6	1.6	.85	.96	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 802
 ACTUAL FLOW RATE: 802

LOS	SERVICE FLOW RATE	V/C
A	82	.04
B	325	.16
C	649	.32
D	1161	.57
E	2249	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... DUVAL #5-#7
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... DUV57P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	44 / 56
LANE WIDTH (FT).....	10
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	4
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	.77	.96	.98
B	2.2	2	2.5	.77	.96	.98
C	2.2	2	2.5	.77	.96	.98
D	2	1.6	1.6	.77	.96	.98
E	2	1.6	1.6	.85	.96	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1087
 ACTUAL FLOW RATE: 1087

LOS	SERVICE FLOW RATE	V/C
A	82	.04
B	325	.16
C	649	.32
D	1161	.57
E	2249	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... WOOLRIDGE #4-NORTH
 ANALYST..... VGN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... W004NA

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	45 / 55
LANE WIDTH (FT).....	10
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	4
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	.77	.97	.98
B	2.2	2	2.5	.77	.97	.98
C	2.2	2	2.5	.77	.97	.98
D	2	1.6	1.6	.77	.97	.98
E	2	1.6	1.6	.85	.97	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 743
 ACTUAL FLOW RATE: 743

LOS	SERVICE FLOW RATE	V/C
A	82	.04
B	327	.16
C	654	.32
D	1169	.57
E	2263	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION... WOOLRIDGE #4-NORTH
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... W004NP

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	45 / 55
LANE WIDTH (FT).....	10
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	4
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	.77	.97	.98
B	2.2	2	2.5	.77	.97	.98
C	2.2	2	2.5	.77	.97	.98
D	2	1.6	1.6	.77	.97	.98
E	2	1.6	1.6	.85	.97	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1051
 ACTUAL FLOW RATE: 1051

LOS	SERVICE FLOW RATE	V/C
A	82	.04
B	327	.16
C	654	.32
D	1169	.57
E	2263	1

LOS FOR GIVEN CONDITIONS: D

5-17.

1985 HCM: TWO-LANE HIGHWAYS

FACILITY LOCATION.... OTTERDALE RD #1-#4
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... OTT14A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	37 / 63
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.93	.98
B	2.2	2	2.5	1	.93	.98
C	2.2	2	2.5	1	.93	.98
D	2	1.6	1.6	1	.93	.98
E	2	1.6	1.6	1	.93	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1113
 ACTUAL FLOW RATE: 1113

LOS	FLOW RATE	V/C
A	102	.04
B	405	.16
C	809	.32
D	1447	.57
E	2539	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION... OTTERDALE RD #1-#4
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... OTT14P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	39 / 61
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.94	.98
B	2.2	2	2.5	1	.94	.98
C	2.2	2	2.5	1	.94	.98
D	2	1.6	1.6	1	.94	.98
E	2	1.6	1.6	1	.94	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1258
 ACTUAL FLOW RATE: 1258

LOS	FLOW RATE	V/C
A	103	.04
B	409	.16
C	818	.32
D	1463	.57
E	2567	1

LOS FOR GIVEN CONDITIONS: D

518

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... OTTERDALE #4-#5
ANALYST..... VGN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... OTT45A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES..... 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 49 / 51
LANE WIDTH (FT)..... 12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 6
PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.99	.98
B	2.2	2	2.5	1	.99	.98
C	2.2	2	2.5	1	.99	.98
D	2	1.6	1.6	1	.99	.98
E	2	1.6	1.6	1	.99	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1182
ACTUAL FLOW RATE: 1182

LOS	SERVICE FLOW RATE	V/C
A	109	.04
B	435	.16
C	870	.32
D	1555	.57
E	2729	1

LOS FOR GIVEN CONDITIONS: D

#15-18

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... OTTERDALE #4-#5
ANALYST..... VGN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... OTT14P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	49 / 51
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.99	.98
B	2.2	2	2.5	1	.99	.98
C	2.2	2	2.5	1	.99	.98
D	2	1.6	1.6	1	.99	.98
E	2	1.6	1.6	1	.99	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1431
ACTUAL FLOW RATE: 1431

