APPENDIX E

Peak Hour Intersection and ILV Analysis Worksheets – Existing + Project

Ex+P-AM Tue Dec 5, 2006 10:46:27 Page 2-1

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 SR 78/Sycamore EB Ramps	F	89.7	1.302	F	89.7	1.302	+ 0.000 D/V
# 2 SR 78/Sycamore WB Ramps	C	26.5	0.710	C	26.5	0.710	+ 0.000 D/V
# 3 S. Santa Fe/Robelini Dr	C	23.6	0.624	C	23.6	0.624	+ 0.000 D/V
# 4 S. Santa Fe/Buena Creek	E	70.1	1.002	E	70.1	1.002	+ 0.000 D/V
# 5 Buena Creek/Monte Vista Dr	C	15.2	0.582	C	15.2	0.582	+ 0.000 V/C
# 6 Buena Creek/Sugarbush Dr	C	19.6	0.000	C	19.6	0.000	+ 0.000 D/V
# 7 Twin Oaks Valley Road/Buena Cr	B	13.0	0.663	B	13.0	0.663	+ 0.000 D/V
# 8 Deer Springs Rd/N. Twin Oaks V	B	19.3	0.873	B	19.3	0.873	+ 0.000 D/V
# 9 I-15 SB Ramps/Deer Springs Rd.	D	46.7	0.922	D	46.7	0.922	+ 0.000 D/V
# 10 I-15 NB Ramps/Deer Springs Rd.	C	25.7	0.539	C	25.7	0.539	+ 0.000 D/V

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to LLG Costa Mesa, CA

SUGARBUSH SUBDIVISION
TM5295RPL

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 SR 78/Sycamore EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	1.302
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	89.7
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	0 0	3	0	1	2 0	3	0	0	1 1	0	0	1	0 0	0	0	0
Volume Module: am peak																
Base Vol:	0	689	682		196	1403		0	403	2	988		0	0		0
Growth 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
Initial Bse:	0	689	682		196	1403		0	403	2	988		0	0		0
User 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
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92	0.92		0.92	0.92		0.92
PHF Volume:	0	749	741		213	1525		0	438	2	1074		0	0		0
Reduct Vol:	0	0	0		0	0		0	0	0	0		0	0		0
Reduced Vol:	0	749	741		213	1525		0	438	2	1074		0	0		0
PCE 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
MLF 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
Final Vol.:	0	749	741		213	1525		0	438	2	1074		0	0		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900		1900	1900	1900	1900		1900	1900		1900
Adjustment:	1.00	0.91	0.85		0.92	0.91		1.00	0.96	0.96	0.85		1.00	1.00		1.00
Lanes:	0.00	3.00	1.00		2.00	3.00		0.00	1.99	0.01	1.00		0.00	0.00		0.00
Final Sat.:	0	5187	1615		3502	5187		0	3619	18	1615		0	0		0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.14	0.46		0.06	0.29		0.00	0.12	0.12	0.66		0.00	0.00		0.00
Crit Moves:			****		****						****					
Green/Cycle:	0.00	0.34	0.34		0.07	0.41		0.00	0.50	0.50	0.50		0.00	0.00		0.00
Volume/Cap:	0.00	0.42	1.34		0.87	0.71		0.00	0.24	0.24	1.34		0.00	0.00		0.00
Uniform Del:	0.0	25.2	32.8		46.0	24.4		0.0	14.4	14.4	25.2		0.0	0.0		0.0
IncremntDel:	0.0	0.2	164.1		26.6	1.1		0.0	0.1	0.1	160.5		0.0	0.0		0.0
InitQueuDel:	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Delay Adj:	0.00	1.00	1.00		1.00	1.00		0.00	1.00	1.00	1.00		0.00	0.00		0.00
Delay/Veh:	0.0	25.4	196.9		72.6	25.5		0.0	14.5	14.5	185.7		0.0	0.0		0.0
User DelAdj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	0.0	25.4	196.9		72.6	25.5		0.0	14.5	14.5	185.7		0.0	0.0		0.0
LOS by Move:	A	C	F		E	C		A	B	B	F		A	A		A
HCM2kAvgQ:	0	7	47		6	15		0	4	4	67		0	0		0

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 SR 78/Sycamore WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.710
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	26.5
Optimal Cycle:	52	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	2 0	3	0	1	0 0	3	0	1	0 0	0	0	0	1 1	0	0	2
Volume Module: am peak																
Base Vol:	440	673		0	0	744		342	0	0		0	924		0	267
Growth 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
Initial Bse:	440	673		0	0	744		342	0	0		0	924		0	267
User 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
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92		0.92	0.92
PHF Volume:	478	732		0	0	809		372	0	0		0	1004		0	290
Reduct Vol:	0	0		0	0	0		0	0	0		0	0		0	0
Reduced Vol:	478	732		0	0	809		372	0	0		0	1004		0	290
PCE 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
MLF 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
Final Vol.:	478	732		0	0	809		372	0	0		0	1004		0	290
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900		1900	1900
Adjustment:	0.92	0.91		1.00	1.00	0.91		0.85	1.00	1.00		1.00	0.95		1.00	0.75
Lanes:	2.00	3.00		1.00	0.00	3.00		1.00	0.00	0.00		0.00	2.00		0.00	2.00
Final Sat.:	3495	5177		1896	0	5177		1612	0	0		0	3610		0	2837
Capacity Analysis Module:																
Vol/Sat:	0.14	0.14		0.00	0.00	0.16		0.23	0.00	0.00		0.00	0.28		0.00	0.10
Crit Moves:	****							****					****			
Green/Cycle:	0.19	0.52		0.00	0.00	0.33		0.33	0.00	0.00		0.00	0.39		0.00	0.39
Volume/Cap:	0.71	0.27		0.00	0.00	0.48		0.71	0.00	0.00		0.00	0.71		0.00	0.26
Uniform Del:	37.7	13.5		0.0	0.0	27.0		29.6	0.0	0.0		0.0	25.6		0.0	20.6
IncremntDel:	3.5	0.1		0.0	0.0	0.2		4.5	0.0	0.0		0.0	1.7		0.0	0.1
InitQueuDel:	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0		0.0	0.0
Delay Adj:	1.00	1.00		0.00	0.00	1.00		1.00	0.00	0.00		0.00	1.00		0.00	1.00
Delay/Veh:	41.3	13.6		0.0	0.0	27.2		34.1	0.0	0.0		0.0	27.3		0.0	20.7
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00		1.00	1.00
AdjDel/Veh:	41.3	13.6		0.0	0.0	27.2		34.1	0.0	0.0		0.0	27.3		0.0	20.7
LOS by Move:	D	B		A	A	C		C	A	A		A	C		A	C
HCM2kAvgQ:	8	5		0	0	7		11	0	0		0	14		0	3

Note: Queue reported is the number of cars per lane.

E.2

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 S. Santa Fe/Robelini Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.624
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	23.6
Optimal Cycle:	56	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:		Ovl				Include				Include				Include		
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	0 1	0 1		0	0 0	0 0		0	0 0	1 0		1	1 0	1 0		0
Volume Module: am peak																
Base Vol:	134	1	201		0	0		0	0	382	254		422	270		0
Growth 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
Initial Bse:	134	1	201		0	0		0	0	382	254		422	270		0
User 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
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92	0.92		0.92	0.92		0.92
PHF Volume:	146	1	218		0	0		0	0	415	276		459	293		0
Reduct Vol:	0	0	0		0	0		0	0	0	0		0	0		0
Reduced Vol:	146	1	218		0	0		0	0	415	276		459	293		0
PCE 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
MLF 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
Final Vol.:	146	1	218		0	0		0	0	415	276		459	293		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900		1900	1900	1900	1900		1900	1900		1900
Adjustment:	0.81	0.81	0.81		1.00	1.00		1.00	1.00	1.00	0.85		0.95	1.00		1.00
Lanes:	0.99	0.01	1.00		0.00	0.00		0.00	1.00	1.00	1.00		1.00	1.00		0.00
Final Sat.:	1533	11	1544		0	0		0	0	1900	1615		1805	1900		0
Capacity Analysis Module:																
Vol/Sat:	0.10	0.10	0.14		0.00	0.00		0.00	0.00	0.22	0.17		0.25	0.15		0.00
Crit Moves:		****								****			****			
Green/Cycle:	0.20	0.20	0.58		0.00	0.00		0.00	0.00	0.33	0.33		0.38	0.71		0.00
Volume/Cap:	0.48	0.48	0.24		0.00	0.00		0.00	0.00	0.67	0.52		0.67	0.22		0.00
Uniform Del:	35.4	35.4	10.2		0.0	0.0		0.0	0.0	28.9	27.2		25.6	5.0		0.0
IncremntDel:	0.5	0.5	0.1		0.0	0.0		0.0	0.0	2.7	0.9		2.5	0.1		0.0
InitQueuDel:	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Delay Adj:	1.00	1.00	1.00		0.00	0.00		0.00	0.00	1.00	1.00		1.00	1.00		0.00
Delay/Veh:	35.8	35.8	10.3		0.0	0.0		0.0	0.0	31.6	28.1		28.1	5.1		0.0
User DelAdj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	35.8	35.8	10.3		0.0	0.0		0.0	0.0	31.6	28.1		28.1	5.1		0.0
LOS by Move:	D	D	B		A	A		A	A	C	C		C	A		A
HCM2kAvgQ:	5	5	3		0	0		0	0	12	7		12	3		0

