TRAFFIC IMPACT ANALYSIS

For

Dolphin Green Car Wash

Prepared for

City of Oceanside

and

Metro Property Group, LLC

Submittal: June 25, 2018

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1.0 INTRODUCTION

Study Update Analysis

This traffic impact analysis represents an update of an approved traffic impact analysis which was originally prepared for the same project in March of 2013. Due to the significant amount time since approval of the TIA and a very minor change in the previous project, removal of the smog test station, a reanalysis and update became necessary. This updated report is in the same format as the originally approved report and shows that although traffic volumes have changed, there are no new direct project impacts. In this report we also carried over the original report comparison to an approved 90 room hotel project which was approved for the site. The reason for again including the hotel project in the study was because all required mitigation for the hotel project was completed or provided, i.e. fees were paid.

Other conditions which have changed since the previous traffic study was approved related to other projects which will be addressed separately from the TIA.

The Metro Property Group, LLC retained Urban Systems Associates, Inc. (USAI) for the purpose of determining if project impacts for a car wash are similar to a previously approved project (a 90 room hotel) on the 1.28 gross acre site. The project site is located at the northeast quadrant of El Camino Real and Via Las Rosas in the City of Oceanside.

A previous traffic study for the 90 room hotel project was prepared by Willdan & Associates. See **Appendix A**. The Willdan Study discusses alternative mitigation for the hotel. Although the Hotel itself was never built, the mitigation improvements and traffic impact fees were both provided. More

specifically, the intersection of El Camino Real and Via Las Rosas was widened and improved plus signalized. In addition, Via Las Rosas was widened and a storm drain / inlet was installed for drainage at its east end. In addition, traffic fees for the project were paid. Credit for these improvements and fees should be carried over to the new project since traffic impacts are either similar to or less than the Hotel project.

The replacement project of a car wash is proposed on the same site with the same project access. The purpose of this study is to determine if any new project impacts would occur which were not previously evaluated and mitigated. As noted above, the Hotel project was not built but mitigation for the hotel was built. Therefore, impacts do not change or they are reduced, and mitigation was already provided, no new mitigation should be needed. Section 4 of this report specifically compares the projects and sections 5 and 6 discuss the comparative analysis results plus summarize the conclusions of this study.

2.0 PROJECT DESCRIPTION

As discussed in the preceding section of this report, the project is a 4,566 square foot facility which will be a car wash facility. The previous approved TIA included a smog station which has been removed from this project. **Figure 2-1** shows the general project location, site statistics and the proposed development patterns. A close up of the project site is shown on **Figure 2-2.**

The proposed Dolphin Green Car Wash project site plan is shown on **Figure 2-3**. As shown, the access drive is from Via Las Rosas. The proposed access location provides for ten car queuing area on site without blocking the driveway. Additional queuing although unlikely may be provided by using the long driveway on site. Also, because Via Las Rosas is a cul-de-sac street easterly of the site, a significant amount of on-street queueing could occur without any adverse impacts to both adjacent office uses or the signalized intersection at El Camino Real.

The study area proposed for comparison to the approved hotel project is shown on **Figure 2-4**. Also shown on this figure are three intersections and two street segments proposed for analysis. Existing traffic volumes for the proposed project are shown on **Figure 2-5.**

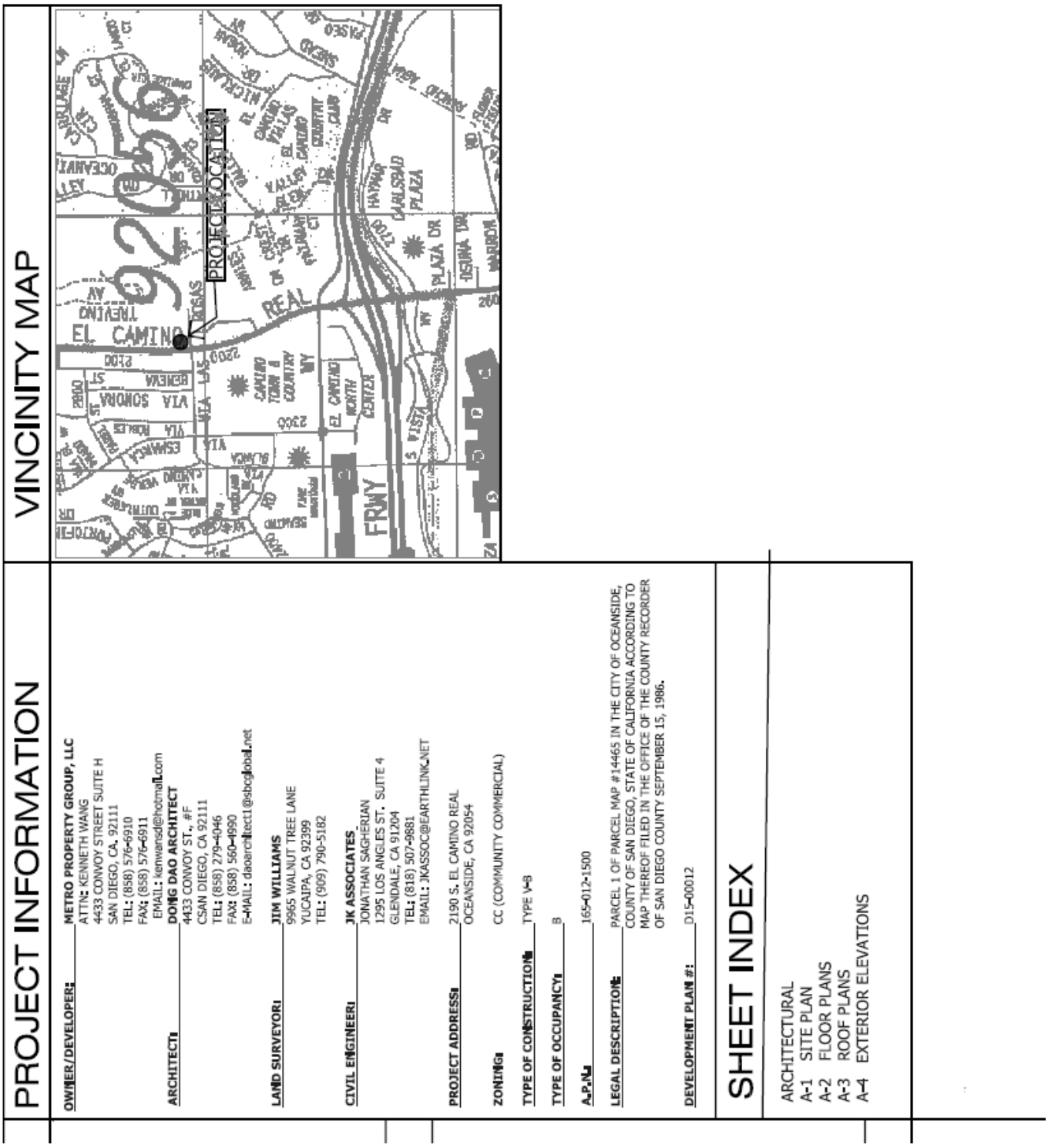


FIGURE 2-1

Site / Development Team Information

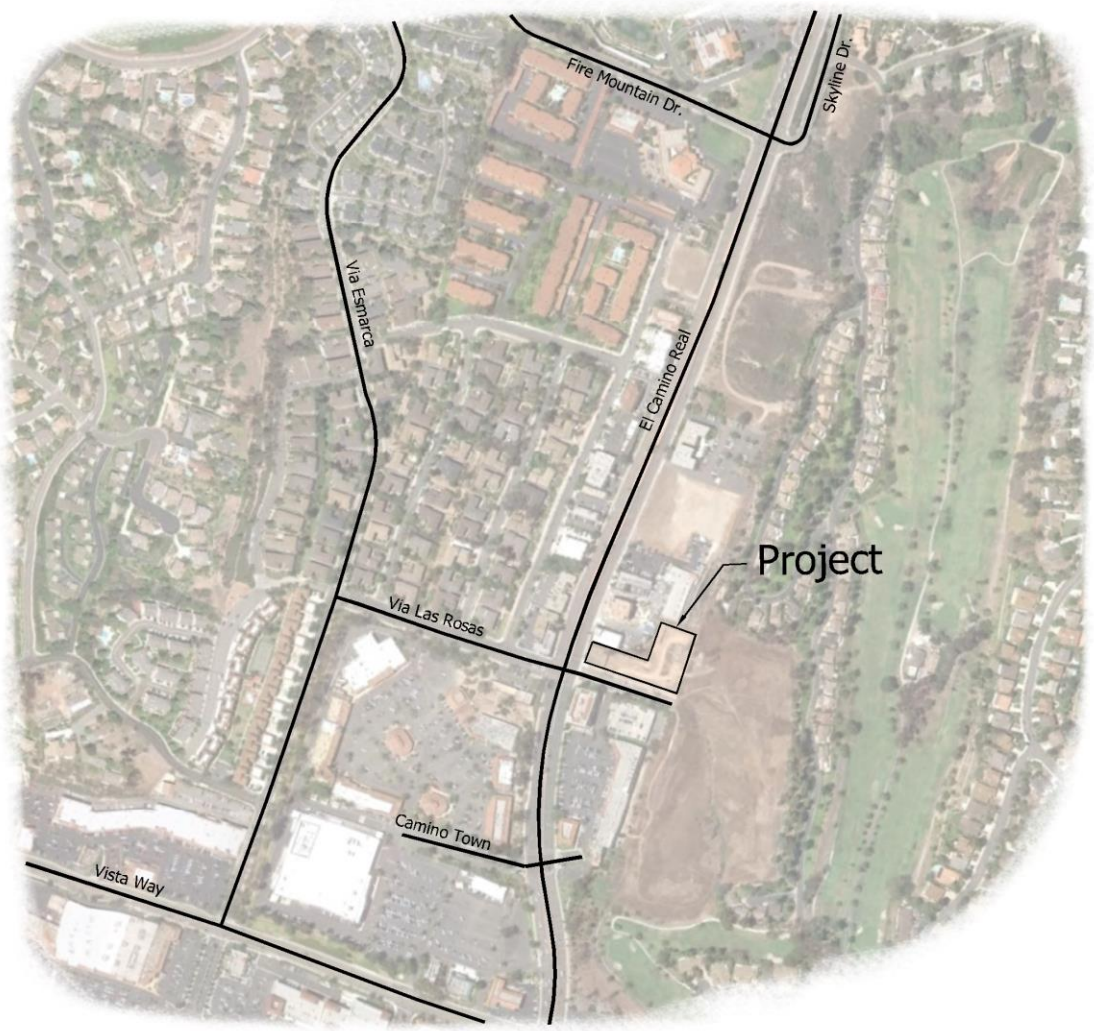


FIGURE 2-2

Project Location Map

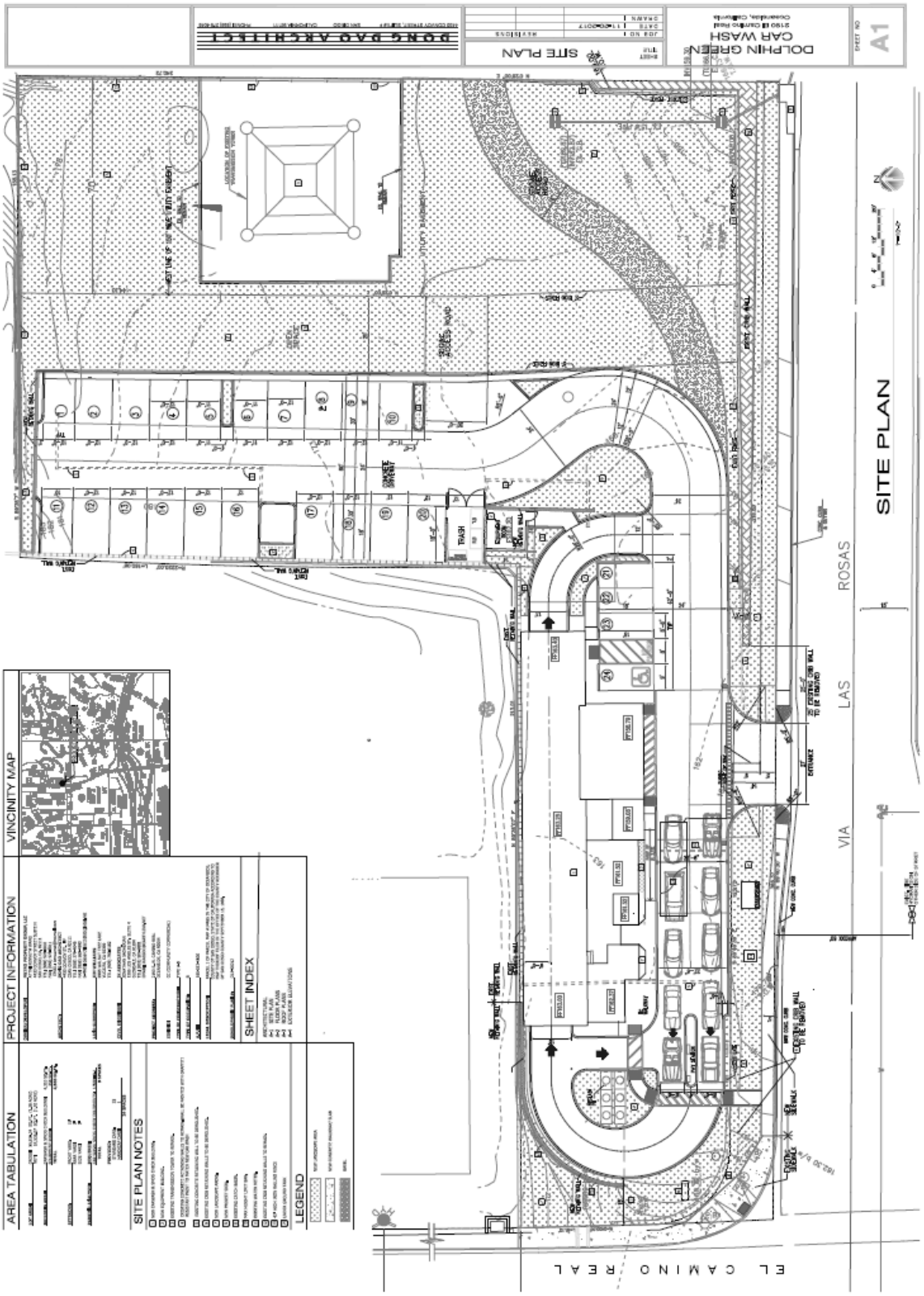


FIGURE 2-3

Site Plan

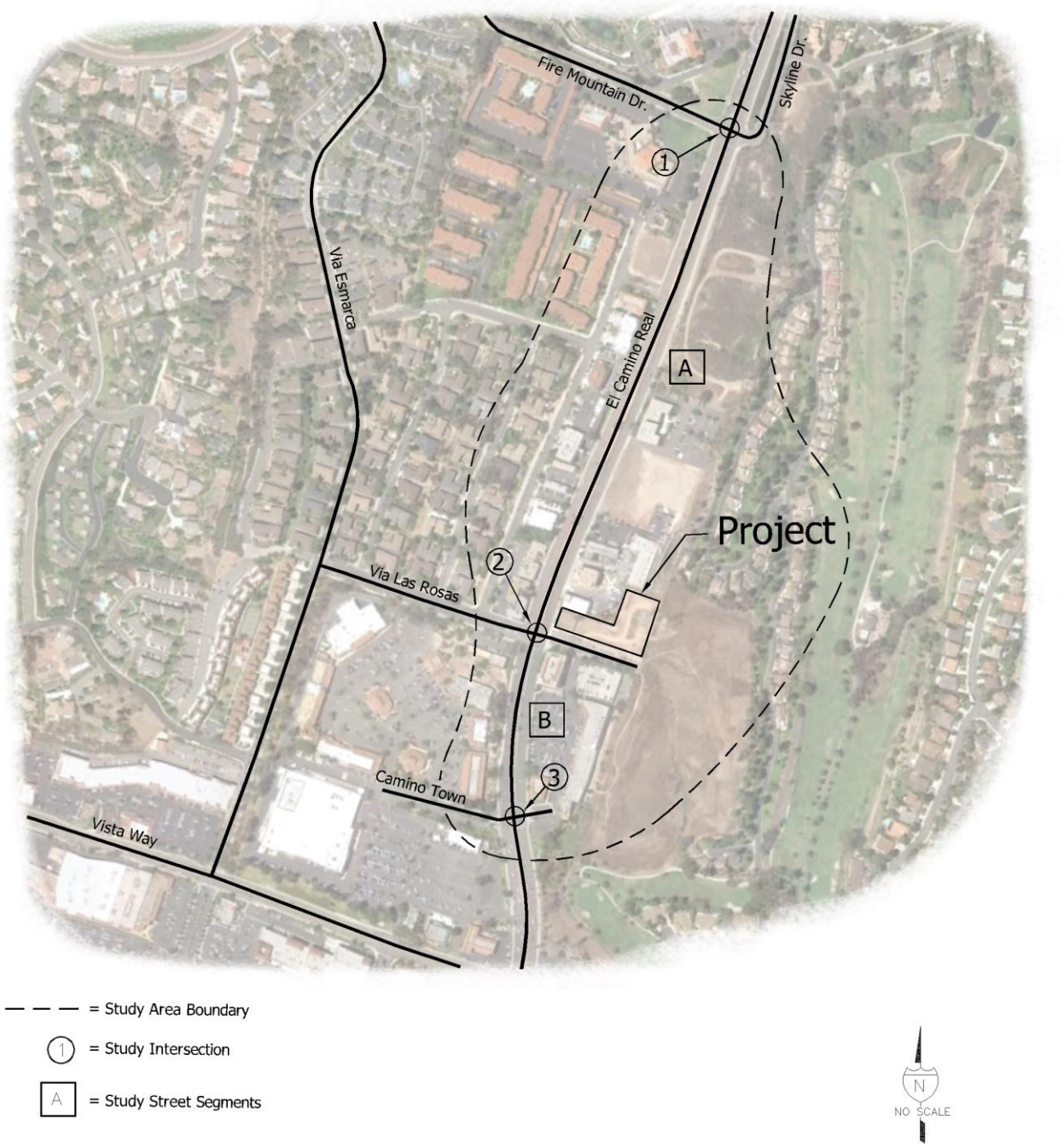


FIGURE 2-4

Study Area Boundary / Intersection Key

Count Date: 6/5/2018

N
NO SCALE

FIGURE 2-5

Existing Average Daily Traffic

3.0 TRAFFIC GENERATION / DISTRIBUTION

The proposed Dolphin Green Car Wash project is expected to generate approximately 900 average daily trips (ADT). This estimate is based on SANDAG Traffic Generation Rates, see **Appendix B**. **Table 3-1** summarizes how SANDAG Traffic Generation Rates were applied to the proposed project. As shown in the table, SANDAG uses a trip rate of 900 average daily trips per car wash site. A total of 900 trips represents the average daily traffic expected to be generated on an average weekday for the site. Due to the removal of the smog station included in the previously approved TIA, average daily traffic generation is reduced by 40 daily trips.

Also shown in the trip generation **Table 3-1** are the AM and PM peak traffic which totals 36 AM peak trips and 81 PM peak trips. In the next section of this study the daily and peak trips are compared with the approved and traffic mitigated hotel project of 90 rooms. Traffic distribution for the proposed car wash project is shown in **Figure 3-1**. As shown on this figure, the expected distribution is fairly uniform because the car wash is expected to serve primarily residents of the area. The previously approved hotel however assumed traffic to be more oriented to the freeway which is located to the south. Further discussion of traffic distribution is included in the comparison, section 4, of this report. **Figure 3-2** shows the expected average daily traffic from the proposed project. Project only ADT volumes are determined based on project distribution percentage multiplied by the proposed project's ADT (i.e. 0.50 x 900 = 450 ADT for El Camino Real south of Via Las Rosas). It should be noted that more project traffic could be oriented to the north rather than the south. This is due to the fact that the car wash is local serving and more residential units are located to the north as compared to the south.

TABLE 3-1

Dolphin Green Car Wash Trip Generation

Land Use	Intensity	Rate*	ADT	AM						PM					
				Peak%*	Vol.	In %	Out%	In	Out	Peak%*	Vol.	In %	Out%	In	Out
Car Wash Automatic	**1** Site	**900** /site	**900**	**4%**	**36**	**50%** : **50%**		**18**	**18**	**9%**	**81**	**50%** : **50%**		**41**	**41**
Total			**900**		**36**			**18**	**18**		**81**			**41**	**41**

Source:

*Rates are used taken from SANDAG "(Not so) Brief Guide of Vehicular Traffic Generation Rates for the San Diego Region", April 2002.

Note:

ADT= Average Daily Trips

FIGURE 3-1

Project Only Distribution Percentages

FIGURE 3-2

Project Only Average Daily Traffic

4.0 COMPARISON WITH PREVIOUSLY APPROVED PROJECT

In order to compare the new Dolphin Green Car Wash / smog project with the previously approved project two comparisons are necessary. First, we need to compare traffic generation and distribution. Second, we need to compare direct project impacts based on today's traffic to determine if there are new direct project impacts. Following is a discussion of both of these comparisons.

4.1 TRAFFIC GENERATION / DISTRIBUTION

To compare average daily and peak traffic the table below was prepared.

TRAFFIC COMPARISON TABLE

	ADT	AM PEAK	PM PEAK
Hotel Approved Project (From Appendix A)	910	73	82
Proposed Car Wash	900	36	81
Difference	Minus 10 Trips (-1.1%)	Minus 37 Trips (-50.6%)	Minus 1 Trips (-1.2%)

Based on a traffic generation comparison except for the AM peak there are very minor differences 1.1% ADT and 1.2% PM peak in traffic. When the distribution of traffic is also considered the slight increases in traffic are essentially zeroed out because the hotel traffic was more focused, i.e. to and from the south (SR-78) as compared to the car wash which serves the community and is not a destination point like the

hotel would have been. Eighty percent of traffic for the hotel was distributed to and from the south on EL Camino Real but for the car wash only 50% of traffic is assumed to and from the south. Based on the distribution project traffic to and from the south on El Camino Real is (910 x 0.8 = 728) where as for the car wash traffic to and from the south is (900 x 0.5 = 450). This represents a reduction in traffic to the south on El Camino Real of about 38%.

4.2 EXISTING STREET SEGMENT LEVELS OF SERVICE

Next, we calculated the existing level of service for street segments on El Camino Real which will service the project. Street segment counts were obtained on June 5, 2018 and are provided in **Appendix F. Table 4-1** shows these results. As shown in the table El Camino Real now operates at a level of service (LOS) D.

4.3 EXISTING INTERSECTION LEVELS OF SERVICE

We also calculated the existing intersections LOS for three intersections, see **Table 4-2**. Turning movement counts were obtained on June 5, 2018**.** Additionally, signal timing sheets for the analyzed intersections were obtained from the City of Oceanside and used for the Synchro analysis. **Appendix F** contains the turning movement counts and signal timing sheets. As shown in the table, all three intersections presently operate at an acceptable level of service D or better during both the AM and PM peaks. **Appendix C** contains the Existing Synchro worksheets.

In the next (analysis) section of this report levels of service with and without the project are compared to determine if there are any new, based on today's traffic, direct project impacts or level of service problems that would require mitigation that has not already been provided.

TABLE 4-1

Existing Street Segment Levels of Service

Road	Segment	Standard	# of Ln.	Class.	Cap.	Volume	V/C	LOS
El Camino Real	Fire Mountain Drive to Via Las Rosas	Oceanside	6	6-M	50,000	44,141	0.88	D
El Camino Real	Via Las Rosas to Camino Town	Oceanside	6	6-M	50,000	42,686	0.85	D

Legend:

Class. = Functional Class

Cap. = Capacity

LOS = Level of Service

6-M = 6 Lane Major Arterial

TABLE 4-2

Existing Intersection Levels of Service

Number	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	El Camino Real at Fire Mountain Drive	Signalized	26.3	C	38.1	D
2	El Camino Real at Via Las Rosas	Signalized	18.2	B	21.1	C
3	El Camino Real at Camino Town	Signalized	4.2	A	39.7	D

Notes:

LOS = Level of Service

5.0 ANALYSIS

In this section of the report project traffic is added to existing traffic and both street segments and intersections are evaluated. The purpose of this analysis is to determine:

A. Are there any existing LOS problems?
B. Are there and significant direct impacts resulting from the addition of project traffic to the street system?
C. Is any mitigation required?

5.1 SEGMENTS

Figure 5-1 shows the existing plus project segment traffic volumes and **Table 5-1** shows the resulting street segment levels of service when project traffic is added to existing traffic. As shown in the table, the street segment levels of service remain at LOS D for both segments evaluated. **Appendix E** summarizes the street standards and existing street configurations used in this analysis.

Next we compared existing with existing plus project segment levels of service to determine if the addition of project traffic results in a significant impact, see **Table 5-2.** Based on regional guidelines a street segment significant direct impact would occur if there is a change in the volume to capacity (v/c) ratio of 2% but as long as there are acceptable levels of service i.e. higher than E or F, the criteria does not apply. Since the level of service remain acceptable (i.e. “C” or “D”) there is no direct street segment impact that would require mitigation.

