

October 24, 2008

TO: Jay D. Walter, Director of Public Works

FROM: Tim Bochum, Deputy Director of Public Works

SUBJECT: 400 Prado Road Off-Site Traffic Assessment

I have completed the assessment of off-site potential impacts of the 400 Prado Road subdivision. This analysis focuses specifically on the intersection of Prado Road/South Higuera Street to determine if additional mitigation is required as part of the project or, if the connection of Prado Road between South Higuera and Broad Street needs to be completed prior to issuance and occupancy of the project.

The analysis indicates that the project does not, in and of itself, require the connection of Prado Road between South Higuera and Broad Street.

However, the project will have a potentially significant impact at the intersection of Prado Road/South Higuera due to the amount of Westbound left turns that are added to the intersection. The following condition of approval needs to be included for the project to address potential impact and maintain intersection operations at an acceptable level of service. All other fees, installation of subdivision infrastructure improvement requirements and timing of said improvements should remain the same.

1. As part of public infrastructure improvements for the subdivision map the develop/applicant shall:
 - a. Modify the intersection of Prado Road/Higuera Street in order to lengthen the Westbound left turn lane on Prado Road to a minimum of 200' of storage length.
 - b. Install countdown pedestrian signal heads for the two South Higuera Street crossings.
 - c. Modify the eastbound and westbound approaches of Prado Road to include protected/permissive left-turn signal phasing.
 - d. The improvements shall include miscellaneous signing and striping modifications and potential installation/modification of traffic signal detection equipment for the approaches of Prado Road.

BACKGROUND

A commercial/industrial subdivision has been submitted for the property located at 400 Prado Road. The subject property is contained within the Margarita Specific Plan Area and must comply with the provisions and requirements of the MASP document. The project seeks discretionary approval to build up to 160,000 sq. ft. of business park type development under a commercial subdivision and isolated building permit issuance process.

The City has previously given discretionary approvals to three other subdivisions located within the vicinity of the 400 Prado Road project. All three of these projects are also contained within the MASP area and have received conditions of approval for each of their subdivisions. Two of the subdivisions (Cowan/French and Deblauw) are mixed-use subdivisions consisting of a mixture of residential and office/business land use designations.

This assessment reviews potential impacts of the 400 Prado Road subdivision project at the intersection of Prado Road/South Higuera Street under the scenario that the Prado Road extension between South Higuera and Broad Street is not completed prior to occupancy of the subdivision.

NEED AND PURPOSE

A. Problems, Deficiencies

Based upon review of the size of the 400 Prado Road subdivision project and its location at the west end of the MASP area, staff has determined that the extension of Prado Road between South Higuera and Broad Street may not be necessary prior to building of the 400 Prado Road project. This approach is commensurate with orderly development principles of proper land use and growth objectives and meets objectives of the City in allowing development to proceed if appropriate infrastructure exists to support the development.

However, because the MASP assumed that the Prado Road extension would be completed prior to the 400 Prado Road project seeking approval and currently contains language to that effect, an assessment of potential impacts of allowing the development to occur prior to the completion of Prado Road extension needs to be done to determine if other off-site mitigation may be necessary.

This analysis specifically focuses on the intersection of Prado Road/South Higuera Street to determine if mitigation is required by the 400 Prado Road project.

Assumptions

This analysis studies six scenarios for the intersection:

- Existing AM
- Existing AM + Baseline
- Existing AM + Baseline + Project

- Exiting PM
- Existing PM + Baseline
- Exiting PM + Baseline + Project

Existing conditions include traffic and pedestrian counts recorded at the intersections in late 2007 as part of the City’s annual traffic volume counting program

The Baseline conditions include a forecast approximately 5 years out with a conservative 1% ambient background traffic volume growth and the potential commercial trip generation at the intersection that may occur from the Cowan/French and Deblauw subdivisions that are currently approved and seeking building permits and subdivision finalization.

Traffic due to residential components of the Cowan/French and Deblauw project are not included in the baseline because the conditions of approval for those projects set the stage for implementation of the Prado Road extension tied to the number of building occupancies (both commercial and residential) and it is believed that due to the current economy and residential market, that the residential components may occur past the five year forecast of this study.

The Project assumptions include buildout of the 400 Prado Road project up to the 160,000 sq. ft. allowed by the MASP.

Trip Generation for AM and PM peaks periods for each of the projects in contained in the appendix of this report.

Trip distribution for AM and PM peak periods are contained in the appendix of this report.

Table 1 depicts existing and forecast Levels Of Service (LOS) for the intersection of Prado Road/South Higuera Street for the six scenarios analyzed.

**TABLE 1
Existing and Projected LOS**

Intersection LOS						
Intersection	Existing (2007)		Existing + Baseline		Baseline + Project	
	AM LOS	PM LOS	AM LOS	PM LOS	AM LOS	PM LOS
Prado Road/South Higuera	B	B	B	B	B	B
Intersection Delay	10.2	12.9	12	14.8	14.8	17.5
Worst Movement	SBL (C)	NBL (C)	SBL (C)	NBL (C)	SBL (D)	WBL (C)
Wb Turn Storage Needed	100	100	100	100	110	200

The City’s traffic analysis software program (Synchro) was used to determine forecast LOS for each scenario and potential increase to intersection delay by the various projects under consideration

The analysis indicated that the intersection of Prado Road/South Higuera should not experience any significant traffic LOS impacts if the 400 Prado Road subdivision is approved and occupied prior to the Prado Road extension being completed.

However, the analysis also reviewed potential operation changes that may occur due to the increase in traffic volumes and current lane capacities. The analysis indicated there is a potential for the westbound left turn lane to fail (demand exceeds storage length) when the 400 Prado Road project is built.

Based upon the projected new turn volumes the westbound left turn storage lane should be extended to a minimum of 200' to meet the new demand of the project and reduce the potential of turning traffic to queue into the adjacent through lane.

In addition to this modification, the increase in right turn and left turn traffic caused by the project will likely make the vehicle and pedestrian conflicts at the intersection worsen in the Baseline + Project condition. This condition can be mitigated in two ways. First, by retrofitting the existing pedestrian signal heads at the intersection (for the pedestrian crossings of Higuera Street) to the newer pedestrian countdown signals to help in separating out pedestrian and turning traffic. These signal heads have proven effective in reducing the conflicts between pedestrians and vehicles and should mitigate any potential impacts that may occur from the new development project.

Secondly, due to the high volume of left turns on Prado Road coming from the new development area, protected/permissive left turn phasing will be necessary in both the eastbound and westbound directions of Prado Road to help clear the left turn queues during signal phases.

CONDITION

Based upon the analysis, the following condition of approval should be included as part of the project approval process to help mitigate potential impacts:

1. As part of public infrastructure improvements for the subdivision map the develop/applicant shall:
 - a. Modify the intersection of Prado Road/Higuera Street in order to lengthen the Westbound left turn lane on Prado Road to a minimum of 200' of storage length.
 - b. Install countdown pedestrian signal heads for the two South Higuera Street crossings.

- c. Modify the eastbound and westbound approaches of Prado Road to include protected/permissive left-turn signal phasing.
- d. The improvements shall include miscellaneous signing and striping modifications and potential installation/modification of traffic signal detection equipment for the approaches of Prado Road.

All other previously discussed on and offsite mitigation and conditions of approval for the project should remain in effect.