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 S. Santa Fe/Buena Creek

Cycle (sec):	100	Critical Vol./Cap.(X):	1.002
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	70.1
Optimal Cycle:	180	Level Of Service:	E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	-	R	L	- T	-	R	L	- T	-	R	L	- T	-	R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:		Include				Include				Include				Include		
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	1 0	1 1		0	1 0	1 1		0	0 1	0 0		0	1 0	1 1		0
Volume Module: am peak																
Base Vol:	0	0	0		197	0		395	180	444	0		0	345		84
Growth 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
Initial Bse:	0	0	0		197	0		395	180	444	0		0	345		84
User 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
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92	0.92		0.92	0.92		0.92
PHF Volume:	0	0	0		214	0		429	196	483	0		0	375		91
Reduct Vol:	0	0	0		0	0		0	0	0	0		0	0		0
Reduced Vol:	0	0	0		214	0		429	196	483	0		0	375		91
PCE 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
MLF 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
Final Vol.:	0	0	0		214	0		429	196	483	0		0	375		91
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900		1900	1900	1900	1900		1900	1900		1900
Adjustment:	0.85	0.81	0.81		0.81	0.81		0.69	0.84	0.84	0.85		0.85	0.78		0.78
Lanes:	1.00	2.00	0.00		1.00	1.00		1.00	0.29	0.71	0.00		1.00	1.61		0.39
Final Sat.:	1615	3069	0		1534	1534		1304	459	1133	0		1615	2396		583
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00	0.00		0.14	0.00		0.33	0.43	0.43	0.00		0.00	0.16		0.16
Crit Moves:								****		****				****		
Green/Cycle:	0.00	0.00	0.00		0.31	0.00		0.31	0.40	0.40	0.00		0.00	0.20		0.20
Volume/Cap:	0.00	0.00	0.00		0.45	0.00		1.06	1.06	1.06	0.00		0.00	0.78		0.78
Uniform Del:	0.0	0.0	0.0		27.7	0.0		34.5	30.0	30.0	0.0		0.0	37.9		37.9
IncremntDel:	0.0	0.0	0.0		0.7	0.0		62.7	53.8	53.8	0.0		0.0	6.7		6.7
InitQueuDel:	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Delay Adj:	0.00	0.00	0.00		1.00	0.00		1.00	1.00	1.00	0.00		0.00	1.00		1.00
Delay/Veh:	0.0	0.0	0.0		28.4	0.0		97.2	83.7	83.7	0.0		0.0	44.6		44.6
User DelAdj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0	0.0		28.4	0.0		97.2	83.7	83.7	0.0		0.0	44.6		44.6
LOS by Move:	A	A	A		C	A		F	F	F	A		A	D		D
HCM2kAvgQ:	0	0	0		6	0		22	31	31	0		0	9		9

Note: Queue reported is the number of cars per lane.

E.3

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #5 Buena Creek/Monte Vista Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 0.582
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 15.2
Optimal Cycle: 0 Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	1 0	1
Volume Module:												
Base Vol:	0	0	0	195	0	120	120	147	0	0	354	275
Growth 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
Initial Bse:	0	0	0	195	0	120	120	147	0	0	354	275
User 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
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	212	0	130	130	160	0	0	385	299
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	212	0	130	130	160	0	0	385	299
PCE 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
MLF 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
Final Vol.:	0	0	0	212	0	130	130	160	0	0	385	299
Saturation Flow Module:												
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.10	1.00	1.00	1.10	1.00
Lanes:	0.00	0.00	0.00	0.62	0.00	0.38	0.45	0.55	0.00	0.00	1.00	1.00
Final Sat.:	0	0	0	371	0	228	267	360	0	0	661	681
Capacity Analysis Module:												
Vol/Sat:	xxxx	xxxx	xxxx	0.57	xxxx	0.57	0.49	0.44	xxxx	xxxx	0.58	0.44
Crit Moves:				****			****				****	
Delay/Veh:	0.0	0.0	0.0	15.7	0.0	15.7	14.0	14.0	0.0	0.0	18.2	11.8
Delay 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
AdjDel/Veh:	0.0	0.0	0.0	15.7	0.0	15.7	14.0	14.0	0.0	0.0	18.2	11.8
LOS by Move:	*	*	*	C	*	C	B	B	*	*	C	B
ApproachDel:	xxxxxx			15.7			14.0			15.4		
Delay Adj:	xxxxx			1.00			1.00			1.00		
ApprAdjDel:	xxxxxx			15.7			14.0			15.4		
LOS by Appr:	*			C			B			C		
AllWayAvgQ:	0.0	0.0	0.0	1.1	1.1	1.1	0.9	0.9	0.9	0.0	1.6	0.7

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 Buena Creek/Sugarbush Dr

Average Delay (sec/veh): 1.2 Worst Case Level Of Service: C[19.6]

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module:												
Base Vol:	25	0	13	3	0	17	7	330	11	7	501	6
Growth 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
Initial Bse:	25	0	13	3	0	17	7	330	11	7	501	6
User 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
PHF Adj:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	28	0	14	3	0	19	8	367	12	8	557	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	28	0	14	3	0	19	8	367	12	8	557	7
Critical Gap Module:												
Critical Gp:	7.1	xxxx	6.2	7.1	xxxx	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	3.5	xxxx	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	973	xxxx	373	971	xxxx	560	563	xxxx	xxxxx	379	xxxx	xxxxx
Potent Cap.:	233	xxxx	678	234	xxxx	532	1018	xxxx	xxxxx	1191	xxxx	xxxxx
Move Cap.:	223	xxxx	678	227	xxxx	532	1018	xxxx	xxxxx	1191	xxxx	xxxxx
Volume/Cap:	0.12	xxxx	0.02	0.01	xxxx	0.04	0.01	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
2Way95thQ:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Control Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.6	xxxx	xxxxx	8.0	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	289	xxxxx	xxxx	442	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.5	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd ConDel:	xxxxx	19.6	xxxxx	xxxxx	13.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	B	*	*	*	*	*	*	*
ApproachDel:	19.6			13.6			xxxxxx			xxxxxx		
ApproachLOS:	C			B			*			*		

Note: Queue reported is the number of cars per lane.

E.4

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 Twin Oaks Valley Road/Buena Creek Road

Cycle (sec): 100 Critical Vol./Cap.(X): 0.663
Loss Time (sec): 6 (Y+R=4.0 sec) Average Delay (sec/veh): 13.0
Optimal Cycle: 46 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	1 0	1	0	1	1 0	1	0	1	0 1	0	0	1	0 0	1!	0	0
Volume Module: am peak																
Base Vol:	99	202		1	0	858		275	149		0	179	1		1	1
Growth 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
Initial Bse:	99	202		1	0	858		275	149		0	179	1		1	1
User 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
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	108	220		1	0	933		299	162		0	195	1		1	1
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	108	220		1	0	933		299	162		0	195	1		1	1
PCE 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
MLF 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
Final Vol.:	108	220		1	0	933		299	162		0	195	1		1	1
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.22	0.98		0.83	0.98	0.98		0.83	0.70	0.98		0.83	0.89	0.89		0.89
Lanes:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	0.34	0.33		0.33
Final Sat.:	412	1862		1583	1862	1862		1583	1326		0	1583	561	561		561
Capacity Analysis Module:																
Vol/Sat:	0.26	0.12		0.00	0.00	0.50		0.19	0.12	0.00		0.12	0.00	0.00		0.00
Crit Moves:						****			****							
Green/Cycle:	0.76	0.76		0.76	0.00	0.76		0.76	0.18	0.00		0.18	0.18	0.18		0.18
Volume/Cap:	0.35	0.16		0.00	0.00	0.66		0.25	0.66	0.00		0.67	0.01	0.01		0.01
Uniform Del:	4.0	3.4		3.0	0.0	6.0		3.7	37.9	0.0		37.9	33.3	33.3		33.3
IncremntDel:	0.7	0.1		0.0	0.0	1.2		0.1	6.7	0.0		5.8	0.0	0.0		0.0
InitQueuDel:	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0
Delay Adj:	1.00	1.00		1.00	0.00	1.00		1.00	1.00	0.00		1.00	1.00	1.00		1.00
Delay/Veh:	4.7	3.4		3.0	0.0	7.2		3.8	44.6	0.0		43.7	33.3	33.3		33.3
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	4.7	3.4		3.0	0.0	7.2		3.8	44.6	0.0		43.7	33.3	33.3		33.3
LOS by Move:	A	A		A	A	A		A	D	A		D	C	C		C
HCM2kAvgQ:	2	2		0	0	15		3	6	0		7	0	0		0

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 Deer Springs Rd/N. Twin Oaks Valley Rd

Cycle (sec): 100 Critical Vol./Cap.(X): 0.873
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 19.3
Optimal Cycle: 90 Level Of Service: B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	1 0	1	0	0	0 0	1	0	1	1 0	0	0	1	0 0	0	0	0
Volume Module:																
Base Vol:	64	257		0	0	1126		59	38		0	71	0		0	0
Growth 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
Initial Bse:	64	257		0	0	1126		59	38		0	71	0		0	0
User 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
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	70	279		0	0	1224		64	41		0	77	0		0	0
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	70	279		0	0	1224		64	41		0	77	0		0	0
PCE 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
MLF 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
Final Vol.:	70	279		0	0	1224		64	41		0	77	0		0	0
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.87	0.92		0.92	0.92	0.92		0.78	0.87	0.92		0.78	0.92	0.92		0.92
Lanes:	1.00	1.00		0.00	0.00	1.00		1.00	1.00	0.00		1.00	0.00	0.00		0.00
Final Sat.:	1661	1748		0	0	1748		1486	1661		0	1486	0	0		0
Capacity Analysis Module:																
Vol/Sat:	0.04	0.16		0.00	0.00	0.70		0.04	0.02	0.00		0.05	0.00	0.00		0.00
Crit Moves:	****					****						****				
Green/Cycle:	0.07	0.84		0.00	0.00	0.77		0.77	0.07	0.00		0.07	0.00	0.00		0.00
Volume/Cap:	0.60	0.19		0.00	0.00	0.91		0.06	0.36	0.00		0.74	0.00	0.00		0.00
Uniform Del:	45.1	1.5		0.0	0.0	8.8		2.8	44.3	0.0		45.6	0.0	0.0		0.0
IncremntDel:	8.3	0.1		0.0	0.0	9.3		0.0	1.9	0.0		24.6	0.0	0.0		0.0
InitQueuDel:	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0
Delay Adj:	1.00	1.00		0.00	0.00	1.00		1.00	1.00	0.00		1.00	0.00	0.00		0.00
Delay/Veh:	53.5	1.6		0.0	0.0	18.2		2.8	46.2	0.0		70.2	0.0	0.0		0.0
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	53.5	1.6		0.0	0.0	18.2		2.8	46.2	0.0		70.2	0.0	0.0		0.0
LOS by Move:	D	A		A	A	B		A	D	A		E	A	A		A
HCM2kAvgQ:	3	2		0	0	33		0	2	0		4	0	0		0

Note: Queue reported is the number of cars per lane.

