

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

INTERSECTION #15: I-15 NB RAMPS / GOPHER CANYON RD - EXISTING + CUMULATIVE + PROJECT

WARRANT 2 - Four Hour Vehicular Volume

SATISFIED* YES ☐ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied)

SATISFIED YES ☒ NO ☐

PART A

SATISFIED YES ☒ NO ☐

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

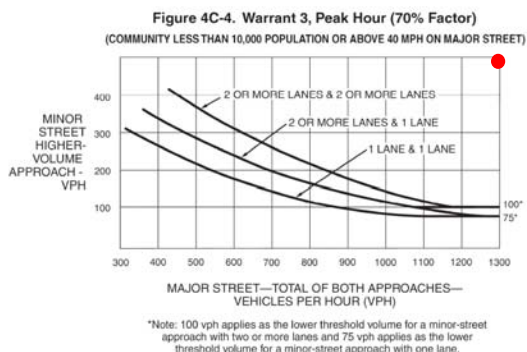
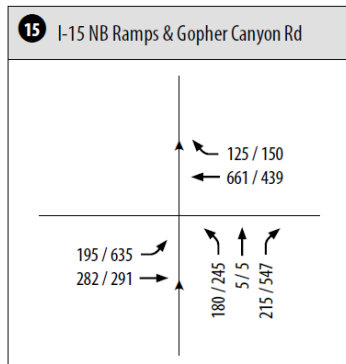
PART B

SATISFIED YES ☒ NO ☐

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1,263 / 1,515
Higher Approach - Minor Street	X		400 / 797

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



**Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)**

COUNT DATE Existing + Cumulative + Project

DIST CO RTE PM

Major St: Gopher Canyon Rd Critical Approach Speed mph

Minor St: I-15 NB Ramps Critical Approach Speed mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒ } **RURAL (R)**

In built up area of isolated community of < 10,000 population..... ☐ } **URBAN (U)**

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL..... <u>X</u> CONDITION A - Minimum Vehicular Volume Satisfied <u>X</u> Not Satisfied _____ Number of lanes for moving traffic on each approach <table style="width: 100%;"> <tr> <td style="width: 50%;">Major Street</td> <td style="width: 50%;">Minor Street</td> </tr> <tr> <td>1..... <u>18,340</u>.....</td> <td>1..... <u>9,800</u>.....</td> </tr> <tr> <td>2 or More.....</td> <td>2 or More.....</td> </tr> <tr> <td>1.....</td> <td>2 or More.....</td> </tr> </table>	Major Street	Minor Street	1..... <u>18,340</u>	1..... <u>9,800</u>	2 or More.....	2 or More.....	1.....	2 or More.....	Minimum Requirements EADT																											
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Combination of CONDITIONS A + B Satisfied <u>X</u> Not Satisfied _____ <u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... <u> </u> A <u> </u> B	2 CONDITIONS 80%																																			

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

INTERSECTION #24: MILLER ROAD / VALLEY CENTER ROAD - EXISTING + CUMULATIVE + PROJECT

WARRANT 2 - Four Hour Vehicular Volume

SATISFIED* YES ☐ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied)

SATISFIED YES ☒ NO ☐

PART A

SATISFIED YES ☐ NO ☒

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☐	No ☒
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

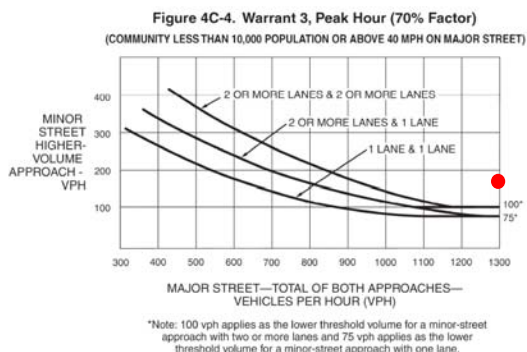
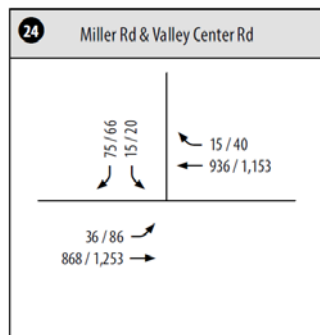
PART B

SATISFIED YES ☒ NO ☐

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street		X	1,765 / 2,532
Higher Approach - Minor Street	X		180 / 86

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



**Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)**

COUNT DATE Existing + Cumulative + Project

DIST CO RTE PM

Major St: Miller Road Critical Approach Speed mph

Minor St: Valley Center Road Critical Approach Speed mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒ } **RURAL (R)**

In built up area of isolated community of < 10,000 population..... ☐ } **URBAN (U)**

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL..... X CONDITION A - Minimum Vehicular Volume Satisfied _____ Not Satisfied X Number of lanes for moving traffic on each approach <table style="width: 100%;"> <tr> <td style="width: 50%;">Major Street</td> <td style="width: 50%;">Minor Street</td> </tr> <tr> <td>1.....</td> <td>1.....</td> </tr> <tr> <td>2 or More..... 27,000.....</td> <td>2 or More..... 2,280.....</td> </tr> <tr> <td>2 or More.....</td> <td>2 or More.....</td> </tr> <tr> <td>1.....</td> <td>2 or More.....</td> </tr> </table>	Major Street	Minor Street	1.....	1.....	2 or More..... 27,000	2 or More..... 2,280	2 or More.....	2 or More.....	1.....	2 or More.....	Minimum Requirements EADT																									
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Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

INTERSECTION #7 : SR-76 / PANKEY ROAD - EXISTING + CUMULATIVE + PROJECT

WARRANT 2 - Four Hour Vehicular Volume

SATISFIED* YES ☐ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied)

SATISFIED YES ☒ NO ☐

PART A

SATISFIED YES ☒ NO ☐

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

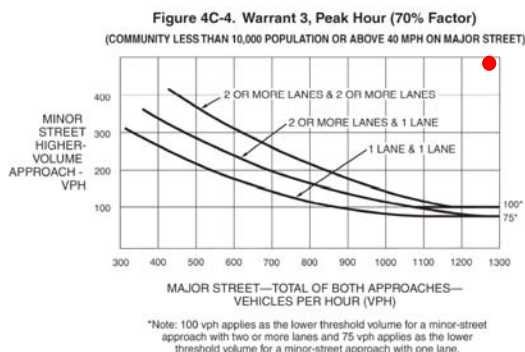
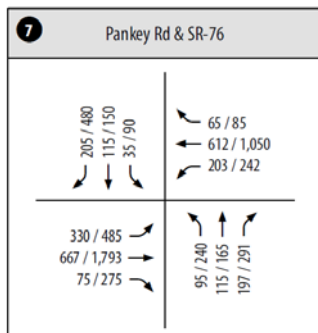
PART B

SATISFIED YES ☒ NO ☐

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street		X	944 / 1,295
Higher Approach - Minor Street	X		1,952 / 3,930

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



**Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)**

COUNT DATE Existing + Cumulative + Project

DIST CO RTE PM

Major St: SR-76 Critical Approach Speed mph

Minor St: Pankey Road Critical Approach Speed mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒ } **RURAL (R)**

In built up area of isolated community of < 10,000 population..... ☐ } **URBAN (U)**

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL..... <u>X</u> CONDITION A - Minimum Vehicular Volume Satisfied <u>X</u> Not Satisfied _____ Number of lanes for moving traffic on each approach <table style="width: 100%;"> <tr> <td style="width: 25%;">Major Street</td> <td style="width: 25%;">Minor Street</td> <td style="width: 25%;">Major Street</td> <td style="width: 25%;">Minor Street</td> </tr> <tr> <td>1.....</td> <td>1.....</td> <td>1.....</td> <td>1.....</td> </tr> <tr> <td>2 or More.....</td> <td>2 or More.....</td> <td>2 or More.....</td> <td>2 or More.....</td> </tr> <tr> <td>2 or More..... <u>32,550</u></td> <td>2 or More..... <u>16,520</u></td> <td>2 or More.....</td> <td>2 or More.....</td> </tr> <tr> <td>1.....</td> <td>2 or More.....</td> <td>1.....</td> <td>2 or More.....</td> </tr> </table>	Major Street	Minor Street	Major Street	Minor Street	1.....	1.....	1.....	1.....	2 or More.....	2 or More.....	2 or More.....	2 or More.....	2 or More..... <u>32,550</u>	2 or More..... <u>16,520</u>	2 or More.....	2 or More.....	1.....	2 or More.....	1.....	2 or More.....	Minimum Requirements EADT <table style="width: 100%;"> <tr> <th style="width: 50%;">Vehicles Per Day on Major Street (Total of Both Approaches)</th> <th style="width: 50%;">Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)</th> </tr> <tr> <td> <table style="width: 100%;"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> <tr> <td>9,600</td> <td><u>6,720</u></td> </tr> <tr> <td>9,600</td> <td><u>6,720</u></td> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> </table> </td> <td> <table style="width: 100%;"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>2,400</td> <td>1,680</td> </tr> <tr> <td>2,400</td> <td><u>1,680</u></td> </tr> <tr> <td>3,200</td> <td><u>2,240</u></td> </tr> <tr> <td>3,200</td> <td>2,240</td> </tr> </table> </td> </tr> </table>		Vehicles Per Day on Major Street (Total of Both Approaches)	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)	<table style="width: 100%;"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> <tr> <td>9,600</td> <td><u>6,720</u></td> </tr> <tr> <td>9,600</td> <td><u>6,720</u></td> </tr> <tr> <td>8,000</td> <td>5,600</td> </tr> </table>	Urban	Rural	8,000	5,600	9,600	<u>6,720</u>	9,600	<u>6,720</u>	8,000	5,600	<table style="width: 100%;"> <tr> <th>Urban</th> <th>Rural</th> </tr> <tr> <td>2,400</td> <td>1,680</td> </tr> <tr> <td>2,400</td> <td><u>1,680</u></td> </tr> <tr> <td>3,200</td> <td><u>2,240</u></td> </tr> <tr> <td>3,200</td> <td>2,240</td> </tr> </table>	Urban	Rural	2,400	1,680	2,400	<u>1,680</u>	3,200	<u>2,240</u>	3,200	2,240
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Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

INTERSECTION #8: OLD HIGHWAY .95 / E. DULIN ROAD - EXISTING + CUMULATIVE + PROJECT

WARRANT 2 - Four Hour Vehicular Volume

SATISFIED* YES ☐ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour			
Both Approaches - Major Street						
Higher Approach - Minor Street						

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied)

SATISFIED YES ☒ NO ☐

PART A

SATISFIED YES ☒ NO ☐

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

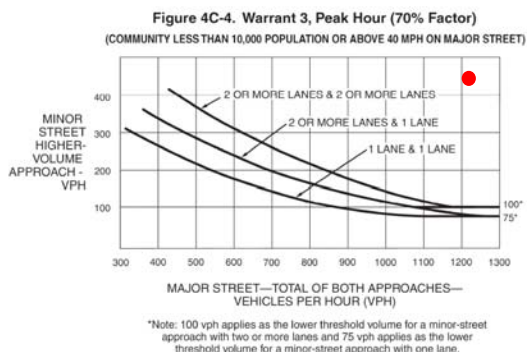
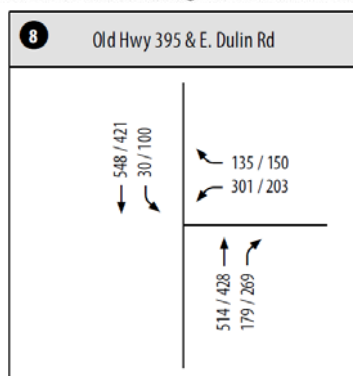
PART B

SATISFIED YES ☒ NO ☐

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1,271 / 1,218
Higher Approach - Minor Street	X		436 / 353

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



**Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)**

COUNT DATE Existing + Cumulative + Project

DIST CO RTE PM

Major St: Old Highway 395 Critical Approach Speed mph

Minor St: E. Dulin Road Critical Approach Speed mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒ } **RURAL (R)**

In built up area of isolated community of < 10,000 population..... ☐ } **URBAN (U)**

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL..... X CONDITION A - Minimum Vehicular Volume Satisfied <u> X </u> Not Satisfied <u> </u> Number of lanes for moving traffic on each approach Major Street <u>12,780</u> Minor Street <u>7,330</u> 1..... 1..... 2 or More..... 2 or More..... 2 or More..... 2 or More..... 1..... 2 or More.....	Minimum Requirements EADT	
	Vehicles Per Day on Major Street (Total of Both Approaches)	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)
	Urban Rural 8,000 5,600 9,600 6,720 9,600 6,720 8,000 5,600	Urban Rural 2,400 1,680 2,400 1,680 3,200 2,240 3,200 2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <u> X </u> Not Satisfied <u> </u> Number of lanes for moving traffic on each approach Major Street <u>12,780</u> Minor Street <u>7,330</u> 1..... 1..... 2 or More..... 2 or More..... 2 or More..... 2 or More..... 1..... 2 or More.....	Vehicles Per Day on Major Street (Total of Both Approaches)	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)
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Combination of CONDITIONS A + B Satisfied <u> X </u> Not Satisfied <u> </u> <u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... <u> </u> A <u> </u> B	2 CONDITIONS 80%	2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Figure 4C-101 (CA). Traffic Signal Warrants Worksheet (Sheet 2 of 5)

INTERSECTION #9: OLD HIGHWAY 395 / W. LILAC RD - EXISTING + CUMULATIVE + PROJECT

WARRANT 2 - Four Hour Vehicular Volume

SATISFIED* YES ☐ NO ☐

Record hourly vehicular volumes for any four hours of an average day.

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street			
Higher Approach - Minor Street			

*All plotted points fall above the applicable curve in Figure 4C-1. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , All plotted points fall above the applicable curve in Figure 4C-2. (RURAL AREAS)	Yes ☐	No ☐

WARRANT 3 - Peak Hour
(Part A or Part B must be satisfied)

SATISFIED YES ☒ NO ☐

PART A

SATISFIED YES ☒ NO ☐

(All parts 1, 2, and 3 below must be satisfied for the same one hour, for any four consecutive 15-minute periods)

1. The total delay experienced by traffic on one minor street approach (one direction only) controlled by a STOP sign equals or exceeds four vehicle-hours for a one-lane approach, or five vehicle-hours for a two-lane approach; <u>AND</u>	Yes ☒	No ☐
2. The volume on the same minor street approach (one direction only) equals or exceeds 100 vph for one moving lane of traffic or 150 vph for two moving lanes; <u>AND</u>	Yes ☒	No ☐
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with four or more approaches or 650 vph for intersections with three approaches.	Yes ☒	No ☐

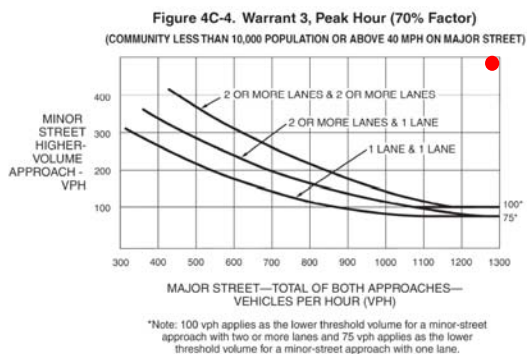
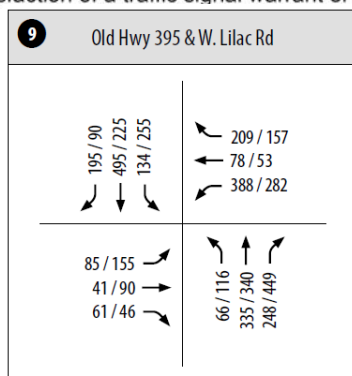
PART B

SATISFIED YES ☒ NO ☐

APPROACH LANES	One	2 or More	Hour
Both Approaches - Major Street	X		1,173 / 1,175
Higher Approach - Minor Street	X		675 / 492

The plotted point falls above the applicable curve in Figure 4C-3. (URBAN AREAS)	Yes ☐	No ☐
<u>OR</u> , The plotted point falls above the applicable curve in Figure 4C-4. (RURAL AREAS)	Yes ☒	No ☐

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.