Appendices

MASP Fees Oct -2007	Land USE	Fee	
	SFR	\$	8,545
	MFR	\$	5,272
	Retail	\$	38,521
	BP/O	\$	16,165

MASP Trips

	MASP ADT Rate	MASP Dem	ADT Trips		ITE AM In	ITE AM Out	AM Total Trips	Total AM Trip
SFR	7.00	685	4795		0.19	0.56	0.75	514
MFR	4.24	183	776		0.10	0.41	0.51	93
BP/Man	13.48	959017	12928		1.20	0.23	1.43	1371
Ncomm	32.41	10000	324		1.98	1.27	3.25	32.50
			18823					2011

Davis Sq Ft:	13.48	160000	2157				107%	of total MASP Trips and Costs
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SFR	SFR Trips	BP/O	BP/O Trips	ITE AM In	ITE AM Out	AM Total Trips	% trips
Davis		160000	2156.8	192.2	36.6	228.8	19.92%

SFR	SFR Trips	BP/O	BP/O Trips	ITE AM In	ITE AM Out	AM Total Trips	% trips
TR 2342 (Cowan/French)	41	287		7.7	23.1	30.8	2.68%
TR 2342 (Cowan/French)			80000	1078.4	96.1	114.4	9.96%
						145.2	12.64%
R 2352 (Sierra Gardens/Deblauw)	121	847		22.7	68.1	90.8	7.90%
R 2352 (Sierra Gardens/Deblauw)			25000	810.25	30.0	35.8	3.11%
						126.5	11.01%
King (SFR)	165	1155		30.9	92.8	123.8	10.78%
King (MFR)	6	25.44		0.6	2.4	3.1	0.27%
King (MFR HA)	26	110.24		31.2	10.6	13.3	1.15%

Commercial Only Phasing to Start:				318.3	60.6	379.0	
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Larry Martinelli (BP/O)		254400		305.6	58.2	363.8	31.68%
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Alfie Martinelli (BP/O)		100800		121.1	23.1	144.1	12.55%
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	ITE AM In	ITE AM Out	AM Total Trips	Check
Total PM Trips	1156.5	399.5	1148.5	#REF!

Land USE	Fee
SFR	\$ 8,545
MFR	\$ 5,272
Retail	\$ 38,521
BP/O	\$ 16,165

MASP Trips

	MASP ADT Rate	MASP Dem	ADT Trips	ITE PM In	ITE PM Out	PM Total Trips	Total PM Trip
SFR	7.00	685	4795	0.64	0.37	1.01	692
MFR	4.24	183	776	0.40	0.22	0.62	113
BP/Man	13.48	959017	12928	0.30	0.99	1.29	1237
Ncomm	32.41	10000	324	5.33	5.12	10.45	104.50
			18823				2147
Davis Sq Ft:	13.48	160000	2157			100%	of total MASP Trips and Costs

	SFR	SFR Trips	BP/O	BP/O Trips	PM In	PM Out	PM Total Trips	% trips
Davis			160000	2156.8	47.5	158.9	206.4	11.50%

	SFR	SFR Trips	BP/O	BP/O Trips	PM In	PM Out	PM Total Trips	% trips
TR 2342 (Cowan/French)		41	287		26.1	15.3	41.4	2.31%
TR 2342 (Cowan/French)			80000	1078.4	23.7	79.5	103.2	5.75%
							144.6	8.06%
R 2352 (Sierra Gardens/Deblauw)		121	847		77.0	45.2	122.2	6.81%
R 2352 (Sierra Gardens/Deblauw)			25000	810.25	7.4	24.8	32.3	1.80%
							154.5	8.61%
King (SFR)	165	1155			105.0	61.7	166.7	9.29%
King (MFR)	6	25.44			2.4	1.3	3.7	0.21%
King (MFR HA)	26	110.24			7.7	5.6	16.1	0.90%
							186.5	10.39%
Damon Garcia (SFR)	355	2485			225.9	132.7	358.6	19.98%
Damon Garcia (MFR)	84	356.16			33.9	18.2	52.1	2.90%
Damon Garcia (Retail)	10000	324.1			53.3	51.2	104.5	5.82%
Damon Garcia (BP/O)		0	100000	1348	29.7	99.3	129.0	7.19%
							644.1	35.90%

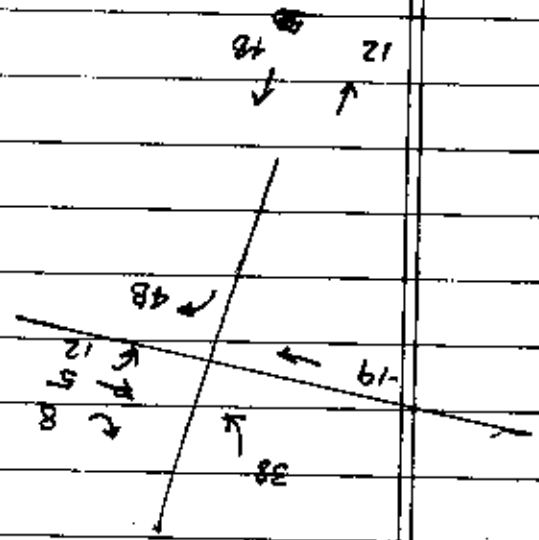
Larry Martinelli (BP/O)			254400		75.5	252.7	328.2	18.29%
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Alfie Martinelli (BP/O)			100800		29.9	100.1	130.0	7.25%
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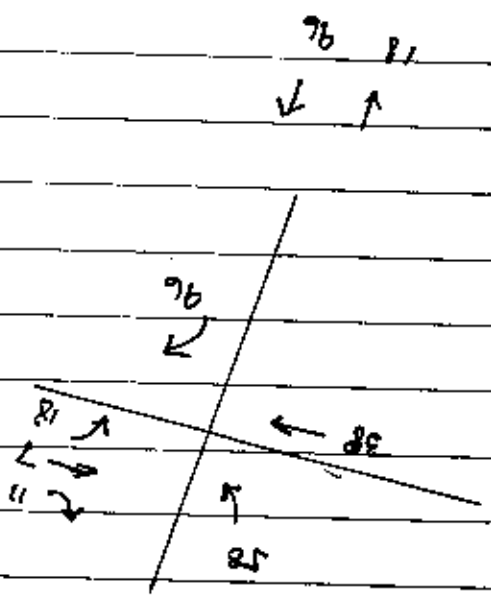
	PM In	PM Out	PM Total Trips	Check
Total PM Trips	744.9	1046.6	1794.3	100%