3.5

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #9 I-15 SB Ramps/Deer Springs Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.922
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	46.7
Optimal Cycle:	115	Level Of Service:	D

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	7	0	7	0	20	7	7	20	0
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 0	0 1	0	1 0	1 0	0
Volume Module: am peak												
Base Vol:	0	0	0	42	5	877	0	272	87	133	481	0
Growth 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
Initial Bse:	0	0	0	42	5	877	0	272	87	133	481	0
User Adj:	1.00	1.00	1.00	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	0	0	0	46	5	858	0	296	85	145	523	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	46	5	858	0	296	85	145	523	0
PCE 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
MLF 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
Final Vol.:	0	0	0	46	5	858	0	296	85	145	523	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.87	0.87	0.87	1.00	0.97	0.97	0.95	1.00	1.00
Lanes:	0.00	0.00	0.00	0.05	0.01	0.94	0.00	0.78	0.22	1.00	1.00	0.00
Final Sat.:	0	0	0	83	10	1555	0	1431	412	1805	1900	0
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.55	0.55	0.55	0.00	0.21	0.21	0.08	0.28	0.00
Crit Moves:					****			****		****		
Green/Cycle:	0.00	0.00	0.00	0.60	0.60	0.60	0.00	0.22	0.22	0.09	0.31	0.00
Volume/Cap:	0.00	0.00	0.00	0.92	0.92	0.92	0.00	0.92	0.92	0.92	0.88	0.00
Uniform Del:	0.0	0.0	0.0	18.0	18.0	18.0	0.0	37.9	37.9	45.3	32.7	0.0
IncremntDel:	0.0	0.0	0.0	13.5	13.5	13.5	0.0	25.8	25.8	49.2	14.8	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	0.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00
Delay/Veh:	0.0	0.0	0.0	31.5	31.5	31.5	0.0	63.8	63.8	94.5	47.5	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	31.5	31.5	31.5	0.0	63.8	63.8	94.5	47.5	0.0
LOS by Move:	A	A	A	C	C	C	A	E	E	F	D	A
HCM2kAvgQ:	0	0	0	29	29	29	0	16	16	8	19	0

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 I-15 NB Ramps/Deer Springs Rd.

Cycle (sec):	100	Critical Vol./Cap.(X):	0.539
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	25.7
Optimal Cycle:	43	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	7	0	7	0	0	0	7	20	0	0	20	7
Lanes:	0 1	0 0	1	0 0	0 0	0	1 0	1 0	0	0 0	1 0	1
Volume Module: am peak												
Base Vol:	166	6	111	0	0	0	231	94	0	0	425	59
Growth 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
Initial Bse:	166	6	111	0	0	0	231	94	0	0	425	59
User Adj:	1.00	1.00	0.85	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.85
PHF Adj:	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
PHF Volume:	180	7	103	0	0	0	251	102	0	0	462	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	180	7	103	0	0	0	251	102	0	0	462	55
PCE 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
MLF 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
Final Vol.:	180	7	103	0	0	0	251	102	0	0	462	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.91	0.91	0.85	1.00	1.00	1.00	0.95	1.00	1.00	1.00	1.00	0.85
Lanes:	0.97	0.03	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Final Sat.:	1663	60	1615	0	0	0	1805	1900	0	0	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.11	0.11	0.06	0.00	0.00	0.00	0.14	0.05	0.00	0.00	0.24	0.03
Crit Moves:		****					****				****	
Green/Cycle:	0.20	0.20	0.20	0.00	0.00	0.00	0.26	0.71	0.00	0.00	0.45	0.45
Volume/Cap:	0.54	0.54	0.32	0.00	0.00	0.00	0.54	0.08	0.00	0.00	0.54	0.07
Uniform Del:	35.8	35.8	34.1	0.0	0.0	0.0	32.0	4.5	0.0	0.0	19.9	15.6
IncremntDel:	1.7	1.7	0.6	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.7	0.0
InitQueuDel:	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Delay Adj:	1.00	1.00	1.00	0.00	0.00	0.00	1.00	1.00	0.00	0.00	1.00	1.00
Delay/Veh:	37.5	37.5	34.6	0.0	0.0	0.0	33.3	4.5	0.0	0.0	20.6	15.6
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.5	37.5	34.6	0.0	0.0	0.0	33.3	4.5	0.0	0.0	20.6	15.6
LOS by Move:	D	D	C	A	A	A	C	A	A	A	C	B
HCM2kAvgQ:	6	6	3	0	0	0	7	1	0	0	10	1

Note: Queue reported is the number of cars per lane.

E.6

Ex+P-PM Tue Dec 5, 2006 10:46:31 Page 2-1

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in	
# 1 SR 78/Sycamore EB Ramps	D	52.7	1.157	D	52.7	1.157	+ 0.000	D/V
# 2 SR 78/Sycamore WB Ramps	C	29.5	0.870	C	29.5	0.870	+ 0.000	D/V
# 3 S. Santa Fe/Robelini Dr	C	30.6	0.848	C	30.6	0.848	+ 0.000	D/V
# 4 S. Santa Fe/Buena Creek	F	194.0	1.360	F	194.0	1.360	+ 0.000	D/V
# 5 Buena Creek/Monte Vista Dr	E	45.1	1.066	E	45.1	1.066	+ 0.000	V/C
# 6 Buena Creek/Sugarbush Dr	D	29.1	0.000	D	29.1	0.000	+ 0.000	D/V
# 7 Twin Oaks Valley Road/Buena Cr	B	19.1	0.715	B	19.1	0.715	+ 0.000	D/V
# 8 Deer Springs Rd/N. Twin Oaks V	B	19.2	0.923	B	19.2	0.923	+ 0.000	D/V
# 9 I-15 SB Ramps/Deer Springs Rd.	F	92.6	1.135	F	92.6	1.135	+ 0.000	D/V
# 10 I-15 NB Ramps/Deer Springs Rd.	D	38.1	0.883	D	38.1	0.883	+ 0.000	D/V

Traffix 7.8.0715 (c) 2006 Dowling Assoc. Licensed to LLG Costa Mesa, CA

SUGARBUSH SUBDIVISION
TM5295RPL

E.7

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 SR 78/Sycamore EB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	1.157
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	52.7
Optimal Cycle:	180	Level Of Service:	D

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	0 0	3	0	1	2 0	3	0	0	1 1	0	0	1	0 0	0	0	0
Volume Module: pm peak																
Base Vol:	0	1671	946		330	1030		0	495		0	466	0		0	0
Growth 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
Initial Bse:	0	1671	946		330	1030		0	495		0	466	0		0	0
User 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
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	0	1816	1028		359	1120		0	538		0	507	0		0	0
Reduct Vol:	0	0	0		0	0		0	0		0	0	0		0	0
Reduced Vol:	0	1816	1028		359	1120		0	538		0	507	0		0	0
PCE 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
MLF 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
Final Vol.:	0	1816	1028		359	1120		0	538		0	507	0		0	0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	1.00	0.91	0.85		0.92	0.91		1.00	0.95	1.00		0.85	1.00	1.00		1.00
Lanes:	0.00	3.00	1.00		2.00	3.00		0.00	2.00	0.00		1.00	0.00	0.00		0.00
Final Sat.:	0	5187	1615		3502	5187		0	3618		0	1615	0		0	0
Capacity Analysis Module:																
Vol/Sat:	0.00	0.35	0.64		0.10	0.22		0.00	0.15	0.00		0.31	0.00	0.00		0.00
Crit Moves:			****		****							****				
Green/Cycle:	0.00	0.55	0.55		0.09	0.64		0.00	0.27	0.00		0.27	0.00	0.00		0.00
Volume/Cap:	0.00	0.64	1.16		1.16	0.34		0.00	0.55	0.00		1.16	0.00	0.00		0.00
Uniform Del:	0.0	15.6	22.5		45.6	8.3		0.0	31.2	0.0		36.4	0.0	0.0		0.0
IncremntDel:	0.0	0.5	83.3		100.6	0.1		0.0	0.7	0.0		93.5	0.0	0.0		0.0
InitQueuDel:	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0
Delay Adj:	0.00	1.00	1.00		1.00	1.00		0.00	1.00	0.00		1.00	0.00	0.00		0.00
Delay/Veh:	0.0	16.0	105.7		146.2	8.4		0.0	31.9	0.0		129.9	0.0	0.0		0.0
User DelAdj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	16.0	105.7		146.2	8.4		0.0	31.9	0.0		129.9	0.0	0.0		0.0
LOS by Move:	A	B	F		F	A		A	C	A		F	A	A		A
HCM2kAvgQ:	0	14	52		12	6		0	8	0		27	0	0		0

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #2 SR 78/Sycamore WB Ramps

Cycle (sec):	100	Critical Vol./Cap.(X):	0.870
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	29.5
Optimal Cycle:	89	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	2 0	3	0	1	0 0	3	0	1	0 0	0	0	0	1 1	0	0	2
Volume Module: pm peak																
Base Vol:	809	1379	0		0	679		476	0		0	0	695		4	520
Growth 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
Initial Bse:	809	1379	0		0	679		476	0		0	0	695		4	520
User 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
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	879	1499	0		0	738		517	0		0	0	755		4	565
Reduct Vol:	0	0	0		0	0		0	0		0	0	0		0	0
Reduced Vol:	879	1499	0		0	738		517	0		0	0	755		4	565
PCE 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
MLF 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
Final Vol.:	879	1499	0		0	738		517	0		0	0	755		4	565
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.92	0.91	1.00		1.00	0.91		0.85	1.00	1.00		1.00	0.91	0.91		0.75
Lanes:	2.00	3.00	1.00		0.00	3.00		1.00	0.00	0.00		0.00	1.99	0.01		2.00
Final Sat.:	3495	5177	1896		0	5177		1612	0		0	0	3450		20	2837
Capacity Analysis Module:																
Vol/Sat:	0.25	0.29	0.00		0.00	0.14		0.32	0.00	0.00		0.00	0.22	0.22		0.20
Crit Moves:	****							****					****			
Green/Cycle:	0.29	0.66	0.00		0.00	0.37		0.37	0.00	0.00		0.00	0.25	0.25		0.25
Volume/Cap:	0.87	0.44	0.00		0.00	0.39		0.87	0.00	0.00		0.00	0.87	0.87		0.79
Uniform Del:	33.7	8.2	0.0		0.0	23.2		29.3	0.0	0.0		0.0	35.8	35.8		35.0
IncremntDel:	8.3	0.1	0.0		0.0	0.1		13.1	0.0	0.0		0.0	9.4	9.4		6.0
InitQueuDel:	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0
Delay Adj:	1.00	1.00	0.00		0.00	1.00		1.00	0.00	0.00		0.00	1.00	1.00		1.00
Delay/Veh:	42.0	8.3	0.0		0.0	23.3		42.4	0.0	0.0		0.0	45.2	45.2		41.0
User DelAdj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	42.0	8.3	0.0		0.0	23.3		42.4	0.0	0.0		0.0	45.2	45.2		41.0
LOS by Move:	D	A	A		A	C		D	A	A		A	D	D		D
HCM2kAvgQ:	16	8	0		0	6		18	0	0		0	14	14		11