FIGURE 5-1

Existing + Project Average Daily Traffic

TABLE 5-1

Existing + Project Street Segment Levels of Service

Road	Segment	Standard	# of Ln.	Class.	Cap.	Volume	V/C	LOS
El Camino Real	Fire Mountain Drive to Via Las Rosas	Oceanside	6	6-M	50,000	44,501	0.89	D
El Camino Real	Via Las Rosas to Camino Town	Oceanside	6	6-M	50,000	43,136	0.86	D

Legend:

Class. = Functional Class

Cap. = Capacity

LOS = Level of Service

6-M = 6 Lane Major Arterial

TABLE 5-2

Existing & Existing Plus Project Street Segment Comparison

Road	Segment	# of Lanes	LOS "E" Capacity	Class.	Existing			Existing + Project			ΔV/C	Is this impact Significant?
					LOS	Volume	V/C	LOS	Volume	V/C		
El Camino Real	Fire Mountain Drive to Via Las Rosas	6	50,000	6-M	D	44,141	0.88	D	44,501	0.89	0.007	***NO***
El Camino Real	Via Las Rosas to Camino Town	6	50,000	6-M	D	42,686	0.85	D	43,136	0.86	0.009	***NO***

Legend:

LOS= Level of Service

V/C= Volume to Capacity Ratio

ΔV/C= Change in V/C ratio

6-M = 6 Lane Major Arterial

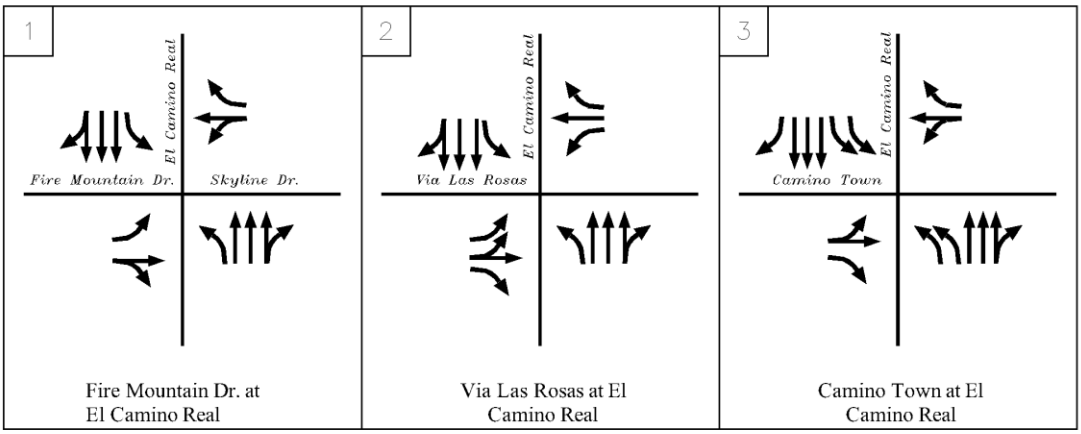
5.2 INTERSECTIONS

Figure 5-2 shows the intersection lane use (configurations) at three locations. These configurations along with peak turn volumes are used in the Synchro 10 software to determine AM and PM intersection levels of service and changes due to the addition of project traffic. The software Synchro 10 applies Highway Capacity Manual methodology to calculate intersection level of service delay. The Synchro model reflects the existing intersection configurations, signal timing, and traffic volumes. **Figure 5-3** shows the existing peak turn volumes, **Figure 5-4** shows the project only peak turns and **Figure 5-5** shows the combined that existing plus project peak turns and through volumes. With the Synchro 10 model inputs discussed above, an analysis was completed. Synchro worksheets may be found in **Appendix C and D**.

Table 5-3 shows the analysis results for the existing plus project condition. As shown, when project traffic is added to existing traffic levels of service remain "D" or better at all three locations for both the AM and PM peaks. Next, we compared the existing with existing plus project intersection analysis results. As shown in **Table 5-4**, there are no significant peak hour intersection impacts resulting from the project that would require any new mitigation.

FIGURE 5-2

Existing Lane Configurations



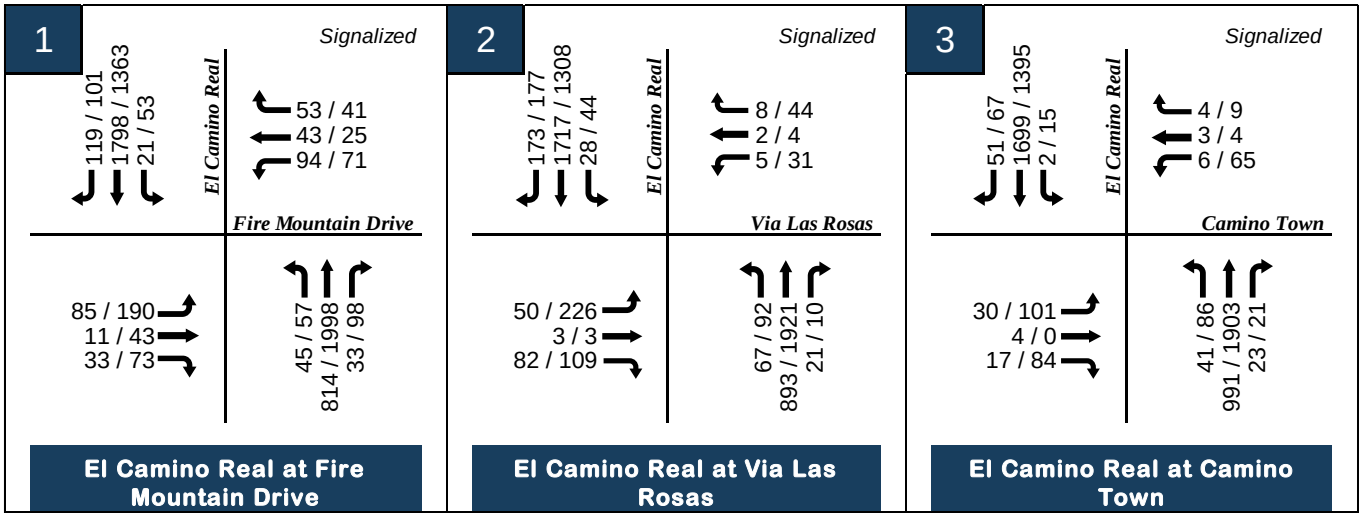
Fire Mountain Dr. at El Camino Real

Via Las Rosas at El Camino Real

Camino Town at El Camino Real

FIGURE 5-3

Existing AM / PM Peak Hour Traffic

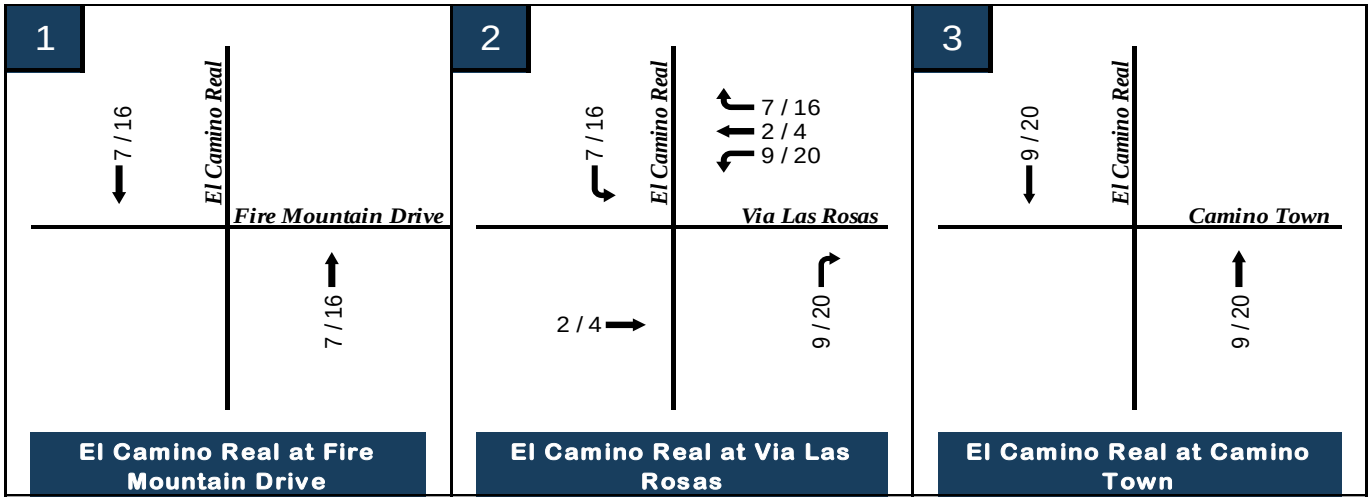


XX / XX = AM / PM Peak hour volumes

Traffic Counts Obtained on 6/5/2018.

FIGURE 5-4

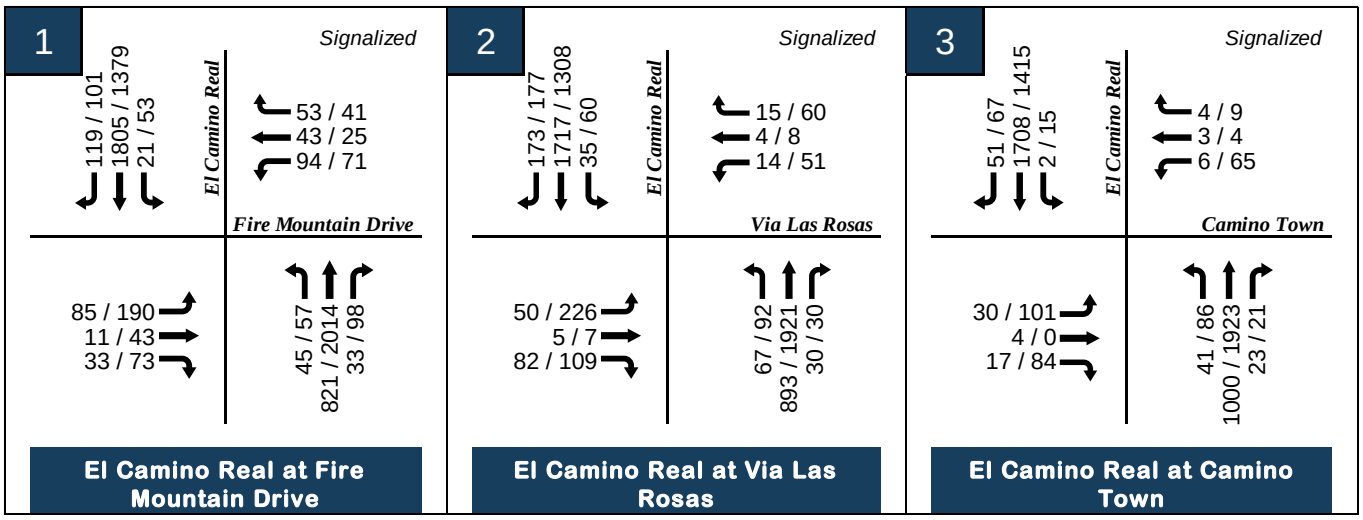
Project Only AM / PM Peak Hour Traffic



XX / XX = AM / PM Peak hour volumes

FIGURE 5-5

Existing + Project Only AM / PM Peak Hour Traffic



XX / XX = AM / PM Peak hour volumes

TABLE 5-3

Existing + Project Intersection Levels of Service

Number	Intersection	Control	AM Peak Hour		PM Peak Hour	
			Delay	LOS	Delay	LOS
1	El Camino Real at Fire Mountain Drive	Signalized	27.1	C	38.9	D
2	El Camino Real at Via Las Rosas	Signalized	19	B	25.9	C
3	El Camino Real at Camino Town	Signalized	4.2	A	41.5	D

Notes:

Delay = seconds per vehicle

LOS = Level of Service

TABLE 5-4

Existing & Existing + Project Intersection Comparison

#	Intersection	Existing				Existing + Project (Buildout)							
		AM Peak Hour		PM Peak Hour		AM Peak Hour		Δ	S ?	PM Peak Hour		Δ	S ?
		D	LOS	D	LOS	D	LOS			D	LOS		
1	El Camino Real at Fire Mountain Drive	26.3	C	38.1	D	27.1	C	0.8	No	38.9	D	0.8	No
2	El Camino Real at Via Las Rosas	18.2	B	21.1	C	19.0	B	0.8	No	25.9	C	4.8	No
3	El Camino Real at Camino Town	4.2	A	39.7	D	4.2	A	0.0	No	41.5	D	1.8	No

Notes:

LOS = Level of Service
Δ = Change in Delay
S = Significant Impact
D= Delay

6.0 CONCLUSIONS AND RECOMMENDATIONS

The Dolphin Green Car Wash project is proposed on a site that was formerly approved for a 90 room hotel. Although significant mitigation was provided for the Hotel project the Hotel itself was not built. The approved project was evaluated in 1985, therefore this analysis which was previously completed and approved in 2013 and updated now, was initiated to determine if there are any new impacts, if the already built mitigation is still adequate and if the proposed change in use to a car wash from a hotel would result in changes that would either cause a problem or require mitigation.

New traffic counts for two street segments and three intersections near the project were obtained and evaluated. Based on this analysis we conclude:

1. No new direct impacts are identified in this 2018 update of the previously approved 2013 Traffic Impact Analysis.
2. The change in use from hotel to car wash creates no new impacts.
3. Existing street segments with Dolphin Green Car Wash traffic added will continue to operate at LOS D.
4. Existing intersections with Dolphin Green Car Wash traffic added will continue to operate at an acceptable LOS D or better.
5. No new impacts or mitigation for the car wash project are necessary.
6. The new project should receive traffic credits based on previous mitigation that was built.

7.0 REFERENCES

San Diego Region Traffic Engineer's Council (SANTEC) and Institute of Transportation Engineers (ITE), California Border Section, Guidelines for Congestion Management Program (CMP) Traffic Impact Report, San Diego, CA

City of Oceanside Street Standards, See Appendix E

San Diego Association of Governments, 2006 Congestion Management Program Update, Appendix D, July 2006, San Diego, CA

8.0 URBAN SYSTEMS ASSOCIATES, INC. PREPARERS

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Word Processing, Report Production and Compilation

Anthony Abalos; B.S. Civil Engineering, EIT

This report is site and time specific and is intended for a one-time use for this intended project under the conditions described as "Proposed Project". Any changes or delay in implementation may require re-analysis and re-consideration by the public agency granting approvals. California land development planning involves subjective political considerations as well as frequently re-interpreted principals of law as well as changes in regulations, policies, guidelines and procedures. Urban Systems and their professionals make no warrant, either express or implied, regarding our findings, recommendations, or professional advice as to the ability to successfully accomplish this land development project.

Traffic is a consequence of human behavior and as such is predictable only in a gross cumulative methodology of user opportunities, using accepted standards and following patterns of past behavior and physical constraints attempting to project into a future window of circumstances. Any counts or existing conditions cited are only as reliable as to the time and conditions under which they were recorded. As such the preparer of this analysis is unable to warrant, either express or implied, that any forecasts are statements of actual true conditions which will in fact exist at any future date.

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APPENDIX A

TRAFFIC ANALYSIS FOR THE PREVIOUS PROJECT

(OCEANSIDE INN 90 ROOMS)

TRAFFIC ANALYSIS

for

OCEANSIDE INN
Oceanside, CA.

November 18, 1985

Prepared By:

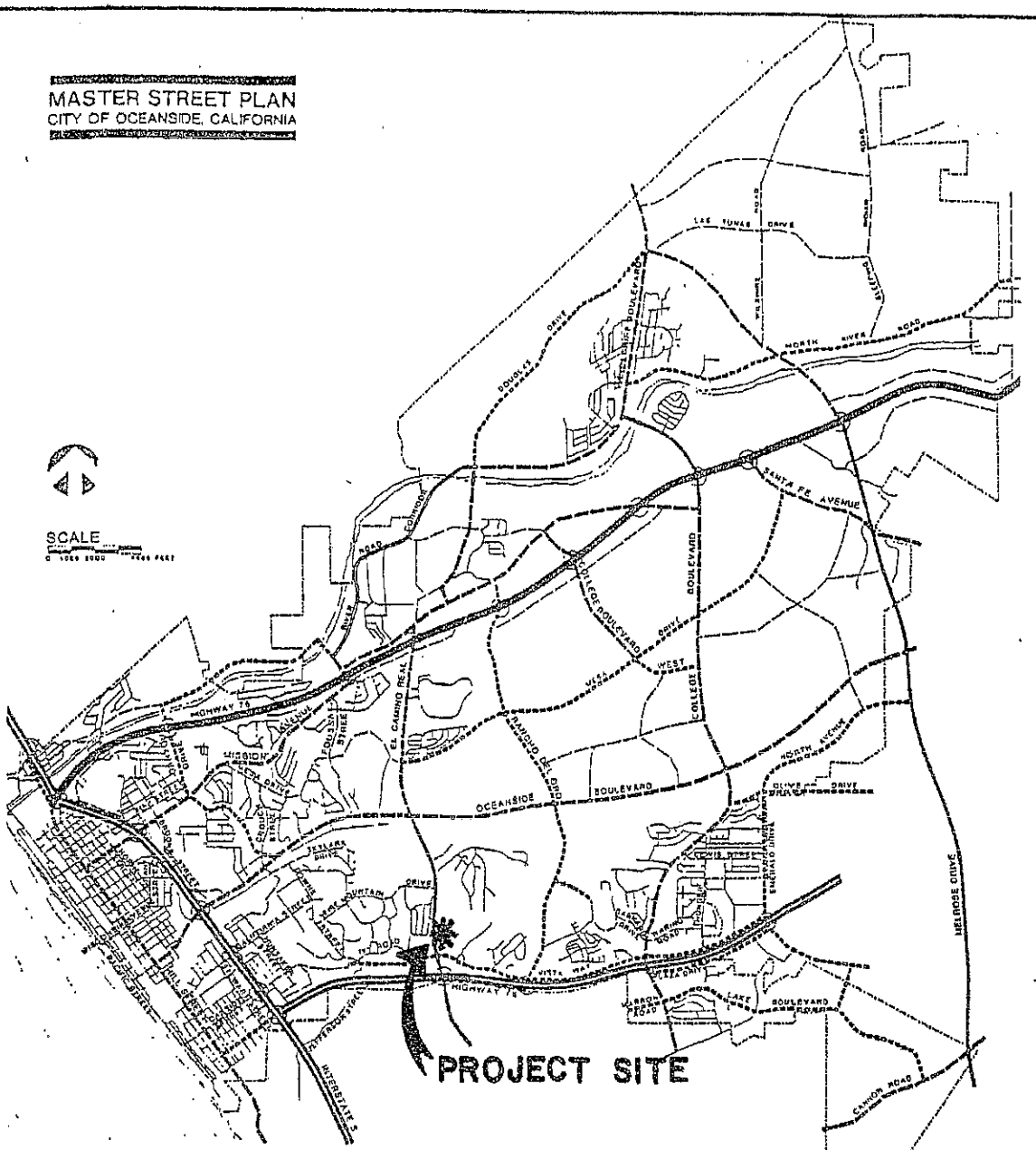
WILLDAN ASSOCIATES
3633 Camino Del Rio South, Suite 207
San Diego, CA. 92108-4042

JN 6881

INTRODUCTION

The 1.316 acre project site is located north of and adjacent to Via Las Rosas and east of El Camino Real in the City of Oceanside (as shown on Figure 1). As shown on Figure 2, the developers propose to construct a 90 room hotel with a manager's apartment on the site.

Willdan Associates has been retained to analyze the potential transportation impacts which may be anticipated due to completion of the project as proposed. The analysis includes identifying existing traffic conditions in the project's vicinity, generating and distributing project traffic onto the street system, and evaluating the resultant effects on the street system as it exists as well as considering future improvements. Based on the above analysis, we will identify any potentially significant adverse traffic related impacts and propose, where feasible, measures to mitigate the impacts.



SYMBOL	CLASSIFICATION	RIGHT-OF-WAY	LANES	MAXIMUM GRADE	MINIMUM CURVE RADIUS	MINIMUM STREET SPACING
	FREEWAY	STATE DESIGN STANDARDS				
	EXPRESSWAY	STATE DESIGN STANDARDS				
	PRIME ARTERIAL	124'	6	6%	1000	1/2MI.
	MAJOR ARTERIAL	100'	4	6%	1000	1/4 MI.
	SECONDARY ARTERIAL	84'	4	8%	750	1/8MI.
	COLLECTOR	80'-72'	2-4	8%	500	300'
	LOCAL	52'-60'	2	12%	200	150'
○	INTERCHANGE					
□	OVERPASS					

There are general maximum standards.
Specific requirements must be determined for each street at time of construction.

AMENDMENTS			
NAME	RES. NO.	DATE	INIT

Proposed roadways are depicted on this Master Street Plan along generally determined routes, and should not be interpreted as being precisely aligned. Such precise alignment shall be determined at development and/or map stages.

Background material and supporting data for this element is contained in the report entitled "THE MASTER STREET PLAN" General Plan Document.

Approved by Planning Commission
Res.____ Date____

Adopted by City Council
Res.____ Date____

CHAIRMAN

MAYOR

SECRETARY

CITY CLERK

VICINITY MAP

FIGURE 1

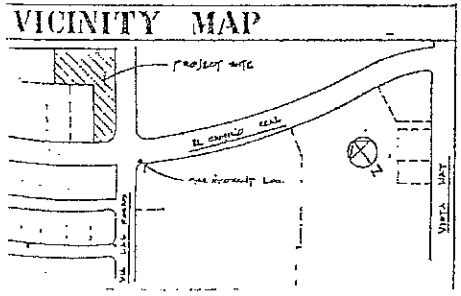
WILLDAN ASSOCIATES

SITE PLAN

FIGURE 2

WILDAN ASSOCIATES

VICINITY MAP



LOCATION : NW CORNER OF EL CAMINO REAL & VIA LAS ROSAS, OCEANSIDE, CA 92056

APN : 163-013-08 (EFFECTIVE), 163-013-12

LEGAL DESCRIPTION :
PARCEL 2 OF THE CITY OF OCEANSIDE
COUNTY OF SAN DIEGO, STATE OF CALIFORNIA
AS SHOWN AT PAGE 4123 OF PARCEL MAPS
FILED IN THE OFFICE OF THE COUNTY RECORDER
OF SAN DIEGO COUNTY, OCTOBER 21, 1975

ZONE: C-A (EXISTING)
PROPOSED: C-2

LOT AREA : 1.316 ACRES (57,326 SF)

SET BACKS : FRONT = 15' FT.
REAR = 0' FT.
SIDE = 0' FT.

HEIGHT LIMIT : 45' FT

PROPOSED STRUCTURE :
STORY = 4 STORY MOTEL W/RESIDENT MANAGER
OCCUPANCY = R-1
BUILDING COVERAGE = 18,074 S.F.
CONSTRUCTION TYPE = TYPE V 1-HR.
NO. GUEST RM = 75
NO. UNITS W/KITCHEN EQUIP. = 15
TOTAL = 90

MATERIALS :

FOUNDATION	60,737 SF
1ST FL.	18,182 SF
2ND FL.	17,174 SF
3RD FL.	17,174 SF
4TH FL.	17,174 SF
TOTAL	170,601 SF

PARKING : REQUIRED = 91 (90 GUESTRM + MANAGER'S APT)
PROVIDED = 80 (9'x20')
44 (7'6"x18')

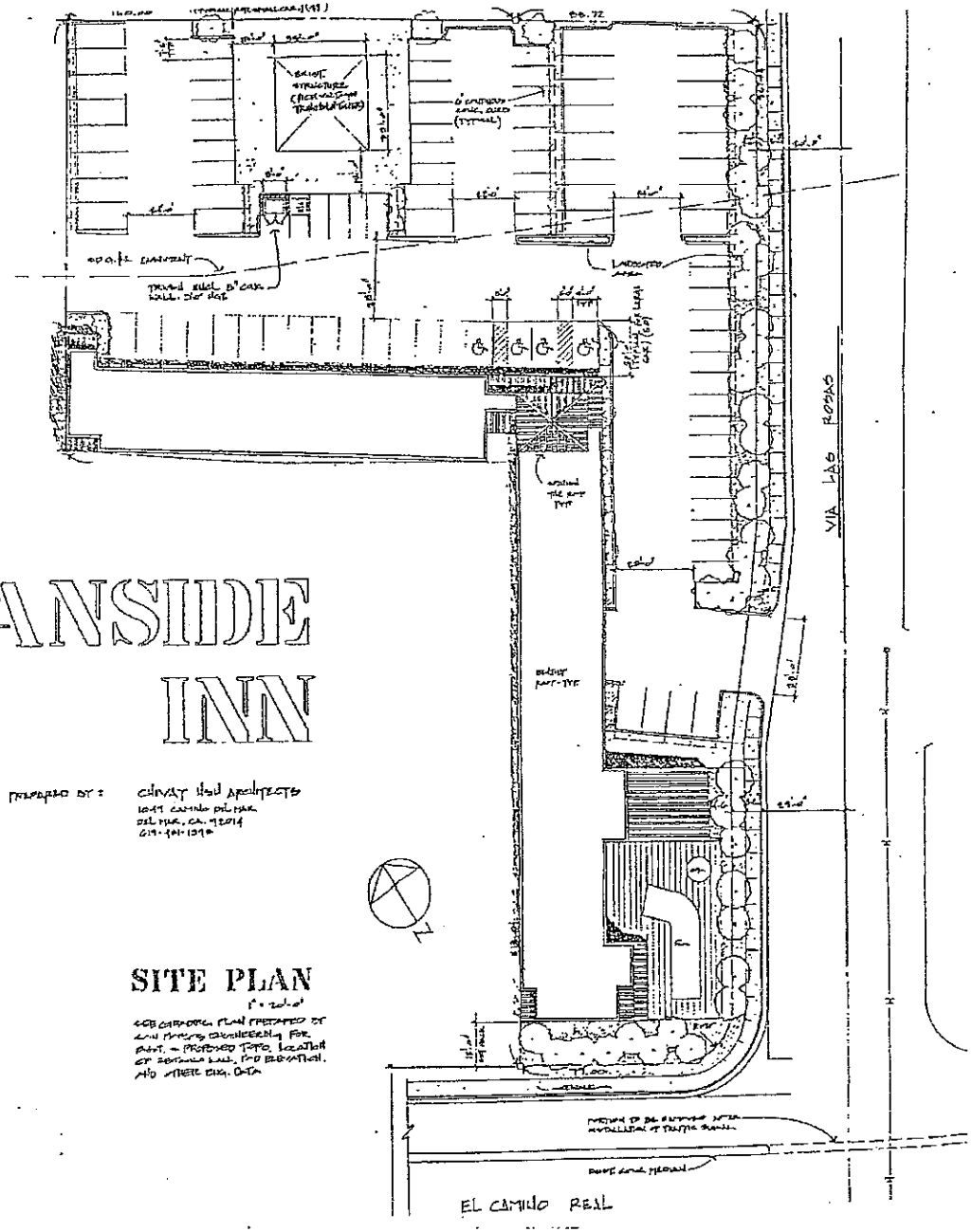
LANDSCAPED AREA :
REQUIRED = 11,064 SF (20%)
PROVIDED = 20,846 SF (36%)

SIGNS SHALL BE UNDER SEPARATE APPLICATION/PERMIT
ALL EXISTING EQUIPMENT AND OTHER MECH. EQUIPMENT SHALL BE APPROPRIATELY SCREENED

= HANDICAPPED PARKING

OCEANSIDE INN

PREPARED BY : CHIVAT HALL ARCHITECTS
1041 CAMINO DEL MAR
DEL MAR, CA. 92014
619-481-1978



SITE PLAN

1" = 20'-0"

SEE GEOTECH. PLAN PREPARED BY ENGINEERING FOR PAVT. - PROPOSED TOPO, LOCATION OF RETAINING WALL, FFD ELEVATION, AND OTHER ENG. DATA

EXISTING CONDITIONS

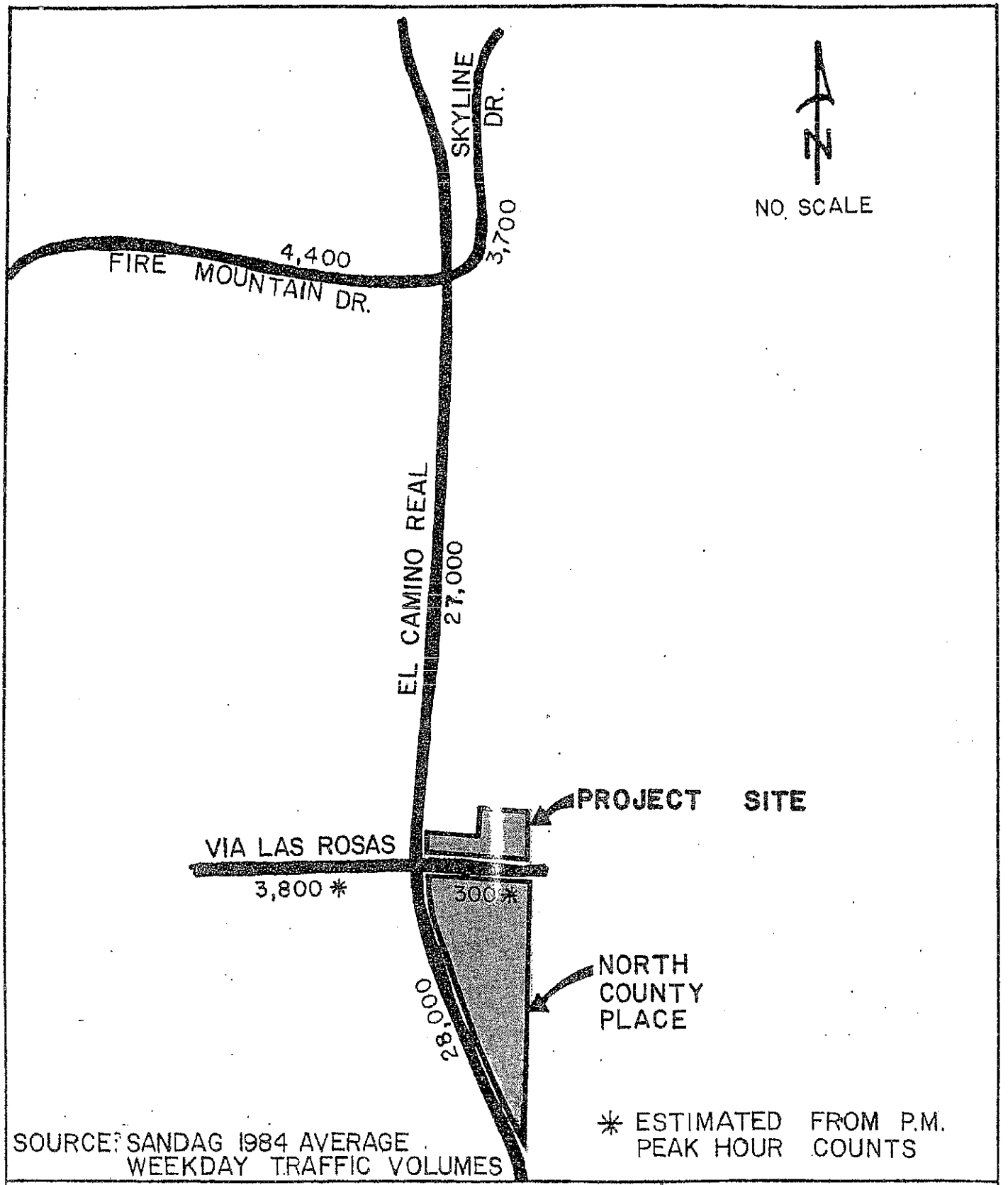
Regional access to the project is provided by Interstate 5 and State Highway 78 via El Camino Real. Direct access is proposed via a driveway on Via Las Rosas.