**Figure 4C-103 (CA). Traffic Signal Warrants Worksheet
(Average Traffic Estimate Form)**

COUNT DATE Existing + Cumulative + Project

DIST CO RTE PM

Major St: Old Highway 395 Critical Approach Speed mph

Minor St: West Lilac Road Critical Approach Speed mph

Speed limit or critical speed on major street traffic > 40 mph..... ☒ } **RURAL (R)**

In built up area of isolated community of < 10,000 population..... ☐ } **URBAN (U)**

(Based on Estimated Average Daily Traffic - See Note)

URBAN..... RURAL..... X CONDITION A - Minimum Vehicular Volume Satisfied <u> X </u> Not Satisfied <u> </u> Number of lanes for moving traffic on each approach Major Street <u>13,310</u> Minor Street <u>12,800</u> 1..... 1..... 2 or More..... 2 or More..... 2 or More..... 2 or More..... 1..... 2 or More.....	Minimum Requirements EADT	
	Vehicles Per Day on Major Street (Total of Both Approaches)	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)
	Urban Rural 8,000 5,600 9,600 6,720 9,600 6,720 8,000 5,600	Urban Rural 2,400 1,680 2,400 1,680 3,200 2,240 3,200 2,240
CONDITION B - Interruption of Continuous Traffic Satisfied <u> X </u> Not Satisfied <u> </u> Number of lanes for moving traffic on each approach Major Street <u>13,310</u> Minor Street <u>12,800</u> 1..... 1..... 2 or More..... 2 or More..... 2 or More..... 2 or More..... 1..... 2 or More.....	Vehicles Per Day on Major Street (Total of Both Approaches)	Vehicles Per Day on Higher-Volume Minor Street Approach (One Direction Only)
	Urban Rural 12,000 8,400 14,400 10,080 14,400 10,080 12,000 8,400	Urban Rural 1,200 850 1,200 850 1,600 1,120 1,600 1,120
Combination of CONDITIONS A + B Satisfied <u> X </u> Not Satisfied <u> </u> <u>No one condition satisfied</u> , but following conditions fulfilled 80% or more..... <u> </u> A <u> </u> B	2 CONDITIONS 80%	2 CONDITIONS 80%

Note: To be used only for NEW INTERSECTIONS or other locations where it is not reasonable to count actual traffic volumes.

The satisfaction of a traffic signal warrant or warrants shall not in itself require the installation of a traffic control signal.

Appendix AS

Mitigated Peak Hour Intersection Capacity Worksheets
- Existing Plus Cumulative Projects Plus Project

HCM 2010 Signalized Intersection Summary

1: East Vista Way & Gopher Canyon Road

2/10/2013

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	WY		↑↑	↑	↑	↑↑
Volume (vph)	856	360	435	404	231	685
Number	3	18	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking, Bus Adj	1.00	0.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863
Lanes	2	0	2	1	1	2
Capacity, veh/h	0	0	2469	1105	206	3210
Arriving On Green	0.00	0.00	0.70	0.70	0.12	0.91
Sat Flow, veh/h	0.0		3632.3	1583.3	1774.0	3632.4
Grp Volume(v), veh/h	0.0		472.8	408.7	251.1	744.6
Grp Sat Flow(s),veh/h/ln	0.0		1769.6	1583.3	1774.0	1769.6
Q Serve(g_s), s	0.0		2.0	4.5	5.0	1.1
Cycle Q Clear(g_c), s	0.0		2.0	4.5	5.0	1.1
Proportion In Lane	0.000			1.000	1.000	
Lane Grp Cap(c), veh/h	0.0		2469.2	1104.7	206.3	3210.0
V/C Ratio(X)	0.000		0.191	0.370	1.217	0.232
Avail Cap(c_a), veh/h	0.0		2469.2	1104.7	206.3	3210.0
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	0.000		1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	0.0		2.3	2.6	19.0	0.2
Incr Delay (d2), s/veh	0.0		0.2	1.0	133.5	0.2
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	0.0		2.4	3.6	152.5	0.4
Lane Group LOS			A	A	F	A
Approach Volume, veh/h	0		882			996
Approach Delay, s/veh	0.0		3.0			38.8
Approach LOS			A			D
Timer						
Assigned Phase			2		1	6
Phase Duration (G+Y+Rc), s			34.00		9.00	43.00
Change Period (Y+Rc), s			4.00		4.00	4.00
Max Green Setting (Gmax), s			30.00		5.00	39.00
Max Q Clear Time (g_c+I1), s			6.52		7.00	3.07
Green Extension Time (p_c)			10.04		0.00	11.68
Intersection Summary						
HCM 2010 Control Delay			22.0			
HCM 2010 Level of Service			C			

HCM 2010 Signalized Intersection Summary

2: SR-76 & Old River Rd/East Vista Way

2/10/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	195	260	330	75	350	90	957	388	460	1652	45
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	1	1	1	2	1	1	1	3	1	2	3	0
Capacity, veh/h	18	384	327	387	574	488	125	1398	435	710	2093	56
Arriving On Green	0.01	0.21	0.21	0.11	0.31	0.31	0.07	0.28	0.28	0.21	0.41	0.41
Sat Flow, veh/h	1774.0	1583.3	1583.3	3441.6	1583.3	1583.3	1774.0	1583.3	1583.3	3441.6	5093.4	135.6
Grp Volume(v), veh/h	16.3	212.0	217.4	358.7	81.5	250.0	97.8	1040.2	258.7	500.0	1194.8	648.6
Grp Sat Flow(s),veh/h/ln	1774.0	1862.7	1583.3	1720.8	1862.7	1583.3	1774.0	1695.1	1583.3	1720.8	1695.1	1838.8
Q Serve(g_s), s	0.7	8.2	10.1	8.3	2.5	10.4	4.3	14.9	11.3	10.8	25.6	25.7
Cycle Q Clear(g_c), s	0.7	8.2	10.1	8.3	2.5	10.4	4.3	14.9	11.3	10.8	25.6	25.7
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		1.000	1.000		0.074
Lane Grp Cap(c), veh/h	18.4	384.2	326.6	387.2	574.4	488.2	124.6	1398.5	435.4	709.8	1393.4	755.8
V/C Ratio(X)	0.884	0.552	0.666	0.926	0.142	0.512	0.785	0.744	0.594	0.704	0.858	0.858
Avail Cap(c_a), veh/h	88.7	384.2	326.6	387.2	574.4	488.2	133.1	1398.5	435.4	709.8	1393.4	755.8
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	39.5	28.4	29.2	35.2	20.0	22.7	36.6	26.4	25.1	29.5	21.4	21.4
Incr Delay (d2), s/veh	69.2	5.6	10.3	28.0	0.5	3.8	24.6	3.6	5.9	5.8	7.0	12.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	108.8	34.0	39.5	63.2	20.5	26.5	61.2	30.1	31.0	35.3	28.4	33.6
Lane Group LOS	F	C	D	E	C	C	E	C	C	D	C	C
Approach Volume, veh/h		446			690			1397			2343	
Approach Delay, s/veh		39.4			44.9			32.4			31.3	
Approach LOS		D			D			C			C	
Timer												
Assigned Phase	3	8		7	4		1	6		5	2	
Phase Duration (G+Y+Rc), s	4.83	20.50		13.00	28.67		9.62	26.00		20.50	36.88	
Change Period (Y+Rc), s	4.00	4.00		4.00	4.00		4.00	4.00		4.00	4.00	
Max Green Setting (Gmax), s	4.00	16.50		9.00	21.50		6.00	22.00		16.50	32.50	
Max Q Clear Time (g_c+I1), s	2.73	12.11		10.26	12.37		6.34	16.92		12.79	27.68	
Green Extension Time (p_c)	0.00	1.38		0.00	2.22		0.00	4.74		0.66	4.50	
Intersection Summary												
HCM 2010 Control Delay				34.3								
HCM 2010 Level of Service				C								

HCM 2010 Signalized Intersection Summary

3: SR-76 & Olive Hill

2/10/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	115	338	175	140	219	286	90	1125	184	315	1655	215
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	1	1	1	1	1	1	1	3	1	2	3	0
Capacity, veh/h	151	437	371	170	458	389	121	2077	647	408	2138	148
Arriving On Green	0.09	0.23	0.23	0.10	0.25	0.25	0.07	0.41	0.41	0.12	0.44	0.44
Sat Flow, veh/h	1774.0	1583.3	1583.3	1774.0	1583.3	1583.3	1774.0	1583.3	1583.3	3441.6	4856.8	336.7
Grp Volume(v), veh/h	125.0	367.4	103.3	152.2	238.0	245.7	97.8	1222.8	113.0	342.4	1254.5	669.4
Grp Sat Flow(s),veh/h/ln	1774.0	1862.7	1583.3	1774.0	1862.7	1583.3	1774.0	1695.1	1583.3	1720.8	1695.1	1803.3
Q Serve(g_s), s	8.7	23.5	6.7	10.6	13.8	17.3	6.8	23.4	5.7	12.2	41.1	41.3
Cycle Q Clear(g_c), s	8.7	23.5	6.7	10.6	13.8	17.3	6.8	23.4	5.7	12.2	41.1	41.3
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		1.000	1.000		0.187
Lane Grp Cap(c), veh/h	150.9	437.1	371.5	170.4	457.5	388.9	121.3	2076.7	646.6	407.9	1492.1	793.7
V/C Ratio(X)	0.829	0.841	0.278	0.893	0.520	0.632	0.806	0.589	0.175	0.839	0.841	0.843
Avail Cap(c_a), veh/h	212.9	618.6	525.8	170.4	567.9	482.7	167.5	2076.7	646.6	581.1	1543.6	821.1
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	56.3	45.6	39.2	55.8	40.8	42.1	57.4	28.8	23.6	53.9	31.1	31.1
Incr Delay (d2), s/veh	16.7	7.2	0.4	40.1	0.9	1.8	17.8	1.2	0.6	7.4	5.9	10.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	73.0	52.8	39.6	96.0	41.7	43.9	75.2	30.0	24.1	61.4	37.0	41.8
Lane Group LOS	E	D	D	F	D	D	E	C	C	E	D	D
Approach Volume, veh/h		596			636			1434			2266	
Approach Delay, s/veh		54.7			55.5			32.6			42.1	
Approach LOS		D			E			C			D	
Timer												
Assigned Phase	7	4		3	8		5	2		1	6	
Phase Duration (G+Y+Rc), s	14.63	33.42		16.00	34.79		14.55	57.03		18.51	61.00	
Change Period (Y+Rc), s	4.00	4.10		4.00	4.10		6.00	6.00		3.70	6.00	
Max Green Setting (Gmax), s	15.00	41.50		12.00	38.10		11.80	48.00		21.10	56.90	
Max Q Clear Time (g_c+I1), s	10.67	25.50		12.60	19.31		8.79	25.41		14.17	43.31	
Green Extension Time (p_c)	0.10	4.22		0.00	4.47		0.05	19.06		0.64	12.15	
Intersection Summary												
HCM 2010 Control Delay				42.6								
HCM 2010 Level of Service				D								

HCM 2010 Signalized Intersection Summary

6: Old Highway 395 & SR-76

2/10/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	835	193	142	1015	155	278	246	215	435	322	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	1	2	1	1	2	1	1	1	1	2	1	0
Capacity, veh/h	106	1023	458	160	1129	759	319	504	429	552	372	81
Arriving On Green	0.06	0.29	0.29	0.09	0.32	0.32	0.18	0.27	0.27	0.16	0.25	0.25
Sat Flow, veh/h	1774.0	1583.3	1583.3	1774.0	1583.3	1583.3	1774.0	1583.3	1583.3	3441.6	1483.4	322.5
Grp Volume(v), veh/h	92.4	907.6	188.0	154.3	1103.3	116.3	302.2	267.4	201.1	472.8	0.0	426.1
Grp Sat Flow(s),veh/h/ln	1774.0	1769.6	1583.3	1774.0	1769.6	1583.3	1774.0	1862.7	1583.3	1720.8	0.0	1805.8
Q Serve(g_s), s	5.2	24.5	9.6	8.7	30.8	2.5	16.8	12.2	10.6	13.4	0.0	23.1
Cycle Q Clear(g_c), s	5.2	24.5	9.6	8.7	30.8	2.5	16.8	12.2	10.6	13.4	0.0	23.1
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		1.000	1.000		0.179
Lane Grp Cap(c), veh/h	106.4	1022.8	457.6	159.7	1129.0	759.0	319.3	504.1	428.5	551.9	0.0	453.3
V/C Ratio(X)	0.868	0.887	0.411	0.967	0.977	0.153	0.946	0.530	0.469	0.857	0.000	0.940
Avail Cap(c_a), veh/h	106.4	1022.8	457.6	159.7	1164.4	774.8	319.3	504.1	428.5	653.9	0.0	467.7
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	1.000
Uniform Delay (d), s/veh	46.6	34.0	28.7	45.4	33.7	6.1	40.5	31.1	30.5	40.9	0.0	36.7
Incr Delay (d2), s/veh	48.5	11.3	2.7	61.1	21.8	0.4	36.3	4.0	3.7	9.6	0.0	29.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	95.1	45.3	31.4	106.4	55.5	6.5	76.9	35.0	34.1	50.5	0.0	66.4
Lane Group LOS	F	D	C	F	E	A	E	D	C	D		E
Approach Volume, veh/h	1188			1374			771			899		
Approach Delay, s/veh	47.0			57.1			51.2			58.0		
Approach LOS	D			E			D			E		
Timer												
Assigned Phase	5	2		1	6		3	8		7	4	
Phase Duration (G+Y+Rc), s	10.00	34.90		13.00	37.90		22.00	32.06		20.04	30.10	
Change Period (Y+Rc), s	4.00	6.00		4.00	6.00		4.00	5.00		4.00	5.00	
Max Green Setting (Gmax), s	6.00	28.90		9.00	32.90		18.00	24.10		19.00	25.90	
Max Q Clear Time (g_c+I1), s	7.16	26.52		10.67	32.84		18.83	14.22		15.37	25.13	
Green Extension Time (p_c)	0.00	2.09		0.00	0.05		0.00	3.41		0.66	0.40	
Intersection Summary												
HCM 2010 Control Delay	53.4											
HCM 2010 Level of Service	D											

HCM 2010 Signalized Intersection Summary

7: Dublin Rd & SR-76

2/10/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	 	 			 		 					 
Volume (vph)	330	667	75	203	612	65	95	159	197	35	140	205
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	2	2	1	1	2	1	2	1	1	1	1	2
Capacity, veh/h	488	1022	457	271	1061	475	182	393	334	45	342	907
Arriving On Green	0.14	0.29	0.29	0.15	0.30	0.30	0.05	0.21	0.21	0.03	0.18	0.18
Sat Flow, veh/h	3441.6	1583.3	1583.3	1774.0	1583.3	1583.3	3441.6	1583.3	1583.3	1774.0	2786.7	2786.7
Grp Volume(v), veh/h	358.7	725.0	81.5	220.7	665.2	70.7	103.3	172.8	214.1	38.0	152.2	222.8
Grp Sat Flow(s),veh/h/ln	1720.8	1769.6	1583.3	1774.0	1769.6	1583.3	1720.8	1862.7	1583.3	1774.0	1862.7	1393.3
Q Serve(g_s), s	5.0	9.1	1.9	6.0	8.1	1.6	1.5	4.0	6.1	1.1	3.6	2.9
Cycle Q Clear(g_c), s	5.0	9.1	1.9	6.0	8.1	1.6	1.5	4.0	6.1	1.1	3.6	2.9
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		1.000	1.000		1.000
Lane Grp Cap(c), veh/h	488.5	1022.0	457.2	271.3	1061.1	474.7	182.5	393.4	334.4	44.7	341.6	906.6
V/C Ratio(X)	0.734	0.709	0.178	0.813	0.627	0.149	0.566	0.439	0.640	0.851	0.445	0.246
Avail Cap(c_a), veh/h	553.9	1139.1	509.6	285.5	1139.1	509.6	276.9	599.5	509.6	142.7	599.5	1292.4
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	20.4	15.8	13.3	20.4	15.0	12.8	23.0	17.0	17.9	24.1	18.0	12.3
Incr Delay (d2), s/veh	4.4	1.8	0.2	15.7	1.0	0.1	2.7	0.8	2.0	33.2	0.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	24.8	17.6	13.4	36.0	16.0	12.9	25.7	17.8	19.9	57.4	19.0	12.4
Lane Group LOS	C	B	B	D	B	B	C	B	B	E	B	B
Approach Volume, veh/h	1165				957				490		413	
Approach Delay, s/veh	19.6				20.4				20.4		19.0	
Approach LOS	B				C				C		B	
Timer												
Assigned Phase	7	4			3	8			5	2		
Phase Duration (G+Y+Rc), s	11.06	18.36			11.60	18.90			6.64	14.50		
Change Period (Y+Rc), s	4.00	4.00			4.00	4.00			4.00	4.00		
Max Green Setting (Gmax), s	8.00	16.00			8.00	16.00			4.00	16.00		
Max Q Clear Time (g_c+I1), s	6.96	11.11			7.98	10.06			3.46	8.13		
Green Extension Time (p_c)	0.14	3.25			0.00	3.81			0.01	2.37		
Intersection Summary												
HCM 2010 Control Delay	19.9											
HCM 2010 Level of Service	B											