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 S. Santa Fe/Robelini Dr

Cycle (sec):	100	Critical Vol./Cap.(X):	0.848
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	30.6
Optimal Cycle:	81	Level Of Service:	C

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Split Phase				Split Phase				Protected				Protected			
Rights:	Ovl				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	1 0	0	0	1	0 0	0	0	0	0 0	1	0	1	1 0	1	0	0
Volume Module: pm peak																
Base Vol:	377	0	653		0	0		0	0	554	283		378	598		0
Growth 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
Initial Bse:	377	0	653		0	0		0	0	554	283		378	598		0
User 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
PHF Adj:	0.92	0.92	0.92		0.92	0.92		0.92	0.92	0.92	0.92		0.92	0.92		0.92
PHF Volume:	410	0	710		0	0		0	0	602	308		411	650		0
Reduct Vol:	0	0	0		0	0		0	0	0	0		0	0		0
Reduced Vol:	410	0	710		0	0		0	0	602	308		411	650		0
PCE 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
MLF 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
Final Vol.:	410	0	710		0	0		0	0	602	308		411	650		0
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900		1900	1900	1900	1900		1900	1900		1900
Adjustment:	0.95	1.00	0.85		1.00	1.00		1.00	1.00	0.85	0.95		1.00	1.00		1.00
Lanes:	1.00	0.00	1.00		0.00	0.00		0.00	0.00	1.00	1.00		1.00	1.00		0.00
Final Sat.:	1805	0	1615		0	0		0	0	1900	1615		1805	1900		0
Capacity Analysis Module:																
Vol/Sat:	0.23	0.00	0.44		0.00	0.00		0.00	0.00	0.32	0.19		0.23	0.34		0.00
Crit Moves:	****									****			****			
Green/Cycle:	0.27	0.00	0.54		0.00	0.00		0.00	0.00	0.37	0.37		0.27	0.64		0.00
Volume/Cap:	0.85	0.00	0.82		0.00	0.00		0.00	0.00	0.85	0.51		0.85	0.53		0.00
Uniform Del:	34.7	0.0	19.2		0.0	0.0		0.0	0.0	28.7	24.2		34.6	9.7		0.0
IncremntDel:	13.2	0.0	6.2		0.0	0.0		0.0	0.0	9.4	0.7		13.1	0.5		0.0
InitQueuDel:	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0		0.0
Delay Adj:	1.00	0.00	1.00		0.00	0.00		0.00	0.00	1.00	1.00		1.00	1.00		0.00
Delay/Veh:	47.9	0.0	25.4		0.0	0.0		0.0	0.0	38.1	24.9		47.8	10.2		0.0
User DelAdj:	1.00	1.00	1.00		1.00	1.00		1.00	1.00	1.00	1.00		1.00	1.00		1.00
AdjDel/Veh:	47.9	0.0	25.4		0.0	0.0		0.0	0.0	38.1	24.9		47.8	10.2		0.0
LOS by Move:	D	A	C		A	A		A	A	D	C		D	B		A
HCM2kAvgQ:	15	0	20		0	0		0	0	20	8		15	11		0

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #4 S. Santa Fe/Buena Creek

Cycle (sec):	100	Critical Vol./Cap.(X):	1.360
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	194.0
Optimal Cycle:	180	Level Of Service:	F

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Split Phase				Split Phase			
Rights:	Include				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	1 0	1	1	0	1 0	1	1	0	0 1	0	0	0	1 0	1	1	0
Volume Module: pm peak																
Base Vol:	0	0		0	149	0		260	557	514		0	0	540		221
Growth 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
Initial Bse:	0	0		0	149	0		260	557	514		0	0	540		221
User 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
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	0	0		0	162	0		283	605	559		0	0	587		240
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	0	0		0	162	0		283	605	559		0	0	587		240
PCE 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
MLF 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
Final Vol.:	0	0		0	162	0		283	605	559		0	0	587		240
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.85	0.81		0.81	0.81	0.69		0.83	0.83	0.85		0.85	0.77	0.77		
Lanes:	1.00	2.00		0.00	1.00	1.00		1.00	0.52	0.48		0.00	1.00	1.42		0.58
Final Sat.:	1615	3069		0	1534	1534		1304	819	756		0	1615	2084		853
Capacity Analysis Module:																
Vol/Sat:	0.00	0.00		0.00	0.11	0.00		0.22	0.74	0.74		0.00	0.00	0.28		0.28
Crit Moves:								****		****						****
Green/Cycle:	0.00	0.00		0.00	0.16	0.00		0.16	0.54	0.54		0.00	0.00	0.21		0.21
Volume/Cap:	0.00	0.00		0.00	0.66	0.00		1.36	1.36	1.36		0.00	0.00	1.36		1.36
Uniform Del:	0.0	0.0		0.0	39.5	0.0		42.0	22.8	22.8		0.0	0.0	39.6		39.6
IncremntDel:	0.0	0.0		0.0	6.6	0.0		190.0	169.6	170		0.0	0.0	173		172.5
InitQueuDel:	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0
Delay Adj:	0.00	0.00		0.00	1.00	0.00		1.00	1.00	1.00		0.00	0.00	1.00		1.00
Delay/Veh:	0.0	0.0		0.0	46.2	0.0		232.0	192.5	192		0.0	0.0	212		212.2
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	0.0	0.0		0.0	46.2	0.0		232.0	192.5	192		0.0	0.0	212		212.2
LOS by Move:	A	A		A	D	A		F	F	F		A	A	F		F
HCM2kAvgQ:	0	0		0	6	0		21	74	74		0	0	30		30

Note: Queue reported is the number of cars per lane.

E.9

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM 4-Way Stop Method (Base Volume Alternative)

Intersection #5 Buena Creek/Monte Vista Dr

Cycle (sec): 100 Critical Vol./Cap.(X): 1.066
Loss Time (sec): 0 (Y+R=4.0 sec) Average Delay (sec/veh): 45.1
Optimal Cycle: 0 Level Of Service: E

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	0	0	0	0 0	0	0	1!	0 0	0	1	0	0 0	0	0	1	0 1
Volume Module:																
Base Vol:	0	0	0		279	0	137		149	415	0		0	196	257	
Growth 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	
Initial Bse:	0	0	0		279	0	137		149	415	0		0	196	257	
User 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	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	0	0	0		303	0	149		162	451	0		0	213	279	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	0	0	0		303	0	149		162	451	0		0	213	279	
PCE 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	
MLF 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	
Final Vol.:	0	0	0		303	0	149		162	451	0		0	213	279	
Saturation Flow Module:																
Adjustment:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.10	1.00		1.00	1.10	1.00	
Lanes:	0.00	0.00	0.00		0.67	0.00	0.33		0.26	0.74	0.00		0.00	1.00	1.00	
Final Sat.:	0	0	0		376	0	185		152	466	0		0	562	566	
Capacity Analysis Module:																
Vol/Sat:	xxxx	xxxx	xxxx		0.81	xxxx	0.81		1.07	0.97	xxxx		xxxx	0.38	0.49	
Crit Moves:							****		****						****	
Delay/Veh:	0.0	0.0	0.0		30.2	0.0	30.2		80.7	80.7	0.0		0.0	14.4	14.7	
Delay 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	
AdjDel/Veh:	0.0	0.0	0.0		30.2	0.0	30.2		80.7	80.7	0.0		0.0	14.4	14.7	
LOS by Move:	*	*	*		D	*	D		F	F	*		*	B	B	
ApproachDel:	xxxxxx					30.2				80.7				14.6		
Delay Adj:	xxxxx					1.00				1.00				1.00		
ApprAdjDel:	xxxxxx					30.2				80.7				14.6		
LOS by Appr:	*					D				F				B		
AllWayAvgQ:	0.0	0.0	0.0		3.2	3.2	3.2		11.4	11.4	11.4		0.0	0.7	0.9	

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #6 Buena Creek/Sugarbush Dr

Average Delay (sec/veh): 1.0 Worst Case Level Of Service: D[29.1]

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Stop Sign				Stop Sign				Uncontrolled				Uncontrolled			
Rights:	Include				Include				Include				Include			
Lanes:	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0	0	0	1!	0 0
Volume Module:																
Base Vol:	19	0	7		1	0	9		12	619	28		17	453	3	
Growth 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	
Initial Bse:	19	0	7		1	0	9		12	619	28		17	453	3	
User 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	
PHF Adj:	0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92	
PHF Volume:	21	0	8		1	0	10		13	673	30		18	492	3	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Final Vol.:	21	0	8		1	0	10		13	673	30		18	492	3	
Critical Gap Module:																
Critical Gp:	7.1	xxxx	6.2		7.1	xxxx	6.2		4.1	xxxx	xxxxx		4.1	xxxx	xxxxx	
FollowUpTim:	3.5	xxxx	3.3		3.5	xxxx	3.3		2.2	xxxx	xxxxx		2.2	xxxx	xxxxx	
Capacity Module:																
Cnflict Vol:	1250	xxxx	688		1249	xxxx	494		496	xxxx	xxxxx		703	xxxx	xxxxx	
Potent Cap.:	151	xxxx	450		151	xxxx	579		1079	xxxx	xxxxx		904	xxxx	xxxxx	
Move Cap.:	145	xxxx	450		145	xxxx	579		1079	xxxx	xxxxx		904	xxxx	xxxxx	
Volume/Cap:	0.14	xxxx	0.02		0.01	xxxx	0.02		0.01	xxxx	xxxx		0.02	xxxx	xxxx	
Level Of Service Module:																
2Way95thQ:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx		0.0	xxxx	xxxxx		0.1	xxxx	xxxxx	
Control Del:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx		8.4	xxxx	xxxxx		9.1	xxxx	xxxxx	
LOS by Move:	*	*	*		*	*	*		A	*	*		A	*	*	
Movement:	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT	LT	-	LTR	- RT
Shared Cap.:	xxxx	177	xxxxx		xxxx	446	xxxxx		xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	
SharedQueue:	xxxxx	0.6	xxxxx		xxxxx	0.1	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shrd ConDel:	xxxxx	29.1	xxxxx		xxxxx	13.3	xxxxx		xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	
Shared LOS:	*	D	*		*	B	*		*	*	*		*	*	*	
ApproachDel:	29.1				13.3				xxxxxx				xxxxxx			
ApproachLOS:	D				B				*				*			

Note: Queue reported is the number of cars per lane.