LOS	SERVICE FLOW RATE	V/C
A	109	.04
B	435	.16
C	870	.32
D	1555	.57
E	2729	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... OTTERDALE #5-#6
 ANALYST..... VQN
 TIME OF ANALYSIS..... AM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... OTT56A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	44 / 56
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.96	.98
B	2.2	2	2.5	1	.96	.98
C	2.2	2	2.5	1	.96	.98
D	2	1.6	1.6	1	.96	.98
E	2	1.6	1.6	1	.96	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1227
 ACTUAL FLOW RATE: 1227

SERVICE

LOS	FLOW RATE	V/C
A	106	.04
B	422	.16
C	843	.32
D	1508	.57
E	2646	1

LOS FOR GIVEN CONDITIONS: D

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION.... OTTERDALE #5-#6
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... DTTS6P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	45 / 55
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.97	.98
B	2.2	2	2.5	1	.97	.98
C	2.2	2	2.5	1	.97	.98
D	2	1.6	1.6	1	.97	.98
E	2	1.6	1.6	1	.97	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1525
 ACTUAL FLOW RATE: 1525

LOS	FLOW RATE	V/C
A	107	.04
B	424	.16
C	849	.32
D	1518	.57
E	2663	1

LOS FOR GIVEN CONDITIONS: E

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION... OTTERDALE #6 NORTH
ANALYST..... VGN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION... OTT6NA

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS.....	2
PERCENTAGE OF BUSES.....	0
PERCENTAGE OF RECREATIONAL VEHICLES.....	0
DESIGN SPEED (MPH).....	50
PEAK HOUR FACTOR.....	1
DIRECTIONAL DISTRIBUTION (UP/DOWN).....	43 / 57
LANE WIDTH (FT).....	12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)...	6
PERCENT NO PASSING ZONES.....	100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.96	.98
B	2.2	2	2.5	1	.96	.98
C	2.2	2	2.5	1	.96	.98
D	2	1.6	1.6	1	.96	.98
E	2	1.6	1.6	1	.96	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1314
ACTUAL FLOW RATE: 1314

LOS	FLOW RATE	V/C
A	105	.04
B	419	.16
C	838	.32
D	1499	.57
E	2630	1

LOS FOR GIVEN CONDITIONS: D

#5-20

1985 HCM:TWO-LANE HIGHWAYS

FACILITY LOCATION... OTTERDALE #6 NORTH
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION... OTT6NP

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES..... 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DIRECTIONAL DISTRIBUTION (UP/DOWN)..... 44 / 56
LANE WIDTH (FT)..... 12
USABLE SHOULDER WIDTH (AVG. WIDTH IN FT.)... 6
PERCENT NO PASSING ZONES..... 100

B) CORRECTION FACTORS

LEVEL TERRAIN

LOS	E T	E B	E R	f w	f d	f HV
A	2	1.8	2.2	1	.96	.98
B	2.2	2	2.5	1	.96	.98
C	2.2	2	2.5	1	.96	.98
D	2	1.6	1.6	1	.96	.98
E	2	1.6	1.6	1	.96	.98

C) LEVEL OF SERVICE RESULTS

INPUT VOLUME (vph): 1660
ACTUAL FLOW RATE: 1660

LOS	FLOW RATE	V/C
A	106	.04
B	422	.16
C	843	.32
D	1508	.57
E	2646	1

LOS FOR GIVEN CONDITIONS: E

APPENDIX S-3

CAPACITY ANALYSIS WORKSHEETS: MULTI-LANE HIGHWAY

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... LOOP RD A #2-#9
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... LA29A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1043
V/C RATIO..... .28
LEVEL OF SERVICE..... B
MAX. SERVICE FLOW RATE (pcphpl).. 529
SPEED (mph)..... 44
DENSITY (pcmppl)..... 13