HCM 2010 Signalized Intersection Summary

8: Old Highway 395 & Dublin Rd

2/10/2013

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	301	135	514	179	30	548
Number	3	18	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863
Lanes	1	1	1	0	0	1
Capacity, veh/h	463	413	643	224	139	852
Arriving On Green	0.26	0.26	0.49	0.49	0.49	0.49
Sat Flow, veh/h	1774.0	1583.3	1321.4	460.2	92.9	1531.9
Grp Volume(v), veh/h	327.2	146.7	0.0	753.3	628.3	0.0
Grp Sat Flow(s),veh/h/ln	1774.0	1583.3	0.0	1781.5	1790.8	0.0
Q Serve(g_s), s	5.3	2.4	0.0	11.9	0.0	0.0
Cycle Q Clear(g_c), s	5.3	2.4	0.0	11.9	8.3	0.0
Proportion In Lane	1.000	1.000		0.258	0.052	
Lane Grp Cap(c), veh/h	462.6	412.9	0.0	867.3	991.3	0.0
V/C Ratio(X)	0.707	0.355	0.000	0.869	0.634	0.000
Avail Cap(c_a), veh/h	895.6	799.3	0.0	899.4	1020.4	0.0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	0.000	1.000	1.000	0.000
Uniform Delay (d), s/veh	10.6	9.5	0.0	7.2	6.3	0.0
Incr Delay (d2), s/veh	2.0	0.5	0.0	8.9	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	12.6	10.1	0.0	16.1	7.5	0.0
Lane Group LOS	B	B		B	A	
Approach Volume, veh/h	474		753			628
Approach Delay, s/veh	11.8		16.1			7.5
Approach LOS	B		B			A
Timer						
Assigned Phase			2			6
Phase Duration (G+Y+Rc), s			19.43			19.43
Change Period (Y+Rc), s			4.00			4.00
Max Green Setting (Gmax), s			16.00			16.00
Max Q Clear Time (g_c+l1), s			13.91			10.28
Green Extension Time (p_c)			1.52			3.71
Intersection Summary						
HCM 2010 Control Delay			12.1			
HCM 2010 Level of Service			B			

HCM 2010 Signalized Intersection Summary

9: Old Highway 395 & W Lilac Rd

3/5/2014

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	61	61	468	76	209	66	335	268	154	495	195
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	1	1	0	1	1	0	1	1	0	1	2	0
Capacity, veh/h	118	97	65	523	181	356	92	399	224	174	1136	308
Arriving On Green	0.07	0.09	0.09	0.29	0.32	0.32	0.05	0.36	0.36	0.10	0.40	0.40
Sat Flow, veh/h	1774.0	1040.2	699.2	1774.0	563.4	1104.5	1774.0	1122.0	629.6	1774.0	2823.4	766.8
Grp Volume(v), veh/h	92.4	0.0	110.9	508.7	0.0	244.6	71.7	0.0	568.5	167.4	354.2	330.6
Grp Sat Flow(s),veh/h/ln	1774.0	0.0	1739.4	1774.0	0.0	1667.8	1774.0	0.0	1751.6	1774.0	1862.7	1727.4
Q Serve(g_s), s	5.2	0.0	6.3	28.8	0.0	11.9	4.1	0.0	31.5	9.6	14.3	14.4
Cycle Q Clear(g_c), s	5.2	0.0	6.3	28.8	0.0	11.9	4.1	0.0	31.5	9.6	14.3	14.4
Proportion In Lane	1.000		0.402	1.000		0.662	1.000		0.359	1.000		0.444
Lane Grp Cap(c), veh/h	117.8	0.0	162.7	523.2	0.0	537.1	92.4	0.0	623.6	174.4	749.2	694.8
V/C Ratio(X)	0.785	0.000	0.681	0.972	0.000	0.455	0.776	0.000	0.912	0.960	0.473	0.476
Avail Cap(c_a), veh/h	209.3	0.0	273.6	523.2	0.0	557.4	174.4	0.0	654.3	174.4	749.2	694.8
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	1.000	1.000	0.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	46.8	0.0	44.6	35.5	0.0	27.4	47.6	0.0	31.2	45.7	22.4	22.5
Incr Delay (d2), s/veh	10.8	0.0	4.9	32.2	0.0	0.6	13.0	0.0	16.7	56.2	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	57.6	0.0	49.6	67.7	0.0	28.0	60.6	0.0	47.9	101.9	22.9	23.0
Lane Group LOS	E		D	E		C	E		D	F	C	C
Approach Volume, veh/h	203			753			640			852		
Approach Delay, s/veh	53.2			54.8			49.3			38.5		
Approach LOS	D			D			D			D		
Timer												
Assigned Phase	7	4		3	8		5	2		1	6	
Phase Duration (G+Y+Rc), s	10.75	13.51		34.00	36.76		9.30	40.21		14.00	44.92	
Change Period (Y+Rc), s	4.00	4.00		4.00	4.00		4.00	4.00		4.00	4.00	
Max Green Setting (Gmax), s	12.00	16.00		30.00	34.00		10.00	38.00		10.00	38.00	
Max Q Clear Time (g_c+I1), s	7.22	8.28		30.84	13.85		6.06	33.48		11.56	16.39	
Green Extension Time (p_c)	0.07	1.24		0.00	2.03		0.04	2.74		0.00	7.55	
Intersection Summary												
HCM 2010 Control Delay	47.6											
HCM 2010 Level of Service	D											

HCM 2010 Signalized Intersection Summary 10: Old Highway 395 & I-15 SB Off Ramp

3/15/2014

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↑	↑	↑	↑					↑		↑
Volume (veh/h)	0	310	598	25	418	0	0	0	0	100	0	69
Number	1	6	16	5	2	12				3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0				0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00				1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	0	1863	1863	1863	1863	0				1863	0	1863
Adj Flow Rate, veh/h	0	337	650	27	454	0				109	0	75
Adj No. of Lanes	0	1	1	1	1	0				1	0	1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92				0.92	0.92	0.92
Percent Heavy Veh, %	0	2	2	2	2	0				2	0	2
Cap, veh/h	0	944	802	47	1221	0				176	0	157
Arrive On Green	0.00	0.51	0.51	0.03	0.66	0.00				0.10	0.00	0.10
Sat Flow, veh/h	0	1863	1583	1774	1863	0				1774	0	1583
Grp Volume(v), veh/h	0	337	650	27	454	0				109	0	75
Grp Sat Flow(s),veh/h/ln	0	1863	1583	1774	1863	0				1774	0	1583
Q Serve(g_s), s	0.0	3.6	11.2	0.5	3.6	0.0				1.9	0.0	1.5
Cycle Q Clear(g_c), s	0.0	3.6	11.2	0.5	3.6	0.0				1.9	0.0	1.5
Prop In Lane	0.00		1.00	1.00		0.00				1.00		1.00
Lane Grp Cap(c), veh/h	0	944	802	47	1221	0				176	0	157
V/C Ratio(X)	0.00	0.36	0.81	0.57	0.37	0.00				0.62	0.00	0.48
Avail Cap(c_a), veh/h	0	1084	921	217	1540	0				272	0	242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	0.00				1.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	4.9	6.7	15.7	2.6	0.0				14.1	0.0	13.9
Incr Delay (d2), s/veh	0.0	0.2	4.9	10.4	0.2	0.0				3.5	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
%ile BackOfQ(0%),veh/ln	0.0	1.8	5.8	0.4	1.8	0.0				1.1	0.0	0.7
LnGrp Delay(d),s/veh	0.0	5.1	11.6	26.2	2.7	0.0				17.6	0.0	16.1
LnGrp LOS		A	B	C	A					B		B
Approach Vol, veh/h		987			481						184	
Approach Delay, s/veh		9.4			4.1						17.0	
Approach LOS		A			A						B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2			5	6		8				
Phs Duration (G+Y+Rc), s		25.4			4.9	20.5		7.2				
Change Period (Y+Rc), s		4.0			4.0	4.0		4.0				
Max Green Setting (Gmax), s		27.0			4.0	19.0		5.0				
Max Q Clear Time (g_c+I1), s		5.6			2.5	13.2		3.9				
Green Ext Time (p_c), s		7.2			0.0	3.3		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			8.7									
HCM 2010 LOS			A									

HCM 2010 Signalized Intersection Summary

13: Old Highway 395 & Circle R Road

5/19/2014

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Volume (veh/h)	424	88	344	162	42	471		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	446	77	362	150	44	496		
Adj No. of Lanes	0	0	1	1	1	1		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95		
Percent Heavy Veh, %	0	0	2	2	2	2		
Cap, veh/h	500	86	569	483	70	840		
Arrive On Green	0.34	0.34	0.31	0.31	0.04	0.45		
Sat Flow, veh/h	1484	256	1863	1583	1774	1863		
Grp Volume(v), veh/h	524	0	362	150	44	496		
Grp Sat Flow(s),veh/h/ln	1743	0	1863	1583	1774	1863		
Q Serve(g_s), s	10.7	0.0	6.3	2.7	0.9	7.5		
Cycle Q Clear(g_c), s	10.7	0.0	6.3	2.7	0.9	7.5		
Prop In Lane	0.85	0.15		1.00	1.00			
Lane Grp Cap(c), veh/h	587	0	569	483	70	840		
V/C Ratio(X)	0.89	0.00	0.64	0.31	0.63	0.59		
Avail Cap(c_a), veh/h	834	0	792	673	189	1188		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	11.8	0.0	11.3	10.0	17.8	7.7		
Incr Delay (d2), s/veh	9.0	0.0	1.2	0.4	9.1	0.7		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	6.6	0.0	3.4	1.2	0.6	3.9		
LnGrp Delay(d),s/veh	20.8	0.0	12.5	10.4	27.0	8.4		
LnGrp LOS	C		B	B	C	A		
Approach Vol, veh/h	524		512			540		
Approach Delay, s/veh	20.8		11.9			9.9		
Approach LOS	C		B			A		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	5.5	15.5				21.0		16.7
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	4.0	16.0				24.0		18.0
Max Q Clear Time (g_c+I1), s	2.9	8.3				9.5		12.7
Green Ext Time (p_c), s	0.0	3.2				4.6		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			14.2					
HCM 2010 LOS			B					
Notes								
User approved pedestrian interval to be less than phase max green.								

HCM 2010 Signalized Intersection Summary

24: Valley Center Rd & Miller Road

2/10/2013

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	36	868	936	15	15	75
Number	5	2	6	16	7	14
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	0.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863
Lanes	1	2	2	0	1	0
Capacity, veh/h	41	2475	1372	22	0	0
Arriving On Green	0.02	0.70	0.38	0.38	0.00	0.00
Sat Flow, veh/h	1774.0	3632.4	3656.7	58.6	0.0	
Grp Volume(v), veh/h	39.1	943.5	518.3	515.4	0.0	
Grp Sat Flow(s),veh/h/ln	1774.0	1769.6	1862.7	1852.4	0.0	
Q Serve(g_s), s	0.3	1.5	3.2	3.2	0.0	
Cycle Q Clear(g_c), s	0.3	1.5	3.2	3.2	0.0	
Proportion In Lane	1.000			0.032	0.000	
Lane Grp Cap(c), veh/h	41.3	2474.7	698.7	694.9	0.0	
V/C Ratio(X)	0.946	0.381	0.742	0.742	0.000	
Avail Cap(c_a), veh/h	667.0	2927.5	698.7	694.9	0.0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.000	1.000	1.000	1.000	0.000	
Uniform Delay (d), s/veh	6.5	0.8	3.6	3.6	0.0	
Incr Delay (d2), s/veh	52.4	0.1	4.2	4.3	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	
Lane Group Delay (d), s/veh	58.8	0.9	7.8	7.9	0.0	
Lane Group LOS	E	A	A	A		
Approach Volume, veh/h		983	1034		0	
Approach Delay, s/veh		3.2	7.9		0.0	
Approach LOS		A	A			
Timer						
Assigned Phase	5	2	6			
Phase Duration (G+Y+Rc), s	4.31	13.30	8.99			
Change Period (Y+Rc), s	4.00	4.00	4.00			
Max Green Setting (Gmax), s	5.00	11.00	2.00			
Max Q Clear Time (g_c+I1), s	2.29	3.45	5.20			
Green Extension Time (p_c)	0.01	5.85	0.00			
Intersection Summary						
HCM 2010 Control Delay			5.6			
HCM 2010 Level of Service			A			

HCM 2010 Signalized Intersection Summary

1: East Vista Way & Gopher Canyon Road

2/10/2013

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	426	232	565	894	363	650
Number	3	18	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking, Bus Adj	1.00	0.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863
Lanes	2	0	2	1	1	2
Capacity, veh/h	0	0	2510	1123	303	3282
Arriving On Green	0.00	0.00	0.71	0.71	0.17	0.93
Sat Flow, veh/h	0.0		3632.4	1583.3	1774.0	3632.4
Grp Volume(v), veh/h	0.0		614.1	808.7	394.6	706.5
Grp Sat Flow(s),veh/h/ln	0.0		1769.6	1583.3	1774.0	1769.6
Q Serve(g_s), s	0.0		6.7	33.4	18.8	2.0
Cycle Q Clear(g_c), s	0.0		6.7	33.4	18.8	2.0
Proportion In Lane	0.000			1.000	1.000	
Lane Grp Cap(c), veh/h	0.0		2509.6	1122.7	303.2	3281.8
V/C Ratio(X)	0.000		0.245	0.720	1.301	0.215
Avail Cap(c_a), veh/h	0.0		2509.6	1122.7	303.2	3359.0
HCM Platoon Ratio	1.00		1.00	1.00	1.00	1.00
Upstream Filter(I)	0.000		1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	0.0		5.6	9.5	45.6	0.4
Incr Delay (d2), s/veh	0.0		0.2	4.0	157.7	0.2
Initial Q Delay(d3),s/veh	0.0		0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	0.0		5.9	13.5	203.3	0.5
Lane Group LOS			A	B	F	A
Approach Volume, veh/h	0		1423			1101
Approach Delay, s/veh	0.0		10.2			73.2
Approach LOS			B			E
Timer						
Assigned Phase			2		1	6
Phase Duration (G+Y+Rc), s			86.00		24.00	110.00
Change Period (Y+Rc), s			8.00		5.20	8.00
Max Green Setting (Gmax), s			78.00		18.80	104.40
Max Q Clear Time (g_c+I1), s			35.41		20.80	4.00
Green Extension Time (p_c)			17.66		0.00	20.81
Intersection Summary						
HCM 2010 Control Delay			37.7			
HCM 2010 Level of Service			D			

HCM 2010 Signalized Intersection Summary

2: SR-76 & Old River Rd/East Vista Way

2/10/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	15	105	93	254	125	420	196	1864	446	415	1648	20
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	1	1	1	2	1	1	1	3	1	2	3	0
Capacity, veh/h	124	185	157	419	316	268	245	2177	678	478	2223	26
Arriving On Green	0.10	0.10	0.10	0.17	0.17	0.17	0.14	0.43	0.43	0.14	0.43	0.43
Sat Flow, veh/h	1248.3	1862.7	1583.3	2470.0	1862.7	1583.3	1774.0	1583.3	1583.3	3441.6	5182.7	59.7
Grp Volume(v), veh/h	16.3	114.1	70.7	276.1	135.9	271.7	213.0	2026.1	376.1	451.1	1171.6	640.3
Grp Sat Flow(s),veh/h/ln	1248.3	1862.7	1583.3	1235.0	1862.7	1583.3	1774.0	1695.1	1583.3	1720.8	1695.1	1852.2
Q Serve(g_s), s	1.4	7.1	5.1	12.6	7.9	20.5	14.2	45.8	21.6	15.7	36.5	36.5
Cycle Q Clear(g_c), s	1.4	7.1	5.1	12.6	7.9	20.5	14.2	45.8	21.6	15.7	36.5	36.5
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		1.000	1.000		0.032
Lane Grp Cap(c), veh/h	123.7	184.5	156.9	418.5	315.6	268.3	244.9	2177.3	677.9	477.9	1454.3	794.5
V/C Ratio(X)	0.132	0.618	0.450	0.660	0.430	1.013	0.870	0.931	0.555	0.944	0.806	0.806
Avail Cap(c_a), veh/h	165.1	246.3	209.4	418.5	315.6	268.3	244.9	2177.3	677.9	477.9	1454.3	794.5
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	49.8	52.3	51.4	47.0	45.0	50.2	51.1	32.9	25.9	51.6	30.1	30.1
Incr Delay (d2), s/veh	0.5	3.4	2.0	7.9	4.2	58.3	31.9	8.7	3.3	29.3	4.9	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	50.2	55.7	53.4	54.9	49.3	108.5	82.9	41.6	29.2	80.9	35.0	38.7
Lane Group LOS	D	E	D	D	D	F	F	D	C	F	D	D
Approach Volume, veh/h		201			684			2615			2263	
Approach Delay, s/veh		54.4			75.1			43.2			45.2	
Approach LOS		D			E			D			D	
Timer												
Assigned Phase		8			4		1	6		5	2	
Phase Duration (G+Y+Rc), s		16.59			25.10		20.90	58.30		21.00	58.40	
Change Period (Y+Rc), s		4.60			4.60		4.20	6.50		4.20	6.50	
Max Green Setting (Gmax), s		16.00			20.50		16.70	51.80		16.80	51.90	
Max Q Clear Time (g_c+l1), s		9.11			22.50		16.23	47.82		17.72	38.50	
Green Extension Time (p_c)		0.40			0.00		0.03	3.92		0.00	12.89	
Intersection Summary												
HCM 2010 Control Delay				48.1								
HCM 2010 Level of Service				D								