AM		Prado/Higuera		Base Year	1	2	3	4	5	6	Baseline	Total	Baseline	Total	7	8	9	10	11
	Higuera	SB LT	95	96	97	98	99	100	101	38	139	58	197	102	103	104	105	106	
		SB Thru	695	702	709	716	723	730	738		738		738	745	753	760	768	775	
		SB RT	67	68	68	69	70	70	71		71		71	72	73	73	74	75	
	Prado	EB LT	37	37	38	38	39	39	39		39		39	40	40	40	41	41	
		EB Thru	40	40	41	41	42	42	42	19	61	38	99	43	43	44	44	45	
		EB RT	114	115	116	117	119	120	121		121		121	122	123	125	126	127	
	Higuera	NB LT	56	57	57	58	58	59	59		59		59	60	61	61	62	62	
		NB Thru	804	812	820	828	837	845	853		853		853	862	871	879	888	897	
		NB RT	60	61	61	62	62	63	64	48	112	96	208	64	65	66	66	67	
	Prado	WB LT	19	19	19	20	20	20	20	12	32	18	50	20	21	21	21	21	
		WB Thru	35	35	36	36	36	37	37	5	42	7	49	38	38	38	39	39	
		WB RT	29	29	30	30	30	30	31	8	39	11	50	31	31	32	32	32	
PM		Prado/Higuera		Base Year	1	2	3	4	5	6	Baseline	Total	Baseline	Total	7	8	9	10	11
	Higuera	SB LT	64	65	65	66	67	67	68	9	77	14	91	69	69	70	71	71	
		SB Thru	834	842	851	859	868	877	885	0	885		885	894	903	912	921	930	
		SB RT	42	42	43	43	44	44	45	0	45		45	45	45	46	46	47	
	Prado	EB LT	40	40	41	41	42	42	42	0	42		42	43	43	44	44	45	
		EB Thru	42	42	43	43	44	44	45	6	51	10	61	45	45	46	46	47	
		EB RT	130	131	133	134	135	137	138	0	138		138	139	141	142	144	145	
	Higuera	NB LT	79	80	81	81	82	83	84	0	84		84	85	86	86	87	88	
		NB Thru	778	786	794	802	810	818	826	0	826		826	834	842	851	859	868	
		NB RT	30	30	31	31	31	32	32	16	48	24	72	32	32	33	33	33	
	Prado	WB LT	59	60	60	61	61	62	63	52	115	80	195	63	64	65	65	66	
		WB Thru	92	93	94	95	96	97	98	21	119	32	151	99	100	101	102	103	
		WB RT	36	36	37	37	37	38	38	31	69	48	117	39	39	39	40	40	

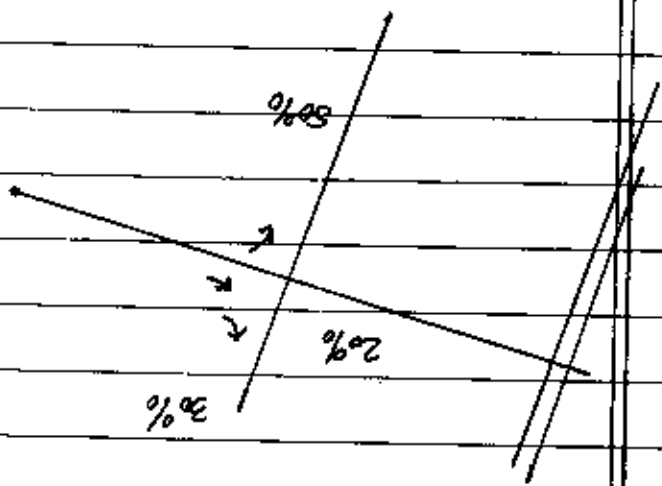
Count/Balances
 Arrived to Network



Count/Balances
 Arrived to Network



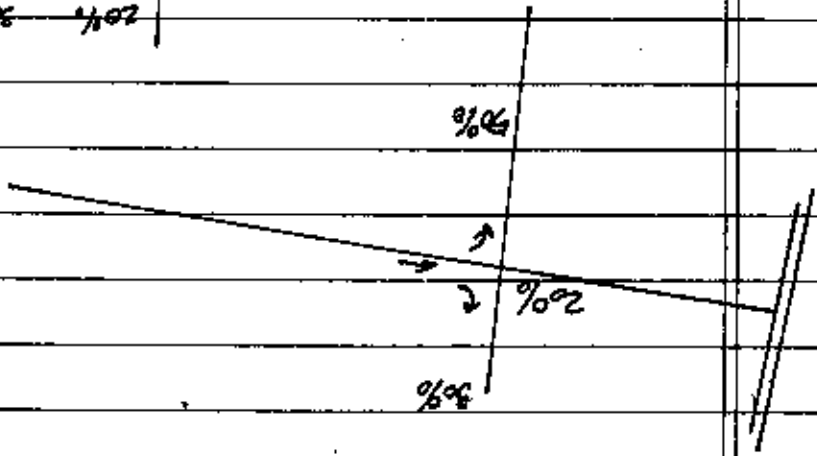
Count/Balances
 Arrived to Network



AM IN
 192.2
 96.1
 29
 36.76
 AM OUT

20%	30%	5%	20%	30%	50%
IN	19	29	48	38	58
OUT	5	8	12	7	11
					18

Distribution:



Green Data		Data	
31.1	47.5	10	14
104.3	188.9	6	24
PM IN		IN	
20%	20%	30%	50%
20%	20%	30%	50%
OUT		OUT	

Data

Green Data

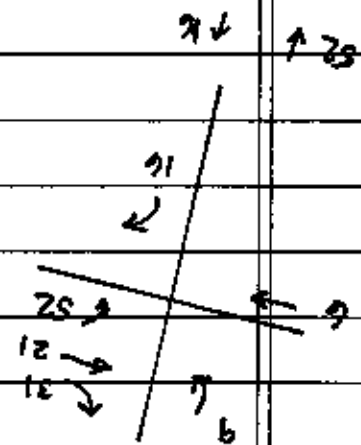
PM IN

PM OUT

IN

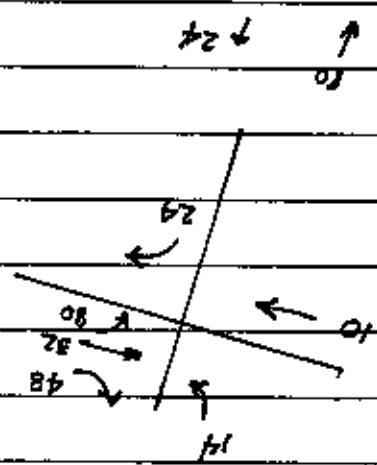
OUT

Green Data Applied to Network:



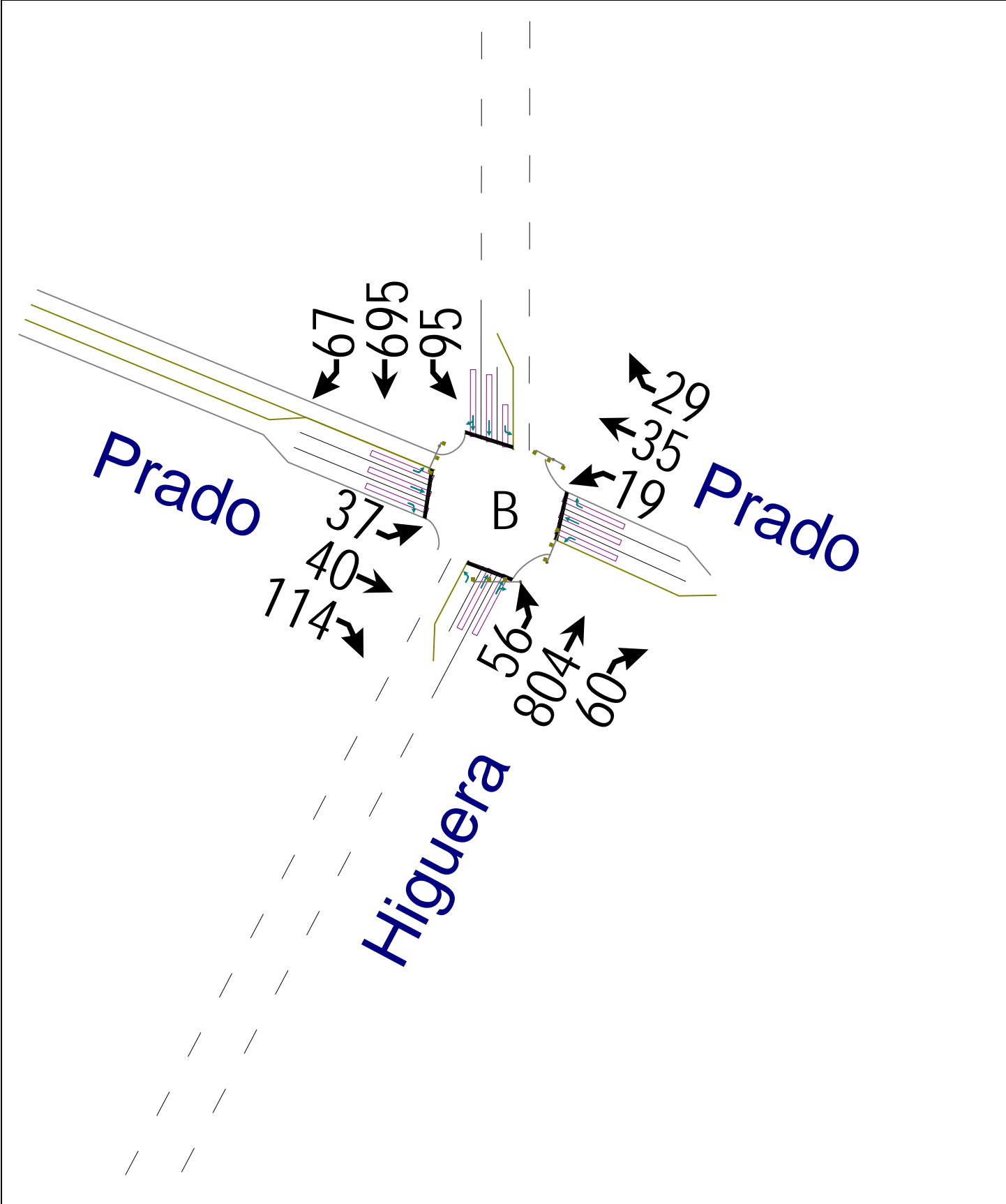
Data

Applied to Network:



























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Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	37	40	114	19	35	29	56	804	60	95	695	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	100		90	50		0	50		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t			0.850			0.850		0.990			0.987	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3504	0	1770	3493	0
Fl _t Permitted	0.733			0.730			0.950			0.950		
Satd. Flow (perm)	1365	1863	1583	1360	1863	1583	1770	3504	0	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			120			31		15			12	
Link Speed (mph)		35			35			45			40	
Link Distance (ft)		385			2255			2779			2121	
Travel Time (s)		7.5			43.9			42.1			36.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	39	42	120	20	37	31	59	846	63	100	732	71
Shared Lane Traffic (%)												
Lane Group Flow (vph)	39	42	120	20	37	31	59	909	0	100	803	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	2	2	2	6	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	8.0	21.0		8.0	21.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	33.0	46.0	0.0	10.0	23.0	0.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	41.3%	57.5%	0.0%	12.5%	28.8%	0.0%

Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

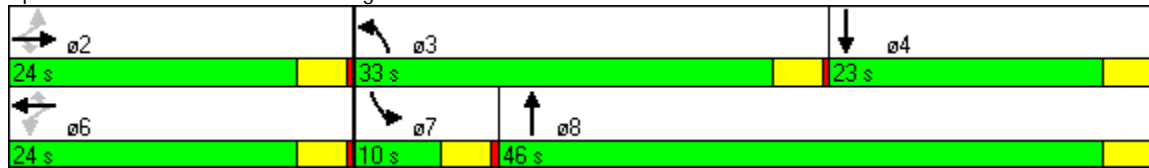


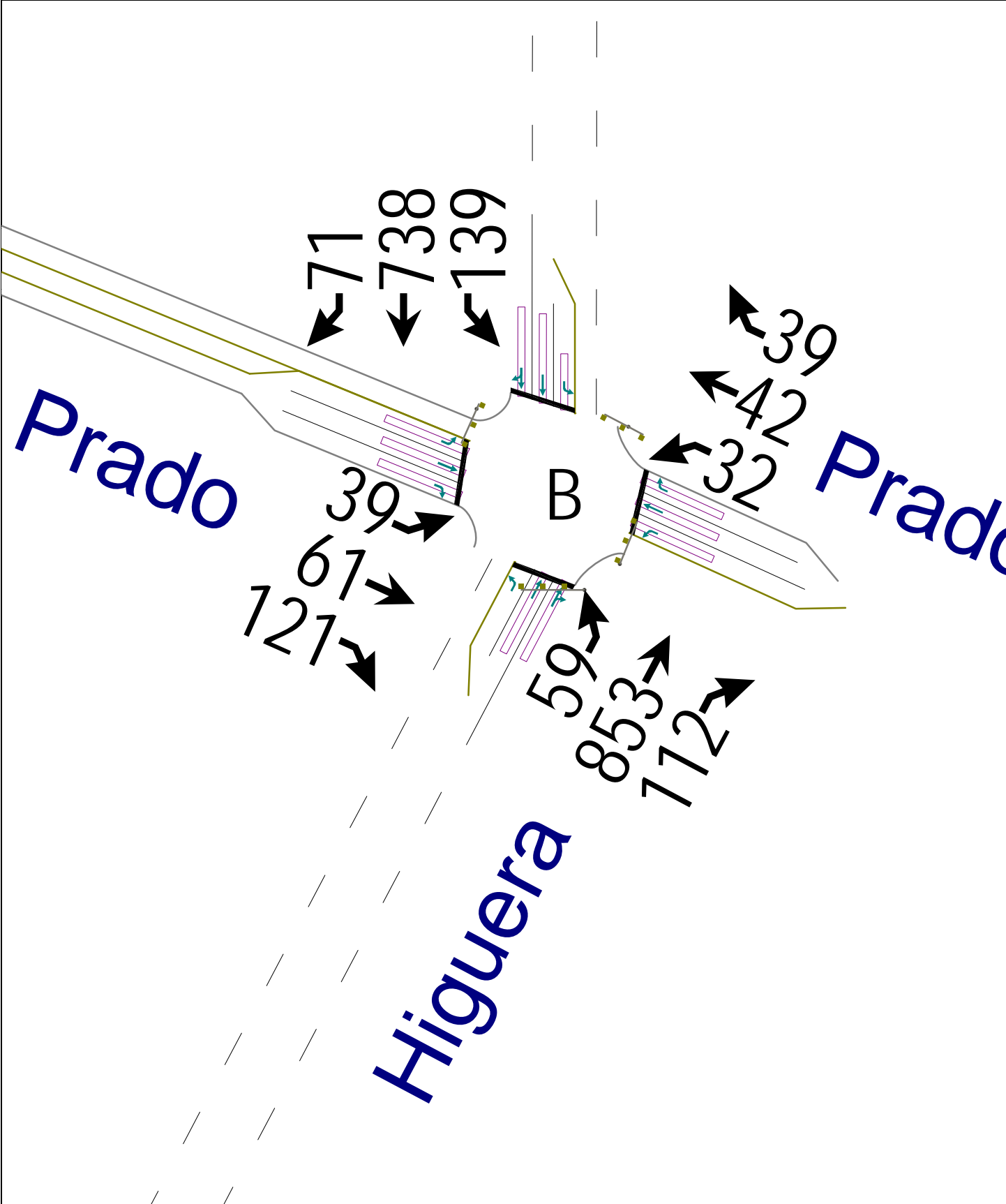
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	29.0	42.0		6.0	19.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	None		None	None	
Act Effect Green (s)	8.2	8.2	8.2	8.2	8.2	8.2	8.4	18.0		7.5	21.3	
Actuated g/C Ratio	0.20	0.20	0.20	0.20	0.20	0.20	0.21	0.45		0.19	0.53	
v/c Ratio	0.14	0.11	0.29	0.07	0.10	0.09	0.16	0.57		0.30	0.43	
Control Delay	17.5	16.7	6.6	16.7	16.6	8.3	17.0	10.1		20.6	7.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	17.5	16.7	6.6	16.7	16.6	8.3	17.0	10.1		20.6	7.9	
LOS	B	B	A	B	B	A	B	B		C	A	
Approach Delay		10.8			13.7			10.5			9.3	
Approach LOS		B			B			B			A	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	40
Natural Cycle:	55
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.57
Intersection Signal Delay:	10.2
Intersection LOS:	B
Intersection Capacity Utilization:	48.1%
ICU Level of Service:	A
Analysis Period (min):	15

