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... LOOP RD A #2-#9
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... LA29P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1399
V/C RATIO..... .37
LEVEL OF SERVICE..... B
MAX. SERVICE FLOW RATE (pcphpl).. 709
SPEED (mph)..... 42
DENSITY (pcpmpl)..... 18

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... LOOP RD A #9-#10
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... LA910A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E	E	E	f	f	f	f
	T	B	R	HV	w	p	E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1115
V/C RATIO..... .3
LEVEL OF SERVICE..... B
MAX. SERVICE FLOW RATE (pcphpl).. 565
SPEED (mph)..... 44
DENSITY (pcmppl)..... 14

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... LOOP RD A #9-#10
ANALYST..... VGN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... LA910P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE E E E f f f f
 T B R HV w p E

 LEVEL 1.7 1.5 1.6 0.99 1.00 1.00 1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1676
V/C RATIO..... .45
LEVEL OF SERVICE..... B
MAX. SERVICE FLOW RATE (pcphpl).. 850
SPEED (mph)..... 41
DENSITY (pcmppl)..... 23

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... LOOP RD A #10-#11
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... LA1011A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1156
V/C RATIO..... .31
LEVEL OF SERVICE..... B
MAX. SERVICE FLOW RATE (pcphpl).. 586
SPEED (mph)..... 43
DENSITY (pcmp1)..... 15

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... LOOP RD A #10-#11
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... LA1011P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1643
V/C RATIO..... .44
LEVEL OF SERVICE..... B
MAX. SERVICE FLOW RATE (pcphpl).. 833
SPEED (mph)..... 41
DENSITY (pcpmpl)..... 22

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... LOOP RD A #4-#14
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... LA414A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1367
V/C RATIO..... .36
LEVEL OF SERVICE..... B
MAX. SERVICE FLOW RATE (pcphpl).. 693
SPEED (mph)..... 43
DENSITY (pcmppl)..... 17

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... LOOP RD A #4-#14
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... LA414P

A) ADJUSTMENT FACTORS

 PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
 PERCENTAGE OF BUSES..... 0
 PERCENTAGE OF RECREATIONAL VEHICLES.. 0
 DESIGN SPEED (MPH)..... 50
 PEAK HOUR FACTOR..... 1
 DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
 LANE WIDTH (FT)..... 12
 OBSTRUCTIONS..... NO
 DISTANCE (FT) FROM ROADWAY EDGE..... 6
 TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E	E	E	f	f	f	f
	T	B	R	HV	w	p	E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
 INPUT VOLUME..... 1905
 V/C RATIO..... .51
 LEVEL OF SERVICE..... C
 MAX. SERVICE FLOW RATE (pcphpl).. 966
 SPEED (mph)..... 40
 DENSITY (pcmppl)..... 27

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... SITE RD E #12-#17
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SE1217A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1526
V/C RATIO..... .41
LEVEL OF SERVICE..... B
MAX. SERVICE FLOW RATE (pcphpl).. 774
SPEED (mph)..... 42
DENSITY (pcmppl)..... 20

5-25

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... SITE RD E #12-#17
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SE1217P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 2076
V/C RATIO..... .55
LEVEL OF SERVICE..... C
MAX. SERVICE FLOW RATE (pcphpl).. 1053
SPEED (mph)..... 39
DENSITY (pcpmpl)..... 29

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... SITE RD E #15-#17
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SE1517A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE E E E f f f f
 T B R HV w p E

 LEVEL 1.7 1.5 1.6 0.99 1.00 1.00 1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1920
V/C RATIO..... .51
LEVEL OF SERVICE..... C
MAX. SERVICE FLOW RATE (pcphpl).. 973
SPEED (mph)..... 40
DENSITY (pcmp1)..... 27

#15-26

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... SITE RD E #15-#17
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SE1517P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE E E E f f f f
 T B R HV w p E