El Camino Real is classified as a prime arterial in the project's vicinity. It currently carries 27,000 average daily trips (ADT) between Fire Mountain Drive and Via Las Rosas and provides two travel lanes in each direction with exclusive left turn lanes. Between Via Las Rosas and Highway 78, it provides three travel lanes in each direction and exclusive left turn lanes and carries 28,000 ADT. Northbound, however, there is an unusual feature existing in that a frontage road runs directly alongside the northbound travel lanes, separated by only a very narrow median. The one-way frontage road has served to limit driveway accesses along El Camino Real and therefore to reduce driveway conflicts. It currently serves as access and a parking area for the office buildings north of the site, but also extends southerly, past Via Las Rosas, restricting turning movements to and from that street. Vehicles wishing to turn right onto Via Las Rosas (east side) must enter the frontage road first and vehicles exiting are forced to turn right and travel north to Basel Street or Fire Mountain Drive/Skyline Drive to execute a U-turn for travelling south to the freeway or join northbound traffic on El Camino Real. Left turns onto the east side of Via Las Rosas are similarly prohibited. As such, all access to and from the east side of Via Las Rosas is currently limited to approaching from the south and exiting to the north. The frontage road will be eliminated with the intended widening of El Camino Real to six travel lanes. These improvements to El Camino Real were budgeted for the '85-'86 fiscal year, but design has not yet begun and therefore, the improvements could not be expected to be completed for approximately a year.

Via Las Rosas is not a circulation element street on the east side. It currently serves the North County Place development on the east side, and offices and commercial areas on the west side. Based on evening peak hour counts, we estimate it currently carries 3,500 to 4,000 ADT on the west side and 300 ADT on the east side.

Figure 3 shows the existing traffic volumes on the streets in the vicinity of the project.

FIGURE 3



EXISTING AVERAGE DAILY TRIPS

FIGURE 3

WILLDAN ASSOCIATES

IMPACTS

To evaluate the potential impacts of the project, we have compared the existing traffic conditions to what could be anticipated with the addition of project traffic. To accomplish this, we have estimated the trips which we would expect the site to generate (on an average daily basis) and, distributed those trips onto the roads in the project's vicinity. In particular, we have analyzed the project's use of Via Las Rosas as an access. Because North County Place is not fully occupied, we have generated and distributed traffic from that site as well and added it to existing daily and peak hour volumes.

Trip Generation

The traffic which results from the proposed project, as well as the North County Place development, is estimated using the generation factors which are based on categories of land uses and which have been developed by various agencies, such as CALTRANS and SANDAG. Table 1 summarizes the generation of trips.

TABLE 1
Trip Generation

Proposed Project:

Use	Trip Rate	ADT	A.M. Peak Hour				P.M. Peak Hour			
			% In	In	% Out	Out	% In	In	% Out	Out
Hotel - 91 Rooms	10 Trips/Room	910	3.2	29	4.8	44	5.4	49	3.6	33

North County Place:

Use	Trip Rate / 1000 sf	ADT	A.M. Peak Hour				P.M. Peak Hour			
			% In	In	% Out	Out	% In	In	% Out	Out
Shops - 17,000 sf	40	680	1.8	12	1.2	8	4.5	31	4.5	31
Offices - 41,600 sf	20	832	12.6	105	1.4	12	2.6	22	10.4	87
Restaurant 7,000 sf	300	2100	4.0	84	4.0	84	3.6	76	2.4	50
		3612		201		104		129		168

As shown, the project is only expected to add 910 trips to the street system, of which 73 and 82 are assigned to the AM and PM peak hours, respectively.

Trip Distribution

The distribution of trips typically results from an estimate of ultimate travel destinations and which elements of the street system would be used to reach those destinations. The basis for this is recognition of the driver's consideration of time, distance, comfort and convenience in choosing a route.

Because the hotel site generates trips of a transient nature, which would be expected to be oriented to and from the south (to and from Highway 78), it would not be acceptable for outbound vehicles to be forced into turning right onto the frontage road. The hotel trips would typically be motorists unfamiliar with the area, and expecting them to execute a difficult U-turn at Basel Street or further north at Fire Mountain Drive/Skyline Drive, would not be desirable. Therefore, we have assumed that the east side of Via Las Rosas would be opened to allow left turn movements and signalized to provide adequate access.

Figure 4 shows the assumed distribution of trips. The project distribution is based primarily on the "tourist" character of the trips, oriented primarily to and from the freeway. For the North County Place distribution, we used peak hour turning movements at the southerly project access (which is signalized) and assumed primarily the office trips to use Via Las Rosas (due to the parking garage on Via Las Rosas and the site layout).

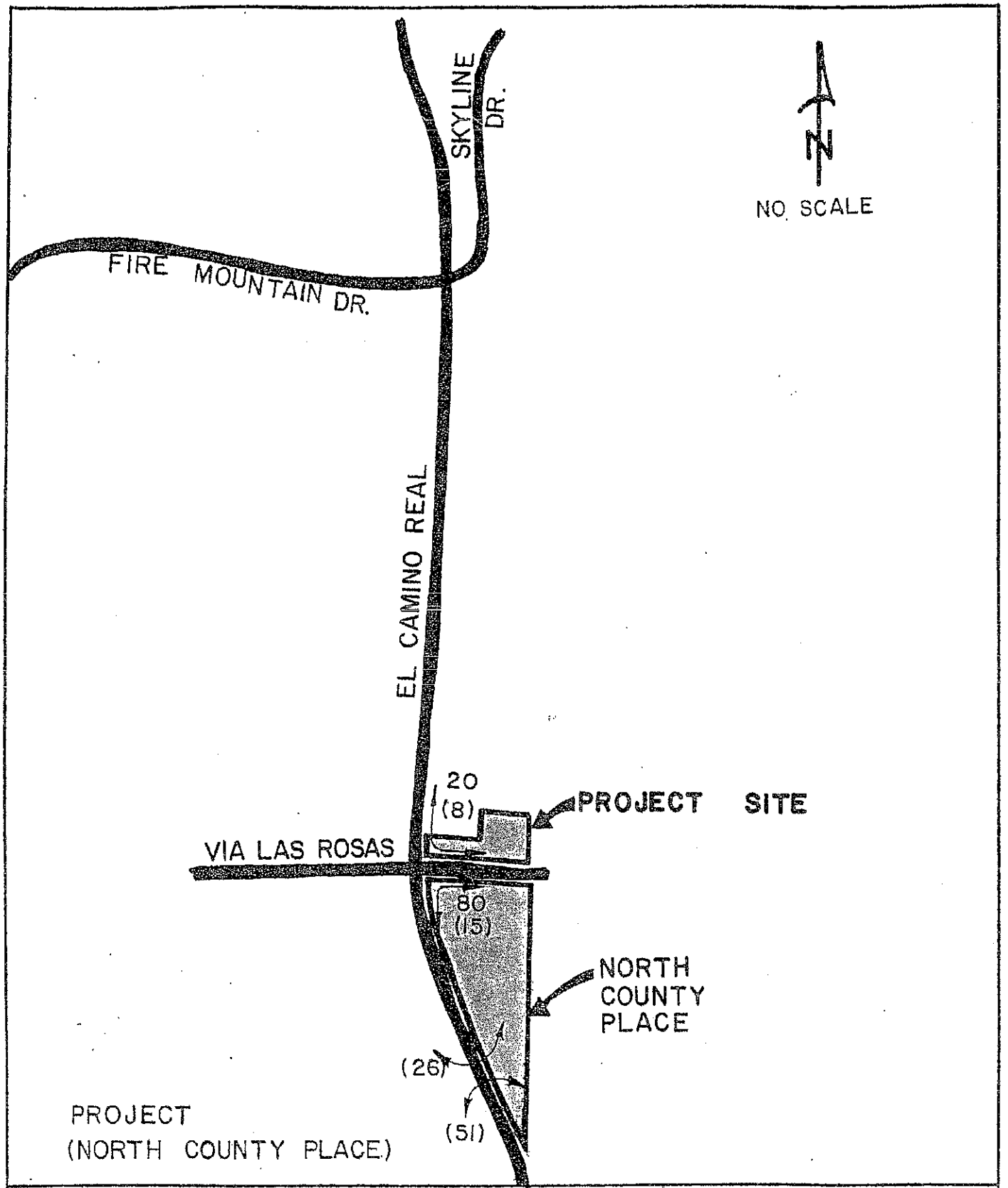
Street Segments

The North County Place development was not occupied, to any substantial degree, when the counts were made on El Camino Real. Therefore, we have added all of its estimated trips and the project's anticipated trips to the existing volumes. Figure 5 shows the assigned project and North County Place trips along with the existing traffic.

In order to assess the short range impacts of the project on street segment capacities, we have utilized the County of San Diego's table which relates ADT with levels of service for the different road classifications (see Table 2). This comparison can be made if we note that from Via Las Rosas to Fire Mountain Drive, El Camino Real currently operates like a County Major Road (4 lanes, divided). Table 3 summarizes our comparison of the volumes and levels of service due to developing the site as proposed. Table 4 describes the conditions experienced by drivers for the various levels of service.

As can be seen, north of Via Las Rosas, El Camino Real operates at LOS C with and without the project(s). South of Via Las Rosas, El Camino Real operates at LOS B with and without the project(s).

FIGURE 4

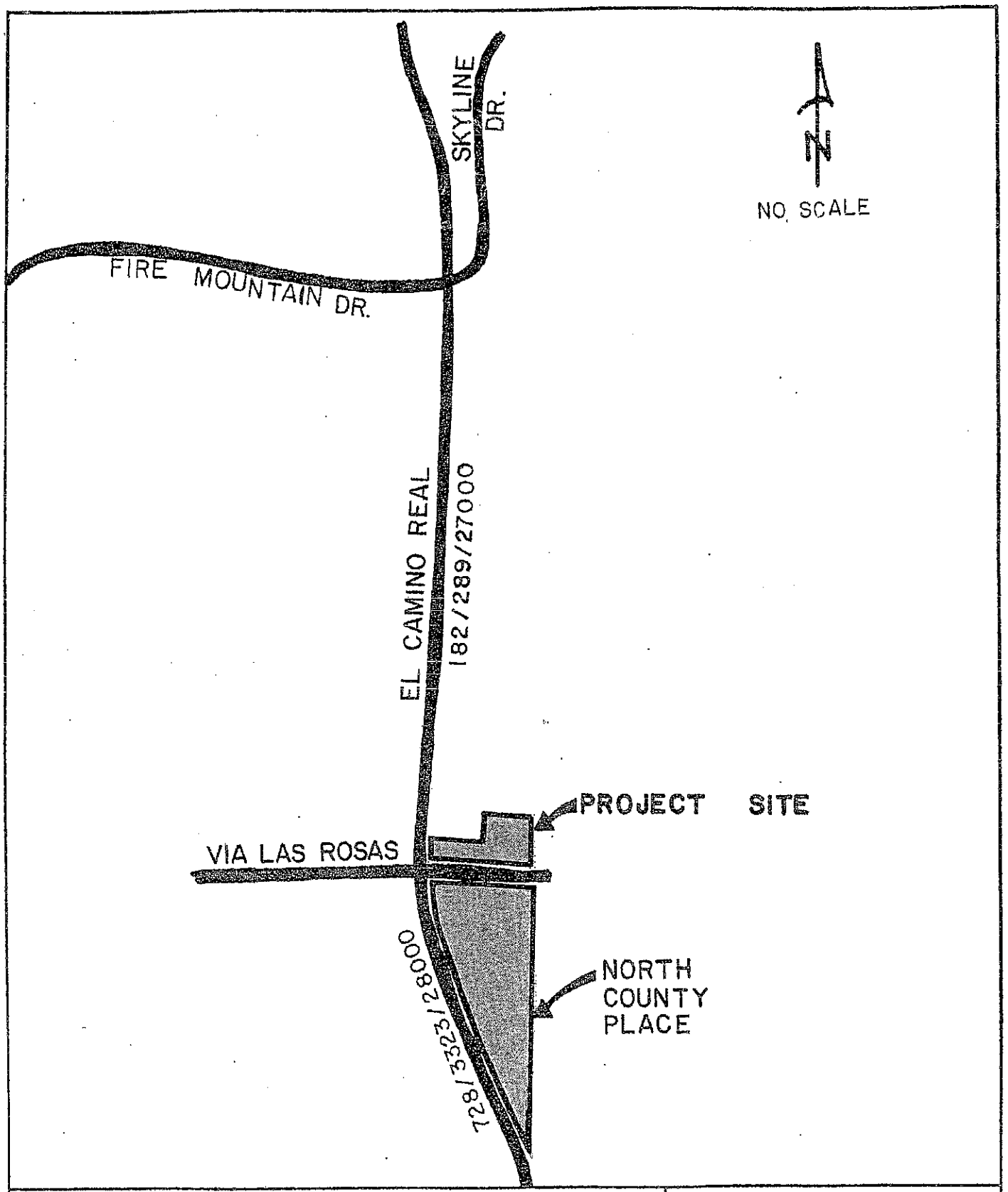


DISTRIBUTION OF TRIPS

FIGURE 4

WILLDAN ASSOCIATES

FIGURE 5



PROJECT/NO. COUNTY PLACE/EXISTING ADT

FIGURE 5

WILLDAN ASSOCIATES

TABLE 2

SAN DIEGO COUNTY STANDARD STREET CLASSIFICATION

AVERAGE DAILY VEHICLE TRIPS

ROAD CLASS	ROAD X-SECTION	LEVEL OF SERVICE A	B	C	D	E
Prime Arterial	106/126	22,200	37,000	44,600	50,000	57,000
Major Road	82/102	14,800	24,700	29,600	33,400	37,000
Collector	64/84	13,700	22,800	27,400	30,800	34,200
Light Collector	40/60	1,900	4,100	7,100	10,900	16,200
Rural Collector	40/84	1,900	4,100	7,100	10,900	16,200
Rural Light Collector	40/100	1,900	4,100	7,100	10,900	16,200
Rural Mountain	40/100	1,900	4,100	7,100	10,900	16,200
Recreational Parkway	42/100	1,900	4,100	7,100	10,900	16,200
Residential Collector	40/60	*	*	7,000	*	*
Residential Street	36/56	*	*	1,500	*	*
Residential Cul-de-Sac or Loop Street	32/52	*	*	200	*	*
Interim Road	28/40 or 60	*	*	2,800	*	*

* Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

TABLE 3
Street Segment Levels of Service

Street Segment	Configuration	Existing Vol.	LOS	+No. Cnty Vol.	LOS	+ Project Vol.	LOS
El Camino Real							
Fire Mountain Dr./ Skyline Dr. to Via Las Rosas	4 lanes, divided	29,000	C	27,289	C	27,471	C
El Camino Real							
Via Las Rosas to Highway 78	6 lanes	28,000	B	31,323	B	32,051	B

TABLE 4

Descriptions of Conditions for Various Levels of Service

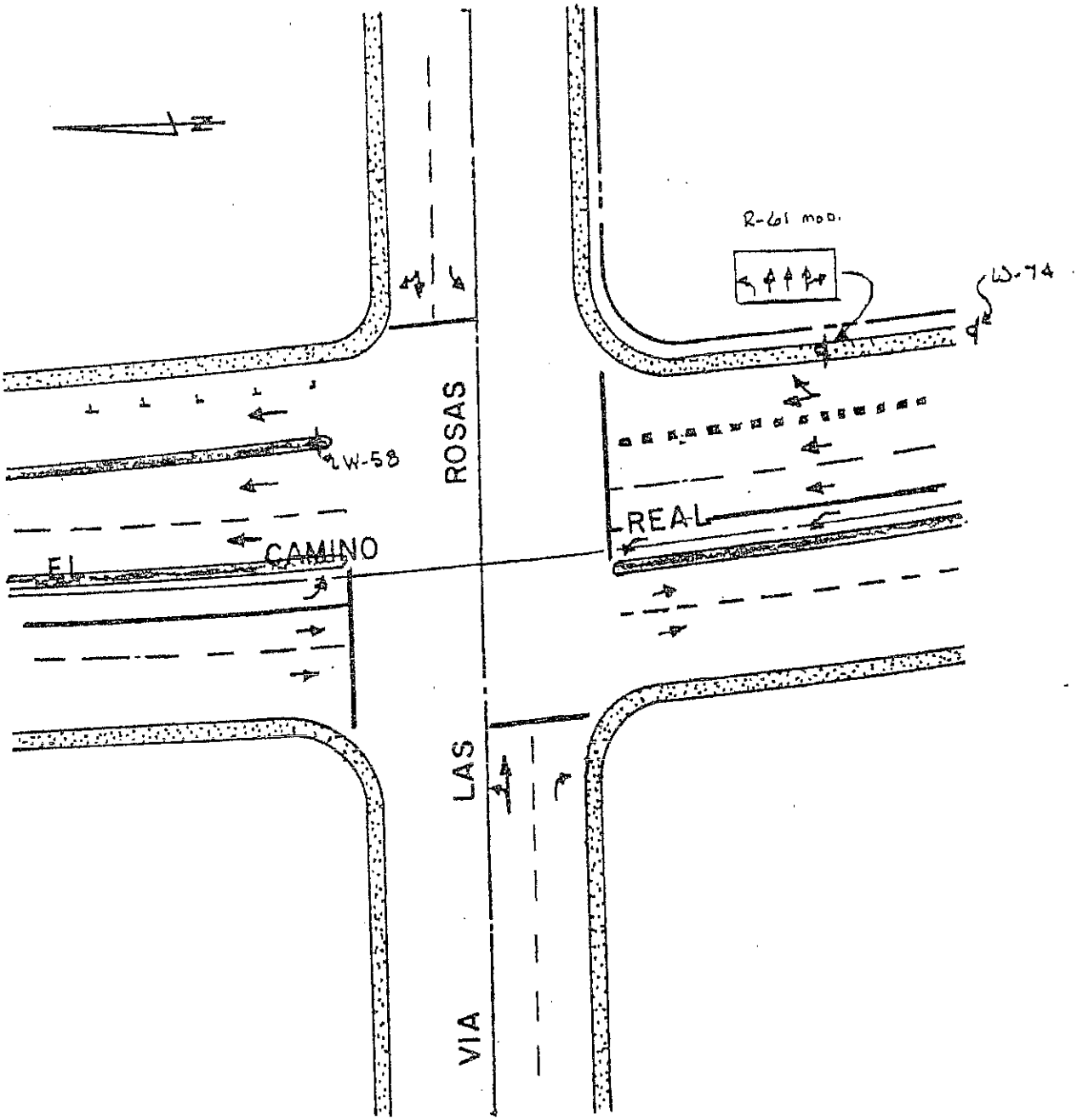
Level of Service	Operating Conditions
A	Free flow; speed controlled by driver's desires, speed limits, or physical roadway conditions.
B	Stable flows; operating speeds beginning to be restricted; little or no restrictions on maneuverability from other vehicles.
C	Stable flow; speeds and maneuverability more closely restricted.
D	Approaches unstable flow; tolerable speeds can be maintained, but temporary restrictions to flow cause substantial drops in speed. Little freedom to maneuver, comfort and convenience low.
E	Volumes near capacity; flow unstable; stoppages of momentary duration. Ability to maneuver severely limited.
F	Forced flow; low operating speeds; volumes below capacity, queues form.

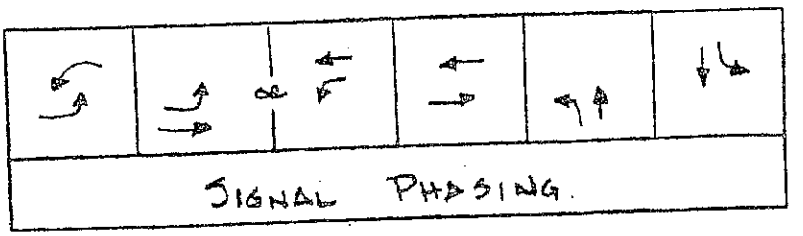
Intersections

The intersection of interest is the intersection of El Camino Real and Via Las Rosas. In order to provide adequate and reasonable access, this intersection should be signalized and the frontage road median opened to allow left turns to and from the east side of Via Las Rosas. The intersection currently warrants a signal due to conditions on the west side and is #4 on the City's signal priority list. The options for opening Via Las Rosas were addressed in depth with the North County Place planning and construction. A discussion of the five alternatives addressed is included in the Appendix. Our recommendation would be to implement the second alternative (see Figure 6) if the project is anticipated to be complete before the El Camino Real widening project occurs. This includes the need for splitting the phasing on Via Las Rosas so that turns onto the frontage road do not interfere with other through and turning movements. Signal pole locations should be set so that they need not be moved with the widening project.

Assuming a signal is installed, we have analyzed the anticipated level of service the intersection would operate at with project traffic added to existing evening peak hour turning movement counts. Utilizing the critical movement analysis method described in "Transportation Research Board Circular #212, Interim Materials on Highway Capacity", the PM peak hour level of service, with existing traffic plus North County Place and project traffic would be anticipated to be LOS B. Figure 7 shows this intersection capacity utilization (ICU) calculation.

FIGURE 6





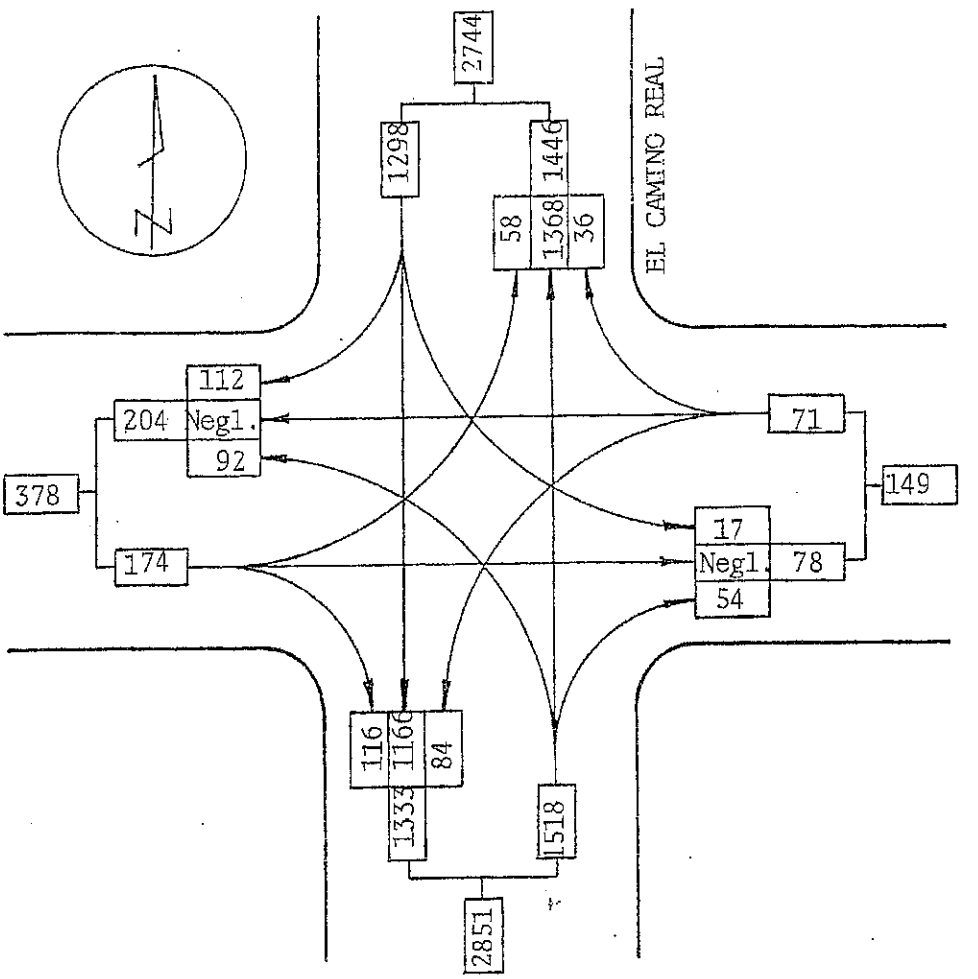
SIGNAL PHASING

SUGGESTED LANE CONFIGURATION
AND SIGNAL PHASING
EL CAMINO REAL / VIA LAS ROSAS

FIGURE 6

WILLDAN ASSOCIATES

FIGURE 7



Split Signal Phasing

El Camino Real: Two through and left turn lanes north and southbound, and right turn lane northbound.