HCM 2010 Signalized Intersection Summary

3: SR-76 & Olive Hill

2/10/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	125	255	300	145	183	426	180	1915	208	311	1450	170
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	1	1	1	1	1	1	1	3	1	2	3	0
Capacity, veh/h	143	319	271	169	346	294	220	2312	720	385	2065	128
Arriving On Green	0.08	0.17	0.17	0.10	0.19	0.19	0.12	0.45	0.45	0.11	0.42	0.42
Sat Flow, veh/h	1774.0	1583.3	1583.3	1774.0	1583.3	1583.3	1774.0	1583.3	1583.3	3441.6	4895.6	303.7
Grp Volume(v), veh/h	135.9	277.2	163.0	157.6	198.9	245.7	195.7	2081.5	160.9	338.0	1091.2	582.7
Grp Sat Flow(s),veh/h/ln	1774.0	1862.7	1583.3	1774.0	1862.7	1583.3	1774.0	1695.1	1583.3	1720.8	1695.1	1809.1
Q Serve(g_s), s	10.4	19.8	13.0	12.0	13.3	20.4	14.8	51.6	8.4	13.2	37.4	37.5
Cycle Q Clear(g_c), s	10.4	19.8	13.0	12.0	13.3	20.4	14.8	51.6	8.4	13.2	37.4	37.5
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		1.000	1.000		0.168
Lane Grp Cap(c), veh/h	143.1	318.5	270.7	169.1	345.8	294.0	220.3	2311.6	719.7	385.3	1430.0	763.1
V/C Ratio(X)	0.950	0.870	0.602	0.932	0.575	0.836	0.888	0.900	0.224	0.877	0.763	0.764
Avail Cap(c_a), veh/h	143.1	366.0	311.1	169.1	387.9	329.7	260.1	2311.6	719.7	398.7	1430.0	763.1
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	62.4	55.1	52.2	61.3	50.6	53.5	58.8	34.3	22.6	59.6	33.6	33.6
Incr Delay (d2), s/veh	59.9	18.0	2.5	49.7	1.7	15.5	26.1	6.2	0.7	18.9	3.9	7.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	122.4	73.0	54.8	111.0	52.3	69.0	84.9	40.5	23.3	78.6	37.5	40.8
Lane Group LOS	F	E	D	F	D	E	F	D	C	E	D	D
Approach Volume, veh/h	576				602				2438			
Approach Delay, s/veh	79.5				74.5				43.0			
Approach LOS	E				E				D			
Timer												
Assigned Phase	7	4		3	8		5	2		1	6	
Phase Duration (G+Y+Rc), s	15.00	28.92		17.00	30.92		24.94	70.00		20.47	65.53	
Change Period (Y+Rc), s	4.00	5.60		4.00	5.60		8.00	8.00		5.20	8.00	
Max Green Setting (Gmax), s	11.00	26.80		13.00	28.40		20.00	62.00		15.80	57.40	
Max Q Clear Time (g_c+l1), s	12.40	21.77		14.03	22.40		16.81	53.55		15.19	39.47	
Green Extension Time (p_c)	0.00	1.96		0.00	2.22		0.14	8.16		0.08	16.83	
Intersection Summary												
HCM 2010 Control Delay	50.9											
HCM 2010 Level of Service	D											

HCM 2010 Signalized Intersection Summary

6: Old Highway 395 & SR-76

2/10/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		 			 					 		
Volume (vph)	110	990	148	127	1140	340	216	320	141	335	246	90
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	1	2	1	1	2	1	1	1	1	2	1	0
Capacity, veh/h	149	1246	557	170	1286	756	239	387	329	393	248	85
Arriving On Green	0.08	0.35	0.35	0.10	0.36	0.36	0.13	0.21	0.21	0.11	0.19	0.19
Sat Flow, veh/h	1774.0	1583.3	1583.3	1774.0	1583.3	1583.3	1774.0	1583.3	1583.3	3441.6	1328.9	453.8
Grp Volume(v), veh/h	119.6	1076.1	154.3	138.0	1239.1	267.4	234.8	347.8	104.3	364.1	0.0	358.7
Grp Sat Flow(s),veh/h/ln	1774.0	1769.6	1583.3	1774.0	1769.6	1583.3	1774.0	1862.7	1583.3	1720.8	0.0	1782.7
Q Serve(g_s), s	6.4	27.3	6.7	7.3	33.0	10.2	12.7	17.5	5.4	10.1	0.0	18.0
Cycle Q Clear(g_c), s	6.4	27.3	6.7	7.3	33.0	10.2	12.7	17.5	5.4	10.1	0.0	18.0
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		1.000	1.000		0.255
Lane Grp Cap(c), veh/h	149.2	1245.8	557.3	169.6	1286.3	756.3	239.5	386.9	328.8	393.1	0.0	333.2
V/C Ratio(X)	0.801	0.864	0.277	0.814	0.963	0.354	0.980	0.899	0.317	0.926	0.000	1.077
Avail Cap(c_a), veh/h	217.4	1249.6	559.0	235.8	1286.3	756.3	239.5	386.9	328.8	393.1	0.0	333.2
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	0.000	1.000
Uniform Delay (d), s/veh	43.3	29.1	22.4	42.7	30.0	15.8	41.5	37.2	32.4	42.2	0.0	39.2
Incr Delay (d2), s/veh	12.6	6.5	0.3	13.9	17.7	1.3	52.4	26.3	2.5	27.7	0.0	71.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	55.9	35.5	22.7	56.7	47.7	17.1	94.0	63.4	34.9	70.0	0.0	110.3
Lane Group LOS	E	D	C	E	D	B	F	E	C	E		F
Approach Volume, veh/h		1350			1645			687			723	
Approach Delay, s/veh		35.9			43.5			69.5			90.0	
Approach LOS		D			D			E			F	
Timer												
Assigned Phase	1	6		5	2		7	4		3	8	
Phase Duration (G+Y+Rc), s	13.30	40.90		14.40	42.00		17.00	26.00		15.00	24.00	
Change Period (Y+Rc), s	5.20	7.00		5.20	7.00		4.00	6.00		4.00	6.00	
Max Green Setting (Gmax), s	11.80	34.00		12.80	35.00		13.00	20.00		11.00	18.00	
Max Q Clear Time (g_c+I1), s	8.37	29.26		9.35	35.02		14.71	19.52		12.09	20.00	
Green Extension Time (p_c)	0.07	4.26		0.09	0.00		0.00	0.24		0.00	0.00	
Intersection Summary												
HCM 2010 Control Delay			52.9									
HCM 2010 Level of Service			D									

HCM 2010 Signalized Intersection Summary

7: Dublin Rd & SR-76

2/10/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	485	1793	275	242	1050	85	240	196	291	90	204	480
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	2	2	1	1	2	1	2	1	1	1	1	2
Capacity, veh/h	573	1829	818	260	1759	787	265	282	240	109	254	843
Arriving On Green	0.17	0.52	0.52	0.15	0.50	0.50	0.08	0.15	0.15	0.06	0.14	0.14
Sat Flow, veh/h	3441.6	1583.3	1583.3	1774.0	1583.3	1583.3	3441.6	1583.3	1583.3	1774.0	2786.7	2786.7
Grp Volume(v), veh/h	510.5	1887.4	289.5	254.7	1105.3	89.5	252.6	206.3	148.4	94.7	214.7	505.3
Grp Sat Flow(s),veh/h/ln	1720.8	1769.6	1583.3	1774.0	1769.6	1583.3	1720.8	1862.7	1583.3	1774.0	1862.7	1393.3
Q Serve(g_s), s	18.8	67.0	10.0	18.6	29.6	3.9	9.5	13.7	11.4	6.9	14.6	15.2
Cycle Q Clear(g_c), s	18.8	67.0	10.0	18.6	29.6	3.9	9.5	13.7	11.4	6.9	14.6	15.2
Proportion In Lane	1.000		1.000	1.000		1.000	1.000		1.000	1.000		1.000
Lane Grp Cap(c), veh/h	572.6	1829.0	818.2	260.0	1758.8	786.8	265.5	282.3	240.0	109.5	253.6	843.0
V/C Ratio(X)	0.892	1.032	0.354	0.980	0.628	0.114	0.952	0.731	0.618	0.865	0.847	0.599
Avail Cap(c_a), veh/h	663.6	1829.0	818.2	260.0	1758.8	786.8	265.5	287.3	244.2	109.5	258.6	850.5
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	52.9	31.3	9.4	55.1	23.9	17.4	59.6	52.5	51.5	60.3	54.7	23.0
Incr Delay (d2), s/veh	13.0	29.7	0.3	50.0	0.7	0.1	42.1	9.0	4.6	47.0	21.9	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	65.9	61.1	9.7	105.2	24.6	17.5	101.7	61.5	56.0	107.3	76.5	24.1
Lane Group LOS	E	F	A	F	C	B	F	E	E	F	E	C
Approach Volume, veh/h	2687				1449			607			815	
Approach Delay, s/veh	56.4				38.3			76.9			47.6	
Approach LOS	E				D			E			D	
Timer												
Assigned Phase	7	4		3	8		5	2		1	6	
Phase Duration (G+Y+Rc), s	25.57	71.00		23.00	68.43		14.00	23.65		12.00	21.65	
Change Period (Y+Rc), s	4.00	4.00		4.00	4.00		4.00	4.00		4.00	4.00	
Max Green Setting (Gmax), s	25.00	67.00		19.00	61.00		10.00	20.00		8.00	18.00	
Max Q Clear Time (g_c+I1), s	20.82	69.00		20.55	31.62		11.48	15.70		8.86	17.15	
Green Extension Time (p_c)	0.75	0.00		0.00	24.78		0.00	2.15		0.00	0.50	
Intersection Summary												
HCM 2010 Control Delay	52.7											
HCM 2010 Level of Service	D											

HCM 2010 Signalized Intersection Summary

8: Old Highway 395 & Dublin Rd

2/10/2013

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Volume (vph)	203	150	428	269	100	421
Number	3	18	2	12	1	6
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863
Lanes	1	1	1	0	0	1
Capacity, veh/h	364	324	556	349	235	676
Arriving On Green	0.20	0.20	0.52	0.52	0.52	0.52
Sat Flow, veh/h	1774.0	1583.3	1070.9	673.1	282.2	960.2
Grp Volume(v), veh/h	220.7	163.0	0.0	757.6	566.3	0.0
Grp Sat Flow(s),veh/h/ln	1774.0	1583.3	0.0	1744.0	1470.5	0.0
Q Serve(g_s), s	3.3	2.6	0.0	10.7	0.0	0.0
Cycle Q Clear(g_c), s	3.3	2.6	0.0	10.7	6.9	0.0
Proportion In Lane	1.000	1.000		0.386	0.192	
Lane Grp Cap(c), veh/h	363.6	324.5	0.0	904.6	911.0	0.0
V/C Ratio(X)	0.607	0.502	0.000	0.837	0.622	0.000
Avail Cap(c_a), veh/h	980.5	875.1	0.0	963.9	951.3	0.0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	1.000	0.000	1.000	1.000	0.000
Uniform Delay (d), s/veh	10.4	10.2	0.0	5.9	4.9	0.0
Incr Delay (d2), s/veh	1.6	1.2	0.0	6.3	1.2	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	12.1	11.4	0.0	12.2	6.0	0.0
Lane Group LOS	B	B		B	A	
Approach Volume, veh/h	384		758			566
Approach Delay, s/veh	11.8		12.2			6.0
Approach LOS	B		B			A
Timer						
Assigned Phase			2			6
Phase Duration (G+Y+Rc), s			19.02			19.02
Change Period (Y+Rc), s			4.00			4.00
Max Green Setting (Gmax), s			16.00			16.00
Max Q Clear Time (g_c+l1), s			12.70			8.90
Green Extension Time (p_c)			2.32			4.46
Intersection Summary						
HCM 2010 Control Delay			10.1			
HCM 2010 Level of Service			B			

HCM 2010 Signalized Intersection Summary

24: Valley Center Rd & Miller Road

2/10/2013

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Volume (vph)	86	1253	1153	40	20	126
Number	5	2	6	16	7	14
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	0.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863
Lanes	1	2	2	0	1	0
Capacity, veh/h	108	2611	1486	52	0	0
Arriving On Green	0.06	0.74	0.42	0.42	0.00	0.00
Sat Flow, veh/h	1774.0	3632.4	3580.3	124.1	0.0	
Grp Volume(v), veh/h	93.5	1362.0	651.8	645.0	0.0	
Grp Sat Flow(s),veh/h/ln	1774.0	1769.6	1862.7	1840.8	0.0	
Q Serve(g_s), s	0.8	2.5	4.8	4.8	0.0	
Cycle Q Clear(g_c), s	0.8	2.5	4.8	4.8	0.0	
Proportion In Lane	1.000			0.067	0.000	
Lane Grp Cap(c), veh/h	107.7	2611.5	773.1	764.0	0.0	
V/C Ratio(X)	0.868	0.522	0.843	0.844	0.000	
Avail Cap(c_a), veh/h	581.3	2783.2	773.1	764.0	0.0	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	
Upstream Filter(I)	1.000	1.000	1.000	1.000	0.000	
Uniform Delay (d), s/veh	7.1	0.9	4.0	4.0	0.0	
Incr Delay (d2), s/veh	18.2	0.2	8.4	8.6	0.0	
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	
Lane Group Delay (d), s/veh	25.3	1.0	12.4	12.6	0.0	
Lane Group LOS	C	A	B	B		
Approach Volume, veh/h		1455	1297		0	
Approach Delay, s/veh		2.6	12.5		0.0	
Approach LOS		A	B			
Timer						
Assigned Phase	5	2	6			
Phase Duration (G+Y+Rc), s	4.93	15.26	10.33			
Change Period (Y+Rc), s	4.00	4.00	4.00			
Max Green Setting (Gmax), s	5.00	12.00	3.00			
Max Q Clear Time (g_c+I1), s	2.80	4.50	6.81			
Green Extension Time (p_c)	0.03	6.76	0.00			
Intersection Summary						
HCM 2010 Control Delay			7.3			
HCM 2010 Level of Service			A			

HCM 2010 Signalized Intersection Summary

9: Old Highway 395 & W Lilac Rd

12/19/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	85	39	61	388	76	209	66	335	248	134	495	195
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	1	1	0	1	1	0	1	1	0	1	2	0
Capacity, veh/h	119	74	77	459	158	310	93	425	213	179	1163	316
Arriving On Green	0.07	0.09	0.09	0.26	0.28	0.28	0.05	0.36	0.36	0.10	0.41	0.41
Sat Flow, veh/h	1774.0	832.8	875.5	1774.0	563.4	1104.5	1774.0	1171.5	587.5	1774.0	2823.4	766.8
Grp Volume(v), veh/h	92.4	0.0	87.0	421.7	0.0	244.6	71.7	0.0	546.7	145.7	354.2	330.6
Grp Sat Flow(s),veh/h/ln	1774.0	0.0	1708.2	1774.0	0.0	1667.8	1774.0	0.0	1759.1	1774.0	1862.7	1727.4
Q Serve(g_s), s	4.3	0.0	4.1	19.6	0.0	10.5	3.4	0.0	24.3	6.8	11.7	11.8
Cycle Q Clear(g_c), s	4.3	0.0	4.1	19.6	0.0	10.5	3.4	0.0	24.3	6.8	11.7	11.8
Proportion In Lane	1.000		0.512	1.000		0.662	1.000		0.334	1.000		0.444
Lane Grp Cap(c), veh/h	119.0	0.0	150.8	459.5	0.0	467.4	92.5	0.0	638.9	178.7	767.0	711.3
V/C Ratio(X)	0.776	0.000	0.576	0.918	0.000	0.523	0.776	0.000	0.856	0.815	0.462	0.465
Avail Cap(c_a), veh/h	230.2	0.0	322.5	502.3	0.0	570.6	188.4	0.0	726.4	188.4	769.2	713.3
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	1.000	1.000	0.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	38.9	0.0	37.1	30.5	0.0	25.7	39.7	0.0	24.9	37.3	18.1	18.1
Incr Delay (d2), s/veh	10.3	0.0	3.4	20.9	0.0	0.9	12.9	0.0	9.0	22.5	0.4	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	49.2	0.0	40.6	51.4	0.0	26.6	52.6	0.0	33.9	59.9	18.5	18.6
Lane Group LOS	D		D	D		C	D		C	E	B	B
Approach Volume, veh/h	179			666			618			830		
Approach Delay, s/veh	45.0			42.3			36.1			25.8		
Approach LOS	D			D			D			C		
Timer												
Assigned Phase	7	4		3	8		5	2		1	6	
Phase Duration (G+Y+Rc), s	9.69	11.48		25.95	27.75		8.42	34.78		12.54	38.90	
Change Period (Y+Rc), s	4.00	4.00		4.00	4.00		4.00	4.00		4.00	4.00	
Max Green Setting (Gmax), s	11.00	16.00		24.00	29.00		9.00	35.00		9.00	35.00	
Max Q Clear Time (g_c+l1), s	6.34	6.14		21.59	12.48		5.39	26.34		8.82	13.80	
Green Extension Time (p_c)	0.07	1.34		0.37	1.75		0.04	4.44		0.01	7.30	
Intersection Summary												
HCM 2010 Control Delay	34.9											
HCM 2010 Level of Service	C											