 LEVEL 1.7 1.5 1.6 0.99 1.00 1.00 1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 2729
V/C RATIO..... .73
LEVEL OF SERVICE..... D
MAX. SERVICE FLOW RATE (pcphpl).. 1384
SPEED (mph)..... 36
DENSITY (pcmppl)..... 40

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... SITE RD I #15-SITE RD H
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SRI15HP

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1837
V/C RATIO..... .49
LEVEL OF SERVICE..... C
MAX. SERVICE FLOW RATE (pcphpl).. 931
SPEED (mph)..... 40
DENSITY (pcpmp1)..... 25

S-27

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... SITE RD I #15-SITE RD H
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... SRI15HA

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 2 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 50
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.99	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1174
V/C RATIO..... .31
LEVEL OF SERVICE..... B
MAX. SERVICE FLOW RATE (pcphpl).. 595
SPEED (mph)..... 43
DENSITY (pcmppl)..... 15

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... HULL ST #1-#2
ANALYST..... VGN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... HUL12A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 60
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.97	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 3541
V/C RATIO..... .91
LEVEL OF SERVICE..... E
MAX. SERVICE FLOW RATE (pcphpl).. 1820
SPEED (mph)..... 35
DENSITY (pcpmpl)..... 53

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... HULL ST #1-#2
 ANALYST..... VQN
 TIME OF ANALYSIS..... PM PEAK 2010
 DATE OF ANALYSIS..... 09-26-1991
 OTHER INFORMATION.... HUL12P

A) ADJUSTMENT FACTORS

 PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
 PERCENTAGE OF BUSES..... 0
 PERCENTAGE OF RECREATIONAL VEHICLES.. 0
 DESIGN SPEED (MPH)..... 60
 PEAK HOUR FACTOR..... 1
 DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
 LANE WIDTH (FT)..... 12
 OBSTRUCTIONS..... NO
 DISTANCE (FT) FROM ROADWAY EDGE..... 6
 TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E	E	E	f	f	f	f
	T	B	R	HV	w	p	E
LEVEL	1.7	1.5	1.6	0.97	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
 INPUT VOLUME..... 4236
 V/C RATIO..... 1.09
 LEVEL OF SERVICE..... F
 MAX. SERVICE FLOW RATE (pcphpl).. 2177
 SPEED (mph)..... *
 DENSITY (pcpmpl)..... *

* SPEED AND DENSITY HIGHLY VARIABLE FOR LOS F

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... HULL ST #2-#3
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... HUL23A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 60
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E T	E B	E R	f HV	f w	f p	f E
LEVEL	1.7	1.5	1.6	0.97	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 2859
V/C RATIO..... .73
LEVEL OF SERVICE..... D
MAX. SERVICE FLOW RATE (pcphpl).. 1470
SPEED (mph)..... 42
DENSITY (pcpmpl)..... 35

#5-29

1985 HCM: MULTILANE HIGHWAYS

FACILITY SECTION..... HULL ST #2-#3
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION... HUL23P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES..... 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 60
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO
DISTANCE (FT) FROM ROADWAY EDGE..... 6
TYPE OF MULTILANE HIGHWAY..... RURAL, DIVIDED

B) CORRECTION FACTORS

TERRAIN TYPE	E	E	E	f	f	f	f
	T	B	R	HV	w	p	E
LEVEL	1.7	1.5	1.6	0.97	1.00	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 3203
V/C RATIO..... .82
LEVEL OF SERVICE..... E
MAX. SERVICE FLOW RATE (pcphpl).. 1646
SPEED (mph)..... 38
DENSITY (pcmppl)..... 43

APPENDIX S-4
CAPACITY ANALYSIS WORKSHEETS: FREEWAY

5-30

1985 HCM: BASIC FREEWAY SEGMENT

FACILITY SECTION..... POWHITE PKWY #17-#18
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... PD1718A

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 70
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO SIDES
DISTANCE (FT) FROM ROADWAY EDGE..... 6