Via Las Rosas: One through and right and one left turn lane westbound. One through and left and one right turn lane eastbound.

$$\frac{17}{1} + \frac{1368}{2} + \frac{116}{1} + \frac{84}{1} = 901 \text{ ----- LOS B}$$

ICU ANALYSIS - PM PEAK HOUR
EL CAMINO REAL/VIA LAS ROSAS
EXISTING CONDITIONS & NO COUNTY PLACE & PROJECT

FIGURE 7

WILLDAN ASSOCIATES

MITIGATIONS

There are no significant adverse traffic related impacts associated with the completion of this project as proposed. The street segments will not be overburdened by the addition of project traffic. The intersection of El Camino Real/Via Las Rosas will need to be signalized and the frontage road median opened to allow left turns to and from the east side of Via Las Rosas to provide adequate access.

APPENDIX

ANALYSIS OF ALTERNATIVES FOR THE TRANSITION ON EL CAMINO REAL AT VIA LAS ROSAS

BACKGROUND

Condition 6 of Planning Commission Resolution No. 80-P98 approving Zone Change Z-4-80 and Development Plan D-10-80 for Benjamin Harrison and Sons office/commercial project on El Camino Real at Via las Rosas, requires the transition on El Camino Real to be designed to the specification of the City Engineer. Bill Stracker, in reviewing this project proposed four alternatives for this transition (his comments are attached for your reference) and concluded that the consultant should further address this issue.

This paper will review the four alternatives proposed by Mr. Stracker and present additional alternatives to be considered.

ALTERNATIVES

Alternative 1

This alternative as shown in Figure 1 proposes to permanently block access to the frontage road from Via las Rosas. This would require all access to the office buildings along the frontage road to come from Basel St. It would, however, remove some potentially conflicting movements (turns from El Camino Real or Via las Rosas into the frontage road) and keep the pedestrian crossing time to its current level. The drawbacks to this alternative include:

a. The narrow width of the frontage road (20 ft) that would have to be used for two-way traffic.

b. The necessity for removing on-street parking.

c. The opposition of the fire department to the reduction in access.

d. The close proximity and possible confusion resulting from southbound traffic on the frontage road being only a few feet to the right of northbound traffic.

e. The additional costs of installing permanent improvements including costly drainage facilities that would have to be removed within a few years when the City expands El Camino Real to six lanes.

Alternative 2

This alternative as shown on Figure 2 would split the signal phasing for Via las Rosas. This would allow left turns into the frontage road without conflict.

This alternative, however, would increase the pedestrian crossing time about five seconds and would increase entire signal cycle.

Alternative 3

This alternative as shown on Figure 3 would add a raised median in Via las Rosas in an attempt to prohibit turns into the frontage road from El Camino Real or Via las Rosas and would keep the pedestrian crossing time at the current level.

This however, would require changing the frontage road from one way to two way resulting in the same drawbacks as described with Alternative 1. The location of the island would not totally preclude turns into the frontage road and could actually encourage illegal turning manuevers.

Alternative 4

This alternative as shown on Figure 4 would reverse the direction of one way traffic on the frontage road. This would eliminate potential conflicts resulting from vehicles turning onto the frontage road at Via las Rosas.

In addition to the inherent problems resulting from the change of direction, there would also be a problem with northbound vehicles traveling in the number 3 lane directly lining up with southbound vehicles on the frontage road.

Alternative 5

This alternative as shown on Figure 5 would be the same as Alternative 2, but would not split the signal phase. This would reduce the signal cycle required.

This alternative could however, lead to an interlocking problem where eastbound vehicles waiting to turn into the frontage road would block westbound vehicles trying to turn left onto El Camino Real.

CONCLUSIONS AND RECOMMENDATIONS

As everyone is well aware, there is no easy solution to this transition problem. Each alternative has its drawbacks, some

of which are related to safety and some to operating efficiencies.

In arriving at a solution however, the issues of safety must be weighted over those relating to efficiency. This is especially true in this location, where most of the nearby intersections will be operating at or above capacity, resulting in delays during the peak hour.

We, therefore, recommend that Alternative 2 be implemented. With the proper signal and signing installation, we feel that many of the drawbacks associated with this alternative can be partially mitigated.

The main argument against this is the additional delay caused by splitting the signal phases. Assuming a fully actuated traffic signal is installed, this problem will only be significant during the peak hour. During the peak hour, this would increase the cycle length by approximately 15 second if a pedestrian phase is included. There would be no increase if the pedestrian phase is not actuated. The type of phasing is also consistent with the phasing proposed for the signal at Vista Way and El Camino Real and the signal phasing in Carlsbad at the entrance to the shopping center, Marron Rd. and Hosp Way.

The other drawback to this alternative is the potential for vehicles in the number 2 lane on El Camino to turn into the frontage road conflicting with vehicles in the number 3 lane. We feel that with adequate signing and striping as shown on Figure 2 this will not be a problem.

Finally, this alternative will not necessitate costly or major changes to the intersection when El Camino Real is widened to six lanes north of Via las Rosas.

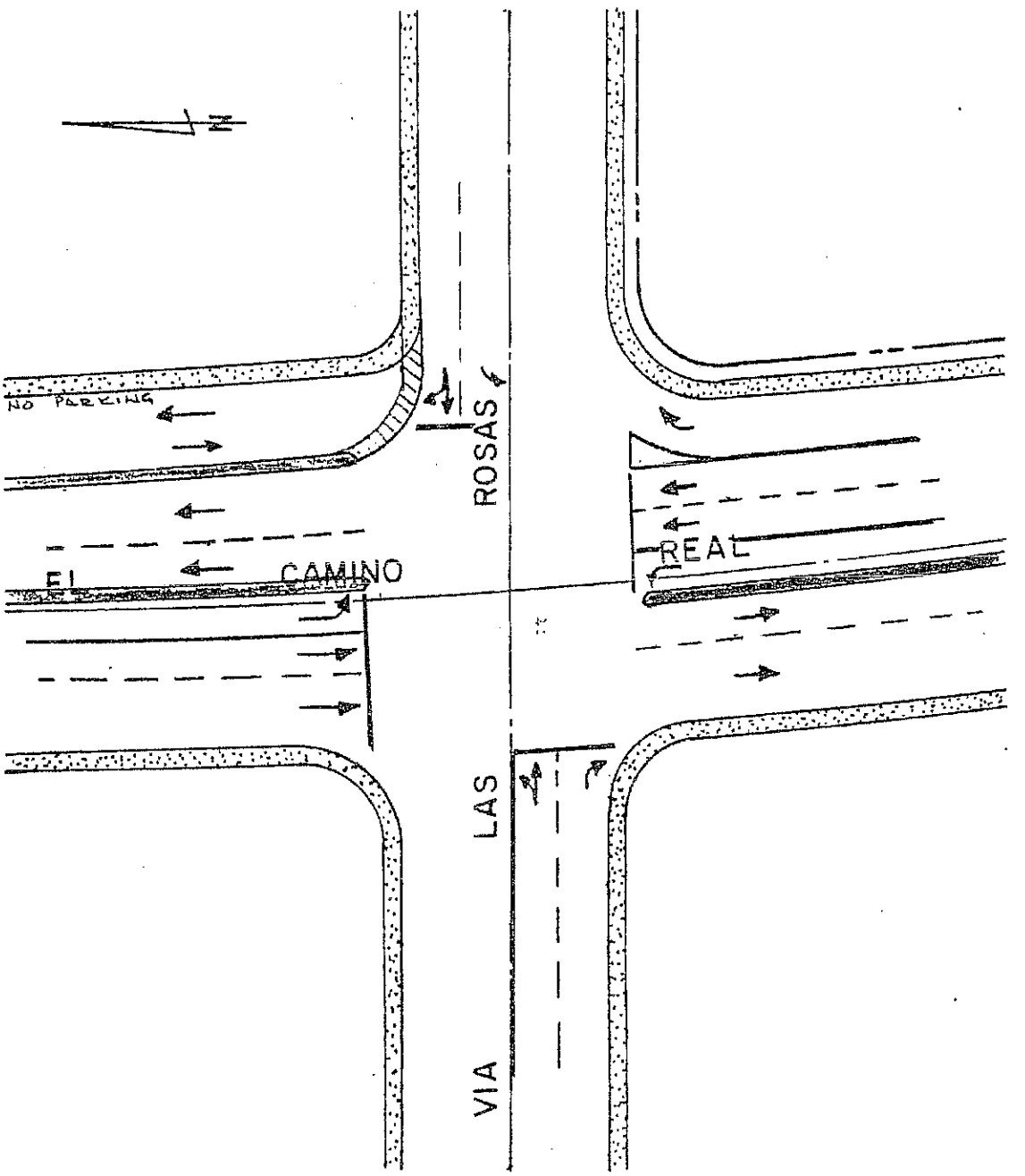
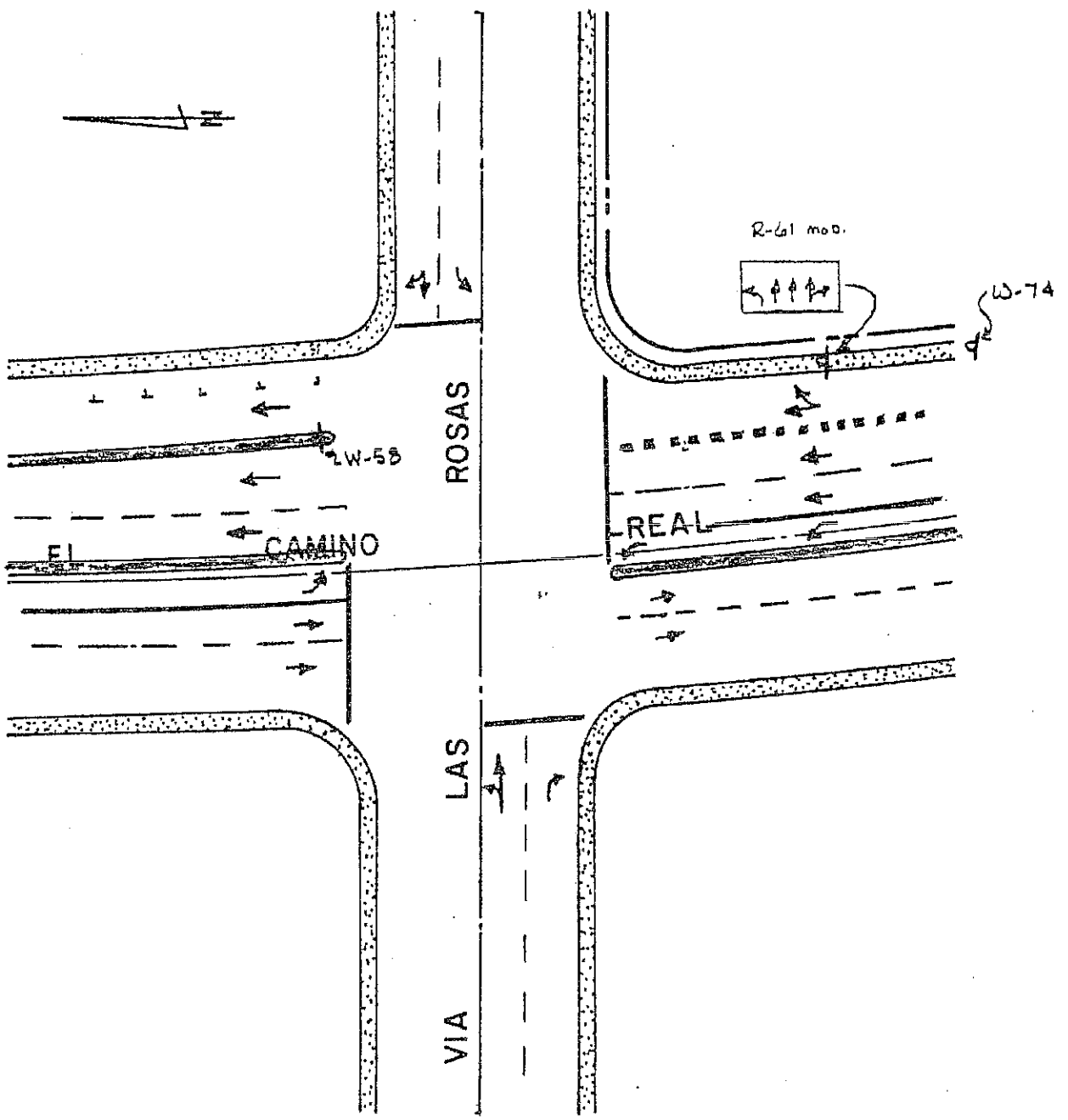


FIGURE 1



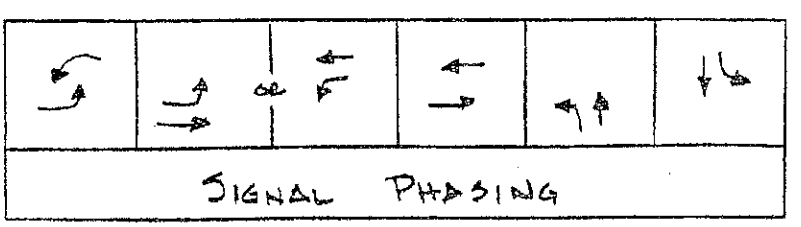


FIGURE 2

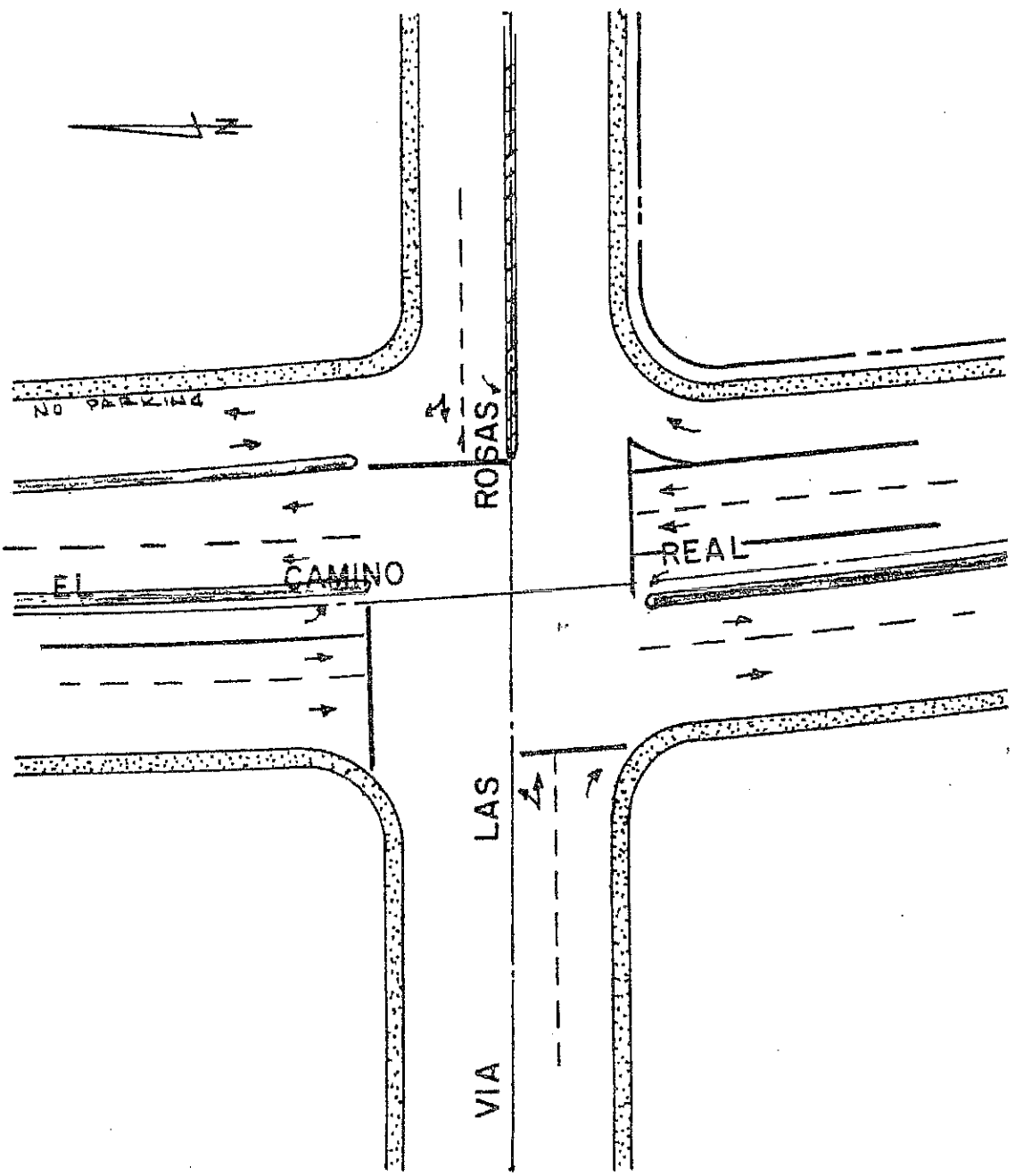


FIGURE 3

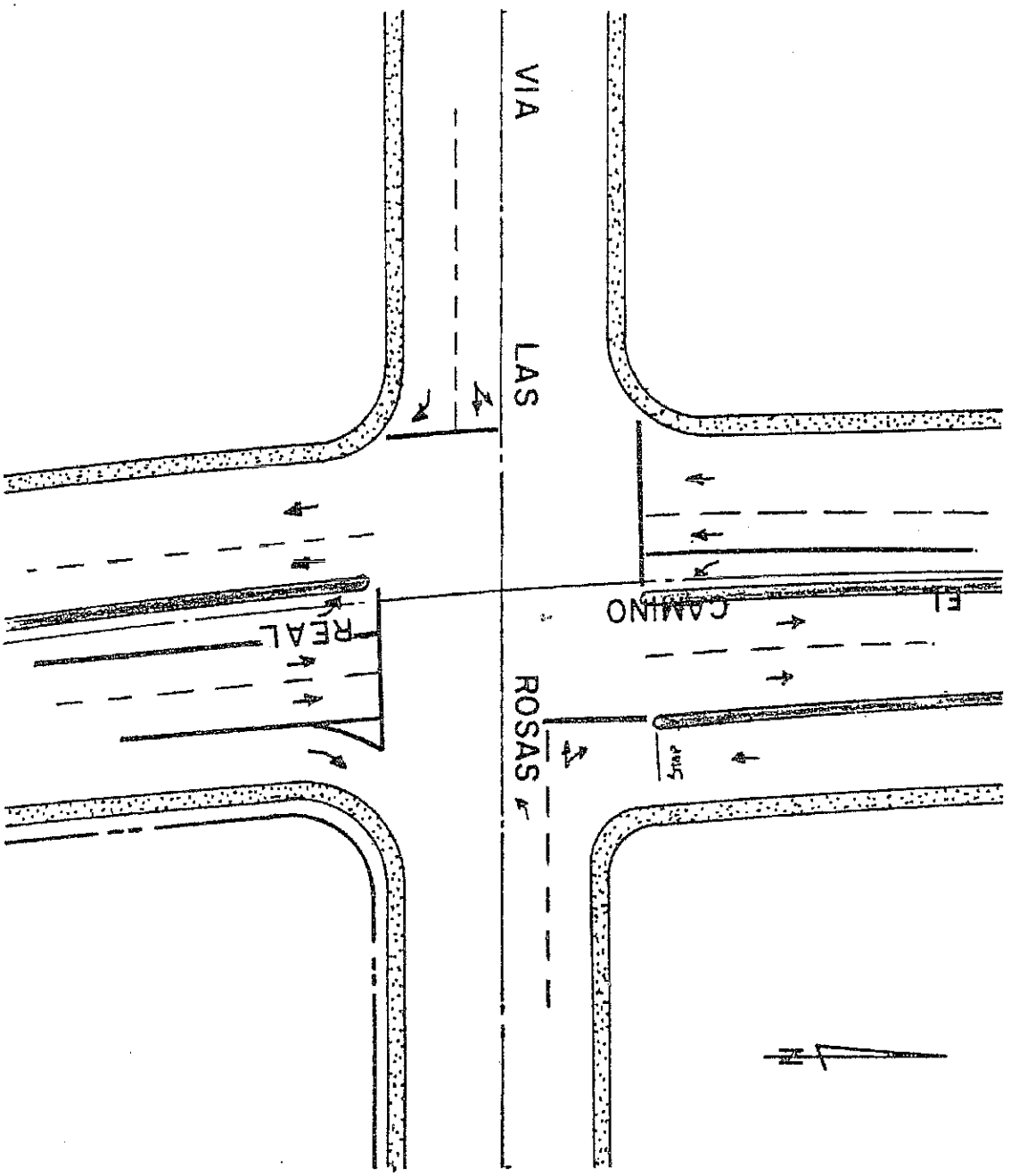
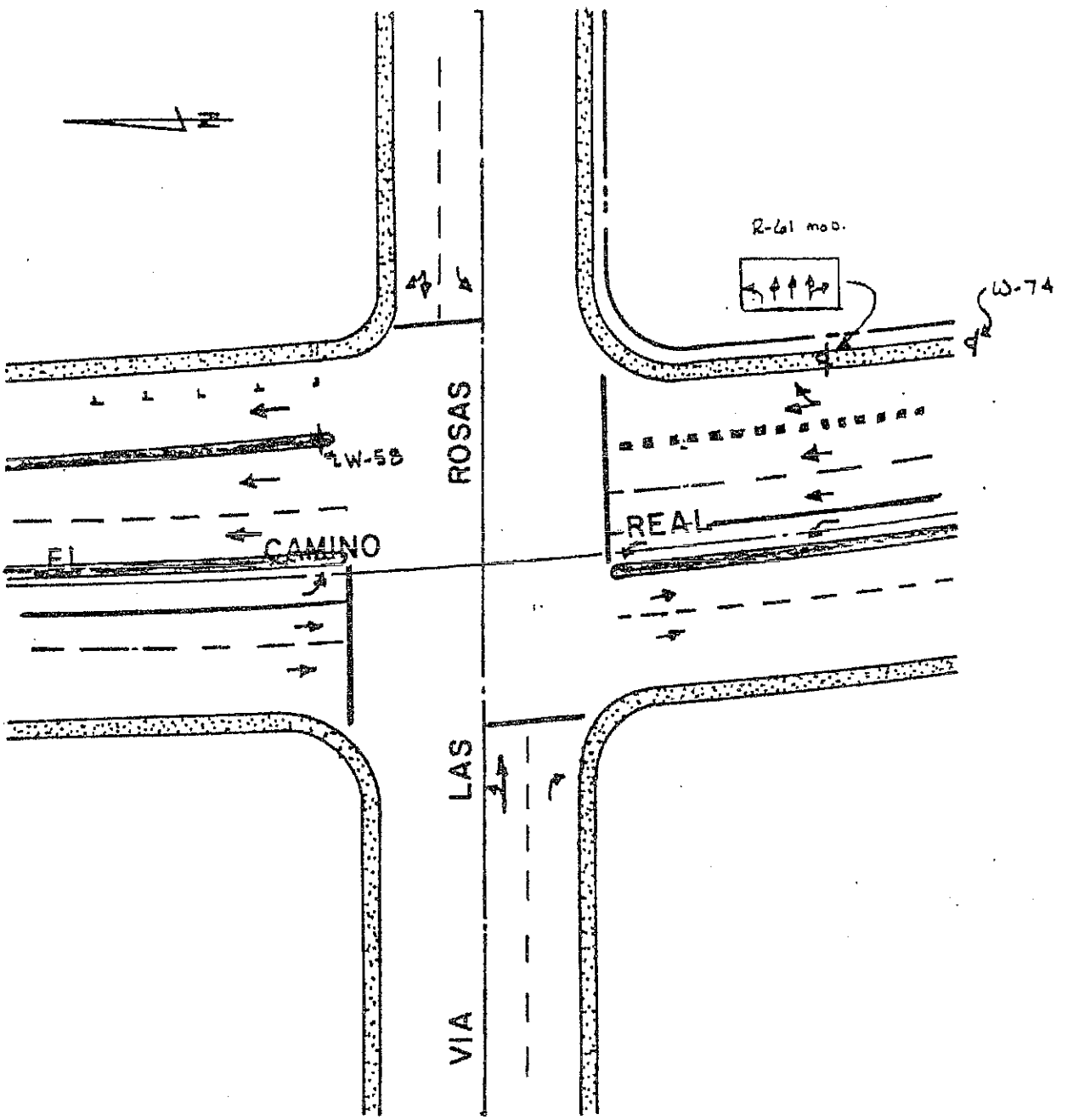
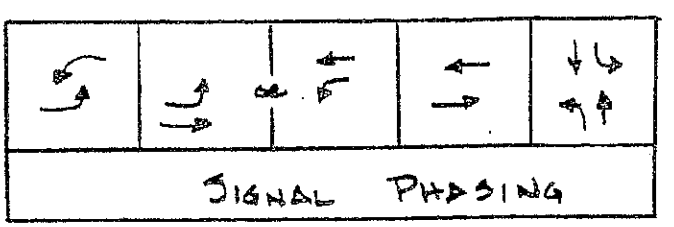


FIGURE 4





SIGNAL PHASING

FIGURE 5

APPENDIX B

SANDAG TRAFFIC GENERATION

(NOT SO)

BRIEF GUIDE OF VEHICULAR TRAFFIC GENERATION RATES FOR THE SAN DIEGO REGION

APRIL 2002

SANDAG
401 B Street, Suite 800
San Diego, California 92101
(619) 699-1900 • Fax (619) 699-1950