E.10

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #7 Twin Oaks Valley Road/Buena Creek Road

Cycle (sec):	100	Critical Vol./Cap.(X):	0.715
Loss Time (sec):	6 (Y+R=4.0 sec)	Average Delay (sec/veh):	19.1
Optimal Cycle:	44	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Permitted				Permitted				Permitted				Permitted			
Rights:	Include				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	1 0	1	0	1	1 0	1	0	1	0 1	0	0	1	0 0	1!	0	0
Volume Module: pm peak																
Base Vol:	161	675		1	1	462		216	339	0		209	2	0		2
Growth 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
Initial Bse:	161	675		1	1	462		216	339	0		209	2	0		2
User 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
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	175	734		1	1	502		235	368	0		227	2	0		2
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	175	734		1	1	502		235	368	0		227	2	0		2
PCE 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
MLF 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
Final Vol.:	175	734		1	1	502		235	368	0		227	2	0		2
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.34	0.98		0.83	0.18	0.98		0.83	0.70	0.98		0.83	0.84	0.98		0.84
Lanes:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	0.50	0.00		0.50
Final Sat.:	654	1862		1583	348	1862		1583	1324	0		1583	798	0		798
Capacity Analysis Module:																
Vol/Sat:	0.27	0.39		0.00	0.00	0.27		0.15	0.28	0.00		0.14	0.00	0.00		0.00
Crit Moves:		****							****							
Green/Cycle:	0.55	0.55		0.55	0.55	0.55		0.55	0.39	0.00		0.39	0.39	0.00		0.39
Volume/Cap:	0.49	0.72		0.00	0.01	0.49		0.27	0.72	0.00		0.37	0.01	0.00		0.01
Uniform Del:	13.8	16.6		10.1	10.1	13.8		11.8	25.9	0.0		21.8	18.7	0.0		18.7
IncremntDel:	1.0	2.4		0.0	0.0	0.4		0.2	4.8	0.0		0.4	0.0	0.0		0.0
InitQueuDel:	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0
Delay Adj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	0.00		1.00	1.00	0.00		1.00
Delay/Veh:	14.8	19.1		10.1	10.1	14.2		12.0	30.6	0.0		22.2	18.7	0.0		18.7
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	14.8	19.1		10.1	10.1	14.2		12.0	30.6	0.0		22.2	18.7	0.0		18.7
LOS by Move:	B	B		B	B	B		B	C	A		C	B	A		B
HCM2kAvgQ:	4	17		0	0	10		4	11	0		5	0	0		0

Note: Queue reported is the number of cars per lane.

SUGARBUSH SUBDIVISION
TM5295RPL

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 Deer Springs Rd/N. Twin Oaks Valley Rd

Cycle (sec):	100	Critical Vol./Cap.(X):	0.923
Loss Time (sec):	9 (Y+R=4.0 sec)	Average Delay (sec/veh):	19.2
Optimal Cycle:	116	Level Of Service:	B

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	-	T	- R	L	-	T	- R	L	-	T	- R	L	-	T	- R
Control:	Protected				Protected				Protected				Protected			
Rights:	Include				Include				Include				Include			
Min. Green:	7	20		7	7	20		7	7	20		7	7	20		7
Lanes:	1 0	1	0	0	0 0	1	0	1	1 0	0	0	1	0 0	0	0	0
Volume Module:																
Base Vol:	58	1270		0	0	298		56	37	0		69	0	0		0
Growth 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
Initial Bse:	58	1270		0	0	298		56	37	0		69	0	0		0
User 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
PHF Adj:	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92	0.92	0.92		0.92
PHF Volume:	63	1380		0	0	324		61	40	0		75	0	0		0
Reduct Vol:	0	0		0	0	0		0	0	0		0	0	0		0
Reduced Vol:	63	1380		0	0	324		61	40	0		75	0	0		0
PCE 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
MLF 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
Final Vol.:	63	1380		0	0	324		61	40	0		75	0	0		0
Saturation Flow Module:																
Sat/Lane:	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900		1900
Adjustment:	0.87	0.92		0.92	0.92	0.92		0.78	0.87	0.92		0.78	0.92	0.92		0.92
Lanes:	1.00	1.00		0.00	0.00	1.00		1.00	1.00	0.00		1.00	0.00	0.00		0.00
Final Sat.:	1661	1748		0	0	1748		1486	1661	0		1486	0	0		0
Capacity Analysis Module:																
Vol/Sat:	0.04	0.79		0.00	0.00	0.19		0.04	0.02	0.00		0.05	0.00	0.00		0.00
Crit Moves:		****			****							****				
Green/Cycle:	0.22	0.84		0.00	0.00	0.62		0.62	0.07	0.00		0.07	0.00	0.00		0.00
Volume/Cap:	0.17	0.94		0.00	0.00	0.30		0.07	0.35	0.00		0.72	0.00	0.00		0.00
Uniform Del:	31.8	6.1		0.0	0.0	8.8		7.4	44.3	0.0		45.5	0.0	0.0		0.0
IncremntDel:	0.2	12.0		0.0	0.0	0.2		0.0	1.8	0.0		21.7	0.0	0.0		0.0
InitQueuDel:	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		0.0
Delay Adj:	1.00	1.00		0.00	0.00	1.00		1.00	1.00	0.00		1.00	0.00	0.00		0.00
Delay/Veh:	32.0	18.1		0.0	0.0	8.9		7.5	46.1	0.0		67.3	0.0	0.0		0.0
User DelAdj:	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00
AdjDel/Veh:	32.0	18.1		0.0	0.0	8.9		7.5	46.1	0.0		67.3	0.0	0.0		0.0
LOS by Move:	C	B		A	A	A		A	D	A		E	A	A		A
HCM2kAvgQ:	2	38		0	0	5		1	2	0		4	0	0		0

Note: Queue reported is the number of cars per lane.

E.11

Ex+P-PM Tue Dec 5, 2006 10:46:32 Page 11-1

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #9 I-15 SB Ramps/Deer Springs Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 1.135
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 92.6
Optimal Cycle: 180 Level Of Service: F

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Split Phase						Split Phase						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	0	0	0				7	0	7				0	20	7				7	20	0			
Lanes:	0	0	0	0	0		0	0	1!	0	0		0	0	0	1	0		1	0	1	0	0	
Volume Module: pm peak																								
Base Vol:	0	0	0				56	2	423				0	950	136				200	328	0			
Growth 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			
Initial Bse:	0	0	0				56	2	423				0	950	136				200	328	0			
User Adj:	1.00	1.00	1.00				1.00	1.00	0.90				1.00	1.00	0.90				1.00	1.00	1.00			
PHF Adj:	0.92	0.92	0.92				0.92	0.92	0.92				0.92	0.92	0.92				0.92	0.92	0.92			
PHF Volume:	0	0	0				61	2	414				0	1033	133				217	357	0			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	0	0	0				61	2	414				0	1033	133				217	357	0			
PCE 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			
MLF 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			
Final Vol.:	0	0	0				61	2	414				0	1033	133				217	357	0			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	1.00	1.00	1.00				0.87	0.87	0.87				1.00	0.99	0.99				0.95	1.00	1.00			
Lanes:	0.00	0.00	0.00				0.12	0.01	0.87				0.00	0.89	0.11				1.00	1.00	0.00			
Final Sat.:	0	0	0				211	8	1431				0	1658	214				1805	1900	0			
Capacity Analysis Module:																								
Vol/Sat:	0.00	0.00	0.00				0.29	0.29	0.29				0.00	0.62	0.62				0.12	0.19	0.00			
Crit Moves:								****						****					****					
Green/Cycle:	0.00	0.00	0.00				0.25	0.25	0.25				0.00	0.55	0.55				0.11	0.66	0.00			
Volume/Cap:	0.00	0.00	0.00				1.13	1.13	1.13				0.00	1.13	1.13				1.13	0.29	0.00			
Uniform Del:	0.0	0.0	0.0				37.3	37.3	37.3				0.0	22.6	22.6				44.7	7.3	0.0			
IncremntDel:	0.0	0.0	0.0				86.0	86.0	86.0				0.0	72.8	72.8				105.8	0.1	0.0			
InitQueuDel:	0.0	0.0	0.0				0.0	0.0	0.0				0.0	0.0	0.0				0.0	0.0	0.0			
Delay Adj:	0.00	0.00	0.00				1.00	1.00	1.00				0.00	1.00	1.00				1.00	1.00	0.00			
Delay/Veh:	0.0	0.0	0.0				123.2	123	123.2				0.0	95.4	95.4				150.5	7.4	0.0			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	0.0	0.0	0.0				123.2	123	123.2				0.0	95.4	95.4				150.5	7.4	0.0			
LOS by Move:	A	A	A				F	F	F				A	F	F				F	A	A			
HCM2kAvgQ:	0	0	0				25	25	25				0	56	56				13	5	0			

Note: Queue reported is the number of cars per lane.

Ex+P-PM Tue Dec 5, 2006 10:46:32 Page 12-1

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #10 I-15 NB Ramps/Deer Springs Rd.