HCM 2010 Signalized Intersection Summary

10: Old Highway 395 & I-15 SB Off Ramp

12/19/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	318	626	25	430	0	0	0	0	100	1	69
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Adj Sat Flow Rate	0	1863	1863	1863	1863	0	0	0	0	1863	1863	1863
Lanes	0	1	1	1	1	0	0	0	0	0	1	1
Capacity, veh/h	0	864	734	0	864	0	0	0	0	227	2	205
Arriving On Green	0.00	0.46	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.13	0.13	0.13
Sat Flow, veh/h		1862.7	1583.3		1862.7	0.0		0		1757.3	17.6	1583.3
Grp Volume(v), veh/h		345.7	0.0		467.4	0.0		0.0		109.8	0.0	75.0
Grp Sat Flow(s),veh/h/ln		1862.7	1583.3		1862.7	0.0				1774.9	0.0	1583.3
Q Serve(g_s), s		2.4	0.0		3.5	0.0				1.1	0.0	0.9
Cycle Q Clear(g_c), s		2.4	0.0		3.5	0.0				1.1	0.0	0.9
Proportion In Lane			1.000			0.000				0.990		1.000
Lane Grp Cap(c), veh/h		864.1	734.4		864.1	0.0				229.5	0.0	204.7
V/C Ratio(X)		0.400	0.000		0.541	0.000				0.478	0.000	0.366
Avail Cap(c_a), veh/h		1705.2	1449.4		1705.2	0.0				1444.2	0.0	1288.4
HCM Platoon Ratio		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)		1.000	0.000		1.000	0.000				1.000	0.000	1.000
Uniform Delay (d), s/veh		3.5	0.0		3.8	0.0				7.9	0.0	7.8
Incr Delay (d2), s/veh		0.3	0.0		0.5	0.0				1.5	0.0	1.1
Initial Q Delay(d3),s/veh		0.0	0.0		0.0	0.0				0.0	0.0	0.0
Lane Group Delay (d), s/veh		3.8	0.0		4.3	0.0				9.5	0.0	8.9
Lane Group LOS		A			A					A		A
Approach Volume, veh/h		346			467						185	
Approach Delay, s/veh		3.8			4.3						9.3	
Approach LOS		A			A						A	
Timer												
Assigned Phase		6			2						8	
Phase Duration (G+Y+Rc), s		13.12			13.12						6.54	
Change Period (Y+Rc), s		4.00			4.00						4.00	
Max Green Setting (Gmax), s		18.00			18.00						16.00	
Max Q Clear Time (g_c+l1), s		4.40			5.53						3.13	
Green Extension Time (p_c)		3.74			3.59						0.56	
Intersection Summary												
HCM 2010 Control Delay			5.0									
HCM 2010 Level of Service			A									

HCM 2010 Signalized Intersection Summary

11: I-15 NB Off Ramp & Old Highway 395

12/19/2013

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				 	 	 
Volume (vph)	284	0	0	310	267	50
Number	6	16	5	2	7	14
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking, Bus Adj	1.00	1.00	0.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	0	0	1863	1863	1863
Lanes	1	0	0	2	1	1
Capacity, veh/h	673	0	0	1278	432	386
Arriving On Green	0.36	0.00	0.00	0.36	0.24	0.24
Sat Flow, veh/h	1862.7	0.0		3725.5	1774.0	1583.3
Grp Volume(v), veh/h	308.7	0.0		337.0	290.2	54.3
Grp Sat Flow(s),veh/h/ln	1862.7	0.0		1769.6	1774.0	1583.3
Q Serve(g_s), s	2.6	0.0		1.4	3.0	0.5
Cycle Q Clear(g_c), s	2.6	0.0		1.4	3.0	0.5
Proportion In Lane		0.000			1.000	1.000
Lane Grp Cap(c), veh/h	672.5	0.0		1277.8	432.1	385.7
V/C Ratio(X)	0.459	0.000		0.264	0.672	0.141
Avail Cap(c_a), veh/h	1473.0	0.0		2798.8	1402.9	1252.1
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000		1.000	1.000	1.000
Uniform Delay (d), s/veh	5.0	0.0		4.6	6.9	6.0
Incr Delay (d2), s/veh	0.5	0.0		0.1	1.8	0.2
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0
Lane Group Delay (d), s/veh	5.4	0.0		4.7	8.7	6.2
Lane Group LOS	A			A	A	A
Approach Volume, veh/h	309			337	345	
Approach Delay, s/veh	5.4			4.7	8.3	
Approach LOS	A			A	A	
Timer						
Assigned Phase	6			2		
Phase Duration (G+Y+Rc), s	11.30			11.30		
Change Period (Y+Rc), s	4.00			4.00		
Max Green Setting (Gmax), s	16.00			16.00		
Max Q Clear Time (g_c+I1), s	4.57			3.36		
Green Extension Time (p_c)	2.74			2.88		
Intersection Summary						
HCM 2010 Control Delay			6.2			
HCM 2010 Level of Service			A			

HCM 2010 Signalized Intersection Summary

13: Old Highway 395 & Circle R Road

5/19/2014

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Volume (veh/h)	255	85	449	449	140	356		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	277	92	488	439	152	387		
Adj No. of Lanes	0	0	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	0	2	2	2	2		
Cap, veh/h	261	87	780	663	193	1151		
Arrive On Green	0.20	0.20	0.42	0.42	0.11	0.62		
Sat Flow, veh/h	1290	428	1863	1583	1774	1863		
Grp Volume(v), veh/h	370	0	488	439	152	387		
Grp Sat Flow(s),veh/h/ln	1723	0	1863	1583	1774	1863		
Q Serve(g_s), s	9.0	0.0	9.2	9.9	3.7	4.5		
Cycle Q Clear(g_c), s	9.0	0.0	9.2	9.9	3.7	4.5		
Prop In Lane	0.75	0.25		1.00	1.00			
Lane Grp Cap(c), veh/h	349	0	780	663	193	1151		
V/C Ratio(X)	1.06	0.00	0.63	0.66	0.79	0.34		
Avail Cap(c_a), veh/h	349	0	1424	1210	199	1801		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	17.7	0.0	10.2	10.4	19.3	4.1		
Incr Delay (d2), s/veh	65.3	0.0	0.8	1.1	18.2	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	10.5	0.0	4.8	4.5	2.8	2.3		
LnGrp Delay(d),s/veh	83.1	0.0	11.0	11.5	37.5	4.3		
LnGrp LOS	F		B	B	D	A		
Approach Vol, veh/h	370		927			539		
Approach Delay, s/veh	83.1		11.2			13.6		
Approach LOS	F		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.8	22.6				31.5		13.0
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	5.0	34.0				43.0		9.0
Max Q Clear Time (g_c+I1), s	5.7	11.9				6.5		11.0
Green Ext Time (p_c), s	0.0	6.7				7.5		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			26.4					
HCM 2010 LOS			C					
Notes								

HCM 2010 Signalized Intersection Summary

14: I-15 SB Ramps & Gopher Canyon Road

12/19/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	362	240	407	419	0	0	0	0	125	5	630
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Adj Sat Flow Rate	0	1863	1863	1863	1863	0	0	0	0	1863	1863	1863
Lanes	0	2	0	1	2	0	0	0	1	0	1	1
Capacity, veh/h	0	709	0	496	1914	0	0	0	0	543	22	503
Arriving On Green	0.00	0.19	0.00	0.28	0.54	0.00	0.00	0.00	0.00	0.32	0.32	0.32
Sat Flow, veh/h		3725.5	0.0	1774.0	3632.4	0.0		0		1708.9	68.4	1583.3
Grp Volume(v), veh/h		381.1	0.0	428.4	441.1	0.0		0.0		136.8	0.0	505.3
Grp Sat Flow(s),veh/h/ln		1862.7	0.0	1774.0	1769.6	0.0				1777.3	0.0	1583.3
Q Serve(g_s), s		5.2	0.0	13.0	3.7	0.0				3.2	0.0	18.0
Cycle Q Clear(g_c), s		5.2	0.0	13.0	3.7	0.0				3.2	0.0	18.0
Proportion In Lane			0.000	1.000		0.000				0.962		1.000
Lane Grp Cap(c), veh/h		709.3	0.0	496.4	1914.2	0.0				564.9	0.0	503.3
V/C Ratio(X)		0.537	0.000	0.863	0.230	0.000				0.242	0.000	1.004
Avail Cap(c_a), veh/h		1118.4	0.0	720.5	2750.0	0.0				564.9	0.0	503.3
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)		1.000	0.000	1.000	1.000	0.000				1.000	0.000	1.000
Uniform Delay (d), s/veh		20.7	0.0	19.4	6.8	0.0				14.3	0.0	19.3
Incr Delay (d2), s/veh		0.6	0.0	7.4	0.1	0.0				0.2	0.0	41.1
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
Lane Group Delay (d), s/veh		21.3	0.0	26.8	6.9	0.0				14.5	0.0	60.4
Lane Group LOS		C		C	A					B		F
Approach Volume, veh/h		381			869						642	
Approach Delay, s/veh		21.3			16.7						50.6	
Approach LOS		C			B						D	
Timer												
Assigned Phase		2		1	6						4	
Phase Duration (G+Y+Rc), s		14.78		19.85	34.63						22.00	
Change Period (Y+Rc), s		4.00		4.00	4.00						4.00	
Max Green Setting (Gmax), s		17.00		23.00	44.00						18.00	
Max Q Clear Time (g_c+I1), s		7.22		14.98	5.70						20.00	
Green Extension Time (p_c)		3.56		0.88	5.87						0.00	
Intersection Summary												
HCM 2010 Control Delay				29.1								
HCM 2010 Level of Service				C								

HCM 2010 Signalized Intersection Summary 15: I-15 NB Ramps & Gopher Canyon Road

12/19/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	195	292	0	0	661	125	180	5	215	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Adj Sat Flow Rate	1863	1863	0	0	1863	1863	1863	1863	1863	0	0	0
Lanes	1	2	0	0	2	0	0	1	1	0	0	0
Capacity, veh/h	276	2117	0	0	1266	0	339	9	311	0	0	0
Arriving On Green	0.16	0.60	0.00	0.00	0.34	0.00	0.20	0.20	0.20	0.00	0.00	0.00
Sat Flow, veh/h	1774.0	3632.4	0.0		3725.5	0.0	1728.3	48.0	1583.3		0	
Grp Volume(v), veh/h	212.0	317.4	0.0		718.5	0.0	201.1	0.0	201.1		0.0	
Grp Sat Flow(s),veh/h/ln	1774.0	1769.6	0.0		1862.7	0.0	1776.3	0.0	1583.3			
Q Serve(g_s), s	4.5	1.5	0.0		6.1	0.0	4.0	0.0	4.5			
Cycle Q Clear(g_c), s	4.5	1.5	0.0		6.1	0.0	4.0	0.0	4.5			
Proportion In Lane	1.000		0.000			0.000	0.973		1.000			
Lane Grp Cap(c), veh/h	275.7	2116.8	0.0		1266.4	0.0	348.7	0.0	310.8			
V/C Ratio(X)	0.769	0.150	0.000		0.567	0.000	0.577	0.000	0.647			
Avail Cap(c_a), veh/h	547.1	3274.3	0.0		1914.8	0.0	730.4	0.0	651.0			
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.000	1.000	0.000		1.000	0.000	1.000	0.000	1.000			
Uniform Delay (d), s/veh	15.8	3.5	0.0		10.5	0.0	14.2	0.0	14.4			
Incr Delay (d2), s/veh	4.5	0.0	0.0		0.4	0.0	1.5	0.0	2.3			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0			
Lane Group Delay (d), s/veh	20.3	3.5	0.0		10.9	0.0	15.7	0.0	16.7			
Lane Group LOS	C	A			B		B		B			
Approach Volume, veh/h		529			718			402				
Approach Delay, s/veh		10.2			10.9			16.2				
Approach LOS		B			B			B				
Timer												
Assigned Phase	5	2			6			8				
Phase Duration (G+Y+Rc), s	10.05	27.27			17.23			11.64				
Change Period (Y+Rc), s	4.00	4.00			4.00			4.00				
Max Green Setting (Gmax), s	12.00	36.00			20.00			16.00				
Max Q Clear Time (g_c+I1), s	6.46	3.54			8.14			6.55				
Green Extension Time (p_c)	0.27	7.73			5.09			1.19				
Intersection Summary												
HCM 2010 Control Delay					12.0							
HCM 2010 Level of Service					B							

HCM 2010 Signalized Intersection Summary

9: Old Highway 395 & W Lilac Rd

12/19/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	155	90	46	282	53	157	116	340	449	255	225	90
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863
Lanes	1	1	0	1	1	0	1	1	0	1	2	0
Capacity, veh/h	197	124	50	333	131	165	154	412	296	302	1401	366
Arriving On Green	0.11	0.10	0.10	0.19	0.17	0.17	0.09	0.41	0.41	0.17	0.49	0.49
Sat Flow, veh/h	1774.0	1266.7	506.7	1774.0	748.9	946.7	1774.0	1010.0	724.8	1774.0	2850.4	743.8
Grp Volume(v), veh/h	168.5	0.0	137.0	306.5	0.0	130.4	126.1	0.0	634.8	277.2	158.0	151.8
Grp Sat Flow(s),veh/h/ln	1774.0	0.0	1773.3	1774.0	0.0	1695.7	1774.0	0.0	1734.8	1774.0	1862.7	1731.5
Q Serve(g_s), s	11.0	0.0	8.9	19.9	0.0	8.1	8.2	0.0	40.1	18.0	5.5	5.7
Cycle Q Clear(g_c), s	11.0	0.0	8.9	19.9	0.0	8.1	8.2	0.0	40.1	18.0	5.5	5.7
Proportion In Lane	1.000		0.286	1.000		0.558	1.000		0.418	1.000		0.430
Lane Grp Cap(c), veh/h	197.2	0.0	173.5	332.9	0.0	295.7	154.0	0.0	707.9	302.0	915.5	851.0
V/C Ratio(X)	0.855	0.000	0.789	0.921	0.000	0.441	0.819	0.000	0.897	0.918	0.173	0.178
Avail Cap(c_a), veh/h	256.7	0.0	241.5	347.3	0.0	317.6	271.8	0.0	959.9	302.0	1062.4	987.5
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000	1.000	1.000	0.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000
Uniform Delay (d), s/veh	51.3	0.0	51.8	46.9	0.0	43.4	52.7	0.0	32.5	47.9	16.6	16.6
Incr Delay (d2), s/veh	19.1	0.0	11.2	28.5	0.0	1.0	10.2	0.0	8.7	31.3	0.1	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Lane Group Delay (d), s/veh	70.4	0.0	63.0	75.3	0.0	44.4	62.9	0.0	41.2	79.3	16.7	16.7
Lane Group LOS	E		E	E		D	E		D	E	B	B
Approach Volume, veh/h	305			437			761			587		
Approach Delay, s/veh	67.1			66.1			44.8			46.3		
Approach LOS	E			E			D			D		
Timer												
Assigned Phase	7	4		3	8		5	2		1	6	
Phase Duration (G+Y+Rc), s	17.06	15.50		26.04	24.48		14.20	51.93		24.00	61.74	
Change Period (Y+Rc), s	4.00	4.00		4.00	4.00		4.00	4.00		4.00	4.00	
Max Green Setting (Gmax), s	17.00	16.00		23.00	22.00		18.00	65.00		20.00	67.00	
Max Q Clear Time (g_c+I1), s	12.96	10.87		21.93	10.08		10.21	42.13		20.05	7.74	
Green Extension Time (p_c)	0.15	0.63		0.11	1.11		0.16	5.81		0.00	6.63	
Intersection Summary												
HCM 2010 Control Delay	52.9											
HCM 2010 Level of Service	D											

HCM 2010 Signalized Intersection Summary

10: Old Highway 395 & I-15 SB Off Ramp

12/19/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	261	365	45	695	0	0	0	0	137	0	269
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	0.00	1.00	1.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Adj Sat Flow Rate	0	1863	1863	1863	1863	0	0	0	0	1863	0	1863
Lanes	0	1	1	1	1	0	0	0	0	0	1	1
Capacity, veh/h	0	347	295	0	855	0	0	0	0	0	0	321
Arriving On Green	0.00	0.19	0.19	0.00	0.46	0.00	0.00	0.00	0.00	0.20	0.00	0.20
Sat Flow, veh/h		1862.7	1583.3		1862.7	0.0		0		0.0	0.0	1583.3
Grp Volume(v), veh/h		283.7	125.0		755.4	0.0		0.0		148.9	0.0	205.4
Grp Sat Flow(s),veh/h/ln		1862.7	1583.3		1862.7	0.0				0.0	0.0	1583.3
Q Serve(g_s), s		11.5	5.5		29.2	0.0				16.0	0.0	9.4
Cycle Q Clear(g_c), s		11.5	5.5		29.2	0.0				16.0	0.0	9.4
Proportion In Lane			1.000			0.000				1.000		1.000
Lane Grp Cap(c), veh/h		347.3	295.2		855.3	0.0				0.0	0.0	320.7
V/C Ratio(X)		0.817	0.423		0.883	0.000				0.000	0.000	0.641
Avail Cap(c_a), veh/h		518.7	440.9		1414.7	0.0				0.0	0.0	320.7
HCM Platoon Ratio		1.00	1.00		1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)		1.000	1.000		1.000	0.000				1.000	0.000	1.000
Uniform Delay (d), s/veh		30.8	28.4		19.4	0.0				0.0	0.0	28.9
Incr Delay (d2), s/veh		6.2	1.0		4.0	0.0				0.0	0.0	4.3
Initial Q Delay(d3),s/veh		0.0	0.0		0.0	0.0				0.0	0.0	0.0
Lane Group Delay (d), s/veh		37.1	29.4		23.4	0.0				0.0	0.0	33.1
Lane Group LOS		D	C		C							C
Approach Volume, veh/h		409			755						354	
Approach Delay, s/veh		34.7			23.4						19.2	
Approach LOS		C			C						B	
Timer												
Assigned Phase		6			2						8	
Phase Duration (G+Y+Rc), s		18.73			40.27						20.00	
Change Period (Y+Rc), s		4.00			4.00						4.00	
Max Green Setting (Gmax), s		22.00			60.00						16.00	
Max Q Clear Time (g_c+I1), s		13.55			31.15						18.00	
Green Extension Time (p_c)		1.18			5.12						0.00	
Intersection Summary												
HCM 2010 Control Delay			25.5									
HCM 2010 Level of Service			C									