Splits and Phases: 15: Prado & Higuera





Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	61	121	32	42	39	59	853	112	139	738	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	100		90	50		0	50		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t			0.850			0.850		0.983			0.987	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3479	0	1770	3493	0
Fl _t Permitted	0.728			0.715			0.950			0.950		
Satd. Flow (perm)	1356	1863	1583	1332	1863	1583	1770	3479	0	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127			41		28			12	
Link Speed (mph)		35			35			45			40	
Link Distance (ft)		385			2255			2779			2121	
Travel Time (s)		7.5			43.9			42.1			36.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	64	127	34	44	41	62	898	118	146	777	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	64	127	34	44	41	62	1016	0	146	852	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	2	2	2	6	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	8.0	21.0		8.0	21.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	33.0	46.0	0.0	10.0	23.0	0.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	41.3%	57.5%	0.0%	12.5%	28.8%	0.0%

Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

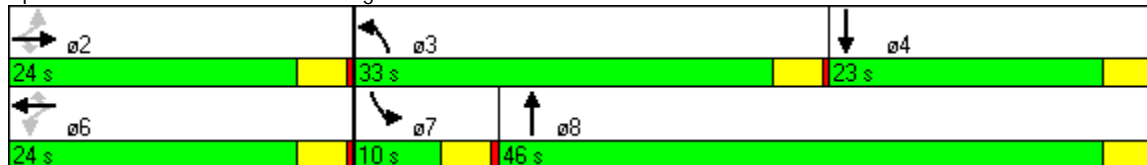


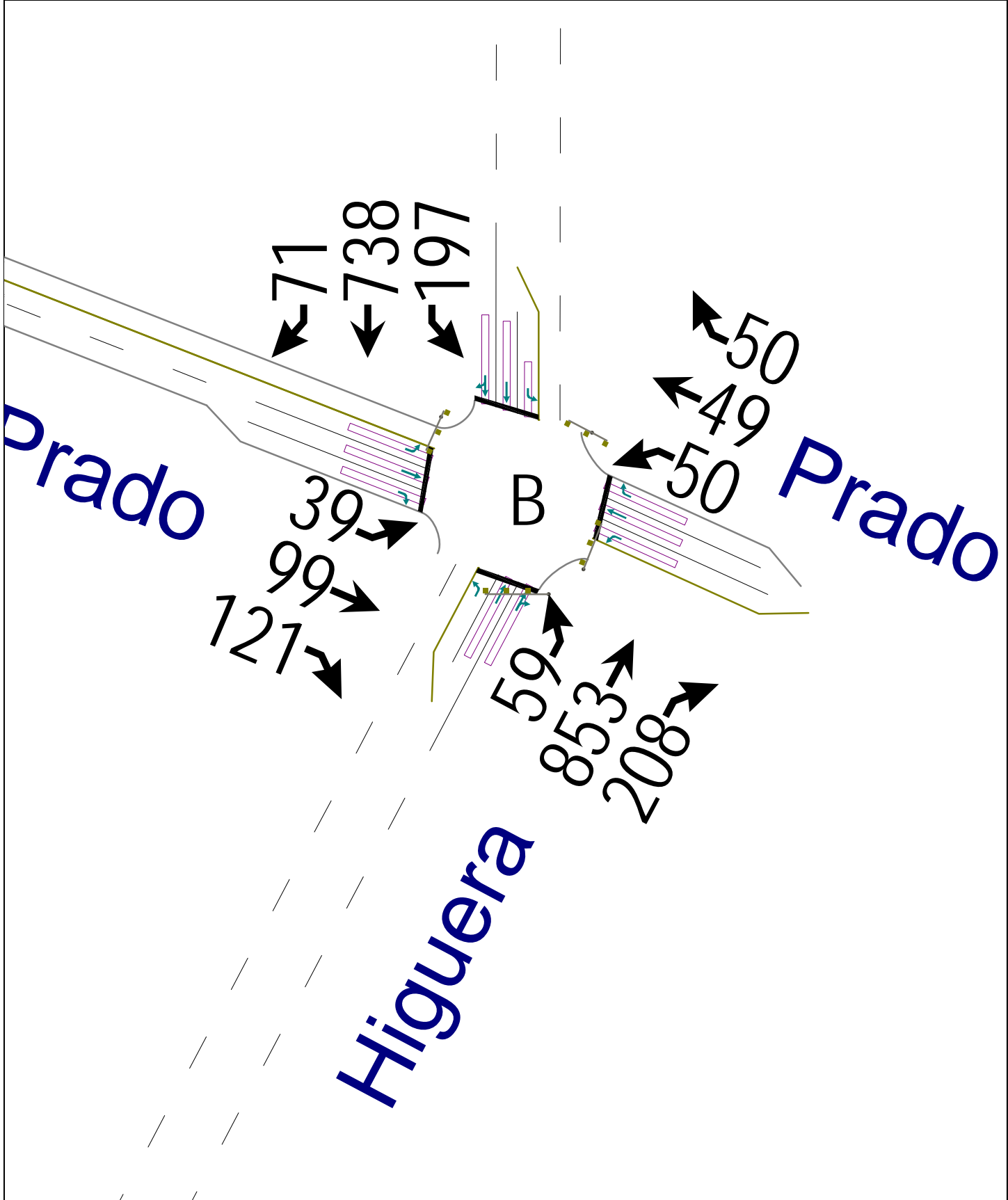
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	29.0	42.0		6.0	19.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	None		None	None	
Act Effect Green (s)	8.2	8.2	8.2	8.2	8.2	8.2	8.3	20.6		7.1	24.0	
Actuated g/C Ratio	0.18	0.18	0.18	0.18	0.18	0.18	0.18	0.46		0.16	0.53	
v/c Ratio	0.17	0.19	0.32	0.14	0.13	0.13	0.19	0.63		0.52	0.46	
Control Delay	19.1	18.7	7.2	18.8	18.2	8.3	18.7	11.0		29.3	9.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	19.1	18.7	7.2	18.8	18.2	8.3	18.7	11.0		29.3	9.2	
LOS	B	B	A	B	B	A	B	B		C	A	
Approach Delay		12.5			15.0			11.5			12.1	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	45.1
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	12.0
Intersection LOS:	B
Intersection Capacity Utilization:	53.7%
ICU Level of Service:	A
Analysis Period (min):	15

