Cycle (sec): 100 Critical Vol./Cap.(X): 0.883
Loss Time (sec): 9 (Y+R=4.0 sec) Average Delay (sec/veh): 38.1
Optimal Cycle: 95 Level Of Service: D

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Split Phase						Split Phase						Protected						Protected					
Rights:	Include						Include						Include						Include					
Min. Green:	7	0	7				0	0	0				7	20	0				0	20	7			
Lanes:	0	1	0	0	1		0	0	0	0	0		1	0	1	0	0		0	0	1	0	1	
Volume Module: pm peak																								
Base Vol:	175	7	317				0	0	0				715	278	0				0	335	40			
Growth 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			
Initial Bse:	175	7	317				0	0	0				715	278	0				0	335	40			
User Adj:	1.00	1.00	0.85				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	0.85			
PHF Adj:	0.92	0.92	0.92				0.92	0.92	0.92				0.92	0.92	0.92				0.92	0.92	0.92			
PHF Volume:	190	8	293				0	0	0				777	302	0				0	364	37			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	190	8	293				0	0	0				777	302	0				0	364	37			
PCE 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			
MLF 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			
Final Vol.:	190	8	293				0	0	0				777	302	0				0	364	37			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	0.94	0.94	0.85				1.00	1.00	1.00				0.95	1.00	1.00				1.00	1.00	0.85			
Lanes:	0.96	0.04	1.00				0.00	0.00	0.00				1.00	1.00	0.00				0.00	1.00	1.00			
Final Sat.:	1721	69	1615				0	0	0				1805	1900	0				0	1900	1615			
Capacity Analysis Module:																								
Vol/Sat:	0.11	0.11	0.18				0.00	0.00	0.00				0.43	0.16	0.00				0.00	0.19	0.02			
Crit Moves:			****										****							****				
Green/Cycle:	0.21	0.21	0.21				0.00	0.00	0.00				0.49	0.70	0.00				0.00	0.22	0.22			
Volume/Cap:	0.54	0.54	0.88				0.00	0.00	0.00				0.88	0.23	0.00				0.00	0.88	0.11			
Uniform Del:	35.5	35.5	38.6				0.0	0.0	0.0				23.1	5.2	0.0				0.0	37.9	31.4			
IncremntDel:	1.6	1.6	23.1				0.0	0.0	0.0				10.5	0.1	0.0				0.0	19.5	0.1			
InitQueuDel:	0.0	0.0	0.0				0.0	0.0	0.0				0.0	0.0	0.0				0.0	0.0	0.0			
Delay Adj:	1.00	1.00	1.00				0.00	0.00	0.00				1.00	1.00	0.00				0.00	1.00	1.00			
Delay/Veh:	37.1	37.1	61.7				0.0	0.0	0.0				33.5	5.3	0.0				0.0	57.5	31.5			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	37.1	37.1	61.7				0.0	0.0	0.0				33.5	5.3	0.0				0.0	57.5	31.5			
LOS by Move:	D	D	E				A	A	A				C	A	A				A	E	C			
HCM2kAvgQ:	6	6	12				0	0	0				25	3	0				0	14	1			

Note: Queue reported is the number of cars per lane.

E.12

Existing + Project - AM

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

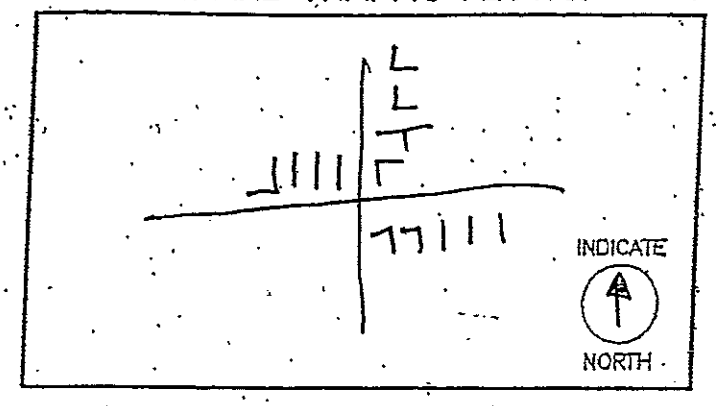
INTERSECTION SR 78/Sycamore Ave WB Ramps

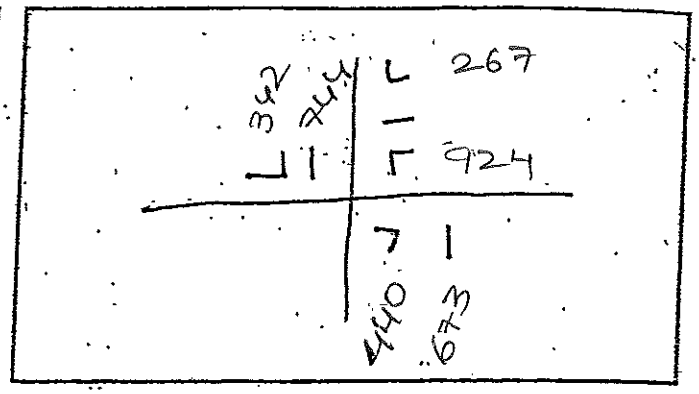
DIST. CO. RTE. P.M.

BY TK DATE 12/5/06

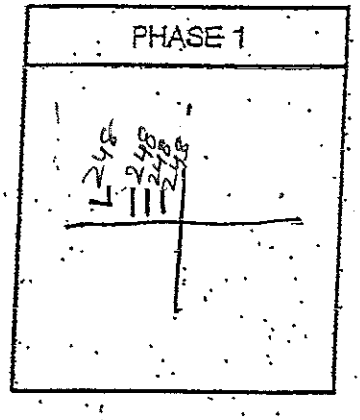
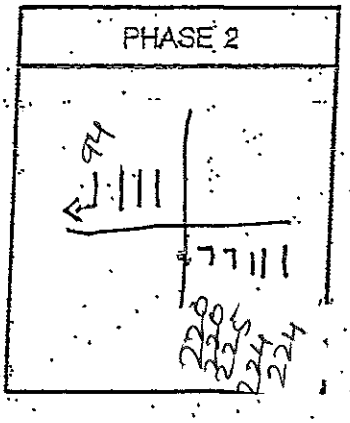
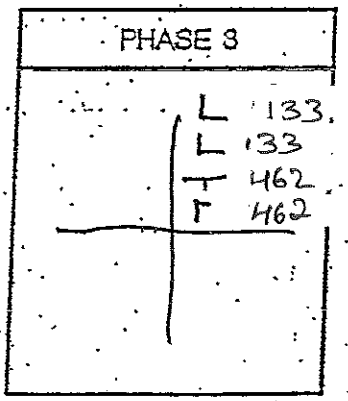
TIME AM AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
248	225	462	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
935

☑ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

Under Capacity

E-13

Existing + Project - PM

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

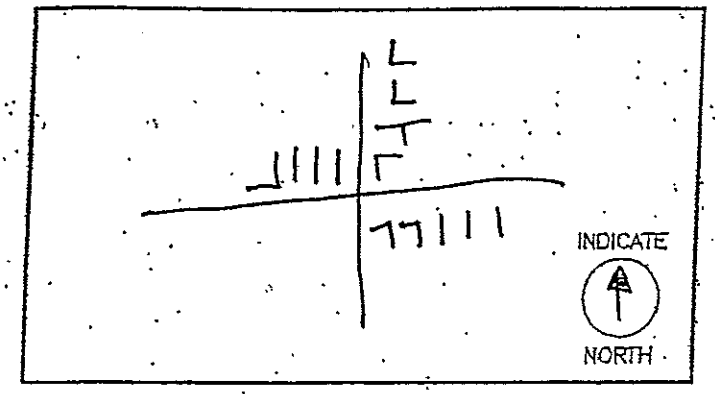
INTERSECTION SR 78/Sycamore Ave WB Ramps

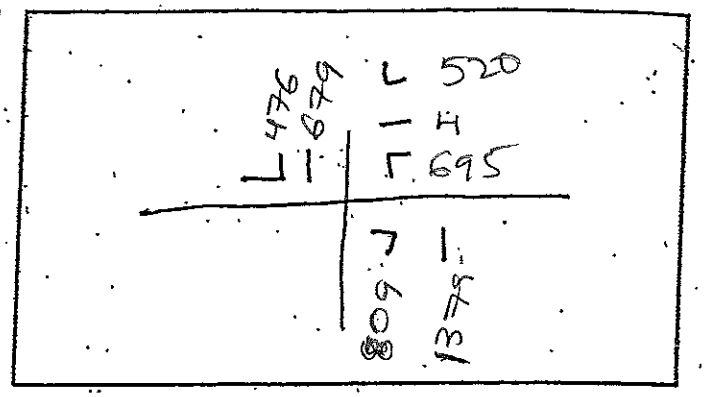
DIST. CO. RTE. P.M. _____

BY LK DATE 12/5/06

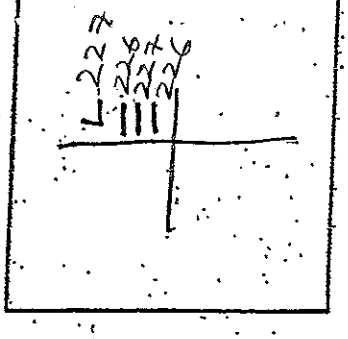
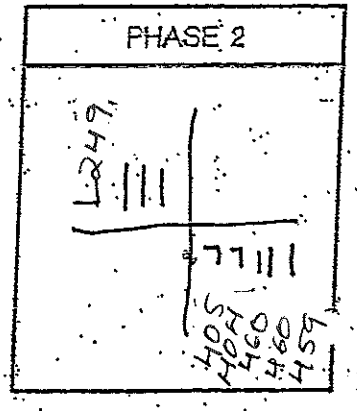
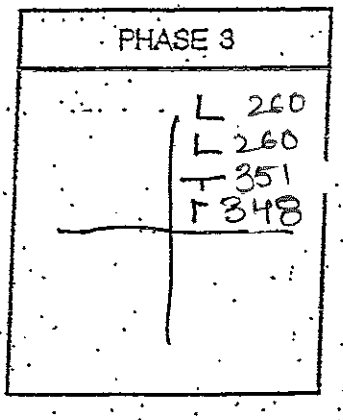
TIME PM AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
227	460	351	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1,088

☑ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS:

Under Capacity

E-14

Ex+P - AM

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

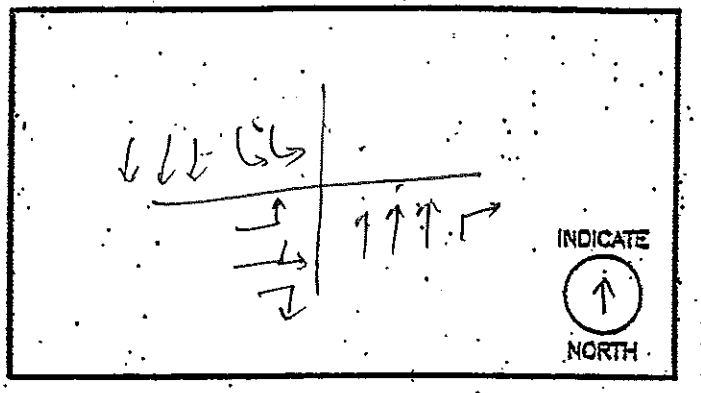
INTERSECTION SR 78 / Sycamore Ave EB Ramps

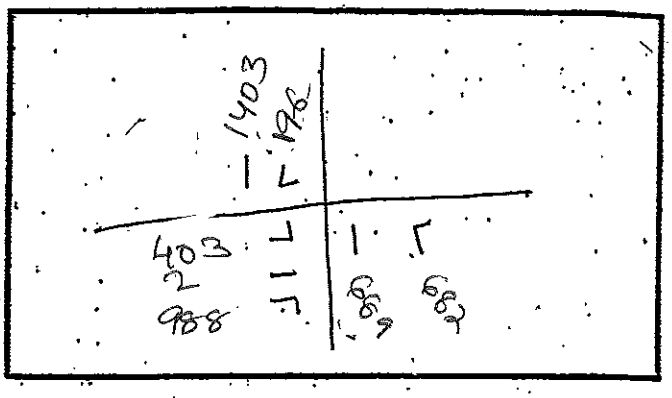
DIST. CO. RTE. P.M.