B) CORRECTION FACTORS

TERRAIN TYPE T B R HV w p

 LEVEL 1.7 1.5 1.6 0.97 1.00 1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 2286
V/C RATIO..... .59
LEVEL OF SERVICE.... C
SPEED (mph)..... 55
DENSITY (pcpmpl).... 20

1985 HCM: BASIC FREEWAY SEGMENT

FACILITY SECTION..... POWHITE PKWY #17-#18
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... PO1718P

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 70
PEAK HOUR FACTOR..... .95
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO SIDES
DISTANCE (FT) FROM ROADWAY EDGE..... 6

B) CORRECTION FACTORS

TERRAIN TYPE T B R HV W P

 LEVEL 1.7 1.5 1.6 0.97 1.00 1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 2645
V/C RATIO..... .72
LEVEL OF SERVICE.... C
SPEED (mph)..... 53
DENSITY (pcpmp1).... 26

1985 HCM: BASIC FREEWAY SEGMENT

FACILITY SECTION..... POWHITE PKWY #17-NORTH
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... PO17NA

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 70
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO SIDES
DISTANCE (FT) FROM ROADWAY EDGE..... 6

B) CORRECTION FACTORS

TERRAIN TYPE	T	B	R	HV	w	p
LEVEL	1.7	1.5	1.6	0.97	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 3052
V/C RATIO..... .78
LEVEL OF SERVICE.... D
SPEED (mph)..... 52
DENSITY (pcppl).... 29

1985 HCM: BASIC FREEWAY SEGMENT

FACILITY SECTION..... POWHITE PKWY #17-NORTH
ANALYST..... VGN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... PO17NP

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 70
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO SIDES
DISTANCE (FT) FROM ROADWAY EDGE..... 6

B) CORRECTION FACTORS

TERRAIN TYPE	T	B	R	HV	w	p
LEVEL	1.7	1.5	1.6	0.97	1.00	1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 3739
V/C RATIO..... .96
LEVEL OF SERVICE.... E
SPEED (mph)..... 40
DENSITY (pcpapl).... 47

1985 HCM: BASIC FREEWAY SEGMENT

FACILITY SECTION..... POWHITE PKW #18-SOUTH
ANALYST..... VQN
TIME OF ANALYSIS..... AM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... PO18SA

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 70
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO SIDES
DISTANCE (FT) FROM ROADWAY EDGE..... 6

B) CORRECTION FACTORS

TERRAIN TYPE T B R HV w p

 LEVEL 1.7 1.5 1.6 0.97 1.00 1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1786
V/C RATIO..... .46
LEVEL OF SERVICE.... B
SPEED (mph)..... 57
DENSITY (pcppl).... 16

1985 HCM: BASIC FREEWAY SEGMENT

FACILITY SECTION..... POWHITE PKW #18-SOUTH
ANALYST..... VQN
TIME OF ANALYSIS..... PM PEAK 2010
DATE OF ANALYSIS..... 09-26-1991
OTHER INFORMATION.... PD18SP

A) ADJUSTMENT FACTORS

PERCENTAGE OF TRUCKS..... 4 (TYPICAL - 200 #/HP)
PERCENTAGE OF BUSES 0
PERCENTAGE OF RECREATIONAL VEHICLES.. 0
DESIGN SPEED (MPH)..... 70
PEAK HOUR FACTOR..... 1
DRIVER POPULATION FACTOR..... 1 (WEEKDAY/COMMUTER)
LANE WIDTH (FT)..... 12
OBSTRUCTIONS..... NO SIDES
DISTANCE (FT) FROM ROADWAY EDGE..... 6

B) CORRECTION FACTORS

TERRAIN TYPE T B R HV w p

 LEVEL 1.7 1.5 1.6 0.97 1.00 1.00

C) OPERATIONAL ANALYSIS RESULTS

NO. OF LANES..... 2
INPUT VOLUME..... 1922
V/C RATIO..... .49
LEVEL OF SERVICE.... B
SPEED (mph)..... 56
DENSITY (pcpmpl).... 17