NOTE: This listing only represents a *guide* of average, or estimated, traffic generation "driveway" rates and some very general trip data for land uses (emphasis on acreage and building square footage) in the San Diego region. These rates (both local and national) are subject to change as future documentation becomes available, or as regional sources are updated. For more specific information regarding traffic data and trip rates, please refer to the San Diego Traffic Generators manual. ***Always check with local jurisdictions for their preferred or applicable rates.***

LAND USE	TRIP CATEGORIES (PRIMARY:DIVERTED:PASS-BY)[a]	ESTIMATED WEEKDAY VEHICLE TRIP GENERATION RATE (DRIVEWAY)	HIGHEST PEAK HOUR % (plus IN:OUT ratio) Between 6:00-9:30 A.M.		Between 3:00-6:30 P.M.		TRIP LENGTH (Miles)[b]
AGRICULTURE (Open Space)	[80:18:2]	2/acre**					10.8
AIRPORT	[78:20:2]						12.5
Commercial		60/acre, 100/flight, 70/1000 sq. ft.* **	5%	(6:4)	6%	(5:5)	
General Aviation		6/acre, 2/flight, 6/based aircraft* **	9%	(7:3)	15%	(5:5)	
Heliports		100/acre**					
AUTOMOBILE[a]							
Car Wash							
Automatic		900/site, 600/acre**	4%	(5:5)	9%	(5:5)	
Self-serve		100/wash stall**	4%	(5:5)	8%	(5:5)	
Gasoline	[21:51:28]						2.8
with/Food Mart		160/vehicle fueling space**	7%	(5:5)	8%	(5:5)	
with/Food Mart & Car Wash		155/vehicle fueling space**	8%	(5:5)	9%	(5:5)	
Older Service Station Design		150/vehicle fueling space, 900/station**	7%	(5:5)	9%	(5:5)	
Sales (Dealer & Repair)		50/1000 sq. ft., 300/acre, 60/service stall* **	5%	(7:3)	8%	(4:6)	
Auto Repair Center		20/1000 sq. ft., 400/acre, 20/service stall*	8%	(7:3)	11%	(4:6)	
Auto Parts Sales		60/1000 sq. ft.**	4%		10%		
Quick Lube		40/service stall**	7%	(6:4)	10%	(5:5)	
Tire Store		25/1000 sq. ft., 30/service stall**	7%	(6:4)	11%	(5:5)	
CEMETERY		5/acre*					
CHURCH (or Synagogue)	[64:25:11]	9/1000 sq. ft., 30/acre** (quadruple rates for Sunday, or days of assembly)	5%	(6:4)	8%	(5:5)	5.1
COMMERCIAL/RETAIL[a]							
Super Regional Shopping Center (More than 80 acres, more than 800,000 sq. ft., w/usually 3+ major stores)		35/1000 sq. ft.,[c] 400/acre*	4%	(7:3)	10%	(5:5)	
Regional Shopping Center (40-80acres, 400,000-800,000 sq. ft., w/usually 2+ major stores)	[54:35:11]	50/1000 sq. ft.,[c] 500/acre*	4%	(7:3)	9%	(5:5)	5.2
Community Shopping Center (15-40 acres, 125,000-400,000 sq. ft., w/usually 1 major store, detached restaurant(s), grocery and drugstore)	[47:31:22]	80/1000 sq. ft., 700/acre* **	4%	(6:4)	10%	(5:5)	3.6
Neighborhood Shopping Center (Less than 15 acres, less than 125,000 sq. ft., w/usually grocery & drugstore, cleaners, beauty & barber shop, & fast food services)		120/1000 sq. ft., 1200/acre* **	4%	(6:4)	10%	(5:5)	
Commercial Shops	[45:40:15]						
Specialty Retail/Strip Commercial		40/1000 sq. ft., 400/acre*	3%	(6:4)	9%	(5:5)	4.3
Electronics Superstore		50/1000 sq. ft**			10%	(5:5)	
Factory Outlet		40/1000 sq. ft.**	3%	(7:3)	9%	(5:5)	
Supermarket		150/1000 sq. ft., 2000/acre* **	4%	(7:3)	10%	(5:5)	
Drugstore		90/1000 sq. ft.**	4%	(6:4)	10%	(5:5)	
Convenience Market (15-16 hours)		500/1000 sq. ft.**	8%	(5:5)	8%	(5:5)	
Convenience Market (24 hours)		700/1000 sq. ft.**	9%	(5:5)	7%	(5:5)	
Convenience Market (w/gasoline pumps)		850/1000 sq. ft., 550/vehicle fueling space**	6%	(5:5)	7%	(5:5)	
Discount Club		60/1000 sq. ft., 600/acre* **	1%	(7:3)	5%	(5:5)	
Discount Store		60/1000 sq. ft., 600/acre**	3%	(6:4)	8%	(5:5)	
Furniture Store		6/1000 sq. ft., 100/acre**	4%	(7:3)	9%	(5:5)	
Lumber Store		30/1000 sq. ft., 150/acre**	7%	(6:4)	9%	(5:5)	
Home Improvement Superstore		40/1000 sq. ft.**	5%	(6:4)	8%	(5:5)	
Hardware/Paint Store		60/1000 sq. ft., 600/acre**	2%	(6:4)	9%	(5:5)	
Garden Nursery		40/1000 sq. ft., 90/acre**	3%	(6:4)	10%	(5:5)	
Mixed Use: Commercial (w/supermarket)/Residential		110/1000 sq. ft., 2000/acre* (commercial only) 5/dwelling unit, 200/acre* (residential only)	3% 5%	(6:4) (3:7)	9% 13%	(5:5) (6:4)	
EDUCATION							
University (4 years)	[91:9:0]	2.4/student, 100 acre*	10%	(8:2)	9%	(3:7)	8.9
Junior College (2 years)	[92:7:1]	1.2/student, 24/1000 sq. ft., 120/acre* **	12%	(8:2)	9%	(6:4)	9.0
High School	[75:19:6]	1.3/student, 15/1000 sq. ft., 60/acre* **	20%	(7:3)	10%	(4:6)	4.8
Middle/Junior High	[63:25:12]	1.4/student, 12/1000 sq. ft. 50/acre**	30%	(6:4)	9%	(4:6)	5.0
Elementary	[57:25:10]	1.6/student, 14/1000 sq. ft., 90/acre* **	32%	(6:4)	9%	(4:6)	3.4
Day Care	[28:58:14]	5/child, 80/1000 sq. ft.**	17%	(5:5)	18%	(5:5)	3.7
FINANCIAL[a]	[35:42:23]						3.4
Bank (Walk-In only)		150/1000 sq. ft., 1000/acre* **	4%	(7:3)	8%	(4:6)	
with Drive-Through		200/1000 sq. ft., 1500/acre*	5%	(6:4)	10%	(5:5)	
Drive-Through only		250 (125 one-way)/lane*	3%	(5:5)	13%	(5:5)	
Savings & Loan		60/1000 sq. ft., 600/acre**	2%		9%		
Drive-Through only		100 (50 one-way)/lane**	4%		15%		
HOSPITAL	[73:25:2]						8.3
General		20/bed, 25/1000 sq. ft., 250/acre*	8%	(7:3)	10%	(4:6)	
Convalescent/Nursing		3/bed**	7%	(6:4)	7%	(4:6)	
INDUSTRIAL							
Industrial/Business Park (commercial included)	[79:19:2]	16/1000 sq. ft., 200/acre* **	12%	(8:2)	12%	(2:8)	9.0
Industrial Park (no commercial)		8/1000 sq. ft., 90/acre**	11%	(9:1)	12%	(2:8)	
Industrial Plant (multiple shifts)	[92:5:3]	10/1000 sq. ft., 120/acre*	14%	(8:2)	15%	(3:7)	11.7
Manufacturing/Assembly		4/1000 sq. ft., 50/acre**	19%	(9:1)	20%	(2:8)	
Warehousing		5/1000 sq. ft., 60/acre**	13%	(7:3)	15%	(4:6)	
Storage		2/1000 sq. ft., 0.2/vault, 30/acre*	6%	(5:5)	9%	(5:5)	
Science Research & Development		8/1000 sq. ft., 80/acre*	16%	(9:1)	14%	(1:9)	
Landfill & Recycling Center		6/acre	11%	(5:5)	10%	(4:6)	

(OVER)

APPENDIX C

EXISTING SYNCHRO WORKSHEETS

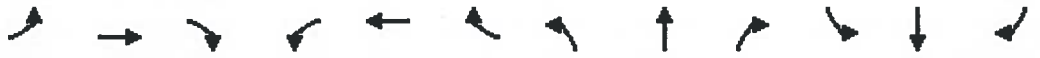
HCM 6th Edition methodology expects strict NEMA phasing.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	11	33	94	43	53	45	814	33	21	1798	119
Future Volume (vph)	85	11	33	94	43	53	45	814	33	21	1798	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1			5.1	5.1	5.1	5.8		5.1	5.8	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.89			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1653			1801	1583	1770	5055		1770	5038	
Flt Permitted	0.95	1.00			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1653			1801	1583	1770	5055		1770	5038	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	12	36	102	47	58	49	885	36	23	1954	129
RTOR Reduction (vph)	0	33	0	0	0	50	0	2	0	0	4	0
Lane Group Flow (vph)	92	15	0	0	149	8	49	919	0	23	2079	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3						
Actuated Green, G (s)	9.7	9.7			14.4	14.4	7.5	61.5		3.3	57.3	
Effective Green, g (s)	9.7	9.7			14.4	14.4	7.5	61.5		3.3	57.3	
Actuated g/C Ratio	0.09	0.09			0.13	0.13	0.07	0.56		0.03	0.52	
Clearance Time (s)	5.1	5.1			5.1	5.1	5.1	5.8		5.1	5.8	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	156	145			235	207	120	2826		53	2624	
v/s Ratio Prot	c0.05	0.01			c0.08		c0.03	c0.18		0.01	c0.41	
v/s Ratio Perm						0.00						
v/c Ratio	0.59	0.10			0.63	0.04	0.41	0.33		0.43	0.79	
Uniform Delay, d1	48.2	46.2			45.3	41.7	49.1	13.1		52.4	21.5	
Progression Factor	1.00	1.00			1.00	1.00	0.74	1.61		1.00	1.00	
Incremental Delay, d2	5.6	0.3			5.5	0.1	2.2	0.3		5.6	2.5	
Delay (s)	53.8	46.5			50.8	41.8	38.8	21.3		58.0	24.0	
Level of Service	D	D			D	D	D	C		E	C	
Approach Delay (s)		51.3			48.3			22.2			24.4	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	3	82	5	2	8	67	893	21	28	1717	173
Future Volume (vph)	50	3	82	5	2	8	67	893	21	28	1717	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.6	4.6	4.6	5.1	5.8		5.1	5.8	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1694	1583	1770	1863	1583	1770	5068		1770	5015	
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1694	1583	1770	1863	1583	1770	5068		1770	5015	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	3	89	5	2	9	73	971	23	30	1866	188
RTOR Reduction (vph)	0	0	84	0	0	9	0	1	0	0	6	0
Lane Group Flow (vph)	29	28	5	5	2	0	73	993	0	30	2048	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8			4						
Actuated Green, G (s)	6.5	6.5	6.5	3.2	3.2	3.2	11.2	74.8		5.0	68.6	
Effective Green, g (s)	6.5	6.5	6.5	3.2	3.2	3.2	11.2	74.8		5.0	68.6	
Actuated g/C Ratio	0.06	0.06	0.06	0.03	0.03	0.03	0.10	0.68		0.05	0.62	
Clearance Time (s)	5.0	5.0	5.0	4.6	4.6	4.6	5.1	5.8		5.1	5.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	99	100	93	51	54	46	180	3446		80	3127	
v/s Ratio Prot	c0.02	0.02		c0.00	0.00		c0.04	0.20		0.02	c0.41	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.29	0.28	0.06	0.10	0.04	0.01	0.41	0.29		0.38	0.65	
Uniform Delay, d1	49.5	49.5	48.9	52.0	51.9	51.9	46.3	7.0		51.0	13.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.94		0.64	1.47	
Incremental Delay, d2	1.6	1.5	0.3	0.8	0.3	0.0	1.5	0.2		2.0	0.7	
Delay (s)	51.2	51.0	49.1	52.8	52.2	51.9	44.4	6.8		34.4	20.1	
Level of Service	D	D	D	D	D	D	D	A		C	C	
Approach Delay (s)		49.9			52.2			9.3			20.3	
Approach LOS		D			D			A			C	

Intersection Summary				
HCM 2000 Control Delay	18.2	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	62.6%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	4	17	6	3	4	41	991	23	2	1699	51
Future Volume (veh/h)	30	4	17	6	3	4	41	991	23	2	1699	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	4	18	7	3	4	45	1077	25	2	1847	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	4	205	56	15	205	117	3732	87	9	3552	1103
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.03	0.73	0.73	0.01	1.00	1.00
Sat Flow, veh/h	9	33	1585	6	115	1585	3456	5134	119	3456	5106	1585
Grp Volume(v), veh/h	37	0	18	10	0	4	45	714	388	2	1847	55
Grp Sat Flow(s),veh/h/ln	42	0	1585	121	0	1585	1728	1702	1849	1728	1702	1585
Q Serve(g_s), s	0.1	0.0	1.1	0.1	0.0	0.2	1.4	8.0	8.0	0.1	0.0	0.0
Cycle Q Clear(g_c), s	14.2	0.0	1.1	14.2	0.0	0.2	1.4	8.0	8.0	0.1	0.0	0.0
Prop In Lane	0.89		1.00	0.70		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	67	0	205	71	0	205	117	2474	1344	9	3552	1103
V/C Ratio(X)	0.55	0.00	0.09	0.14	0.00	0.02	0.38	0.29	0.29	0.21	0.52	0.05
Avail Cap(c_a), veh/h	301	0	461	314	0	461	185	2474	1344	157	3552	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	53.4	0.0	42.2	42.7	0.0	41.8	52.0	5.2	5.2	54.6	0.0	0.0
Incr Delay (d2), s/veh	6.8	0.0	0.2	0.9	0.0	0.0	2.0	0.3	0.5	8.5	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.4	0.3	0.0	0.1	0.6	2.6	2.9	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	0.0	42.3	43.6	0.0	41.8	54.1	5.5	5.7	63.1	0.4	0.1
LnGrp LOS	E	A	D	D	A	D	D	A	A	E	A	A
Approach Vol, veh/h		55			14			1147			1904	
Approach Delay, s/veh		54.4			43.1			7.5			0.5	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	85.7		18.9	8.8	82.2		18.9				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	5.0	57.5		32.0	5.9	56.6		32.0				
Max Q Clear Time (g_c+I1), s	2.1	10.0		16.2	3.4	2.0		16.2				
Green Ext Time (p_c), s	0.0	9.6		0.1	0.0	25.1		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		4.2	
HCM 6th LOS		A	

HCM 6th Edition methodology expects strict NEMA phasing.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	43	73	71	25	41	57	1998	98	53	1363	101
Future Volume (vph)	190	43	73	71	25	41	57	1998	98	53	1363	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1			5.1	5.1	5.1	5.8		5.1	5.8	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.91			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1688			1796	1583	1770	5049		1770	5033	
Flt Permitted	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1688			1796	1583	1770	5049		1770	5033	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	47	79	77	27	45	62	2172	107	58	1482	110
RTOR Reduction (vph)	0	63	0	0	0	40	0	3	0	0	5	0
Lane Group Flow (vph)	207	63	0	0	104	5	62	2276	0	58	1587	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3						
Actuated Green, G (s)	18.3	18.3			11.9	11.9	8.6	50.5		8.2	50.1	
Effective Green, g (s)	18.3	18.3			11.9	11.9	8.6	50.5		8.2	50.1	
Actuated g/C Ratio	0.17	0.17			0.11	0.11	0.08	0.46		0.07	0.46	
Clearance Time (s)	5.1	5.1			5.1	5.1	5.1	5.8		5.1	5.8	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	294	280			194	171	138	2317		131	2292	
v/s Ratio Prot	c0.12	0.04			c0.06		c0.04	c0.45		0.03	0.32	
v/s Ratio Perm						0.00						
v/c Ratio	0.70	0.23			0.54	0.03	0.45	0.98		0.44	0.69	
Uniform Delay, d1	43.3	39.7			46.4	43.9	48.4	29.3		48.7	23.8	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.4	0.4			2.8	0.1	2.3	15.0		2.4	1.7	
Delay (s)	50.7	40.1			49.3	43.9	50.8	44.3		51.1	25.6	
Level of Service	D	D			D	D	D	D		D	C	
Approach Delay (s)		46.7			47.7			44.4			26.5	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	3	109	31	4	44	92	1921	10	44	1308	177
Future Volume (vph)	226	3	109	31	4	44	92	1921	10	44	1308	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.6	4.6	4.6	5.1	5.8		5.1	5.8	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1687	1583	1770	1863	1583	1770	5081		1770	4995	
Flt Permitted	0.95	0.95	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1687	1583	1770	1863	1583	1770	5081		1770	4995	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	246	3	118	34	4	48	100	2088	11	48	1422	192
RTOR Reduction (vph)	0	0	104	0	0	45	0	0	0	0	9	0
Lane Group Flow (vph)	125	124	14	34	4	3	100	2099	0	48	1605	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8			4						
Actuated Green, G (s)	15.1	15.1	15.1	7.2	7.2	7.2	12.8	79.4		7.8	74.4	
Effective Green, g (s)	15.1	15.1	15.1	7.2	7.2	7.2	12.8	79.4		7.8	74.4	
Actuated g/C Ratio	0.12	0.12	0.12	0.06	0.06	0.06	0.10	0.61		0.06	0.57	
Clearance Time (s)	5.0	5.0	5.0	4.6	4.6	4.6	5.1	5.8		5.1	5.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	195	195	183	98	103	87	174	3103		106	2858	
v/s Ratio Prot	c0.07	0.07		c0.02	0.00		c0.06	c0.41		0.03	0.32	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.64	0.64	0.07	0.35	0.04	0.03	0.57	0.68		0.45	0.56	
Uniform Delay, d1	54.9	54.8	51.2	59.1	58.1	58.1	56.0	16.8		59.0	17.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.16	0.66		1.00	1.00	
Incremental Delay, d2	7.0	6.6	0.2	2.1	0.2	0.1	3.9	1.0		3.1	0.8	
Delay (s)	61.9	61.5	51.4	61.3	58.3	58.2	68.7	12.0		62.1	18.3	
Level of Service	E	E	D	E	E	E	E	B		E	B	
Approach Delay (s)		58.4			59.4			14.6			19.6	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.5
Intersection Capacity Utilization	66.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	0	84	65	4	9	86	1903	21	15	1395	67
Future Volume (veh/h)	101	0	84	65	4	9	86	1903	21	15	1395	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	0	91	71	4	10	93	2068	23	16	1516	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	0	407	54	2	407	141	3160	35	58	2976	924
Arrive On Green	0.26	0.00	0.26	0.26	0.26	0.26	0.04	0.61	0.61	0.02	0.58	0.58
Sat Flow, veh/h	0	0	1585	0	6	1585	3456	5206	58	3456	5106	1585
Grp Volume(v), veh/h	110	0	91	75	0	10	93	1352	739	16	1516	73
Grp Sat Flow(s),veh/h/ln	0	0	1585	6	0	1585	1728	1702	1860	1728	1702	1585
Q Serve(g_s), s	0.0	0.0	5.9	0.0	0.0	0.6	3.4	33.7	33.7	0.6	22.9	2.6
Cycle Q Clear(g_c), s	33.4	0.0	5.9	33.4	0.0	0.6	3.4	33.7	33.7	0.6	22.9	2.6
Prop In Lane	1.00		1.00	0.95		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	55	0	407	56	0	407	141	2066	1129	58	2976	924
V/C Ratio(X)	1.99	0.00	0.22	1.35	0.00	0.02	0.66	0.65	0.65	0.27	0.51	0.08
Avail Cap(c_a), veh/h	55	0	407	56	0	407	237	2066	1129	157	2976	924
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	38.1	64.0	0.0	36.1	61.4	16.7	16.7	63.1	16.1	11.9
Incr Delay (d2), s/veh	501.6	0.0	0.3	239.9	0.0	0.0	5.1	1.6	3.0	2.5	0.6	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	0.0	5.5	0.0	0.2	1.6	13.1	14.8	0.3	8.9	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	566.6	0.0	38.4	303.9	0.0	36.1	66.6	18.3	19.6	65.6	16.7	12.0
LnGrp LOS	F	A	D	F	A	D	E	B	B	E	B	B
Approach Vol, veh/h		201			85			2184			1605	
Approach Delay, s/veh		327.5			272.4			20.8			17.0	
Approach LOS		F			F			C			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	84.7		38.0	10.4	81.6		38.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	5.9	75.2		33.4	8.9	72.2		33.4				
Max Q Clear Time (g_c+I1), s	2.6	35.7		35.4	5.4	24.9		35.4				
Green Ext Time (p_c), s	0.0	23.9		0.0	0.1	17.4		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		39.7	
HCM 6th LOS		D	

APPENDIX D

EXISTING PLUS PROJECT SYNCHRO WORKSHEETS

HCM 6th Edition methodology expects strict NEMA phasing.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	85	11	33	94	43	53	45	821	33	21	1805	119
Future Volume (vph)	85	11	33	94	43	53	45	821	33	21	1805	119
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1			5.1	5.1	5.1	5.8		5.1	5.8	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.89			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1653			1801	1583	1770	5056		1770	5038	
Flt Permitted	0.95	1.00			0.97	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1653			1801	1583	1770	5056		1770	5038	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	92	12	36	102	47	58	49	892	36	23	1962	129
RTOR Reduction (vph)	0	33	0	0	0	50	0	2	0	0	4	0
Lane Group Flow (vph)	92	15	0	0	149	8	49	926	0	23	2087	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3						
Actuated Green, G (s)	9.7	9.7			14.4	14.4	7.5	61.5		3.3	57.3	
Effective Green, g (s)	9.7	9.7			14.4	14.4	7.5	61.5		3.3	57.3	
Actuated g/C Ratio	0.09	0.09			0.13	0.13	0.07	0.56		0.03	0.52	
Clearance Time (s)	5.1	5.1			5.1	5.1	5.1	5.8		5.1	5.8	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	156	145			235	207	120	2826		53	2624	
v/s Ratio Prot	c0.05	0.01			c0.08		c0.03	c0.18		0.01	c0.41	
v/s Ratio Perm						0.00						
v/c Ratio	0.59	0.10			0.63	0.04	0.41	0.33		0.43	0.80	
Uniform Delay, d1	48.2	46.2			45.3	41.7	49.1	13.1		52.4	21.6	
Progression Factor	1.00	1.00			1.00	1.00	0.72	1.83		1.00	1.00	
Incremental Delay, d2	5.6	0.3			5.5	0.1	2.2	0.3		5.6	2.6	
Delay (s)	53.8	46.5			50.8	41.8	37.5	24.3		58.0	24.1	
Level of Service	D	D			D	D	D	C		E	C	
Approach Delay (s)		51.3			48.3			24.9			24.5	
Approach LOS		D			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	5	82	14	4	15	67	893	30	35	1717	173
Future Volume (vph)	50	5	82	14	4	15	67	893	30	35	1717	173
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.6	4.6	4.6	5.1	5.8		5.1	5.8	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.99	
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1699	1583	1770	1863	1583	1770	5060		1770	5015	
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1699	1583	1770	1863	1583	1770	5060		1770	5015	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	5	89	15	4	16	73	971	33	38	1866	188
RTOR Reduction (vph)	0	0	84	0	0	15	0	1	0	0	7	0
Lane Group Flow (vph)	29	30	5	15	4	1	73	1003	0	38	2047	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8			4						
Actuated Green, G (s)	6.5	6.5	6.5	4.8	4.8	4.8	11.2	72.8		5.4	67.0	
Effective Green, g (s)	6.5	6.5	6.5	4.8	4.8	4.8	11.2	72.8		5.4	67.0	
Actuated g/C Ratio	0.06	0.06	0.06	0.04	0.04	0.04	0.10	0.66		0.05	0.61	
Clearance Time (s)	5.0	5.0	5.0	4.6	4.6	4.6	5.1	5.8		5.1	5.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	99	100	93	77	81	69	180	3348		86	3054	
v/s Ratio Prot	0.02	c0.02		c0.01	0.00		c0.04	0.20		0.02	c0.41	
v/s Ratio Perm			0.00			0.00						
v/c Ratio	0.29	0.30	0.06	0.19	0.05	0.01	0.41	0.30		0.44	0.67	
Uniform Delay, d1	49.5	49.6	48.9	50.7	50.4	50.3	46.3	7.8		50.8	14.2	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.93	0.93		0.67	1.39	
Incremental Delay, d2	1.6	1.7	0.3	1.2	0.3	0.1	1.5	0.2		2.4	0.8	
Delay (s)	51.2	51.3	49.1	52.0	50.7	50.4	44.4	7.6		36.5	20.5	
Level of Service	D	D	D	D	D	D	D	A		D	C	
Approach Delay (s)		50.0			51.1			10.1			20.8	
Approach LOS		D			D			B			C	

Intersection Summary				
HCM 2000 Control Delay	19.0	HCM 2000 Level of Service	B	
HCM 2000 Volume to Capacity ratio	0.58			
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	62.6%	ICU Level of Service	B	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	4	17	6	3	4	41	1000	23	2	1708	51
Future Volume (veh/h)	30	4	17	6	3	4	41	1000	23	2	1708	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	33	4	18	7	3	4	45	1087	25	2	1857	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	63	4	205	56	15	205	117	3733	86	9	3552	1103
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.03	0.73	0.73	0.01	1.00	1.00
Sat Flow, veh/h	9	33	1585	6	115	1585	3456	5135	118	3456	5106	1585
Grp Volume(v), veh/h	37	0	18	10	0	4	45	720	392	2	1857	55
Grp Sat Flow(s),veh/h/ln	42	0	1585	121	0	1585	1728	1702	1849	1728	1702	1585
Q Serve(g_s), s	0.1	0.0	1.1	0.1	0.0	0.2	1.4	8.1	8.1	0.1	0.0	0.0
Cycle Q Clear(g_c), s	14.2	0.0	1.1	14.2	0.0	0.2	1.4	8.1	8.1	0.1	0.0	0.0
Prop In Lane	0.89		1.00	0.70		1.00	1.00		0.06	1.00		1.00
Lane Grp Cap(c), veh/h	67	0	205	71	0	205	117	2474	1344	9	3552	1103
V/C Ratio(X)	0.55	0.00	0.09	0.14	0.00	0.02	0.38	0.29	0.29	0.21	0.52	0.05
Avail Cap(c_a), veh/h	301	0	461	314	0	461	185	2474	1344	157	3552	1103
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.74	0.74	0.74
Uniform Delay (d), s/veh	53.4	0.0	42.2	42.7	0.0	41.8	52.0	5.2	5.2	54.6	0.0	0.0
Incr Delay (d2), s/veh	6.8	0.0	0.2	0.9	0.0	0.0	2.0	0.3	0.5	8.3	0.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.0	0.4	0.3	0.0	0.1	0.6	2.6	2.9	0.0	0.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	60.2	0.0	42.3	43.6	0.0	41.8	54.1	5.5	5.8	62.8	0.4	0.1
LnGrp LOS	E	A	D	D	A	D	D	A	A	E	A	A
Approach Vol, veh/h		55			14			1157			1914	
Approach Delay, s/veh		54.4			43.1			7.5			0.5	
Approach LOS		D			D			A			A	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.4	85.7		18.9	8.8	82.2		18.9				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	5.0	57.5		32.0	5.9	56.6		32.0				
Max Q Clear Time (g_c+I1), s	2.1	10.1		16.2	3.4	2.0		16.2				
Green Ext Time (p_c), s	0.0	9.8		0.1	0.0	25.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		4.2	
HCM 6th LOS		A	