BY LK DATE 12/5/06

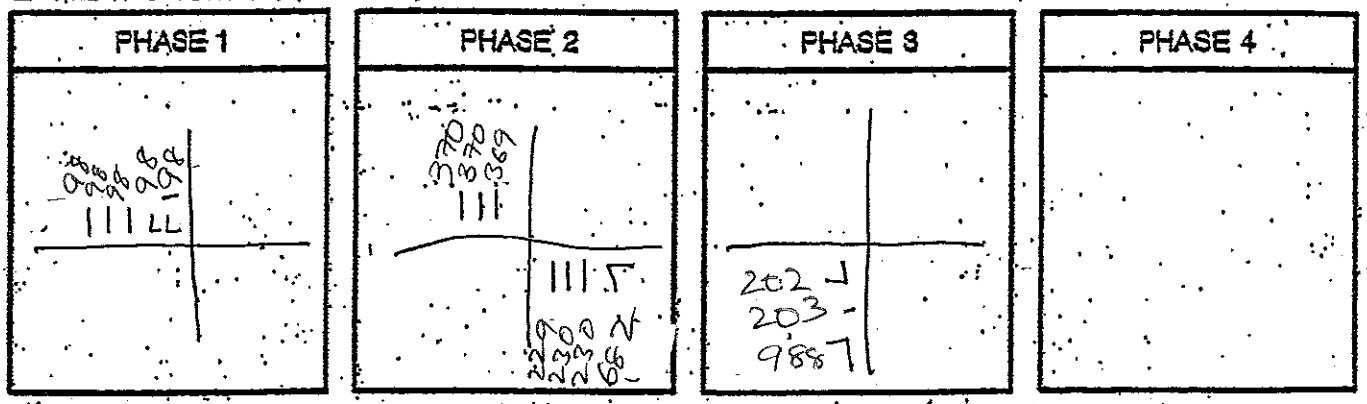
TIME AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)



PHASE 1	PHASE 2	PHASE 3	PHASE 4

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
98	682	988	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1768

- ☐ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☒ > 1500 ILV/HR (CAPACITY)

REMARKS: Over capacity

E-15

Ex+P - PM

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

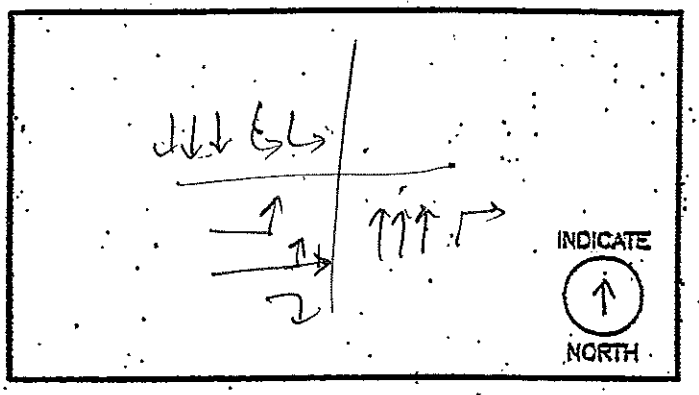
INTERSECTION SR 78 / Sycamore Ave EB Ramps

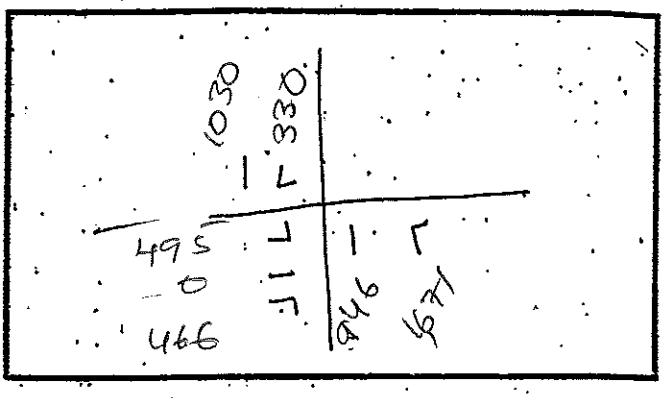
DIST. CO. RTE. P.M. _____

BY LK DATE 12/5/06

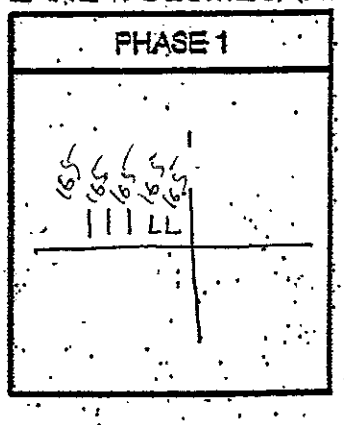
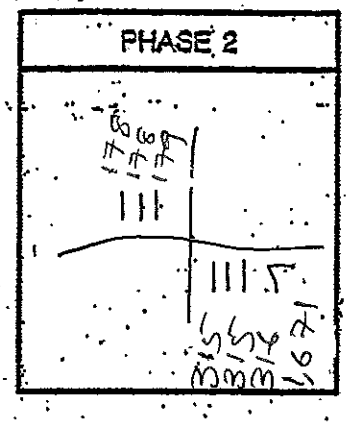
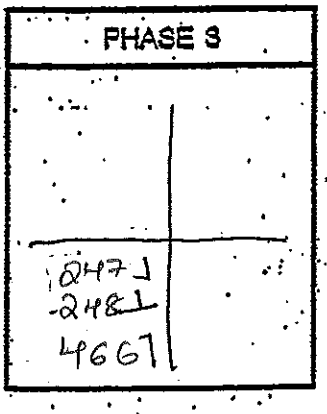
TIME PM AM/PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
165	1671	466	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
2,302

- ☐ < 1200 ILV/HR.
- ☐ > 1200 BUT < 1500 ILV/HR.
- ☒ > 1500 ILV/HR (CAPACITY)

REMARKS: over capacity

E16

ex + p

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

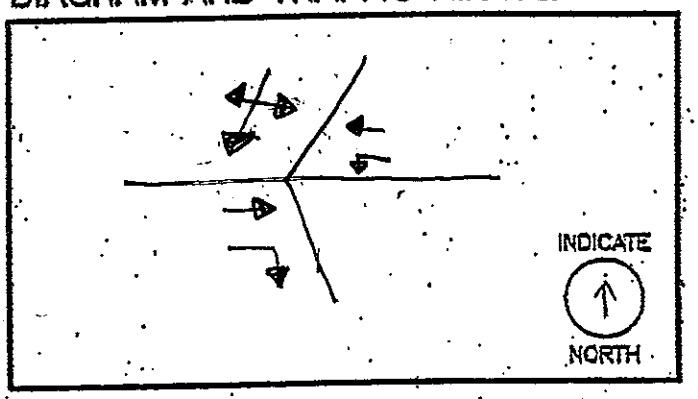
INTERSECTION Deer Springs / I-15 SB Rampo

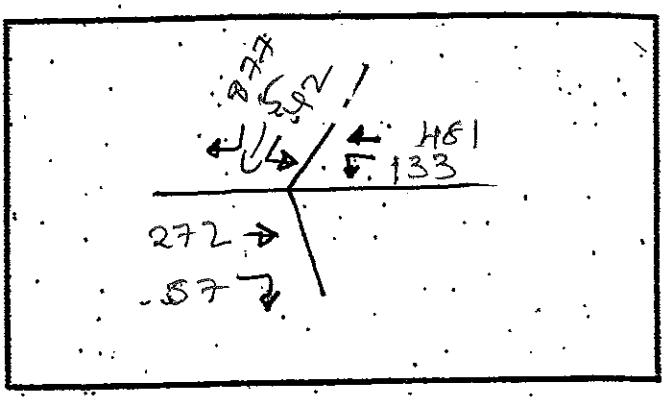
DIST. CO. RTE. P.M. _____

BY UK DATE 12/5/06

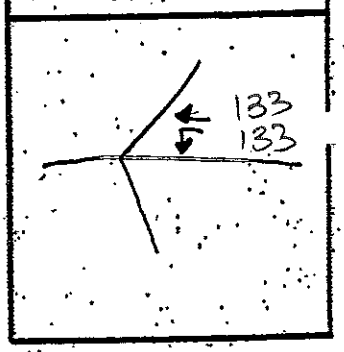
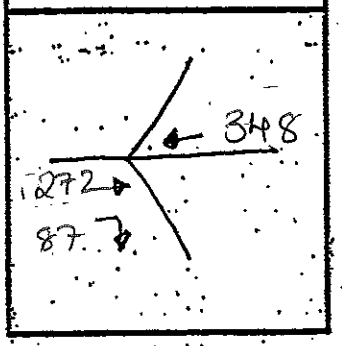
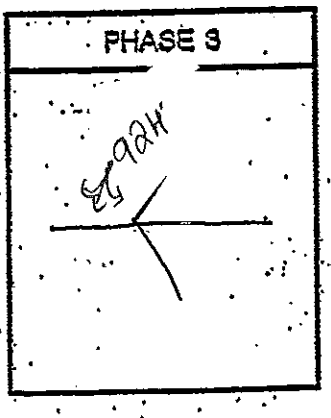
TIME AM AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
133	348	924	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1,405

- ☐ < 1200 ILV/HR.
- ☒ > 1200 BUT < 1500 ILV/HR.
- ☐ > 1500 ILV/HR (CAPACITY)