HCM 2010 Signalized Intersection Summary

11: I-15 NB Off Ramp & Old Highway 395

12/19/2013

						
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations				 		
Volume (vph)	290	0	0	338	518	75
Number	6	16	5	2	7	14
Initial Queue, veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking, Bus Adj	1.00	1.00	0.00	1.00	1.00	1.00
Adj Sat Flow Rate	1863	0	0	1863	1863	1863
Lanes	1	0	0	2	1	1
Capacity, veh/h	582	0	0	1106	703	627
Arriving On Green	0.31	0.00	0.00	0.31	0.40	0.40
Sat Flow, veh/h	1862.7	0.0		3725.5	1774.0	1583.3
Grp Volume(v), veh/h	315.2	0.0		367.4	563.0	81.5
Grp Sat Flow(s),veh/h/ln	1862.7	0.0		1769.6	1774.0	1583.3
Q Serve(g_s), s	3.8	0.0		2.2	7.7	0.9
Cycle Q Clear(g_c), s	3.8	0.0		2.2	7.7	0.9
Proportion In Lane		0.000			1.000	1.000
Lane Grp Cap(c), veh/h	581.9	0.0		1105.7	702.9	627.3
V/C Ratio(X)	0.542	0.000		0.332	0.801	0.130
Avail Cap(c_a), veh/h	1085.6	0.0		2062.6	1033.9	922.7
HCM Platoon Ratio	1.00	1.00		1.00	1.00	1.00
Upstream Filter(I)	1.000	0.000		1.000	1.000	1.000
Uniform Delay (d), s/veh	7.8	0.0		7.2	7.3	5.3
Incr Delay (d2), s/veh	0.8	0.0		0.2	2.9	0.1
Initial Q Delay(d3),s/veh	0.0	0.0		0.0	0.0	0.0
Lane Group Delay (d), s/veh	8.6	0.0		7.4	10.2	5.4
Lane Group LOS	A			A	B	A
Approach Volume, veh/h	315			367	645	
Approach Delay, s/veh	8.6			7.4	9.6	
Approach LOS	A			A	A	
Timer						
Assigned Phase	6			2		
Phase Duration (G+Y+Rc), s	12.58			12.58		
Change Period (Y+Rc), s	4.00			4.00		
Max Green Setting (Gmax), s	16.00			16.00		
Max Q Clear Time (g_c+I1), s	5.85			4.19		
Green Extension Time (p_c)	2.73			2.96		
Intersection Summary						
HCM 2010 Control Delay			8.7			
HCM 2010 Level of Service			A			

HCM 2010 Signalized Intersection Summary

13: Old Highway 395 & Circle R Road

3/2/2014

								
Movement	WBL	WBR	NBT	NBR	SBL	SBT		
Lane Configurations								
Volume (veh/h)	221	85	469	392	140	356		
Number	3	18	2	12	1	6		
Initial Q (Qb), veh	0	0	0	0	0	0		
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00		
Adj Sat Flow, veh/h/ln	1863	1900	1863	1863	1863	1863		
Adj Flow Rate, veh/h	240	92	510	426	152	387		
Adj No. of Lanes	0	0	1	1	1	1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92		
Percent Heavy Veh, %	0	0	2	2	2	2		
Cap, veh/h	281	108	729	619	195	1102		
Arrive On Green	0.23	0.23	0.39	0.39	0.11	0.59		
Sat Flow, veh/h	1238	474	1863	1583	1774	1863		
Grp Volume(v), veh/h	333	0	510	426	152	387		
Grp Sat Flow(s),veh/h/ln	1717	0	1863	1583	1774	1863		
Q Serve(g_s), s	8.2	0.0	10.2	9.9	3.7	4.7		
Cycle Q Clear(g_c), s	8.2	0.0	10.2	9.9	3.7	4.7		
Prop In Lane	0.72	0.28		1.00	1.00			
Lane Grp Cap(c), veh/h	390	0	729	619	195	1102		
V/C Ratio(X)	0.85	0.00	0.70	0.69	0.78	0.35		
Avail Cap(c_a), veh/h	621	0	1011	859	321	1516		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00		
Uniform Delay (d), s/veh	16.4	0.0	11.3	11.2	19.1	4.6		
Incr Delay (d2), s/veh	6.6	0.0	1.3	1.4	6.5	0.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	4.6	0.0	5.4	4.5	2.1	2.4		
LnGrp Delay(d),s/veh	23.0	0.0	12.6	12.6	25.7	4.8		
LnGrp LOS	C		B	B	C	A		
Approach Vol, veh/h	333		936			539		
Approach Delay, s/veh	23.0		12.6			10.7		
Approach LOS	C		B			B		
Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2				6		8
Phs Duration (G+Y+Rc), s	8.9	21.3				30.2		14.1
Change Period (Y+Rc), s	4.0	4.0				4.0		4.0
Max Green Setting (Gmax), s	8.0	24.0				36.0		16.0
Max Q Clear Time (g_c+I1), s	5.7	12.2				6.7		10.2
Green Ext Time (p_c), s	0.1	5.2				7.4		0.0
Intersection Summary								
HCM 2010 Ctrl Delay			13.9					
HCM 2010 LOS			B					
Notes								
User approved pedestrian interval to be less than phase max green.								

HCM 2010 Signalized Intersection Summary

14: I-15 SB Ramps & Gopher Canyon Road

12/19/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	816	300	303	381	0	0	0	0	120	5	205
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	1.00
Adj Sat Flow Rate	0	1863	1863	1863	1863	0	0	0	0	1863	1863	1863
Lanes	0	2	0	1	2	0	0	0	1	0	1	1
Capacity, veh/h	0	1432	0	392	2393	0	0	0	0	311	13	289
Arriving On Green	0.00	0.38	0.00	0.22	0.68	0.00	0.00	0.00	0.00	0.18	0.18	0.18
Sat Flow, veh/h		3725.5	0.0	1774.0	3632.4	0.0		0		1706.3	71.1	1583.3
Grp Volume(v), veh/h		887.0	0.0	329.3	414.1	0.0		0.0		135.9	0.0	222.8
Grp Sat Flow(s),veh/h/ln		1862.7	0.0	1774.0	1769.6	0.0				1777.4	0.0	1583.3
Q Serve(g_s), s		10.9	0.0	10.0	2.4	0.0				3.8	0.0	7.6
Cycle Q Clear(g_c), s		10.9	0.0	10.0	2.4	0.0				3.8	0.0	7.6
Proportion In Lane			0.000	1.000		0.000				0.960		1.000
Lane Grp Cap(c), veh/h		1431.6	0.0	391.9	2392.6	0.0				324.1	0.0	288.7
V/C Ratio(X)		0.620	0.000	0.840	0.173	0.000				0.419	0.000	0.772
Avail Cap(c_a), veh/h		2242.6	0.0	565.4	3508.9	0.0				503.5	0.0	448.5
HCM Platoon Ratio		1.00	1.00	1.00	1.00	1.00				1.00	1.00	1.00
Upstream Filter(I)		1.000	0.000	1.000	1.000	0.000				1.000	0.000	1.000
Uniform Delay (d), s/veh		14.1	0.0	21.0	3.4	0.0				20.4	0.0	22.0
Incr Delay (d2), s/veh		0.4	0.0	7.6	0.0	0.0				0.9	0.0	4.4
Initial Q Delay(d3),s/veh		0.0	0.0	0.0	0.0	0.0				0.0	0.0	0.0
Lane Group Delay (d), s/veh		14.5	0.0	28.6	3.4	0.0				21.3	0.0	26.3
Lane Group LOS		B		C	A					C		C
Approach Volume, veh/h		887			743						359	
Approach Delay, s/veh		14.5			14.6						24.4	
Approach LOS		B			B						C	
Timer												
Assigned Phase		2		1	6						4	
Phase Duration (G+Y+Rc), s		25.71		16.48	42.18						14.30	
Change Period (Y+Rc), s		4.00		4.00	4.00						4.00	
Max Green Setting (Gmax), s		34.00		18.00	56.00						16.00	
Max Q Clear Time (g_c+I1), s		12.87		12.03	4.43						9.56	
Green Extension Time (p_c)		8.84		0.52	11.46						0.77	
Intersection Summary												
HCM 2010 Control Delay				16.3								
HCM 2010 Level of Service				B								

HCM 2010 Signalized Intersection Summary

15: I-15 NB Ramps & Gopher Canyon Road

12/19/2013

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	635	301	0	0	439	150	245	5	547	0	0	0
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Queue, veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking, Bus Adj	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00	0.00
Adj Sat Flow Rate	1863	1863	0	0	1863	1863	1863	1863	1863	0	0	0
Lanes	1	2	0	0	2	0	0	1	1	0	0	0
Capacity, veh/h	694	2261	0	0	698	0	419	9	381	0	0	0
Arriving On Green	0.39	0.64	0.00	0.00	0.19	0.00	0.24	0.24	0.24	0.00	0.00	0.00
Sat Flow, veh/h	1774.0	3632.4	0.0		3725.5	0.0	1740.2	35.5	1583.3		0	
Grp Volume(v), veh/h	690.2	327.2	0.0		477.2	0.0	271.7	0.0	377.2		0.0	
Grp Sat Flow(s),veh/h/ln	1774.0	1769.6	0.0		1862.7	0.0	1775.7	0.0	1583.3			
Q Serve(g_s), s	25.8	2.4	0.0		7.9	0.0	9.1	0.0	15.8			
Cycle Q Clear(g_c), s	25.8	2.4	0.0		7.9	0.0	9.1	0.0	15.8			
Proportion In Lane	1.000		0.000			0.000	0.980		1.000			
Lane Grp Cap(c), veh/h	694.2	2260.8	0.0		697.6	0.0	427.6	0.0	381.3			
V/C Ratio(X)	0.994	0.145	0.000		0.684	0.000	0.635	0.000	0.989			
Avail Cap(c_a), veh/h	694.2	2450.3	0.0		897.1	0.0	427.6	0.0	381.3			
HCM Platoon Ratio	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	1.000	1.000	0.000		1.000	0.000	1.000	0.000	1.000			
Uniform Delay (d), s/veh	20.1	4.8	0.0		25.2	0.0	22.6	0.0	25.1			
Incr Delay (d2), s/veh	32.6	0.0	0.0		1.5	0.0	3.1	0.0	43.1			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0			
Lane Group Delay (d), s/veh	52.8	4.8	0.0		26.6	0.0	25.7	0.0	68.2			
Lane Group LOS	D	A			C		C		E			
Approach Volume, veh/h		1017			477			649				
Approach Delay, s/veh		37.4			26.6			50.4				
Approach LOS		D			C			D				
Timer												
Assigned Phase	5	2			6			8				
Phase Duration (G+Y+Rc), s	30.00	46.44			16.44			20.00				
Change Period (Y+Rc), s	4.00	4.00			4.00			4.00				
Max Green Setting (Gmax), s	26.00	46.00			16.00			16.00				
Max Q Clear Time (g_c+I1), s	27.75	4.44			9.93			17.77				
Green Extension Time (p_c)	0.00	5.77			2.51			0.00				
Intersection Summary												
HCM 2010 Control Delay					38.9							
HCM 2010 Level of Service					D							

**I-15 Interchanges Alternatives
Existing Plus Cumulative Projects Plus Project**

HCM 2010 AWSC
10: Old Highway 395 & I-15 SB Off Ramp

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Intersection												
Intersection Delay (sec/veh)	40.9											
Intersection LOS	E											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	300	598	25	408	0	0	0	0	100	1	69
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	326	650	27	443	0	0	0	0	109	1	75
Number of Lanes	0	1	0	1	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	55.5	21.5	12.9
HCM LOS	F	C	B

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Volume Left (%)	0%	100%	0%	59%
Volume Thru (%)	33%	0%	100%	1%
Volume Right (%)	67%	0%	0%	41%
Sign Control	Stop	Stop	Stop	Stop
Traffic Volume by Lane	898	25	408	170
Left Turning Volume	300	0	408	1
Through Volume	598	0	0	69
Right Turning Volume	0	25	0	100
Lane Flow Rate	976	27	443	185
Geometry Group	5	7	7	2
Degree of Utilization, X	1	0.048	0.719	0.335
Departure Headway, Hd	5.006	6.338	5.839	6.522
Convergence(Y/N)	Yes	Yes	Yes	Yes
Capacity	732	563	616	551
Service Time	3.006	4.104	3.604	4.581
HCM Lane V/C Ratio	1.333	0.048	0.719	0.336
HCM Control Delay	55.5	9.4	22.2	12.9
HCM Lane LOS	F	A	C	B
HCM 95th Percentile Queue	127.2	0.2	7.6	1.5

HCM 2010 AWSC
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Intersection						
Intersection Delay (sec/veh)	12.2					
Intersection LOS	B					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Volume (vph)	250	0	0	409	250	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	272	0	0	445	272	54
Number of Lanes	1	0	0	2	1	0
Approach	EB		WB		NB	
Opposing Approach	WB		EB			
Opposing Lanes	2		1		0	
Conflicting Approach Left			NB		EB	
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB				WB	
Conflicting Lanes Right	1		0		2	
HCM Control Delay	12.6		10.2		14.5	
HCM LOS	B		B		B	
Lane	NBLn1	EBLn1	WBLn1	WBLn2		
Volume Left (%)	83%	0%	0%	0%		
Volume Thru (%)	0%	100%	100%	100%		
Volume Right (%)	17%	0%	0%	0%		
Sign Control	Stop	Stop	Stop	Stop		
Traffic Volume by Lane	300	250	205	205		
Left Turning Volume	0	250	205	205		
Through Volume	50	0	0	0		
Right Turning Volume	250	0	0	0		
Lane Flow Rate	326	272	222	222		
Geometry Group	2	5	7	7		
Degree of Utilization, X	0.512	0.42	0.364	0.256		
Departure Headway, Hd	5.656	5.57	5.899	4.141		
Convergence(Y/N)	Yes	Yes	Yes	Yes		
Capacity	639	647	609	867		
Service Time	3.688	3.605	3.633	1.873		
HCM Lane V/C Ratio	0.51	0.42	0.365	0.256		
HCM Control Delay	14.5	12.6	12	8.3		
HCM Lane LOS	B	B	B	A		
HCM 95th Percentile Queue	3.1	2.2	1.7	1		

HCM 2010 AWSC
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Intersection												
Intersection Delay (sec/veh)	54.8											
Intersection LOS	F											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	256	345	45	658	0	0	0	0	137	0	249
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	278	375	49	715	0	0	0	0	149	0	271
Number of Lanes	0	1	0	1	1	0	0	0	0	0	1	0

Approach	EB	WB	SB
Opposing Approach	WB	EB	
Opposing Lanes	2	1	0
Conflicting Approach Left	SB		WB
Conflicting Lanes Left	1	0	2
Conflicting Approach Right		SB	EB
Conflicting Lanes Right	0	1	1
HCM Control Delay	62.4	62.6	28.9
HCM LOS	F	F	D

Lane	EBLn1	WBLn1	WBLn2	SBLn1
Volume Left (%)	0%	100%	0%	35%
Volume Thru (%)	43%	0%	100%	0%
Volume Right (%)	57%	0%	0%	65%
Sign Control	Stop	Stop	Stop	Stop
Traffic Volume by Lane	601	45	658	386
Left Turning Volume	256	0	658	0
Through Volume	345	0	0	249
Right Turning Volume	0	45	0	137
Lane Flow Rate	653	49	715	420
Geometry Group	5	7	7	2
Degree of Utilization, X	1	0.103	1	0.772
Departure Headway, Hd	6.278	7.549	7.048	6.622
Convergence(Y/N)	Yes	Yes	Yes	Yes
Capacity	581	477	522	541
Service Time	4.278	5.249	4.748	4.712
HCM Lane V/C Ratio	1.124	0.103	1.37	0.776
HCM Control Delay	62.4	11.1	66.1	28.9
HCM Lane LOS	F	B	F	D
HCM 95th Percentile Queue	113.6	0.3	107.2	10