Splits and Phases: 15: Prado & Higuera





Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	39	99	121	50	49	50	59	853	208	197	738	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		100	100		90	50		0	50		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t			0.850			0.850		0.971			0.987	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3437	0	1770	3493	0
Fl _t Permitted	0.723			0.690			0.950			0.950		
Satd. Flow (perm)	1347	1863	1583	1285	1863	1583	1770	3437	0	1770	3493	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			127			53		58			12	
Link Speed (mph)		35			35			45			40	
Link Distance (ft)		385			2255			2779			2121	
Travel Time (s)		7.5			43.9			42.1			36.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	41	104	127	53	52	53	62	898	219	207	777	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	41	104	127	53	52	53	62	1117	0	207	852	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	2	2	2	6	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	8.0	21.0		8.0	21.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	33.0	46.0	0.0	10.0	23.0	0.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	30.0%	30.0%	41.3%	57.5%	0.0%	12.5%	28.8%	0.0%

Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

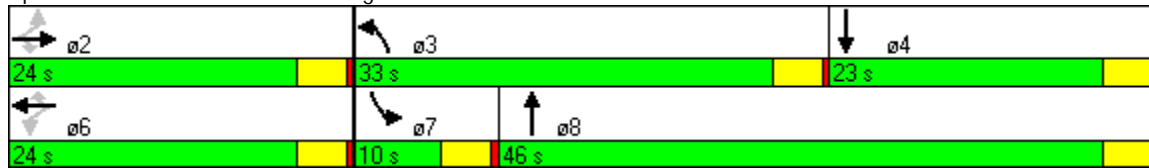


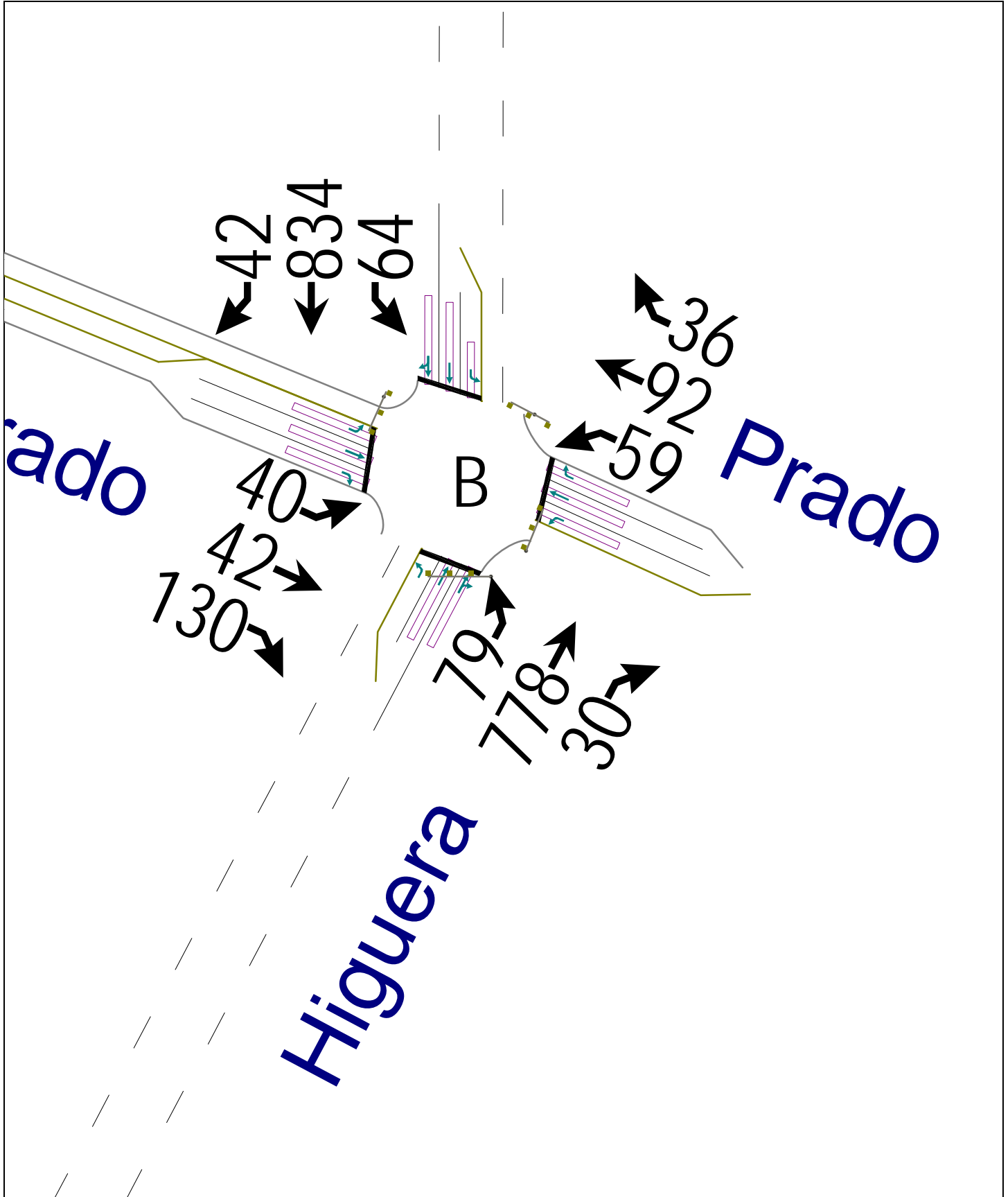
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	29.0	42.0		6.0	19.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	None		None	None	
Act Effect Green (s)	9.5	9.5	9.5	9.5	9.5	9.5	8.5	22.9		7.2	26.4	
Actuated g/C Ratio	0.19	0.19	0.19	0.19	0.19	0.19	0.17	0.47		0.15	0.54	
v/c Ratio	0.16	0.29	0.31	0.21	0.14	0.15	0.20	0.68		0.79	0.45	
Control Delay	19.9	20.8	7.1	20.8	19.2	7.9	21.2	11.9		50.1	9.6	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	19.9	20.8	7.1	20.8	19.2	7.9	21.2	11.9		50.1	9.6	
LOS	B	C	A	C	B	A	C	B		D	A	
Approach Delay		14.3			15.9			12.3			17.5	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	80
Actuated Cycle Length:	48.8
Natural Cycle:	60
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.79
Intersection Signal Delay:	14.8
Intersection LOS:	B
Intersection Capacity Utilization:	60.6%
ICU Level of Service:	B
Analysis Period (min):	15

























Splits and Phases: 15: Prado & Higuera





Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	40	42	130	59	92	36	79	778	30	64	834	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	100		90	50		0	50		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t			0.850			0.850		0.994			0.993	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3518	0	1770	3514	0
Fl _t Permitted	0.694			0.728			0.950			0.950		
Satd. Flow (perm)	1293	1863	1583	1356	1863	1583	1770	3518	0	1770	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			137			38		6			6	
Link Speed (mph)		35			35			45			40	
Link Distance (ft)		385			2255			2779			2121	
Travel Time (s)		7.5			43.9			42.1			36.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	42	44	137	62	97	38	83	819	32	67	878	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	42	44	137	62	97	38	83	851	0	67	922	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	2	2	2	6	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	8.0	21.0		20.0	21.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	33.0	46.0	0.0	20.0	23.0	0.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	36.7%	51.1%	0.0%	22.2%	25.6%	0.0%

Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

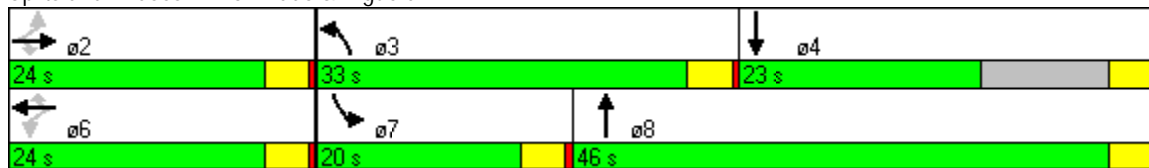


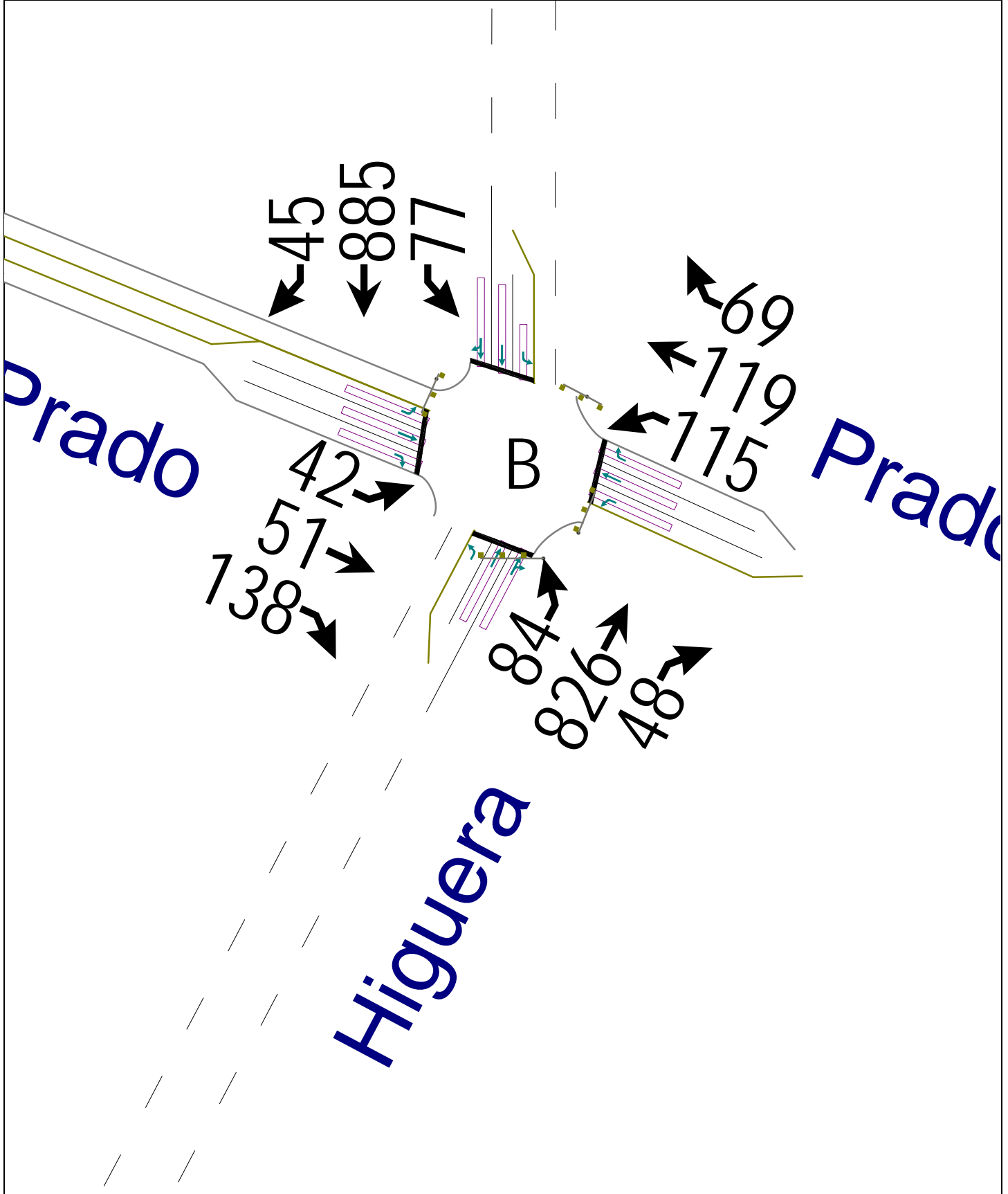
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	29.0	42.0		16.0	19.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		11.0		11.0		
Pedestrian Calls (#/hr)	3	3	3	10	10	10		10		5		
Act Effect Green (s)	10.4	10.4	10.4	10.4	10.4	10.4	9.8	20.4		9.9	20.7	
Actuated g/C Ratio	0.23	0.23	0.23	0.23	0.23	0.23	0.22	0.46		0.22	0.46	
v/c Ratio	0.14	0.10	0.29	0.20	0.22	0.10	0.21	0.53		0.17	0.56	
Control Delay	19.9	19.0	6.6	20.2	19.7	8.6	21.4	12.0		19.8	11.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	19.9	19.0	6.6	20.2	19.7	8.6	21.4	12.0		19.8	11.7	
LOS	B	B	A	C	B	A	C	B		B	B	
Approach Delay		11.5			17.7			12.8			12.2	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	44.6
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.56
Intersection Signal Delay:	12.9
Intersection LOS:	B
Intersection Capacity Utilization:	48.7%
ICU Level of Service:	A
Analysis Period (min):	15

























Splits and Phases: 15: Prado & Higuera





Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	51	138	115	119	69	84	826	48	77	885	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	100		90	50		0	50		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t			0.850			0.850		0.992			0.993	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3511	0	1770	3514	0
Fl _t Permitted	0.677			0.722			0.950			0.950		
Satd. Flow (perm)	1261	1863	1583	1345	1863	1583	1770	3511	0	1770	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			73		9			6	
Link Speed (mph)		35			35			45			40	
Link Distance (ft)		385			2255			2779			2121	
Travel Time (s)		7.5			43.9			42.1			36.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	54	145	121	125	73	88	869	51	81	932	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	54	145	121	125	73	88	920	0	81	979	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	2	2	2	6	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	8.0	21.0		20.0	21.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	33.0	46.0	0.0	20.0	23.0	0.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	36.7%	51.1%	0.0%	22.2%	25.6%	0.0%

Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

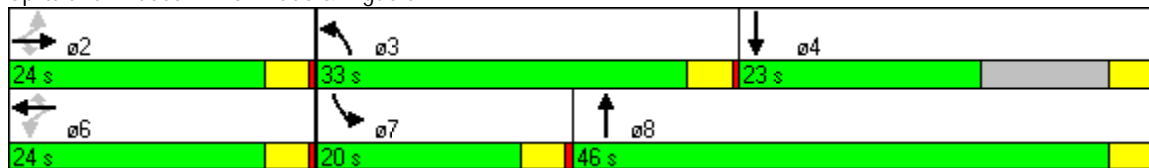


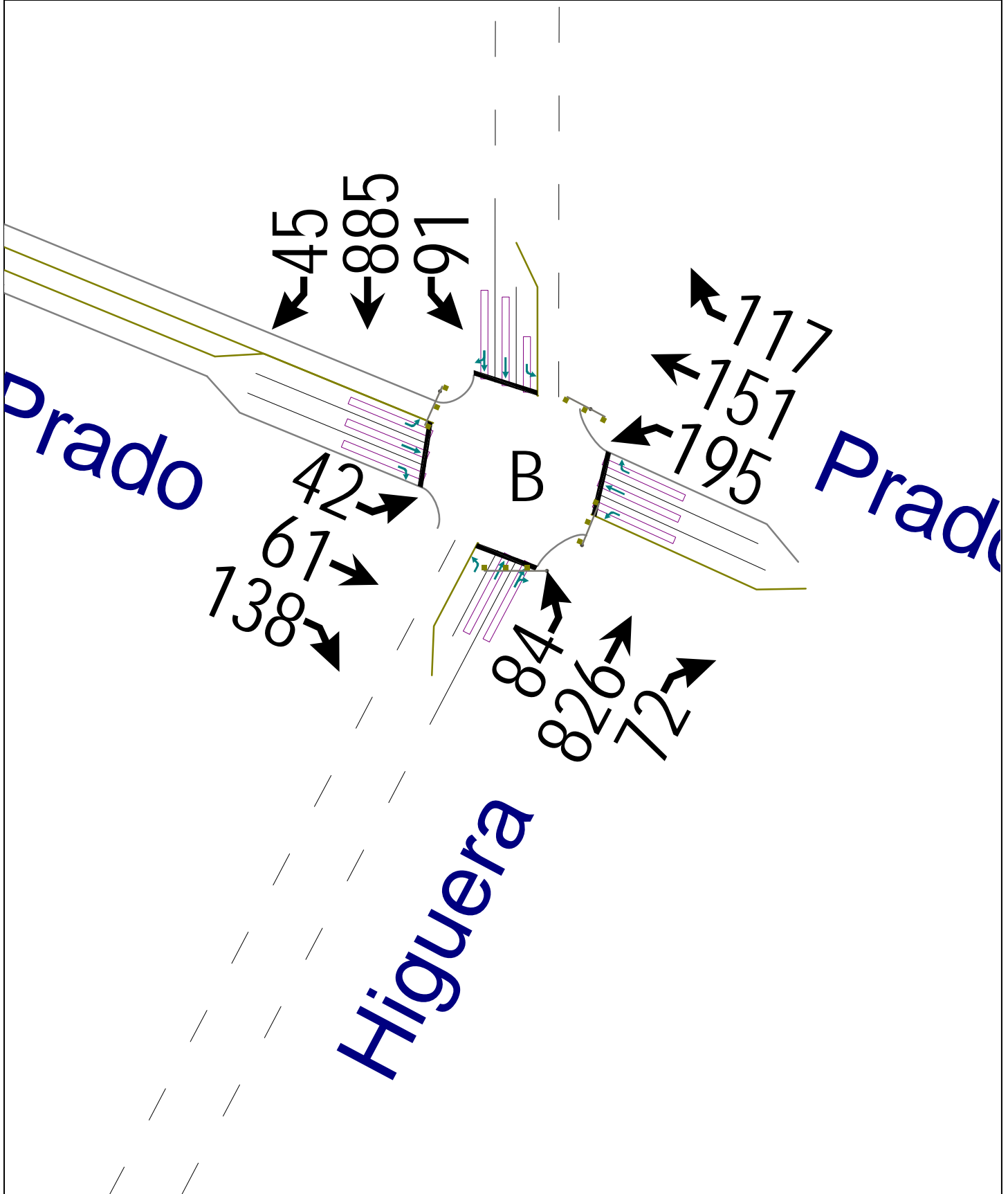
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	29.0	42.0		16.0	19.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0		
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		11.0		11.0		
Pedestrian Calls (#/hr)	3	3	3	10	10	10		10		5		
Act Effect Green (s)	12.1	12.1	12.1	12.1	12.1	12.1	10.1	25.0		10.3	22.8	
Actuated g/C Ratio	0.24	0.24	0.24	0.24	0.24	0.24	0.20	0.49		0.20	0.44	
v/c Ratio	0.15	0.12	0.30	0.38	0.28	0.17	0.25	0.54		0.23	0.63	
Control Delay	21.4	20.5	6.7	24.7	22.0	7.4	24.7	12.6		23.4	14.2	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	21.4	20.5	6.7	24.7	22.0	7.4	24.7	12.6		23.4	14.2	
LOS	C	C	A	C	C	A	C	B		C	B	
Approach Delay		12.4			19.7			13.7			14.9	
Approach LOS		B			B			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	51.4
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	14.8
Intersection LOS:	B
Intersection Capacity Utilization:	53.6%
ICU Level of Service:	A
Analysis Period (min):	15

























Splits and Phases: 15: Prado & Higuera





Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	42	61	138	195	151	117	84	826	72	91	885	45
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100		100	100		90	50		0	50		0
Storage Lanes	1		1	1		1	1		0	1		0
Taper Length (ft)	25		25	25		25	25		25	25		25
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	0.95	1.00	0.95	0.95
Fr _t			0.850			0.850		0.988			0.993	
Fl _t Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1863	1583	1770	1863	1583	1770	3497	0	1770	3514	0
Fl _t Permitted	0.613			0.715			0.950			0.950		
Satd. Flow (perm)	1142	1863	1583	1332	1863	1583	1770	3497	0	1770	3514	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			145			123		14			6	
Link Speed (mph)		35			35			45			40	
Link Distance (ft)		385			2255			2779			2121	
Travel Time (s)		7.5			43.9			42.1			36.2	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	44	64	145	205	159	123	88	869	76	96	932	47
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	64	145	205	159	123	88	945	0	96	979	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	1	1	1	1	1	1	1	1	1	1	1
Detector Template												
Leading Detector (ft)	50	50	50	50	50	50	50	50		50	50	
Trailing Detector (ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	0	0		0	0	
Detector 1 Size(ft)	50	50	50	50	50	50	50	50		50	50	
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Turn Type	Perm		Perm	Perm		Perm	Prot			Prot		
Protected Phases		2			6		3	8		7	4	
Permitted Phases	2		2	6		6						
Detector Phase	2	2	2	6	6	6	3	8		7	4	
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	8.0	21.0		20.0	21.0	
Total Split (s)	24.0	24.0	24.0	24.0	24.0	24.0	33.0	46.0	0.0	20.0	23.0	0.0
Total Split (%)	26.7%	26.7%	26.7%	26.7%	26.7%	26.7%	36.7%	51.1%	0.0%	22.2%	25.6%	0.0%

Lanes, Volumes, Timings
15: Prado & Higuera

10/24/2008



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	20.0	20.0	20.0	20.0	20.0	20.0	29.0	42.0		16.0	19.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5		3.5	3.5	
All-Red Time (s)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5		0.5	0.5	
Lost Time Adjust (s)	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0
Total Lost Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Lead/Lag							Lead	Lag		Lead	Lag	
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min	Min	None	None		None	None	
Walk Time (s)	5.0	5.0	5.0	5.0	5.0	5.0		5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0	11.0	11.0	11.0	11.0		11.0		11.0	11.0	
Pedestrian Calls (#/hr)	3	3	3	10	10	10		10		5	10	
Act Effect Green (s)	15.8	15.8	15.8	15.8	15.8	15.8	10.3	24.4		10.9	25.0	
Actuated g/C Ratio	0.28	0.28	0.28	0.28	0.28	0.28	0.18	0.43		0.19	0.44	
v/c Ratio	0.14	0.12	0.27	0.56	0.31	0.23	0.28	0.63		0.28	0.64	
Control Delay	21.5	20.5	6.1	28.5	22.3	6.3	28.3	16.6		27.2	16.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	
Total Delay	21.5	20.5	6.1	28.5	22.3	6.3	28.3	16.6		27.2	16.1	
LOS	C	C	A	C	C	A	C	B		C	B	
Approach Delay		12.4			20.8			17.6			17.1	
Approach LOS		B			C			B			B	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	57.4
Natural Cycle:	65
Control Type:	Actuated-Uncoordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	17.5
Intersection LOS:	B
Intersection Capacity Utilization:	58.0%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 15: Prado & Higuera