HCM 6th Edition methodology expects strict NEMA phasing.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	190	43	73	71	25	41	57	2014	98	53	1379	101
Future Volume (vph)	190	43	73	71	25	41	57	2014	98	53	1379	101
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1			5.1	5.1	5.1	5.8		5.1	5.8	
Lane Util. Factor	1.00	1.00			1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	0.91			1.00	0.85	1.00	0.99		1.00	0.99	
Flt Protected	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1688			1796	1583	1770	5050		1770	5033	
Flt Permitted	0.95	1.00			0.96	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1688			1796	1583	1770	5050		1770	5033	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	207	47	79	77	27	45	62	2189	107	58	1499	110
RTOR Reduction (vph)	0	63	0	0	0	40	0	3	0	0	5	0
Lane Group Flow (vph)	207	63	0	0	104	5	62	2293	0	58	1604	0
Turn Type	Split	NA		Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	4	4		3	3		1	6		5	2	
Permitted Phases						3						
Actuated Green, G (s)	18.3	18.3			11.9	11.9	8.6	50.5		8.2	50.1	
Effective Green, g (s)	18.3	18.3			11.9	11.9	8.6	50.5		8.2	50.1	
Actuated g/C Ratio	0.17	0.17			0.11	0.11	0.08	0.46		0.07	0.46	
Clearance Time (s)	5.1	5.1			5.1	5.1	5.1	5.8		5.1	5.8	
Vehicle Extension (s)	3.0	3.0			3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	294	280			194	171	138	2318		131	2292	
v/s Ratio Prot	c0.12	0.04			c0.06		c0.04	c0.45		0.03	0.32	
v/s Ratio Perm						0.00						
v/c Ratio	0.70	0.23			0.54	0.03	0.45	0.99		0.44	0.70	
Uniform Delay, d1	43.3	39.7			46.4	43.9	48.4	29.5		48.7	23.9	
Progression Factor	1.00	1.00			1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.4	0.4			2.8	0.1	2.3	16.3		2.4	1.8	
Delay (s)	50.7	40.1			49.3	43.9	50.8	45.8		51.1	25.7	
Level of Service	D	D			D	D	D	D		D	C	
Approach Delay (s)		46.7			47.7			45.9			26.6	
Approach LOS		D			D			D			C	

Intersection Summary			
HCM 2000 Control Delay	38.9	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	21.1
Intersection Capacity Utilization	73.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM 6th Edition methodology does not support turning movements with shared & exclusive lanes.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	7	109	51	8	60	92	1921	30	60	1308	177
Future Volume (vph)	226	7	109	51	8	60	92	1921	30	60	1308	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0	5.0	4.6	4.6	4.6	5.1	5.8		5.1	5.8	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.91		1.00	0.91	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	1.00		1.00	0.98	
Flt Protected	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1681	1690	1583	1770	1863	1583	1770	5073		1770	4995	
Flt Permitted	0.95	0.96	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1681	1690	1583	1770	1863	1583	1770	5073		1770	4995	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	246	8	118	55	9	65	100	2088	33	65	1422	192
RTOR Reduction (vph)	0	0	104	0	0	61	0	1	0	0	10	0
Lane Group Flow (vph)	128	126	14	55	9	4	100	2120	0	65	1604	0
Turn Type	Split	NA	Perm	Split	NA	Perm	Prot	NA		Prot	NA	
Protected Phases	8	8		4	4		1	6		5	2	
Permitted Phases			8			4						
Actuated Green, G (s)	15.3	15.3	15.3	8.3	8.3	8.3	12.8	77.0		8.9	73.1	
Effective Green, g (s)	15.3	15.3	15.3	8.3	8.3	8.3	12.8	77.0		8.9	73.1	
Actuated g/C Ratio	0.12	0.12	0.12	0.06	0.06	0.06	0.10	0.59		0.07	0.56	
Clearance Time (s)	5.0	5.0	5.0	4.6	4.6	4.6	5.1	5.8		5.1	5.8	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	197	198	186	113	118	101	174	3004		121	2808	
v/s Ratio Prot	c0.08	0.07		c0.03	0.00		c0.06	c0.42		0.04	0.32	
v/s Ratio Perm			0.01			0.00						
v/c Ratio	0.65	0.64	0.07	0.49	0.08	0.04	0.57	0.71		0.54	0.57	
Uniform Delay, d1	54.8	54.7	51.0	58.8	57.2	57.1	56.0	18.6		58.6	18.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.04		1.00	1.00	
Incremental Delay, d2	7.2	6.5	0.2	3.3	0.3	0.2	4.5	1.4		4.5	0.9	
Delay (s)	62.0	61.2	51.2	62.1	57.5	57.3	58.8	20.7		63.1	19.2	
Level of Service	E	E	D	E	E	E	E	C		E	B	
Approach Delay (s)		58.3			59.3			22.4			20.9	
Approach LOS		E			E			C			C	

Intersection Summary				
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio	0.68			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.5	
Intersection Capacity Utilization	67.5%	ICU Level of Service	C	
Analysis Period (min)	15			

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	0	84	65	4	9	86	1923	21	15	1415	67
Future Volume (veh/h)	101	0	84	65	4	9	86	1923	21	15	1415	67
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	110	0	91	71	4	10	93	2090	23	16	1538	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	0	444	54	2	444	141	3040	33	58	2859	888
Arrive On Green	0.28	0.00	0.28	0.28	0.28	0.28	0.04	0.58	0.58	0.02	0.56	0.56
Sat Flow, veh/h	0	0	1585	0	6	1585	3456	5207	57	3456	5106	1585
Grp Volume(v), veh/h	110	0	91	75	0	10	93	1366	747	16	1538	73
Grp Sat Flow(s),veh/h/ln	0	0	1585	6	0	1585	1728	1702	1860	1728	1702	1585
Q Serve(g_s), s	0.0	0.0	5.7	0.0	0.0	0.6	3.4	36.2	36.3	0.6	24.7	2.8
Cycle Q Clear(g_c), s	36.4	0.0	5.7	36.4	0.0	0.6	3.4	36.2	36.3	0.6	24.7	2.8
Prop In Lane	1.00		1.00	0.95		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	55	0	444	56	0	444	141	1988	1086	58	2859	888
V/C Ratio(X)	1.99	0.00	0.21	1.35	0.00	0.02	0.66	0.69	0.69	0.27	0.54	0.08
Avail Cap(c_a), veh/h	55	0	444	56	0	444	210	1988	1086	157	2859	888
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.0	0.0	35.7	63.9	0.0	33.9	61.5	18.8	18.8	63.1	18.0	13.2
Incr Delay (d2), s/veh	501.6	0.0	0.2	239.9	0.0	0.0	5.2	2.0	3.6	2.5	0.7	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.0	2.3	5.5	0.0	0.2	1.6	14.4	16.2	0.3	9.7	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	566.6	0.0	36.0	303.8	0.0	33.9	66.6	20.8	22.4	65.6	18.7	13.4
LnGrp LOS	F	A	D	F	A	C	E	C	C	E	B	B
Approach Vol, veh/h		201			85			2206			1627	
Approach Delay, s/veh		326.4			272.1			23.2			19.0	
Approach LOS		F			F			C			B	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.3	81.7		41.0	10.4	78.6		41.0				
Change Period (Y+Rc), s	5.1	5.8		4.6	5.1	5.8		4.6				
Max Green Setting (Gmax), s	5.9	72.2		36.4	7.9	70.2		36.4				
Max Q Clear Time (g_c+I1), s	2.6	38.3		38.4	5.4	26.7		38.4				
Green Ext Time (p_c), s	0.0	22.0		0.0	0.0	17.4		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			41.5									
HCM 6th LOS			D									

APPENDIX E

- STREET STANDARDS

- INTERSECTION AERIAL VIEW

Level of Service F exists when there are insufficient gaps of suitable size to allow a side street demand to safely cross through a major street traffic stream. This level of service is generally evident from extremely long control delays experienced by side-street traffic and by queuing on the minor-street approaches. The method, however, is based on a constant critical gap size; that is, the critical gap remains constant no matter how long the side-street motorist waits.

LOS F may also appear in the form of side-street vehicles selecting smaller-than-usual gaps. In such cases, safety may be a problem, and some disruption to the major traffic stream may result. It is important to note that LOS F may not always result in long queues but may result in adjustments to normal gap acceptance behavior, which are more difficult to observe in the field than queuing.

4.2.2 *Street Segments*

Street segments were analyzed based upon the comparison of ADT to the City of Oceanside *Average Daily Vehicle Trips* table. This table provides segment capacities for different street classifications, based on traffic volumes and roadway characteristics. The street segments that are located in the County of San Diego were analyzed based on the capacities listed in *Tables 4-5*.

TABLE 4-4
CITY OF OCEANSIDE PROPOSED STANDARD STREET CLASSIFICATION
AVERAGE DAILY VEHICLE TRIPS

Road		Level of Service				
Class	X- Sections	A	B	C	D	E
Prime Arterial	104/124 *	36,000	42,000	48,000	54,000	60,000
Major Arterial (6 lanes) (4 lanes)	 104/124 * 80/100 *	 30,000 24,000	 35,000 28,000	 40,000 32,000	 45,000 36,000	 50,000 40,000
Secondary	64/84 *	15,000	17,500	20,000	22,500	25,000
Collector	40/60	5,250	6,125	7,000	7,875	8,750
Industrial	50/72	6,000	7,000	8,000	9,000	10,000
Local Street	40/60 36/56	** **	** **	1,200 500	** **	** **

Footnotes:

* Additional right-of-way at intersections shall be required to accommodate dual left turn lanes as necessary.

** Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

TABLE 6-2 (CONTINUED)
EXISTING STREET SEGMENT OPERATIONS

Segment	Existing Roadway Class [a]	LOS E Capacity [b]	Existing		
			Volume	LOS [c]	V/C [d]
E. Vista Way					
SR 76 to Gopher Canyon Rd	Town Collector	19,000	15,900	E	0.837
Gopher Canyon Rd to Osborne St	Town Collector	19,000	23,600	F	1.242
South of Osborne St	Town Collector	19,000	23,300	F	1.226
SR 76					
College Dr to N. Santa Fe Ave	4-Ln Expressway	53,300	45,000	D	0.844
N. Santa Fe Ave to Guajome Lake Rd	4-Ln Expressway	53,300	46,300	D	0.869
Guajome Lake Rd to Melrose Dr	4-Ln Expressway	53,300	38,700	C	0.726
East of Melrose Dr	4-Ln Expressway	53,300	36,100	C	0.677
West of E. Vista Way	2-Ln Highway	20,000	33,900	F	1.695
Guojome Lake Road [h]					
South of SR 76	Resi Collector	<4500	1,400	h	h
Jeffries Ranch Road					
North of Old Ranch Rd	Local Collector	8,750	1,800	A	0.206
N. River Road					
College Blvd to Redondo Dr	Major Rd	40,000	33,300	D	0.833
East of Vandegrift Blvd	Secondary Arterial	22,500	4,700	A	0.209
N. Santa Fe Avenue					
SR 76 to Mesa Dr	Major Rd	40,000	21,900	A	0.548
Mesa Dr to Melrose Dr	Major Rd	40,000	26,000	B	0.650
Melrose Dr to Osborne St	Town Collector	19,000	17,800	E	0.937
Osborne Street					
N. Santa Fe Ave to Hutchison St	Light Collector	16,200	5,600	C	0.346
Hutchison St to E. Vista Way	Light Collector	16,200	4,600	C	0.284

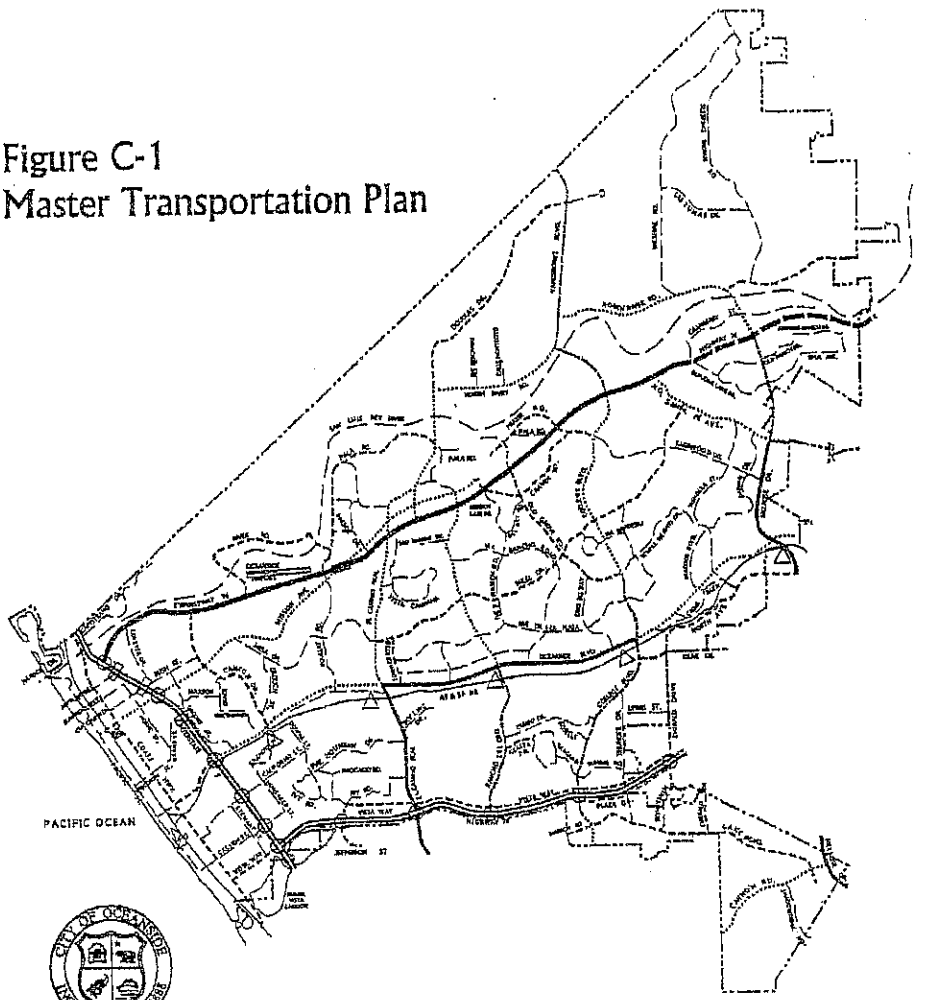
Footnotes:

a. Classification to which facility is currently built
b. Capacity of roadway at LOS E per City of Oceanside *General Plan, "Table C-2, Levels of Service for Various Street Classifications and Traffic Volumes"* or, San Diego County *Average Daily Vehicle Trips*, as appropriate.
c. Level of Service
d. Volume / Capacity ratio
e. City of Oceanside *General Plan* Proposed Roadway Classification.
f. Roadway segment does not exist
g. Melrose Drive is a 2-Lane roadway for a short distance and widens to a Four-lane facility.
h. Residential Collector, level of service is not determined.

General Notes:

Bold and shading indicates LOS E or worse condition.

Figure C-1
Master Transportation Plan



SYMBOL	CLASSIFICATION	RIGHT OF WAY	LANES	MAX GRADE	MIN. CURVE RADIUS	MIN. STREET SPACING
	FREEWAY	STATE DESIGN STANDARDS				
	EXPRESSWAY 76	STATE DESIGN STANDARDS				
	HIGHWAY 76	STATE DESIGN STANDARDS				
	PRIME ARTERIAL	124'	6	6%	1000'	2600'
	MAJOR ARTERIAL (6 LANES)	124'	6	6%	1000'	1200'
	MAJOR ARTERIAL (4 LANES)	100'	4	6%	1000'	1000'
	SECONDARY ARTERIAL	84'	4	6%	750'	800'
	COLLECTOR ROAD	60'-72'	2-4	8%	500'	300'
	RAILROAD	NOTE: RIGHT OF WAY WIDTH MAY BE REQUIRED AT INTERSECTIONS ON ARTERIAL STREETS				
△	OCEANSIDE -ESCONDIDO COMMUTER RAIL STATION	(1) VANDEGRIFT BLVD NORTH RIVER RD. FROM COLLEGE BLVD. TO NORTH CITY LIMITS IS 6 LANES - 3 LANES NORTHBOUND AND 3 LANES SOUTHBOUND. RIGHT OF WAY 112'				
○	INTERCHANGE	(2) DOUGLAS DR. FROM GARDEN BAY DR. TO VANDEGRIFT BLVD. IS TO BE 2 LANES.				
▭	OVERPASS					
▨	MULTI-MODAL TRANSIT CTR.					
	AIRPORT					
	BOUNDARY					

THESE ARE GENERAL MINIMUM STANDARDS.
SPECIFIC REQUIREMENTS MUST BE DETERMINED FOR EACH STREET AT THE TIME OF CONSTRUCTION.

NORTH

SCALE

PROPOSED ROADWAYS ARE DEPICTED ON THIS MASTER TRANSPORTATION PLAN ALONG GENERALLY DETERMINED ROUTES, AND SHOULD NOT BE INTERPRETED AS BEING PRECISELY ALIGNED. SUCH PRECISE ALIGNMENT SHALL BE DETERMINED AS DEVELOPMENT AND/OR NEED WARRANTS.

AMENDMENTS		
FILE NO.	ORDINANCE	DATE

The City's goal for an acceptable traffic service standard during AM and PM peak periods shall be Level of Service (LOS) C for all arterial and street links and LOS D for all intersections. These service values are defined by Table C-5, the 1985 edition of the Highway Capacity Manual or any subsequent edition thereof. This policy shall acknowledge that the aforementioned LOS standards may not be attainable on some existing facilities where abutting development or environmental constraints preclude acquisition of additional right-of-way needed for changes in facility classification. This policy acknowledges that the facility may not attain a LOS C in a practical manner. Any proposed development project that affects a street segment that operates, or is projected to operate at less than LOS C, regardless of peak hour analysis, the developer shall propose and prepare and provide for City review, various and creative measures to enhance roadway capacity to mitigate traffic impacts. Where various and creative measures to the problem have been prepared and will be implemented, yet are not sufficient to fully mitigate traffic impacts, then LOS D during peak hour periods is considered acceptable. LOS D is also considered acceptable as part of the SANDAG's Regional Growth Management Strategy (RGMS).

D. In order to achieve the level of service goals in Policy D, the City shall develop and institute a long-range funding program in which new land development shall bear its share of the associated costs and improvement requirements. Where existing deficiencies occur, the City will have to find funding sources to fund the improvements. Reciprocal agreements with abutting cities must be developed as needed to achieve acceptable levels of service due to development in adjacent cities.

E. The City shall adopt design standards for all streets in accordance with their functional classifications and recognized design guidelines. In developing these standards, the City should consider the design standards of Caltrans and of the American Association of State & Highway Transportation Officials (AASHTO). All streets within the City shall be designed in accordance with the adopted City of Oceanside design standards. Typical cross-sections and design criteria for the various street classifications are shown in the City's Engineers Design and Processing Manual.

F. The City may permit construction of private streets within individual development projects, provided that:

1. They are designed geometrically and structurally to meet City standards.
2. Only project occupants are served.
3. All emergency vehicle access requirements are satisfied.
4. The streets do not provide a direct through route between public streets.
5. The Homeowners' Associations and/or the property owners provide an acceptable program for financing regular street maintenance.

Private streets may be designed with narrower rights-of-way, subject to City review.

Table C-I
City of Oceanside
Street Design Criteria

Design Elements	6-Lane Prime Arterial	6-Lane Major Arterial	4-Lane Major Arterial	Secondary Arterial	Collector/ Industrial Street	Local Collector	Local Street	Cul-de-Sac Street	Private
Estimated Ultimate 24-Hour Traffic (Volume)	36,000 to 54,000	30,000 to 45,000	24,000 to 36,000	7,000 to 24,000	2,500 to 7,000	1,200 to 2,500	200 to 1200	Less than 200	Less than 500
Design Speed	60 mph	55 mph	55 mph	45 mph	35 mph	35 mph	30 mph	25 mph	25 mph
Stopping Sight Distance [1]	580'	500'	500'	360'	250'	250'	200'	150'	150'
Minimum Spacing of Intersections	2,600'	1,200'	1,200'	600'	300'	300'	200'	---	200'
Right-of-Way	124'	124'	100'	84'	60'-72'	60'	60'	56'	60'-56'
Curb-to-Curb Distance	104' 16' Median	104' 16' Median	80' 16' Median	64'	40'-50'	40'	40'	36'	40'-36'
Minimum Traffic Index	10	10	9	8	7	6	5	5	5
Minimum Structural Section [2]	5AC/6AB	5AC/6AB	5AC/6AB	4AC/6AB	4AC/6AB	4AC/6AB	3AC/4AB	3AC/4AB	3AC/4AB
Access to Adjoining Property	None	None	None	Where no other access is possible	Where no other access is possible	Limited access	OK	OK	OK
Minimum Horizontal Radius	1,000	1,000	1,000	750	500	500	350	200	200
Maximum Grade [3]	6%	8%	8%	8%	8%	10%	12%	12%[4]	12%
Minimum Grade	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
Maximum Intersection Grade	3%	3%	3%	4%	5%	5%	5%	5%	5%
Curb Return Radii	35'	35'	35'	35'	30'	30'	25'	40'	25'-35'
Street Lights Location per Standard Drawing No. N-4	30,000 lumen 200' staggered	30,000 lumen 200' staggered	30,000 lumen 200' staggered	30,000 lumen 250' staggered	9,500 lumen 250' one side or staggered	9,500 lumen 250' one side or staggered	9,500 lumen at all intersections 250' spacing one side of street	9,500 lumen at mid-block if less than 200'	9,500 lumen at all intersections 250' spacing one side of street

1. Stopping sight distance shall not be used for intersection sight distance. Refer to Caltrans Design Manual for intersection sight distance.
2. Minimum sections allowable. Actual sections are to be based on R-value tests.
3. Grades greater than allowed must have written approval of the City Engineer prior to approval of the tentative map or development plan.
4. Cul-de-sac turnarounds shall not exceed 5% maximum grade.

Table C-2
City of Oceanside
Levels of Service for Various Street Classifications and Traffic Volumes

Class	Road Cross Section	Level of Service				
		A	B	C	D	E
		Average Daily Vehicle Trips				
Prime Arterial	104/124*	36,000	42,000	48,000	54,000	60,000
Major Arterial (6 lanes)	104/124*	30,000	35,000	40,000	45,000	50,000
Major Arterial (5 lanes)	92/112*	27,000	31,500	36,000	40,500	45,000
Major Arterial (4 lanes)	80/100*	24,000	28,000	32,000	36,000	40,000
Secondary	64/84*	15,000	17,500	20,000	22,500	25,000
Collector	40/60	5,250	6,125	7,000	7,875	8,750
Industrial	50/72	6,000	7,000	8,000	9,000	10,000
Local Street	40/60	**	**	1,200	**	**
	36/56	**	**	500	**	**

* Additional right-of-way at intersection shall be required to accommodate dual left turn lanes as necessary.

** Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors.

Note: The Average Daily Vehicle Trips are general and are calculated based upon the 1985 Highway Capacity Manual.