HCM 2010 AWSC
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Intersection						
Intersection Delay (sec/veh)	35.5					
Intersection LOS	E					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Volume (vph)	267	0	0	488	483	75
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	290	0	0	530	525	82
Number of Lanes	1	0	0	2	1	0
Approach	EB		WB		NB	
Opposing Approach	WB		EB			
Opposing Lanes	2		1		0	
Conflicting Approach Left			NB		EB	
Conflicting Lanes Left	0		1		1	
Conflicting Approach Right	NB				WB	
Conflicting Lanes Right	1		0		2	
HCM Control Delay	17.9		14.5		62.2	
HCM LOS	C		B		F	
Lane	NBLn1	EBLn1	WBLn1	WBLn2		
Volume Left (%)	87%	0%	0%	0%		
Volume Thru (%)	0%	100%	100%	100%		
Volume Right (%)	13%	0%	0%	0%		
Sign Control	Stop	Stop	Stop	Stop		
Traffic Volume by Lane	558	267	244	244		
Left Turning Volume	0	267	244	244		
Through Volume	75	0	0	0		
Right Turning Volume	483	0	0	0		
Lane Flow Rate	607	290	265	265		
Geometry Group	2	5	7	7		
Degree of Utilization, X	1	0.554	0.528	0.397		
Departure Headway, Hd	6.141	6.875	7.164	5.384		
Convergence(Y/N)	Yes	Yes	Yes	Yes		
Capacity	588	534	512	676		
Service Time	4.226	4.786	4.793	3.061		
HCM Lane V/C Ratio	1.032	0.543	0.518	0.392		
HCM Control Delay	62.2	17.9	17.5	11.5		
HCM Lane LOS	F	C	C	B		
HCM 95th Percentile Queue	114.1	3.7	3.3	2		

HCM 2010 Roundabout
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Intersection				
Intersection Delay (sec/veh)	35.1			
Intersection LOS	E			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	0	1
Conflicting Circle Lanes	1	1	1	1
Adjusted Approach Flow (vph)	976	470	0	185
Demand Flow Rate (pc/h)	996	480	0	188
Vehicles Circulating (pc/h)	140	0	444	480
Vehicles Exiting (pc/h)	528	444	692	0
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000	1.000
Approach Delay (sec/veh)	53.3	7.8	0.0	8.5
Approach LOS	F	A	-	A
Lane	Left	Left	Left	Left
Designated moves	TR	LT		LTR
Assumed Moves	TR	LT		LTR
Right Turn Channelized				
Lane Utilization	1.000	1.000		1.000
Critical Headway (s)	5.193	5.193		5.193
Entry Flow Rate (pc/h)	996	480		188
Capacity, Entry Lane (pc/h)	982	1130		699
Entry HV Adjustment Factor	0.980	0.979		0.984
Flow Rate, Entry (vph)	976	470		185
Capacity, Entry (vph)	963	1107		688
Volume to Capacity Ratio	1.014	0.425		0.269
Control Delay (sec/veh)	53.3	7.8		8.5
Level of Service	F	A		A
95th-Percentile Queue (veh)	20	2		1

HCM 2010 Roundabout
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Intersection			
Intersection Delay (sec/veh)	9.2		
Intersection LOS	A		
Approach	EB	WB	NB
Entry Lanes	1	1	1
Conflicting Circle Lanes	1	1	1
Adjusted Approach Flow (vph)	272	445	326
Demand Flow Rate (pc/h)	277	454	332
Vehicles Circulating (pc/h)	0	277	277
Vehicles Exiting (pc/h)	731	332	0
Follow-Up Headway (s)	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000
Approach Delay (sec/veh)	5.5	11.7	8.9
Approach LOS	A	B	A
Lane	Left	Left	Left
Designated moves	TR	T	LR
Assumed Moves	TR	T	LR
Right Turn Channelized			
Lane Utilization	1.000	1.000	1.000
Critical Headway (s)	5.193	5.193	5.193
Entry Flow Rate (pc/h)	277	454	332
Capacity, Entry Lane (pc/h)	1130	857	857
Entry HV Adjustment Factor	0.980	0.980	0.982
Flow Rate, Entry (vph)	272	445	326
Capacity, Entry (vph)	1108	840	841
Volume to Capacity Ratio	0.245	0.530	0.388
Control Delay (sec/veh)	5.5	11.7	8.9
Level of Service	A	B	A
95th-Percentile Queue (veh)	1	3	2

HCM 2010 Roundabout
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Intersection				
Intersection Delay (sec/veh)	15.0			
Intersection LOS	C			
Approach	EB	WB	NB	SB
Entry Lanes	1	1	0	1
Conflicting Circle Lanes	1	1	1	1
Adjusted Approach Flow (vph)	653	764	0	420
Demand Flow Rate (pc/h)	666	779	0	428
Vehicles Circulating (pc/h)	202	0	436	779
Vehicles Exiting (pc/h)	729	436	432	0
Follow-Up Headway (s)	3.186	3.186	3.186	3.186
Ped Vol. Crossing Leg (#/hr)	0	0	0	0
Ped Capacity Adjustment	1.000	1.000	1.000	1.000
Approach Delay (sec/veh)	17.1	13.6	0.0	14.4
Approach LOS	C	B	-	B
Lane	Left	Left	Left	Bypass
Designated moves	TR	LT	L	R
Assumed Moves	TR	LT	L	R
Right Turn Channelized				Yield
Lane Utilization	1.000	1.000	1.000	
Critical Headway (s)	5.193	5.193	5.193	
Entry Flow Rate (pc/h)	666	779	152	276
Capacity, Entry Lane (pc/h)	923	1130	518	545
Entry HV Adjustment Factor	0.981	0.980	0.980	0.980
Flow Rate, Entry (vph)	653	764	149	271
Capacity, Entry (vph)	906	1108	508	534
Volume to Capacity Ratio	0.721	0.689	0.293	0.507
Control Delay (sec/veh)	17.1	13.6	11.5	16.0
Level of Service	C	B	B	C
95th-Percentile Queue (veh)	6	6	1	3

HCM 2010 Roundabout
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Intersection				
Intersection Delay (sec/veh)	17.7			
Intersection LOS	C			
Approach	EB	WB	NB	
Entry Lanes	1	1	1	
Conflicting Circle Lanes	1	1	1	
Adjusted Approach Flow (vph)	290	530	607	
Demand Flow Rate (pc/h)	296	541	620	
Vehicles Circulating (pc/h)	0	535	296	
Vehicles Exiting (pc/h)	1076	296	0	
Follow-Up Headway (s)	3.186	3.186	3.186	
Ped Vol. Crossing Leg (#/hr)	0	0	0	
Ped Capacity Adjustment	1.000	1.000	1.000	
Approach Delay (sec/veh)	5.7	29.6	12.9	
Approach LOS	A	D	B	
Lane	Left	Left	Left	Bypass
Designated moves	T	T	L	R
Assumed Moves	T	T	L	R
Right Turn Channelized				Free
Lane Utilization	1.000	1.000	1.000	
Critical Headway (s)	5.193	5.193	5.193	
Entry Flow Rate (pc/h)	296	541	536	84
Capacity, Entry Lane (pc/h)	1130	662	840	1938
Entry HV Adjustment Factor	0.980	0.980	0.979	0.980
Flow Rate, Entry (vph)	290	530	525	82
Capacity, Entry (vph)	1108	649	823	1900
Volume to Capacity Ratio	0.262	0.818	0.638	0.043
Control Delay (sec/veh)	5.7	29.6	14.9	0.0
Level of Service	A	D	B	A
95th-Percentile Queue (veh)	1	9	5	0

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Intersection												
Intersection Delay (sec/veh):		4.4										
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	300	598	25	408	0	0	0	0	100	1	69
Conflicting Peds.(#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
Right Turn Channelized	Free	Free	Free	None	None	None	None	None	None	Yield	Yield	Yield
Storage Length	0		0	0		0	0		0	0		200
Median Width		12			12			12			12	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	326	650	27	443	0	0	0	0	109	1	75
Number of Lanes	0	1	0	1	1	0	0	0	0	1	0	1

Major/Minor	Major 1			Major 2			Minor 2		
Conflicting Flow Rate - All	-	0	0	976	0	-	1148	1473	222
Stage 1	-	-	-	-	-	-	497	497	-
Stage 2	-	-	-	-	-	-	651	976	-
Follow-up Headway	0	-	-	2.218	-	0	3.518	4.018	3.318
Pot Capacity-1 Maneuver	0	-	-	707	-	0	176	127	818
Stage 1	0	-	-	-	-	0	555	545	-
Stage 2	0	-	-	-	-	0	457	329	-
Time blocked-Platoon(%)	0	-	-	0	-	0	0	0	0
Mov Capacity-1 Maneuver	-	-	-	707	-	-	171	122	818
Mov Capacity-2 Maneuver	-	-	-	-	-	-	171	122	-
Stage 1	-	-	-	-	-	-	-	524	-
Stage 2	-	-	-	-	-	-	457	329	-

Approach	EB	WB	SB
HCM Control Delay (s)	0	0.6	37.7
HCM LOS	A	A	E

Lane	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (vph)					171	818
HCM Control Delay (s)	-	-	10.295	-	57	9.8
HCM Lane VC Ratio	-	-	0.038	-	0.636	0.092
HCM Lane LOS	-	-	B	-	F	A
HCM 95th Percentile Queue (veh)	-	-	0.12	-	3.584	0.302

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Intersection

Intersection Delay (sec/veh): 5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Volume (vph)	250	0	0	308	250	50
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	Free	Free
Storage Length		0	0		0	200
Median Width	0			0	12	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	272	0	0	335	272	54
Number of Lanes	1	0	0	2	1	1

Major/Minor	Major 1		Major 2			
Conflicting Flow Rate - All	0	-	-	0	440	272
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	168	-
Follow-up Headway	-	0	0	-	3.52	3.32
Pot Capacity-1 Maneuver	-	0	0	-	545	726
Stage 1	-	0	0	-	749	-
Stage 2	-	0	0	-	844	-
Time blocked-Platoon(%)	-	0	0	-	0	0
Mov Capacity-1 Maneuver	-	-	-	-	545	726
Mov Capacity-2 Maneuver	-	-	-	-	545	-
Stage 1	-	-	-	-	749	-
Stage 2	-	-	-	-	844	-

Approach	EB	WB	NB
HCM Control Delay (s)	0	0	16.7
HCM LOS	A	A	C

Lane	NBLn1	NBLn2	EBT	WBT
Capacity (vph)	545	726		
HCM Control Delay (s)	18	10.4	-	-
HCM Lane VC Ratio	0.499	0.075	-	-
HCM Lane LOS	C	B	-	-
HCM 95th Percentile Queue (veh)	2.76	0.242	-	-

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Intersection												
Intersection Delay (sec/veh): 15.7												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Volume (vph)	0	256	345	45	658	0	0	0	0	137	0	249
Conflicting Peds.(#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
Right Turn Channelized	None	None	None	None	None	None	None	None	None	Yield	Yield	Yield
Storage Length	0		0	0		0	0		0	0		200
Median Width		12			12			12			12	
Grade (%)		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2	2	2	2	2	2	2
Movement Flow Rate	0	278	375	49	715	0	0	0	0	149	0	271
Number of Lanes	0	1	0	1	1	0	0	0	0	1	0	1
Major/Minor	Major 1			Major 2			Minor 2					
Conflicting Flow Rate - All	-	0	0	653	0	-				1279	~	358
Stage 1	-	-	-	-	-	-				813	-	-
Stage 2	-	-	-	-	-	-				466	-	-
Follow-up Headway	0	-	-	2.218	-	0				3.518	0	3.318
Pot Capacity-1 Maneuver	0	-	-	934	-	0				# 143	0	686
Stage 1	0	-	-	-	-	0				372	0	-
Stage 2	0	-	-	-	-	0				577	0	-
Time blocked-Platoon(%)	0	-	-	0	-	0				0	0	0
Mov Capacity-1 Maneuver	-	-	-	934	-	-				# 137	-	686
Mov Capacity-2 Maneuver	-	-	-	-	-	-				# 137	-	-
Stage 1	-	-	-	-	-	-				-	-	-
Stage 2	-	-	-	-	-	-				577	-	-
Approach	EB			WB			SB					
HCM Control Delay (s)	0			0.6			67.7					
HCM LOS	A			A			F					
Lane	EBT	EBR	WBL	WBT	SBLn1	SBLn2						
Capacity (vph)					137	686						
HCM Control Delay (s)	-	-	9.067	-	165.9	13.6						
HCM Lane VC Ratio	-	-	0.052	-	1.087	0.395						
HCM Lane LOS	-	-	A	-	F	B						
HCM 95th Percentile Queue (veh)	-	-	0.166	-	8.254	1.886						

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Intersection

Intersection Delay (sec/veh): 30.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Volume (vph)	267	0	0	345	483	75
Conflicting Peds.(#/hr)	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
Right Turn Channelized	None	None	None	None	Free	Free
Storage Length		0	0		0	200
Median Width	0			0	12	
Grade (%)	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles(%)	2	2	2	2	2	2
Movement Flow Rate	290	0	0	375	525	82
Number of Lanes	1	0	0	2	1	1

Major/Minor	Major 1		Major 2			
Conflicting Flow Rate - All	0	-	-	0	478	290
Stage 1	-	-	-	-	290	-
Stage 2	-	-	-	-	188	-
Follow-up Headway	-	0	0	-	3.52	3.32
Pot Capacity-1 Maneuver	-	0	0	-	# 516	707
Stage 1	-	0	0	-	734	-
Stage 2	-	0	0	-	825	-
Time blocked-Platoon(%)	-	0	0	-	0	0
Mov Capacity-1 Maneuver	-	-	-	-	# 516	707
Mov Capacity-2 Maneuver	-	-	-	-	# 516	-
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	825	-

Approach	EB	WB	NB
HCM Control Delay (s)	0	0	64.3
HCM LOS	A	A	F

Lane	NBLn1	NBLn2	EBT	WBT
Capacity (vph)	516	707		
HCM Control Delay (s)	72.6	10.8	-	-
HCM Lane VC Ratio	1.017	0.115	-	-
HCM Lane LOS	F	B	-	-
HCM 95th Percentile Queue (veh)	14.605	0.389	-	-

Appendix AT
Sight Distance Analysis by Landmark Consulting



June 25, 2013

Mr. Jon Rilling
Accretive Capital Partners, LLC
12275 El Camino Real, Suite 110
San Diego, CA 92130

RE: Lilac Hills Ranch (TM 5571) - Sight Distance Analysis at Circle R Drive and Mtn Ridge Rd

Dear Jon:

Per your request, we have conducted the Sight Distance Analysis at the intersection of Circle R Drive and Mountain Ridge Road in Valley Center (see Figure 1 - Vicinity Map) to determine adequate sight distance per the San Diego County Public Road Standards requirements. For this analysis, it was assumed the existing alignment of Mountain Ridge Road would remain the same as it approaches Circle R Drive from the north.

The speed survey was completed between September 11, 2012 and September 16, 2012 by National Data and Surveying Services. Average speeds range from 34.7 to 37.0 mph while the 85th percentile, speeds were in the range of 41.3-44.0 mph (see table below). For this analysis, a 45 mph prevailing speed was used. Per the County of San Diego sight distance requirements, the minimum corner intersection sight distance is 450' for a prevailing speed of 45 mph.

Circle R Drive, just east of Mountain Ridge Road						
	ADT	Average Speed (mph)		85th Percentile Speed (mph)		Heavy Vehicle %
		EB	WB	EB	WB	
Weekday	1,822	34.7	36.7	41.3	44.0	2.0%
Weekend	1,407	34.5	37.0	41.5	44.0	2.5%

The line of sight from Observation Point 'B' looking east is of 450' has been achieved due to recent clearing performed in April 2013 along the existing public road within APN 129-390-18 between the existing pavement of Circle R Drive and an existing public road easement granted per PM 17205. It is recommended that this area be kept clear by means of preventative maintenance to maintain adequate sight distance at this Intersection. The County has prescriptive easement rights to this portion of Circle R Drive, a public road. Since the required clearing area is between the existing pavement to the north and an existing public road easement to the south, the County should have the right to clear this area to establish the required line of sight to assure public safety for the use of this existing public road as part of their normal maintenance responsibilities. However, a clear space easement should be obtained over this area (as illustrated on Figure 2) from the offsite property owner (APN 129-390-18) to ensure maintenance rights in perpetuity. Additionally, this clearing area falls within the 50' fire buffer area required by the Deer Springs Fire Protection District along all existing property lines.

The current line of sight for the eastbound traffic as seen from Observation Point 'B' on Mountain Ridge Road looking west toward Object Target 'C' on Circle R Drive is also adequate and neither maintenance nor clearing is recommended at this time.

Profiles through both lines of sight and photos are provided for clarity (Figures 3-6).

If you have any particular questions or require additional information, please do not hesitate to call.