REMARKS: near capacity

E-17

ex + P

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

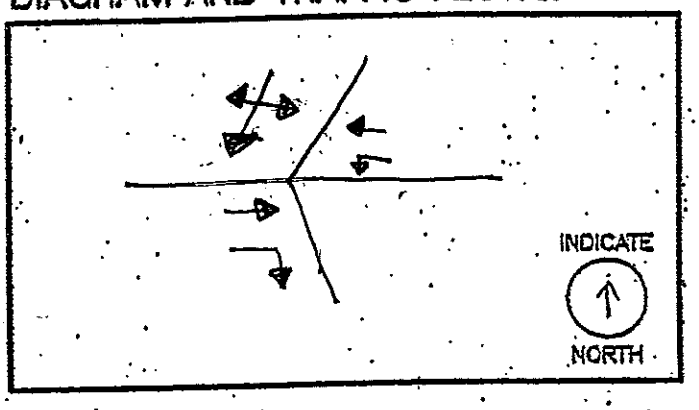
INTERSECTION Deer Springs / I-15 SB Rampo

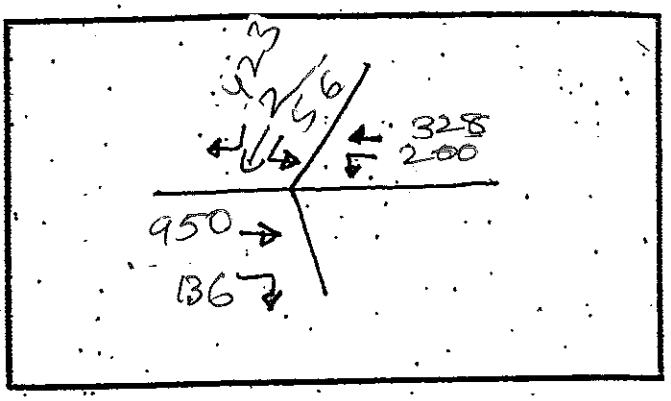
DIST. CO. RTE. P.M. _____

BY UK DATE 12/5/06

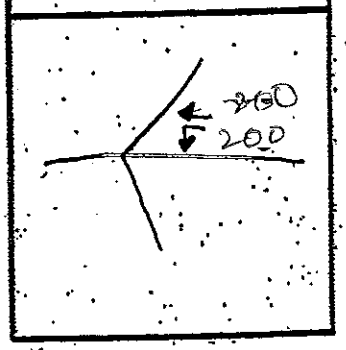
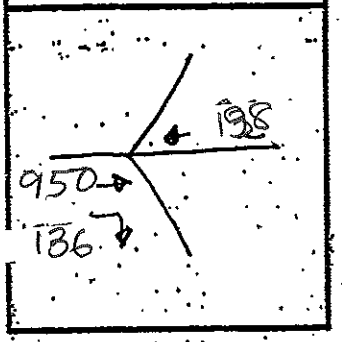
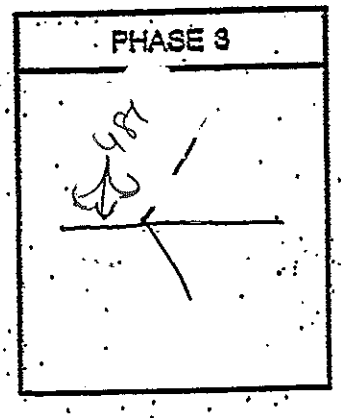
TIME PM AM (PM)

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
200	950	481	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1,631

☐ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☒ > 1500 ILV/HR (CAPACITY)

REMARKS: Over capacity

E-18

ex+P

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

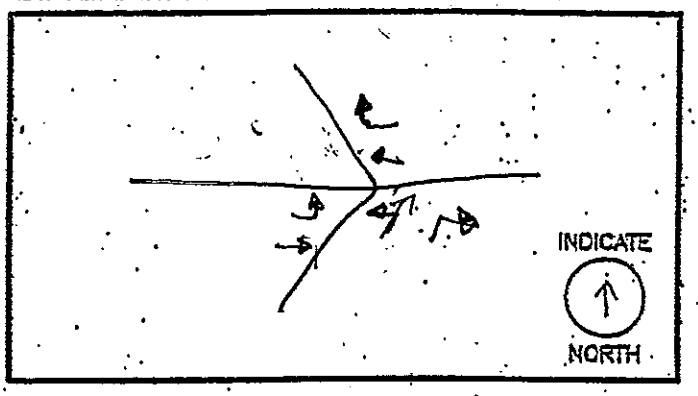
INTERSECTION Deer Springs / I-15 NB Ramps

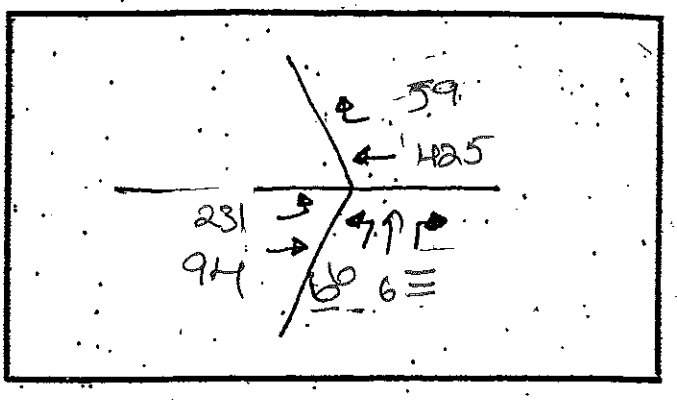
DIST. CO. RTE. P.M. _____

BY _____ DATE _____

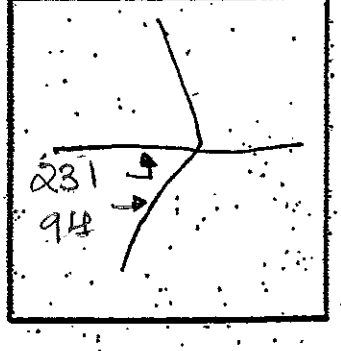
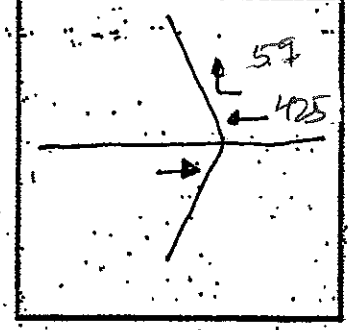
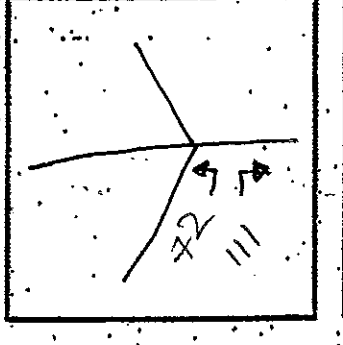
TIME AM AM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
231	425	111	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
767

☒ < 1200 ILV/HR.

☐ > 1200 BUT < 1500 ILV/HR.

☐ > 1500 ILV/HR (CAPACITY)

REMARKS: Under capacity

ex+p

INTERSECTION

Signalized Intersection
CAPACITY ANALYSIS

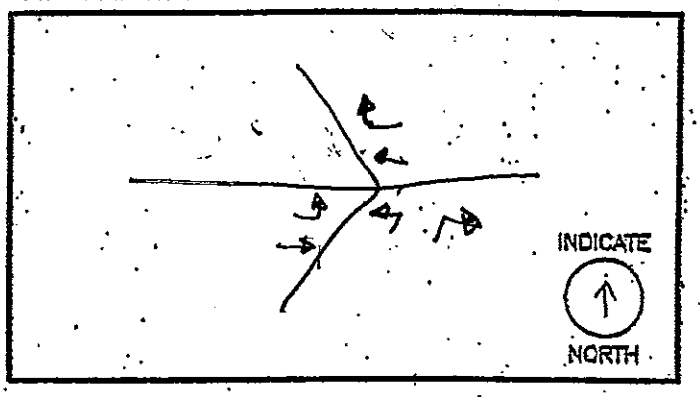
INTERSECTION Deer Spring / I-15 NB Ramps

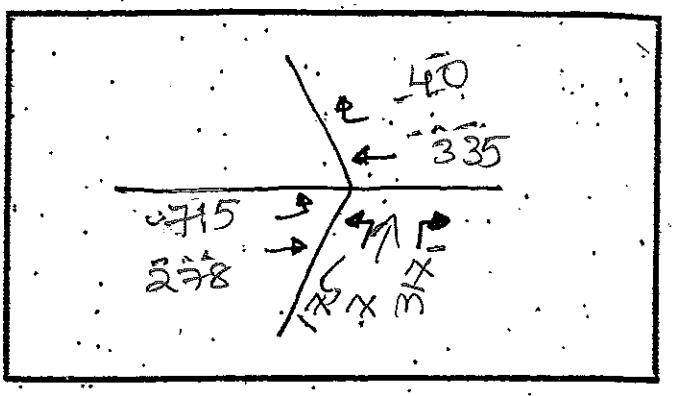
DIST. CO. RTE. P.M. _____

BY _____ DATE _____

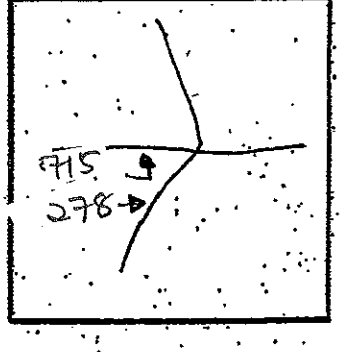
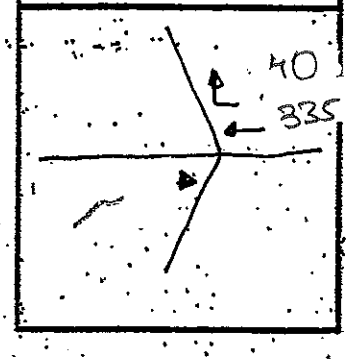
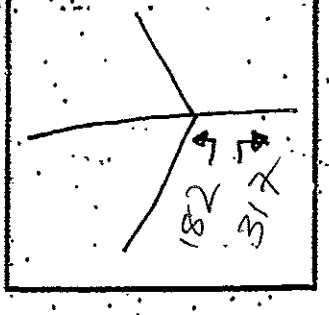
TIME PM AM PM

DIAGRAM AND TRAFFIC FLOWS:





LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
			

CRITICAL LANE VOLUMES (ILV/HR)

PHASE 1	PHASE 2	PHASE 3	PHASE 4
715	335	317	

TOTAL OPERATING LEVEL (ILV/HR) IS . . .

Σ
1,367

☐ < 1200 ILV/HR.

☑ > 1200 BUT < 1500 ILV/HR.

1500 ILV/HR (CAPACITY)

REMARKS:

Near capacity

E 20