Table C-3
Existing and Proposed Classification
Traffic Volumes and Levels of Service

Street Segment	Existing (VEH/DAY) (x000's)	Buildout (VEH/DAY) (x000's)	Current		Proposed		
			Class	LOS[1]	Class	LOS[2]	LOS[3]
Cannon Road							
West City Limits/Lake Blvd.	6.6	31.5	Major	C	Major 4 Lanes	C	N/A
Lake Blvd/Melrose Drive	11.5	30.7	Major	C	Major 4 Lanes	C	N/A
Melrose Drive/E. City Limits	N/A	19.1	Secondary	N/A	Secondary	C	N/A
Canyon Drive							
Oceanside Blvd/Mission Avenue	8.6	6.7	Secondary	A	Secondary	A	N/A
Mission Avenue/SR 76 Expressway	N/A	5.7	Secondary	N/A	Secondary	A	N/A
Cassidy Street							
Pacific/Hill	8.2	9.1	Collector	F	Collector	F	D
Hill/Stewart	4.7	8.2	Collector	E	Collector	E	D
Stewart/I-5	5.6	7.6	Collector	D	Collector	D	C
I-5/Hunsaker	3.6	5.9	Collector	B	Collector	B	N/A
Coast Highway (Hill Street)							
N. City Limits/SR 76 Expressway	16.0	16.8	Secondary	B	Secondary	B	N/A
SR 76 Expressway/Mission Avenue	19.1	21.6	Major	A	Secondary	D	N/A
Mission Avenue/Wisconsin Ave	20.1	13.2	Major	A	Secondary	A	N/A
Wisconsin Ave/Oceanside Blvd	25.0	22.2	Major	A	Secondary	D	N/A
Oceanside Blvd/Morse St	23.5	20.8	Major	A	Secondary	D	N/A
Morse St/Cassidy Street	20.0	26.7	Major	B	Secondary	F	D
Cassidy Street/Vista Way	18.0	31.4	Major	C	Secondary	F	D
Vista Way/South City Limits	17.0	33.7	Major	D	Secondary	F	D
College Boulevard							
South City Limits/Lake Blvd	N/A	46.5	Major	N/A	Major 4 Lanes	F	D
Lake Boulevard/Plaza Drive	15.0	48.3	Major	F	Major 6 Lanes	E	D
Plaza Drive/SR 78	31.5	45.9	Major	F	Major 6 Lanes	E	E
SR 78/Vista Way	34.0	49.0	Major	F	Major 6 Lanes	E	E
Vista Way/Barnard Drive	32.2	43.8	Major	F	Major 6 Lanes	D	N/A
Barnard Drive/Lewis Street	26.0	41.2	Major	E	Major 6 Lanes	D	N/A
Lewis Street/Olive Drive	27.1	33.3	Major	D	Major 6 Lanes	B	N/A
Olive Drive/Oceanside Blvd	40.1	47.6	Major	F	Major 6 Lanes	E	D

Table C-3
Existing and Proposed Classification
Traffic Volumes and Levels of Service

Street Segment	Existing (VEH/DAY) (x000's)	Buildout (VEH/DAY) (x000's)	Current		Proposed		
			Class	LOS[1]	Class	LOS[2]	LOS[3]
Oceanside Blvd/Old Grove Road	37.0	36.8	Major	E	Major 6 Lanes	C	N/A
Old Grove Road/Mesa Drive	37.0	20.4	Major	A	Major 4 Lanes	A	N/A
Mesa Drive/Frazee Drive	24.0	23.0	Major	A	Major 4 Lanes	A	N/A
Frazee Drive/SR 76 Expressway	24.0	24.1	Prime	A	Major 4 Lanes	B	N/A
SR 76 Expressway/North River Rd	28.0	36.6	Prime	B	Major 6 Lanes	C	N/A
Craven Road							
Old Grove Road/Frazee Road	N/A	4.0	N/A	N/A	Secondary	A	N/A
Douglas Drive							
SR 76 Expressway/Mission Avenue	N/A	21.4	N/A	N/A	Major 4 Lanes	A	N/A
Mission Avenue/El Camino Real	8.5	25.6	Major	B	Major 4 Lanes	B	N/A
El Camino Real/North River Road	33.6	37.4	Major	E	Major 4 Lanes	E	D
North River Road/Vandegrift Blvd	9.6	17.8	Secondary	C	Secondary	C	N/A
El Camino Real							
SR 78/Vista Way	38.0	64.7	Prime	F	Prime	F	F
Vista Way/Via Las Rosas	34.8	59.5	Prime	E	Prime	E	D
Via Las Rosas/Fire Mountain Dr	34.8	48.1	Prime	D	Prime	D	N/A
Fire Mountain Dr/Oceanside Blvd	32.0	49.2	Prime	D	Prime	D	N/A
Oceanside Blvd/Mesa Drive	36.5	32.9	Major	D	Major 4 Lanes	D	N/A
Mesa Drive/Mission Avenue	25.1	31.9	Major	C	Major 4 Lanes	C	N/A
Mission Avenue/Douglas Drive	22.1	25.9	Secondary	F	Major 4 Lanes	B	N/A
Emerald Drive							
Lake Blvd/Sunset Drive	7.5	5.9	Secondary	A	Secondary	A	N/A
Lewis Street/Olive Drive	19.0	17.8	Secondary	C	Secondary	C	N/A
Frazee Road							
Craven Road/Old Grove Road	N/A	20.5	Major	N/A	Secondary	D	N/A
Old Grove Road/SR 76 Expressway	N/A	20.9	Major	N/A	Secondary	D	N/A
SR 76 Expressway/Craven Road	N/A	15.2	Major	B	Secondary	B	N/A
Craven Road/College Blvd	N/A	12.4	Major	N/A	Secondary	A	N/A
Interstate 5							
Las Pulgas/Harbor Drive	108.0	153.3	Freeway	N/A	Freeway	N/A	N/A

Table C-3
Existing and Proposed Classification
Traffic Volumes and Levels of Service

Street Segment	Existing (VEH/DAY) (x000's)	Buildout (VEH/DAY) (x000's)	Current		Proposed		
			Class	LOS[1]	Class	LOS[2]	LOS[3]
Harbor Drive/SR 76 Expressway	128.0	174.6	Freeway	N/A	Freeway	N/A	N/A
SR 76 Expressway/Mission Ave	128.0	180.4	Freeway	N/A	Freeway	N/A	N/A
Mission Ave/Oceanside Blvd	144.0	204.0	Freeway	N/A	Freeway	N/A	N/A
Oceanside Blvd/California St	148.0	228.3	Freeway	N/A	Freeway	N/A	N/A
California St/Cassidy St	148.0	222.2	Freeway	N/A	Freeway	N/A	N/A
Cassidy St/SR 78	148.0	225.9	Freeway	N/A	Freeway	N/A	N/A
SR 78/Las Flores Road	155.0	215.8	Freeway	N/A	Freeway	N/A	N/A
Lake Boulevard							
West City Limits/College Blvd	N/A	12.6	Secondary	N/A	Secondary	A	N/A
College Blvd/Emerald Drive	11.9	19.7	Secondary	C	Secondary	C	N/A
Emerald Drive/Cannon Road	11.2	16.2	Secondary	B	Secondary	B	N/A
Melrose Drive							
South City Limits/Oceanside Blvd	17.0	50.9	Prime	D	Prime	D	N/A
Oceanside Blvd/Sagewood Drive	8.8	47.2	Prime	C	Prime	C	N/A
Sagewood Drive/N. Santa Fe	8.8	41.1	Prime	B	Prime	B	N/A
N. Santa Fe Ave/SR 76 Expressway	N/A	51.7	Prime	N/A	Major 6 Lane	F	D
SR 76 Expressway/Cranberry Street	N/A	31.7	Major	N/A	Major 4 Lane	C	N/A
Cranberry Street/N. River Road	N/A	27.6	Major	N/A	Major 4 Lane	B	N/A
Mesa Drive							
Mission Avenue/Crouch Street	5.5	7.5	Collector	D	Collector	D	N/A
Crouch Street/Foussat Street	5.2	6.9	Collector	C	Collector	C	N/A
Foussat Street/El Camino Real	5.2	10.2	Collector	F	Collector	F	D
El Camino Real/Rancho del Oro Dr	15.0	14.8	Secondary	A	Secondary	A	N/A
Rancho del Oro Dr/Old Grove Road	15.0	16.5	Secondary	B	Secondary	B	N/A
Old Grove Road/College Blvd	15.0	14.5	Secondary	A	Secondary	A	N/A
College Blvd/Sagewood Drive	8.5	8.8	Secondary	A	Secondary	A	N/A
Sagewood Drive/N. Santa Fe Ave	8.5	13.1	Secondary	A	Secondary	A	N/A
Mission Avenue							
Pacific/Coast Highway (Hill Street)	11.8	6.9	N/A	N/A	Secondary	A	N/A
Coast Highway (Hill St)/Horne St	20.0	15.2	Major	A	Major 4 Lanes	A	N/A
Horne Street/I-5	21.0	30.2	Major	C	Major 4 Lanes	C	N/A
I-5/Brooks Street	47.0	32.5	Major	D	Major 4 Lanes	D	N/A
Brooks Street/Canyon Drive	47.0	32.1	Major	D	Major 4 Lanes	D	N/A

Table C-3
Existing and Proposed Classification
Traffic Volumes and Levels of Service

Street Segment	Existing (VEH/DAY) (x000's)	Buildout (VEH/DAY) (x000's)	Current		Proposed		
			Class	LOS[1]	Class	LOS[2]	LOS[3]
Canyon Drive/Mesa Drive	43.0	28.9	Major	C	Major 4 Lanes	C	N/A
Mesa Drive/Foussat Street	43.0	23.3	Major	A	Major 4 Lanes	A	N/A
Foussat Street/El Camino Real	43.0	40.1	Major	F	Major 4 Lanes	F	E
El Camino Real/Douglas Drive	38.0	37.9	Major	E	Major 4 Lanes	E	D
Douglas Drive/Rancho del Oro Dr	27.0	35.2	Major	D	Major 4 Lanes	D	N/A
Rancho del Oro Dr/Craven Road	27.5	34.4	Major	D	Major 4 Lanes	D	N/A
North Avenue							
Olive Drive/Temple Heights	N/A	9.1	Secondary	N/A	Secondary	A	N/A
Temple Heights/Melrose Drive	N/A	7.7	Secondary	N/A	Secondary	A	N/A
North River Road							
E. City Limits/Sleeping Indian	6.6	22.4	Secondary	D	Secondary	D	N/A
Sleeping Indian/Melrose Drive	6.6	28.3	Secondary	F	Secondary	F	D
Melrose Drive/Vandegrift Blvd	6.6	33.9	Secondary	F	Major 4 Lanes	D	N/A
Vandegrift Blvd/College Blvd	24.0	30.8	Major	C	Major 5 Lanes	C	N/A
College Blvd/Douglas Drive	26.0	23.3	Major	A	Major 4 Lanes	A	N/A
North Santa Fe Avenue							
SR 76 Expressway/Mesa Drive	12.6	15.6	Major	A	Major 4 Lanes	A	N/A
Mesa Drive/Melrose Drive	12.6	28.6	Major	C	Major 4 Lanes	C	N/A
Melrose Drive/E. City Limits	12.6	22.7	Major	A	Major 4 Lanes	A	N/A
Oceanside Boulevard							
Pacific Street/Coast Hwy (Hill St)	5.3	6.9	Collector	C	Collector	C	N/A
Coast Highway (Hill Street)/I-5	12.6	22.9	Major	A	Secondary	E	D
I-5/State Tree Drive	34.8	35.4	Major	D	Major 4 Lanes	D	N/A
State Tree Drive/Crouch Street	34.8	30.5	Major	C	Major 4 Lanes	C	N/A
Crouch Street/Foussat Street	29.0	29.8	Major	C	Major 4 Lanes	C	N/A
Foussat Street/El Camino Real	28.0	29.2	Major	C	Major 4 Lanes	C	N/A
El Camino Real/Rancho del Oro Dr	22.6	40.4	Major	F	Prime	B	N/A
Rancho del Oro Dr/Via Rancho	25.0	44.2	Major	F	Prime	C	N/A
Via Rancho/Avenida del Oro	25.0	41.6	Major	F	Prime	B	N/A
Avenida del Oro/College Blvd	27.3	48.2	Major	F	Prime	D	N/A
College Blvd/Temple Heights	26.5	45.3	Major	F	Major 4 Lanes	F	E
Temple Heights/Melrose Drive	18.0	36.4	Major	E	Major 4 Lanes	E	D
Melrose Drive/East City Limits	17.0	31.6	Major	C	Major 4 Lanes	C	N/A

Table C-3
Existing and Proposed Classification
Traffic Volumes and Levels of Service

Street Segment	Existing (VEH/DAY) (x000's)	Buildout (VEH/DAY) (x000's)	Current		Proposed		
			Class	LOS[1]	Class	LOS[2]	LOS[3]
Old Grove Road							
College Blvd/Avenida del Oro	N/A	14.2	Secondary	A	Secondary	A	N/A
Avenida del Oro/Mesa Drive	N/A	15.7	Secondary	B	Secondary	B	N/A
Mesa Drive/Craven Road	2.4	17.8	Major	A	Secondary	C	N/A
Craven Road/SR 76 Expressway	N/A	6.1	Major	A	Secondary	A	N/A
SR 76 Expressway/Frazee Drive	N/A	6.6	Major	A	Secondary	A	N/A
Olive Drive							
College Blvd/Emerald Drive	10.5	23.8	Secondary	E	Secondary	E	D
Pala Road							
Mission Avenue/Foussat Drive	N/A	16.5	N/A	N/A	Secondary	B	N/A
Foussat Drive/Douglas Drive	N/A	9.3	N/A	N/A	Secondary	A	N/A
Plaza Drive							
College Blvd/Emerald Drive	18.5	22.4	Secondary	D	Secondary	D	N/A
Rancho del Oro Drive							
SR 78/Glaser Drive	12.0	48.2	Secondary	F	Major 6 Lanes	E	C
Glaser Drive/Oceanside Blvd	12.0	46.1	Secondary	F	Major 6 Lanes	E	C
Oceanside Blvd/Mesa Drive	N/A	29.0	Secondary	F	Major 4 Lanes	C	N/A
Mesa Drive/SR 76 Expressway	8.0	17.7	Secondary	C	Major 4 Lanes	A	N/A
SR 76 Expressway/Mission Ave	8.0	7.0	Secondary	A	Major 4 Lanes	A	N/A
State Route 76 Expressway							
I-5/Canyon Drive	N/A	65.4	Expressway	N/A	Expressway	N/A	N/A
Canyon Drive/Mission Avenue	N/A	64.4	Expressway	N/A	Expressway	N/A	N/A
Mission Avenue/Douglas Drive	N/A	47.8	Expressway	N/A	Expressway	N/A	N/A
Douglas Drive/Rancho del Oro Rd	N/A	36.7	Expressway	N/A	Expressway	N/A	N/A
Rancho del Oro Road/Old Grove Rd	N/A	31.6	Expressway	N/A	Expressway	N/A	N/A
Old Grove Road/Frazee Road	N/A	26.8	Expressway	N/A	Expressway	N/A	N/A
Frazee Road/College Blvd	N/A	31.0	Expressway	N/A	Expressway	N/A	N/A
College Blvd/N. Santa Fe Avenue	N/A	35.7	Expressway	N/A	Expressway	N/A	N/A
N. Santa Fe Avenue/Melrose Drive	N/A	22.3	Expressway	N/A	Expressway	N/A	N/A
Melrose Drive/East City Limits	N/A	40.8	Expressway	N/A	Expressway	N/A	N/A

Table C-3
Existing and Proposed Classification
Traffic Volumes and Levels of Service

Street Segment	Existing (VEH/DAY) (x000's)	Buildout (VEH/DAY) (x000's)	Current		Proposed		
			Class	LOS[1]	Class	LOS[2]	LOS[3]
State Route 78							
I-5/Jefferson Street	116.0	150.5	Expressway	N/A	Expressway	N/A	N/A
Jefferson Street/El Camino Real	105.0	155.7	Expressway	N/A	Expressway	N/A	N/A
El Camino Real/Rancho del Oro Dr	124.0	164.7	Expressway	N/A	Expressway	N/A	N/A
Rancho del Oro Dr/College Blvd	124.0	167.5	Expressway	N/A	Expressway	N/A	N/A
College Blvd/Plaza Drive	101.0	138.0	Expressway	N/A	Expressway	N/A	N/A
Plaza Drive/Emerald Drive	101.0	156.3	Expressway	N/A	Expressway	N/A	N/A
Emerald Drive/Melrose Drive	106.0	157.3	Expressway	N/A	Expressway	N/A	N/A
Vandegrift Boulevard							
North River Road/Douglas Drive	20.3	31.3	Major	C	Major 5 Lanes*	B	N/A
Douglas Drive/North City Limits	19.8	14.3	Major	A	Major 5 Lanes*	A	N/A
Vista Way							
Coast Highway (Hill Street)/I-5	19.9	32.6	Secondary	F	Secondary	F	D
Ivy Road/El Camino Real	19.4	23.3	Secondary	D	Secondary	E	D
El Camino Real/Rancho del Oro Dr	18.5	22.5	Secondary	E	Secondary	D	N/A
Rancho del Oro Dr/College Blvd	16.0	24.7	Secondary	E	Secondary	E	D
College Blvd/Westbound SR78 Ramps	18.5	29.3	Secondary	D	Secondary	C	N/A**
Westbound SR78 Ramps/Emerald Drive	18.5	18.3	Secondary	C	Secondary	C	N/A

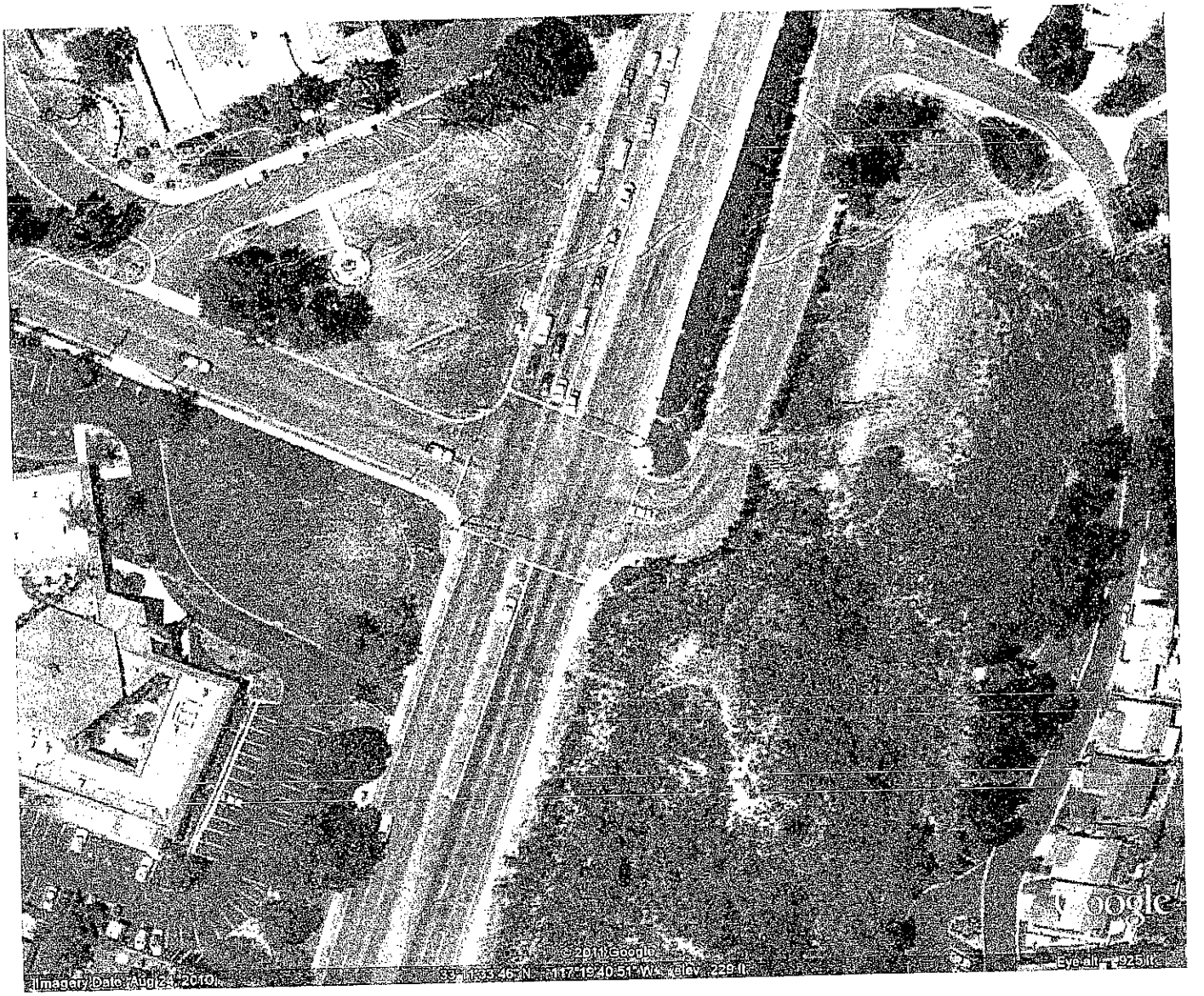
* Vandegrift Boulevard to be built as 5-lane major arterial with 2 lanes southbound and 3 lanes northbound.

** This segment will have 3 lanes eastbound and 2 lanes westbound. An exclusive right-turn-lane for eastbound traffic approaching westbound SR78 Ramps will be provided.

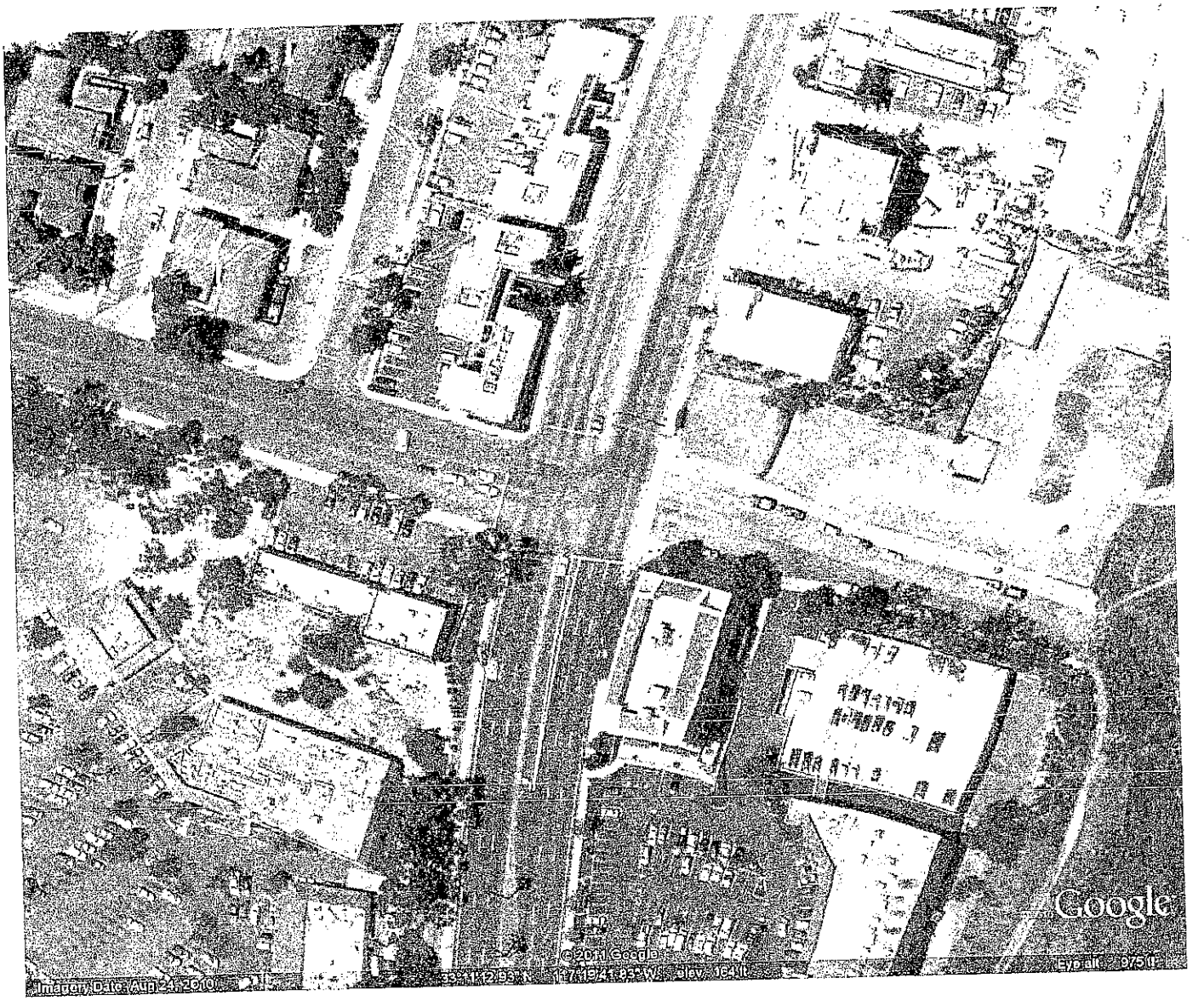
1 Current Classification LOS with buildout traffic volumes using ADT analysis.

2 Proposed classification LOS with buildout traffic volumes using ADT analysis.

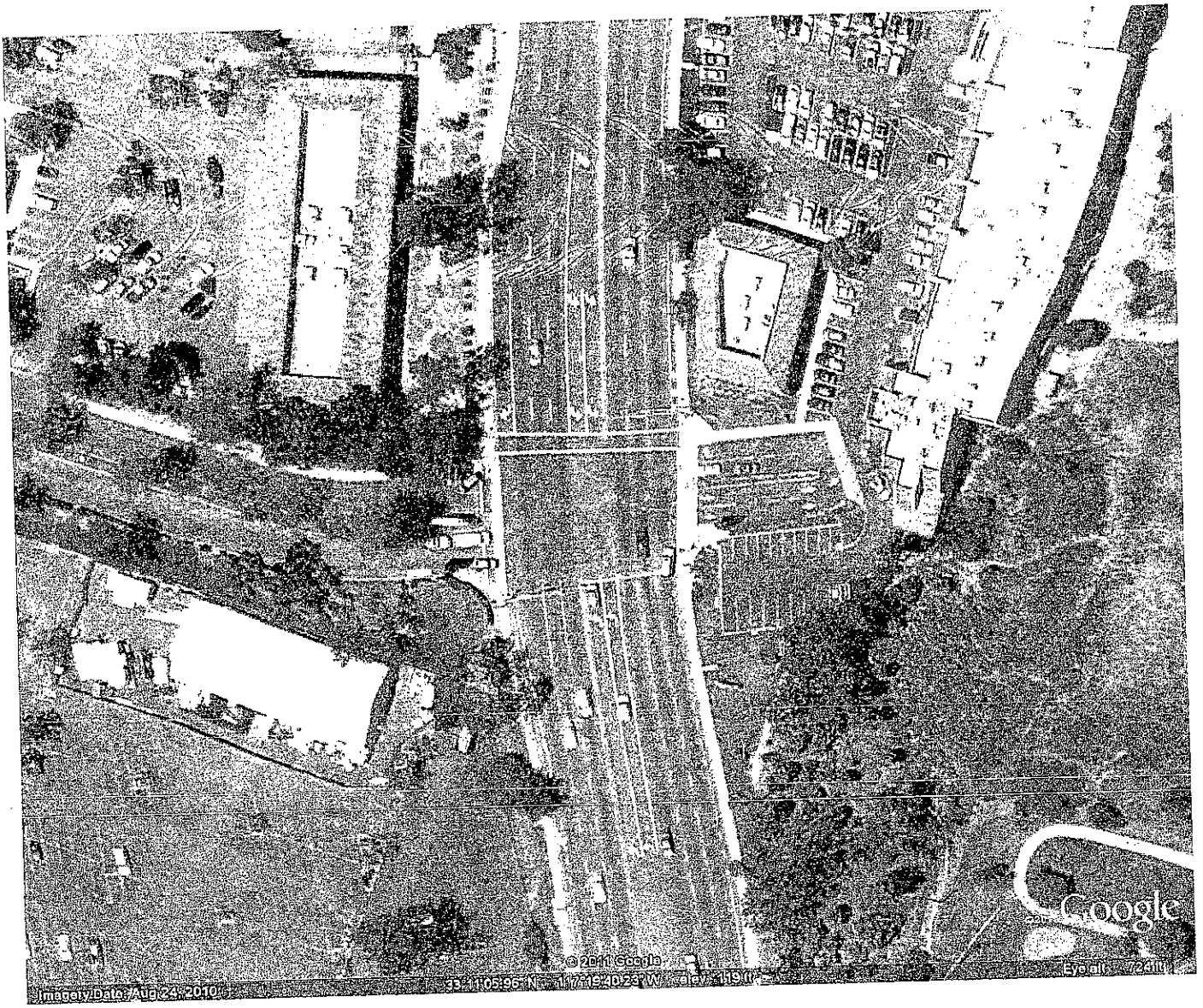
3 Peak Hour LOS with proposed classification and buildout traffic volumes using the Highway Capacity Manual Method. (See discussion under the Master Transportation Plan subsection of the Plan section.)