Sincerely,

LANDMARK CONSULTING

Mark A. Brencick, P.E., P.L.S.
President



F:\Dropbox\103-7\Drawings\ALT 1\Exhibits\Sight Distance Analysis\Circle R Mountain Ridge\2013-06-25\Sight Distance Analysis - Circle R and Mtn Ridge at Lilac Hills Ranch.docx

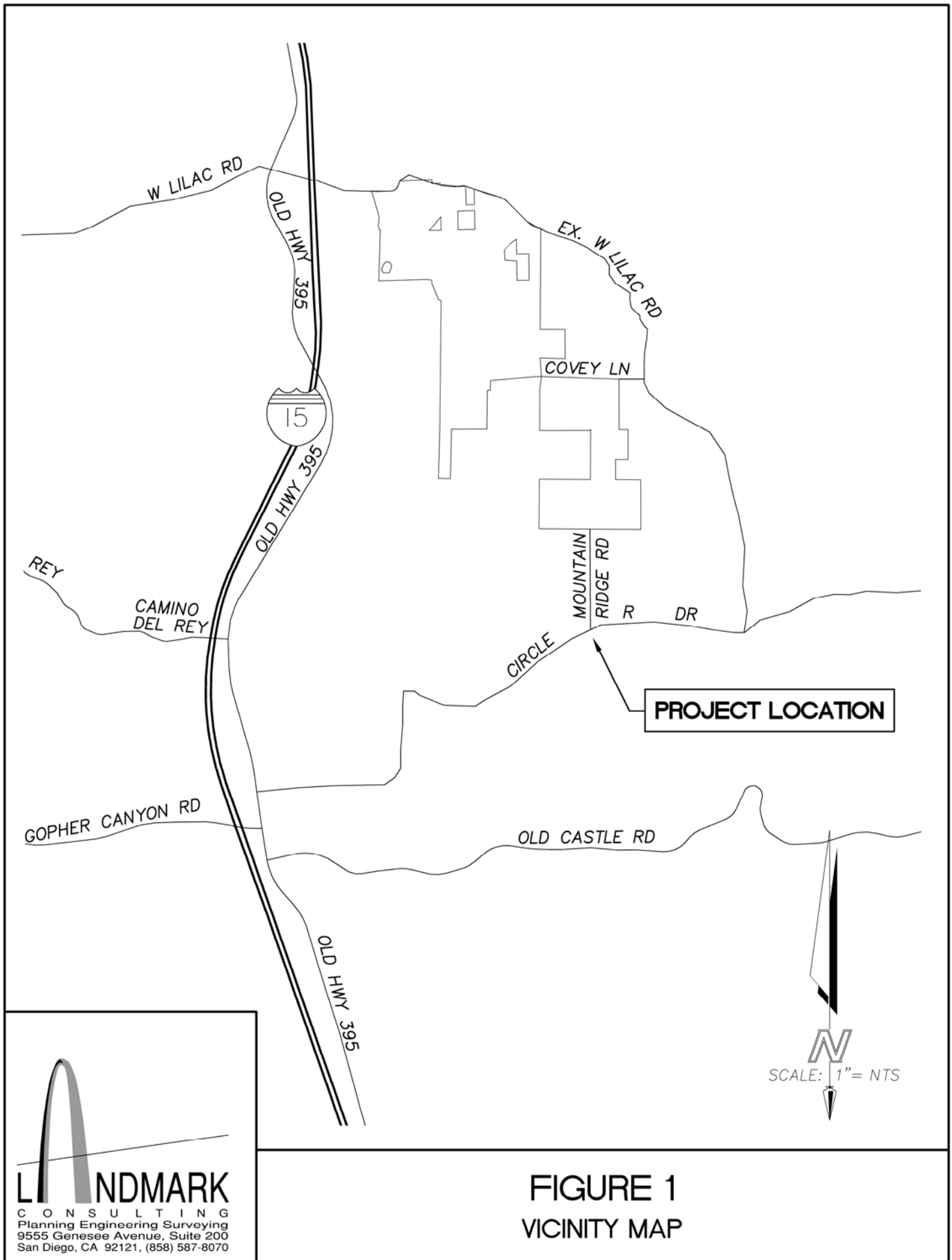


FIGURE 1
VICINITY MAP

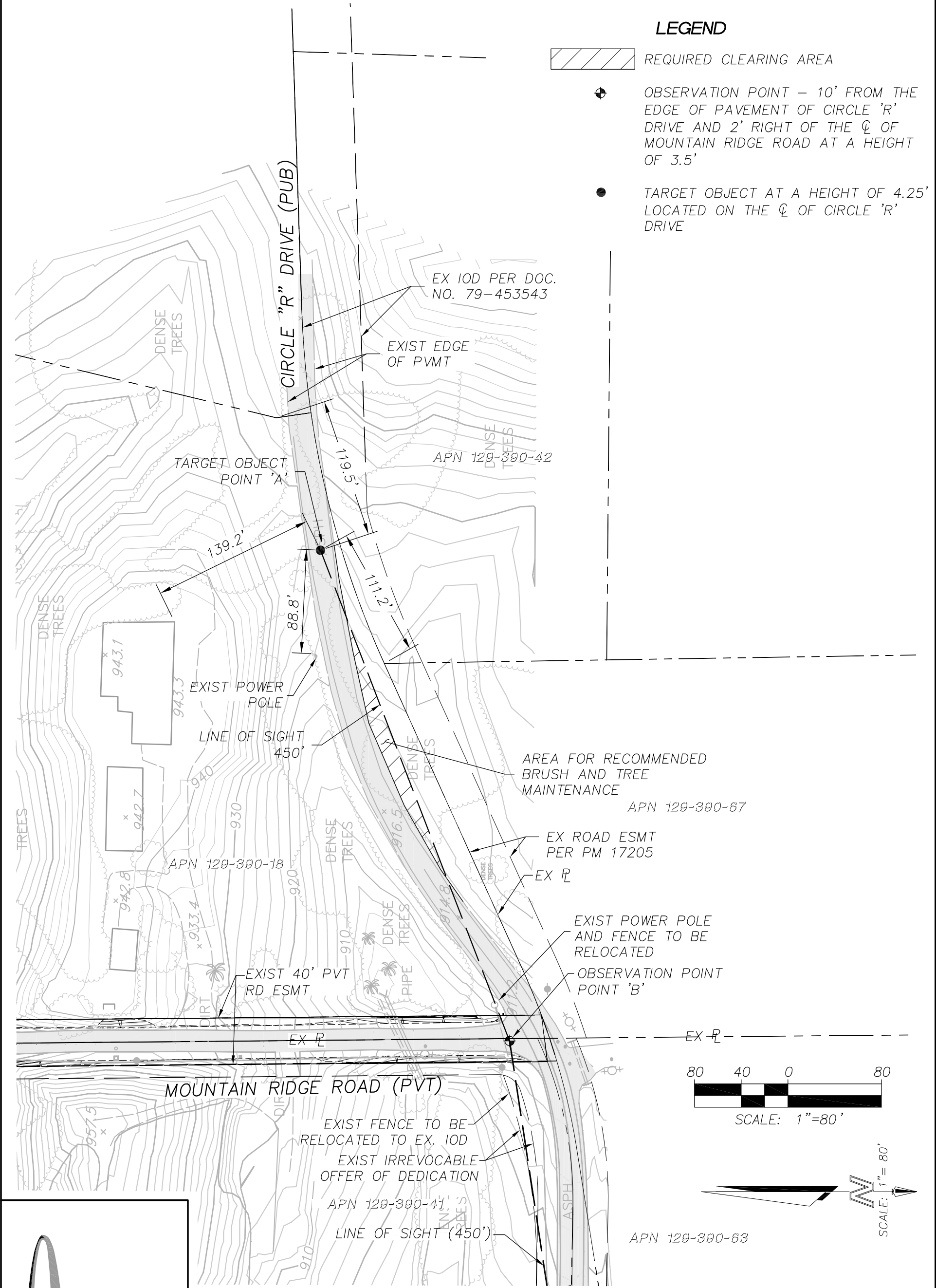


FIGURE 2
SIGHT DISTANCE ANALYSIS
CIRCLE R DRIVE AND MOUNTAIN RIDGE RD

PROFILE: CIRCLE R EAST

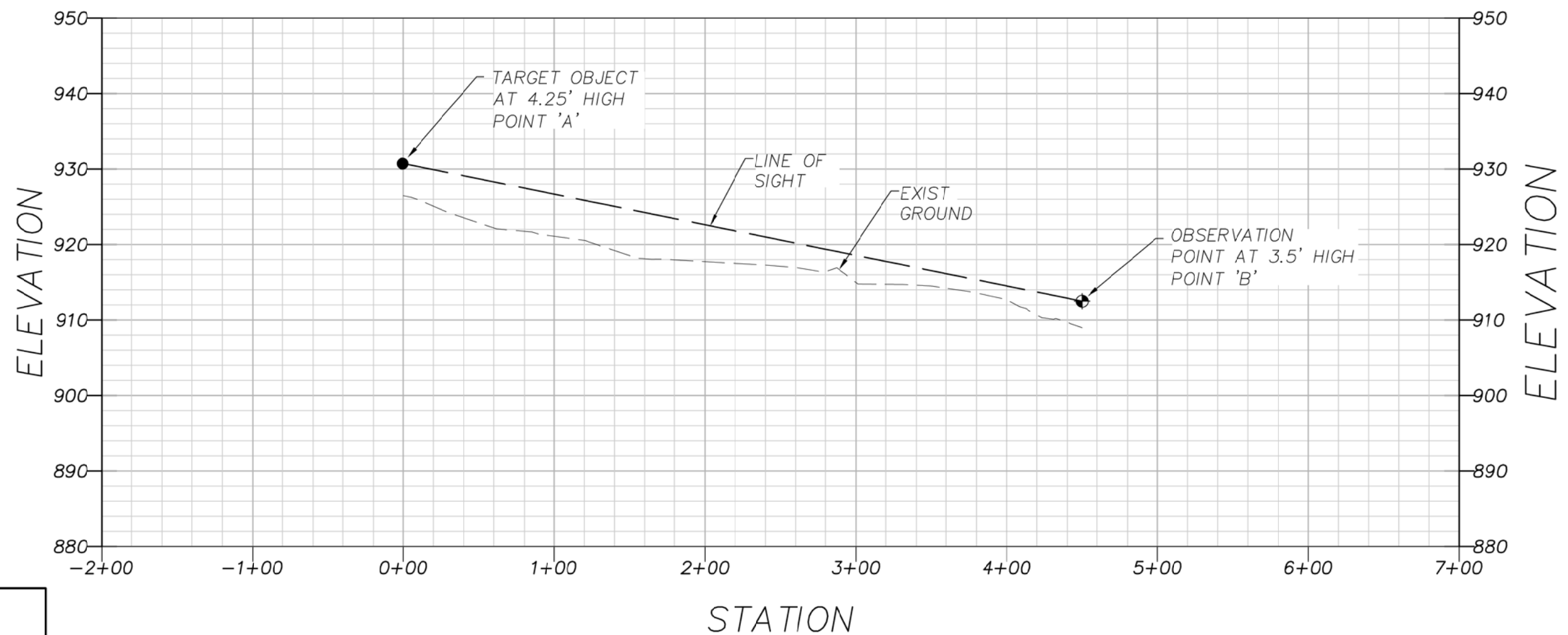


FIGURE 3
LINE OF SIGHT PROFILE FOR MTN RIDGE RD AND CIRCLE R DR (WESTBOUND TRAFFIC)

PROFILE: CIRCLE R WEST

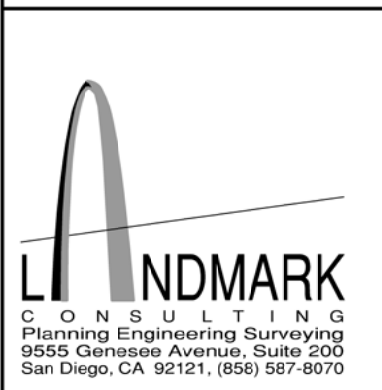
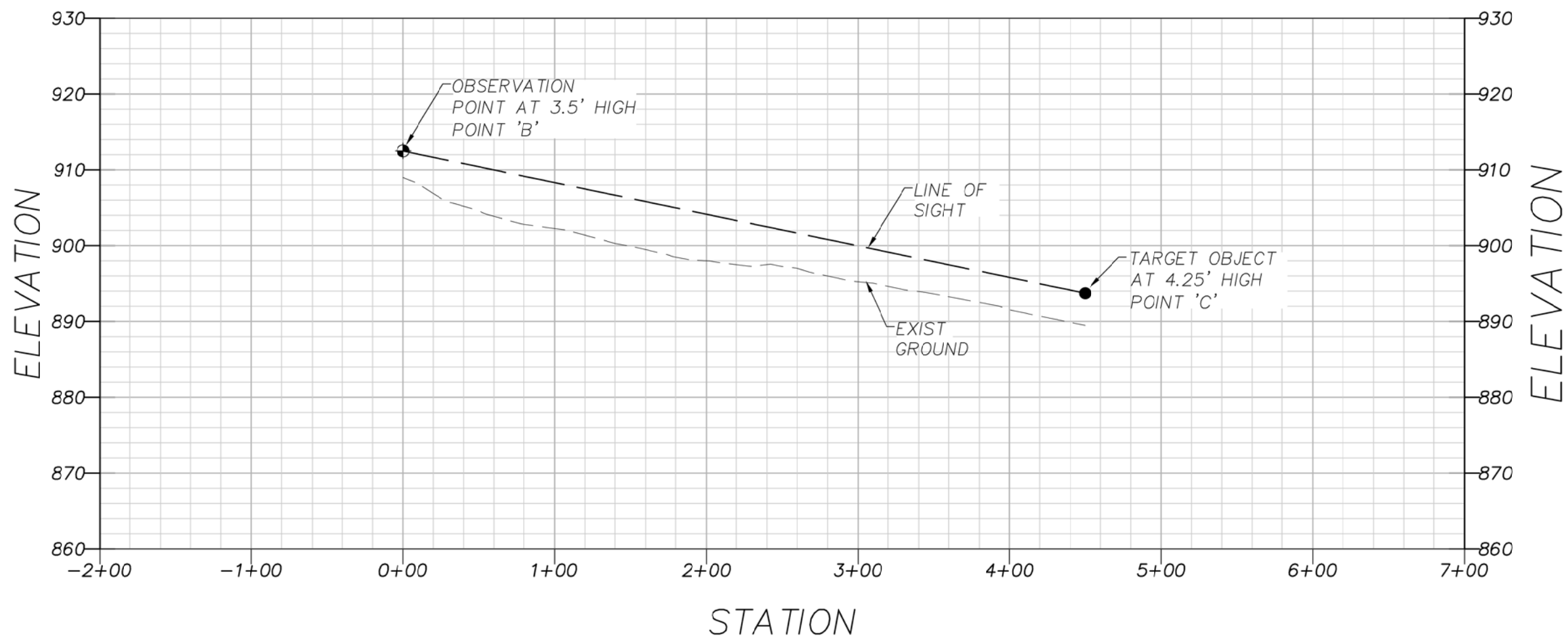


FIGURE 4
LINE OF SIGHT PROFILE FOR MTN RIDGE RD AND CIRCLE R DR (EASTBOUND TRAFFIC)

PHOTO: 05-01-2013

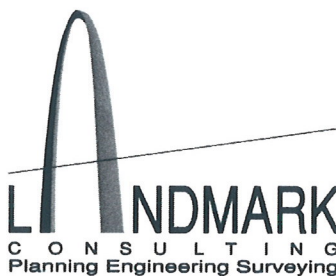


FROM MOUNTAIN RIDGE ROAD LOOKING WEST ONTO
CIRCLE "R" DRIVE

PHOTO: 05-01-2013



FROM MOUNTAIN RIDGE ROAD LOOKING EAST ONTO
CIRCLE "R" DRIVE



June 25, 2013

Mr. Jon Rilling
Accretive Capital Partners, LLC
12275 El Camino Real, Suite 110
San Diego, CA 92130

RE: Lilac Hills Ranch (TM 5571) - Sight Distance Analysis at West Lilac Road and Covey lane

Dear Jon:

Per your request, we have conducted the Sight Distance Analysis at the intersection of West Lilac Road and Covey Lane in Valley Center (see Figure 1 - Vicinity Map) to determine adequate sight distance per the San Diego County Public Road Standards requirements.

The speed survey was completed January 2013 by National Data and Surveying Services. Average speeds range from 25 to 42 mph while the 85th percentile speeds were in the range of 31-48 mph (see table below). For this analysis, a 48 mph prevailing speed was used for the northbound traffic on West Lilac Road south of Covey Lane; and 40 mph for the southbound traffic on West Lilac Road north of Covey Lane. Per the County of San Diego sight distance requirements, the minimum corner intersection sight distance is 480' for a prevailing speed of 48 mph, and 400' for a prevailing speed of 40 mph.

West Lilac Road at Covey Lane				
Roadway	Segment	Direction	Average Speed	85% Percentile Speed
Covey Lane	West of L. Lilac Road	EB	25	31
		WB	28	35
W. Lilac Road	North of Covey Lane	NB	34	41
		SB	34	40
	South of Covey Lane	NB	42	48
		SB	38	44

Currently, the maximum line of sight distance from Observation Point 'B' looking south toward Object Target 'C' on West Lilac Road is 330' assuming no clearing or grading is completed. A line of sight distance of 480' can be achieved by grading and clearing dense trees and brush in an area on property APN 129-190-44. In order to mitigate for the 480' Line of Sight distance requirement, a clear space easement with grading rights should be obtained (as illustrated in Figure 2).

The current line of sight for the southbound traffic as seen from Observation Point 'B' on Covey Lane looking north toward Object Target 'A' on West Lilac Road was adequate; no improvements or clearing will be required.

Profiles through both lines of sight and photos are provided for clarity (Figures 3-5).

If you have any particular questions or require additional information, please do not hesitate to call.

Sincerely,

LANDMARK CONSULTING

Mark A. Brencick, P.E., P.L.S.
President