(1) El Camino Real / Fire Mountain Dr. + Skyline Dr.



(2) El Camino Real / Via Las Rosas



(3) El Camino Real / Camino Town

APPENDIX F

TRAFFIC COUNTS AND SIGNAL TIMING

TUESDAY - JUNE 5, 2018 CITY: OCEANSIDE PROJECT: PTD18-0608-01

EL CAMINO REAL – FIRE MOUNTAIN DRIVE TO VIA LAS ROSAS

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	62		22					12:00	316		371				
00:15	62		16					12:15	321		356				
00:30	36		18					12:30	311		341				
00:45	32	192	19	75			267	12:45	310	1258	348	1416			2674
01:00	24		9					13:00	298		362				
01:15	18		8					13:15	304		388				
01:30	22		12					13:30	351		334				
01:45	17	81	14	43			124	13:45	342	1295	359	1443			2738
02:00	14		16					14:00	355		314				
02:15	17		12					14:15	384		290				
02:30	17		9					14:30	343		344				
02:45	9	57	10	47			104	14:45	372	1454	307	1255			2709
03:00	9		20					15:00	477		339				
03:15	9		16					15:15	461		304				
03:30	9		45					15:30	431		370				
03:45	24	51	43	124			175	15:45	488	1857	365	1378			3235
04:00	17		31					16:00	498		322				
04:15	20		49					16:15	511		379				
04:30	26		98					16:30	511		375				
04:45	44	107	110	288			395	16:45	545	2065	373	1449			3514
05:00	31		141					17:00	535		387				
05:15	41		170					17:15	547		386				
05:30	67		248					17:30	533		376				
05:45	90	229	293	852			1081	17:45	515	2130	328	1477			3607
06:00	102		243					18:00	522		320				
06:15	114		300					18:15	448		319				
06:30	150		418					18:30	387		260				
06:45	192	558	478	1439			1997	18:45	364	1721	265	1164			2885
07:00	171		473					19:00	327		252				
07:15	199		508					19:15	315		239				
07:30	210		491					19:30	281		200				
07:45	281	861	494	1966			2827	19:45	264	1187	182	873			2060
08:00	215		430					20:00	242		198				
08:15	241		437					20:15	218		219				
08:30	233		432					20:30	248		146				
08:45	234	923	376	1675			2598	20:45	231	939	135	698			1637
09:00	234		342					21:00	246		137				
09:15	188		384					21:15	223		121				
09:30	229		331					21:30	195		97				
09:45	224	875	389	1446			2321	21:45	177	841	82	437			1278
10:00	211		338					22:00	175		71				
10:15	219		339					22:15	130		80				
10:30	243		331					22:30	102		55				
10:45	251	924	353	1361			2285	22:45	119	526	43	249			775
11:00	250		301					23:00	98		35				
11:15	253		320					23:15	80		33				
11:30	264		317					23:30	67		40				
11:45	334	1101	369	1307			2408	23:45	55	300	39	147			447
Total Vol.		5959		10623			**16582**			15573		11986			**27559**

	Daily Totals				
	NB	SB	EB	WB	Combined
	21532	22609			**44141**

	AM			PM		
Split %	35.9%	64.1%	**37.6%**	56.5%	43.5%	**62.4%**
Peak Hour	11:45	07:00	**07:15**	16:45	16:45	**16:45**
Volume	1282	1966	**2828**	2160	1522	**3682**
P.H.F.	0.96	0.97	**0.91**	0.99	0.98	**0.99**

PACIFIC TECHNICAL DATA

TUESDAY - JUNE 5, 2018 CITY: OCEANSIDE PROJECT: PTD18-0608-01

EL CAMINO REAL – VIA LAS ROSAS TO CAMINO TOWN

AM Period	NB		SB		EB	WB		PM Period	NB		SB		EB	WB	
00:00	48		26					12:00	285		373				
00:15	44		17					12:15	294		332				
00:30	36		16					12:30	278		324				
00:45	39	167	21	80			247	12:45	302	1159	350	1379			2538
01:00	29		15					13:00	317		361				
01:15	27		11					13:15	319		329				
01:30	16		22					13:30	349		321				
01:45	22	94	25	73			167	13:45	326	1311	329	1340			2651
02:00	11		19					14:00	364		333				
02:15	15		16					14:15	352		277				
02:30	7		16					14:30	297		343				
02:45	15	48	11	62			110	14:45	362	1375	279	1232			2607
03:00	18		17					15:00	406		326				
03:15	16		19					15:15	447		322				
03:30	14		50					15:30	402		313				
03:45	23	71	46	132			203	15:45	472	1727	363	1324			3051
04:00	24		38					16:00	475		314				
04:15	19		48					16:15	496		345				
04:30	35		79					16:30	447		365				
04:45	44	122	123	288			410	16:45	510	1928	358	1382			3310
05:00	46		124					17:00	493		378				
05:15	39		171					17:15	504		370				
05:30	66		255					17:30	506		357				
05:45	104	255	292	842			1097	17:45	479	1982	309	1414			3396
06:00	82		252					18:00	480		300				
06:15	123		326					18:15	427		277				
06:30	152		433					18:30	344		272				
06:45	198	555	439	1450			2005	18:45	339	1590	258	1107			2697
07:00	169		450					19:00	332		225				
07:15	210		483					19:15	301		251				
07:30	222		465					19:30	268		200				
07:45	301	902	435	1833			2735	19:45	273	1174	179	855			2029
08:00	242		424					20:00	251		173				
08:15	266		411					20:15	209		192				
08:30	240		407					20:30	211		154				
08:45	249	997	351	1593			2590	20:45	203	874	123	642			1516
09:00	239		318					21:00	231		131				
09:15	203		350					21:15	235		126				
09:30	232		313					21:30	194		80				
09:45	242	916	336	1317			2233	21:45	176	836	89	426			1262
10:00	203		332					22:00	201		66				
10:15	222		283					22:15	138		85				
10:30	254		298					22:30	117		51				
10:45	264	943	298	1211			2154	22:45	126	582	58	260			842
11:00	247		310					23:00	112		35				
11:15	247		325					23:15	75		39				
11:30	259		299					23:30	75		49				
11:45	324	1077	353	1287			2364	23:45	54	316	33	156			472
Total Vol.		6147		10168			**16315**			14854		11517			**26371**

Daily Totals				
NB	SB	EB	WB	Combined
21001	21685			**42686**

	AM			PM		
Split %	37.7%	62.3%	**38.2%**	56.3%	43.7%	**61.8%**
Peak Hour	11:45	06:45	**07:15**	16:45	16:30	**16:45**
Volume	1181	1837	**2782**	2013	1471	**3476**
P.H.F.	0.91	0.95	**0.94**	0.99	0.97	**0.99**

PACIFIC TECHNICAL DATA

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE:	LOCATION:	OCEANSIDE	PROJECT #:	PTD18-0608-01
6/5/18	NORTH & SOUTH:	EL CAMINO REAL	LOCATION #:	1
TUESDAY	EAST & WEST:	FIRE MOUNTAIN DRIVE	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE PED

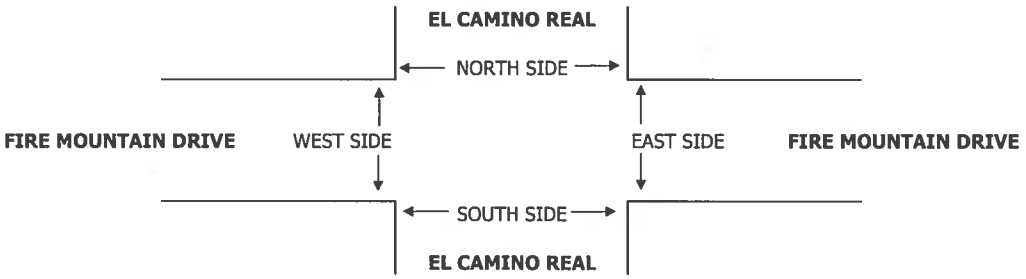
AM / PM / MD / OTHER / OTHER

▲ N ◄ W E ► S ▼

		NORTHBOUND EL CAMINO REAL			SOUTHBOUND EL CAMINO REAL			EASTBOUND FIRE MOUNTAIN DRIVE			WESTBOUND FIRE MOUNTAIN DRIVE			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM	8	160	5	5	458	22	21	1	3	22	7	12	724
	7:15 AM	5	175	6	6	455	25	22	2	10	27	7	11	751
	7:30 AM	9	187	10	2	466	28	12	1	10	19	10	11	765
	7:45 AM	14	261	12	4	487	38	23	4	6	20	14	15	898
	8:00 AM	17	191	5	9	390	28	28	4	7	28	12	16	735
	8:15 AM	14	206	11	9	372	24	23	4	34	22	3	3	725
	8:30 AM	18	189	11	8	396	22	19	7	15	23	3	13	724
	8:45 AM	25	188	10	7	339	35	25	4	17	25	4	12	691
	VOLUMES	110	1,557	70	50	3,363	222	173	27	102	186	60	93	6,013
	APPROACH %	6%	90%	4%	1%	93%	6%	57%	9%	34%	55%	18%	27%	
	APP/DEPART	1,737	/	1,823	3,635	/	3,651	302	/	147	339	/	392	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	45	814	33	21	1,798	119	85	11	33	94	43	53	3,149
	APPROACH %	5%	91%	4%	1%	93%	6%	66%	9%	26%	49%	23%	28%	
	PEAK HR FACTOR		0.777			0.916			0.827			0.848		0.877
	APP/DEPART	892	/	952	1,938	/	1,925	129	/	65	190	/	207	0
PM	4:00 PM	10	450	37	17	289	26	49	7	10	21	6	3	925
	4:15 PM	18	433	29	11	338	30	39	7	18	15	10	9	957
	4:30 PM	16	481	33	11	336	19	43	11	23	17	8	18	1,016
	4:45 PM	16	502	19	20	345	35	39	11	9	17	5	8	1,026
	5:00 PM	11	492	18	10	327	19	59	14	32	24	9	6	1,021
	5:15 PM	14	523	28	12	355	28	49	7	9	13	3	9	1,050
	5:30 PM	21	471	30	12	341	22	42	11	8	27	4	7	996
	5:45 PM	14	501	24	9	299	26	37	10	10	11	6	9	956
	VOLUMES	120	3,853	218	102	2,630	205	357	78	119	145	51	69	7,947
	APPROACH %	3%	92%	5%	3%	90%	7%	64%	14%	21%	55%	19%	26%	
	APP/DEPART	4,191	/	4,279	2,937	/	2,894	554	/	398	265	/	376	0
	BEGIN PEAK HR		4:30 PM											
	VOLUMES	57	1,998	98	53	1,363	101	190	43	73	71	25	41	4,113
	APPROACH %	3%	93%	5%	3%	90%	7%	62%	14%	24%	52%	18%	30%	
	PEAK HR FACTOR		0.953			0.948			0.729			0.797		0.979
	APP/DEPART	2,153	/	2,229	1,517	/	1,507	306	/	194	137	/	183	0

U-TURNS

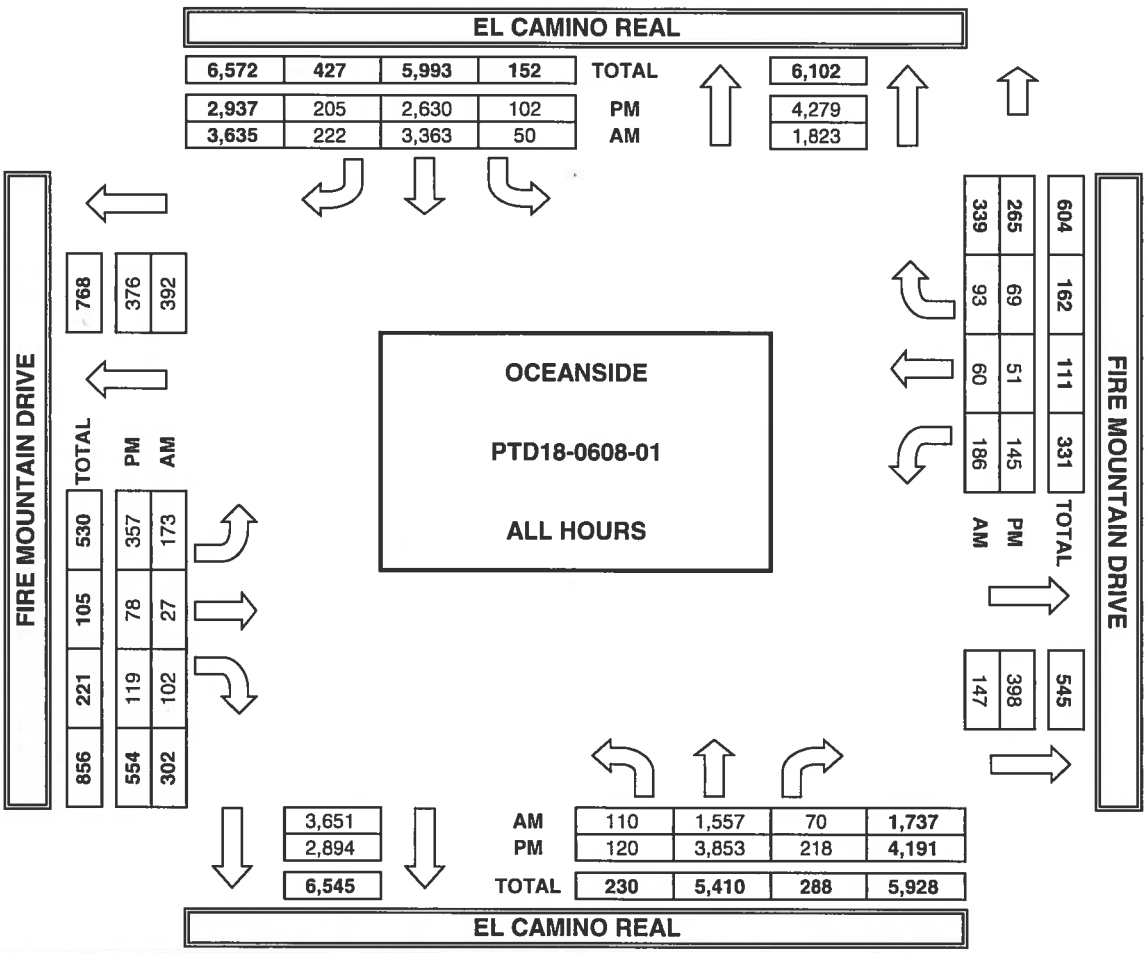
NB X	SB X	EB X	WB X	TTL
1	1			2
1				1
	1			1
				0
	1			1
1	1			2
1	1			2
2	2			4
6	7	0	0	13
1	4			5
2				2
				0
2	6			8
3	2			5
2	4			6
1	2			3
3				3
14	18	0	0	32

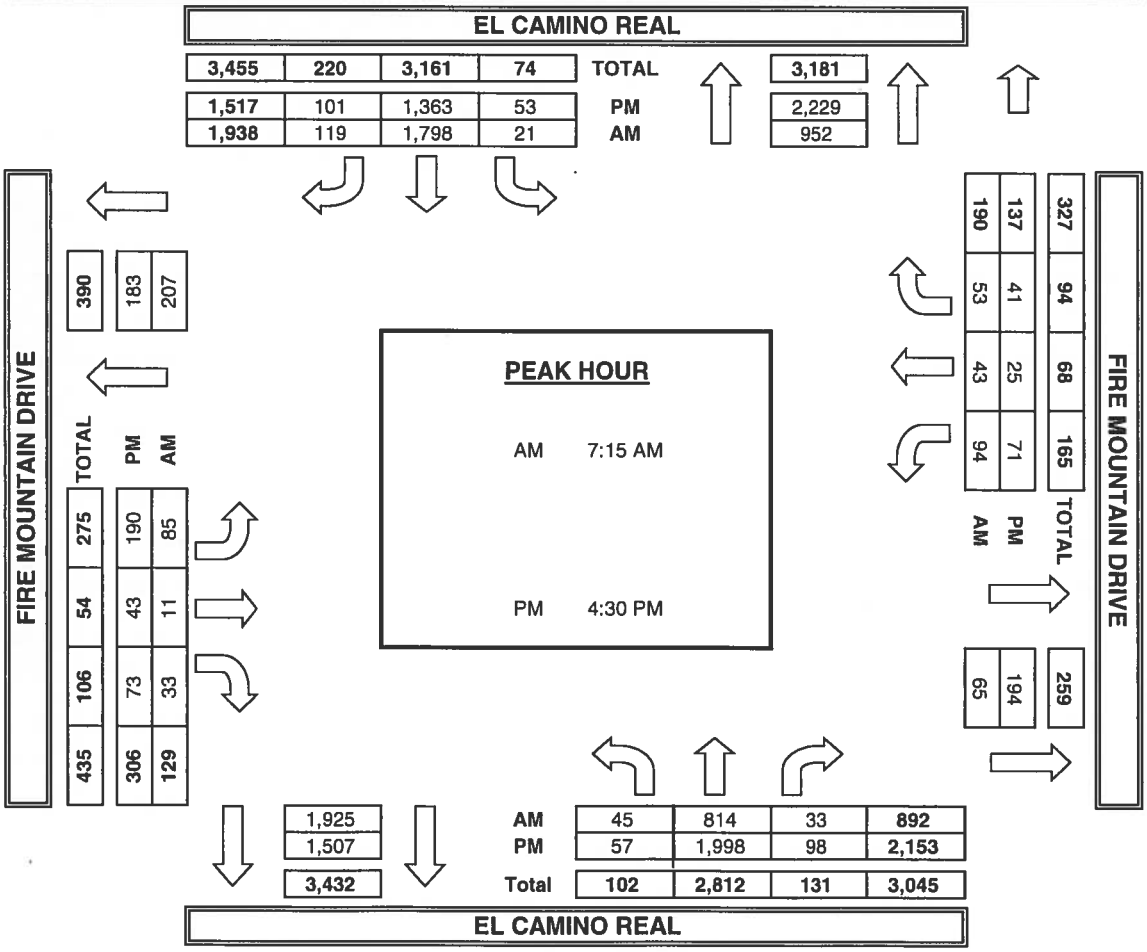


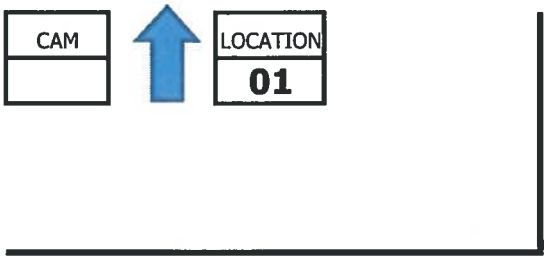
		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM				2	2					0					0
	7:15 AM					0					0					0
	7:30 AM		1	1	2	4					0	1			1	2
	7:45 AM		1	1		2					0					0
	8:00 AM		1		1	2					0					0
	8:15 AM					0					0					0
	8:30 AM					0					0					0
	8:45 AM				1	1					0					0
	TOTAL	0	3	2	6	11	0	0	0	0	0	1	0	0	1	2
PM	4:00 PM					0					0					0
	4:15 PM					0					0				1	1
	4:30 PM		1		1	2					0					0
	4:45 PM		1			1					0					0
	5:00 PM					0					0					0
	5:15 PM					0					0					0
	5:30 PM		1			1					0					0
	5:45 PM					0					0					0
	TOTAL	0	3	0	1	4	0	0	0	0	0	0	0	0	1	1

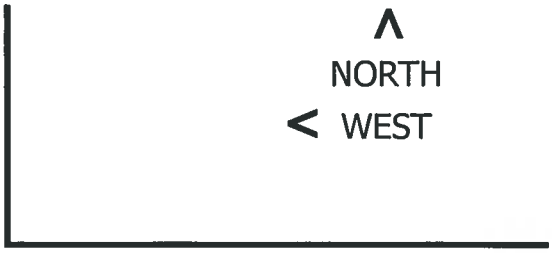
PACIFIC TECHNICAL DATA

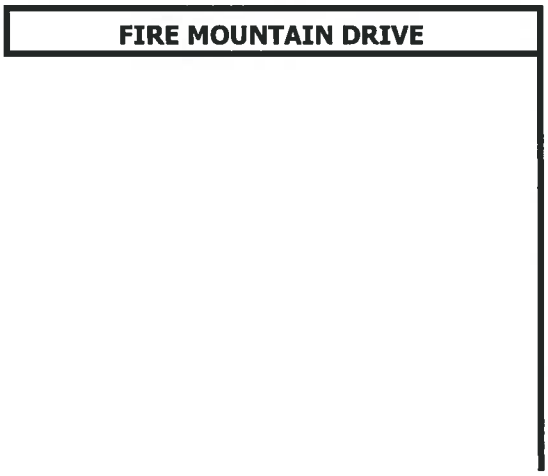
TURNING MOVEMENT COUNTS

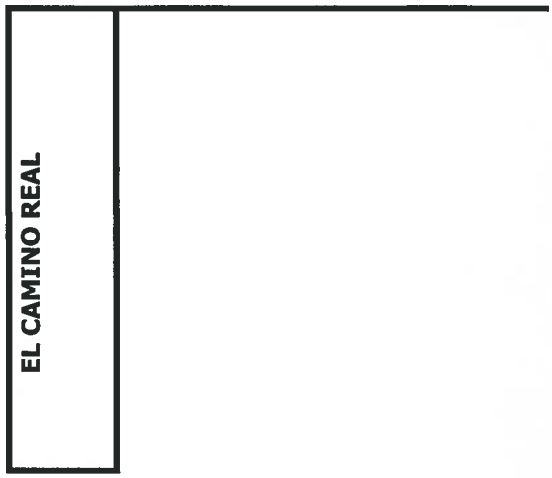












NORTH/SOUTH STREET	EL CAMINO REAL
EAST/WEST STREET	FIRE MOUNTAIN DRIVE

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
0700												
1600												

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

DATE:	LOCATION:	OCEANSIDE	PROJECT #:	PTD18-0608-01
6/5/18	NORTH & SOUTH:	EL CAMINO REAL	LOCATION #:	2
TUESDAY	EAST & WEST:	VIA LAS ROSAS	CONTROL:	SIGNAL

NOTES:

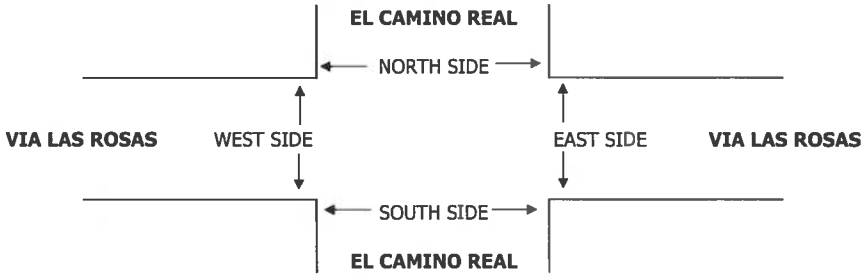
INCLUDES BIKE PED

AM
PM
MD
OTHER
OTHER

N ▲ S ▼ W ◄ E ►

		NORTHBOUND EL CAMINO REAL			SOUTHBOUND EL CAMINO REAL			EASTBOUND VIA LAS ROSAS			WESTBOUND VIA LAS ROSAS			
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
AM	7:00 AM	9	145	4	4	428	37	15	0	27	0	0	1	670
	7:15 AM	11	203	3	3	479	34	12	0	20	0	0	0	765
	7:30 AM	16	210	2	11	434	41	13	2	18	2	0	1	750
	7:45 AM	20	276	7	7	417	54	10	0	19	1	1	2	814
	8:00 AM	20	204	9	7	387	44	15	1	25	2	1	5	720
	8:15 AM	19	235	6	13	394	34	11	0	15	4	0	3	734
	8:30 AM	9	215	7	4	394	34	15	0	19	3	0	6	706
	8:45 AM	16	227	9	16	306	40	13	0	23	6	0	3	659
	VOLUMES	120	1,715	47	65	3,239	318	104	3	166	18	2	21	5,818
	APPROACH %	6%	91%	2%	2%	89%	9%	38%	1%	61%	44%	5%	51%	
	APP/DEPART	1,882	/	1,840	3,622	/	3,423	273	/	115	41	/	440	0
	BEGIN PEAK HR		7:15 AM											
	VOLUMES	67	893	21	28	1,717	173	50	3	82	5	2	8	3,049
	APPROACH %	7%	91%	2%	1%	90%	9%	37%	2%	61%	33%	13%	53%	
	PEAK HR FACTOR		0.809			0.929			0.823			0.469		0.936
	APP/DEPART	981	/	951	1,918	/	1,804	135	/	52	15	/	242	0
PM	4:00 PM	26	446	2	6	286	41	43	0	27	4	0	5	886
	4:15 PM	26	458	7	16	320	43	60	0	23	2	0	14	969
	4:30 PM	19	420	4	7	323	49	62	0	36	7	3	14	944
	4:45 PM	19	491	4	15	316	50	61	1	24	8	3	7	999
	5:00 PM	18	479	1	11	339	43	49	0	31	13	0	21	1,005
	5:15 PM	28	474	3	8	322	44	52	0	28	4	0	9	972
	5:30 PM	27	477	2	10	331	40	64	2	26	6	1	7	993
	5:45 PM	31	436	3	10	280	46	49	1	19	1	0	11	887
	VOLUMES	194	3,681	26	83	2,517	356	440	4	214	45	7	88	7,655
	APPROACH %	5%	94%	1%	3%	85%	12%	67%	1%	33%	32%	5%	63%	
	APP/DEPART	3,901	/	4,209	2,956	/	2,776	658	/	113	140	/	557	0
	BEGIN PEAK HR		4:45 PM											
	VOLUMES	92	1,921	10	44	1,308	177	226	3	109	31	4	44	3,969
	APPROACH %	5%	95%	0%	3%	86%	12%	67%	1%	32%	39%	5%	56%	
	PEAK HR FACTOR		0.984			0.973			0.918			0.581		0.987
	APP/DEPART	2,023	/	2,191	1,529	/	1,448	338	/	57	79	/	273	0

U-TURNS				
NB	SB	EB	WB	TTL
X	X	X	X	
1				1
		1		1
		2		2
		4		4
		3		3
		4		4
1		4		5
1		6		7
3	0	24	0	27
1		2		3
3				3
1				1
1		3		4
		2		2
3		3		6
1		2		3
1		2		3
11	0	14	0	25



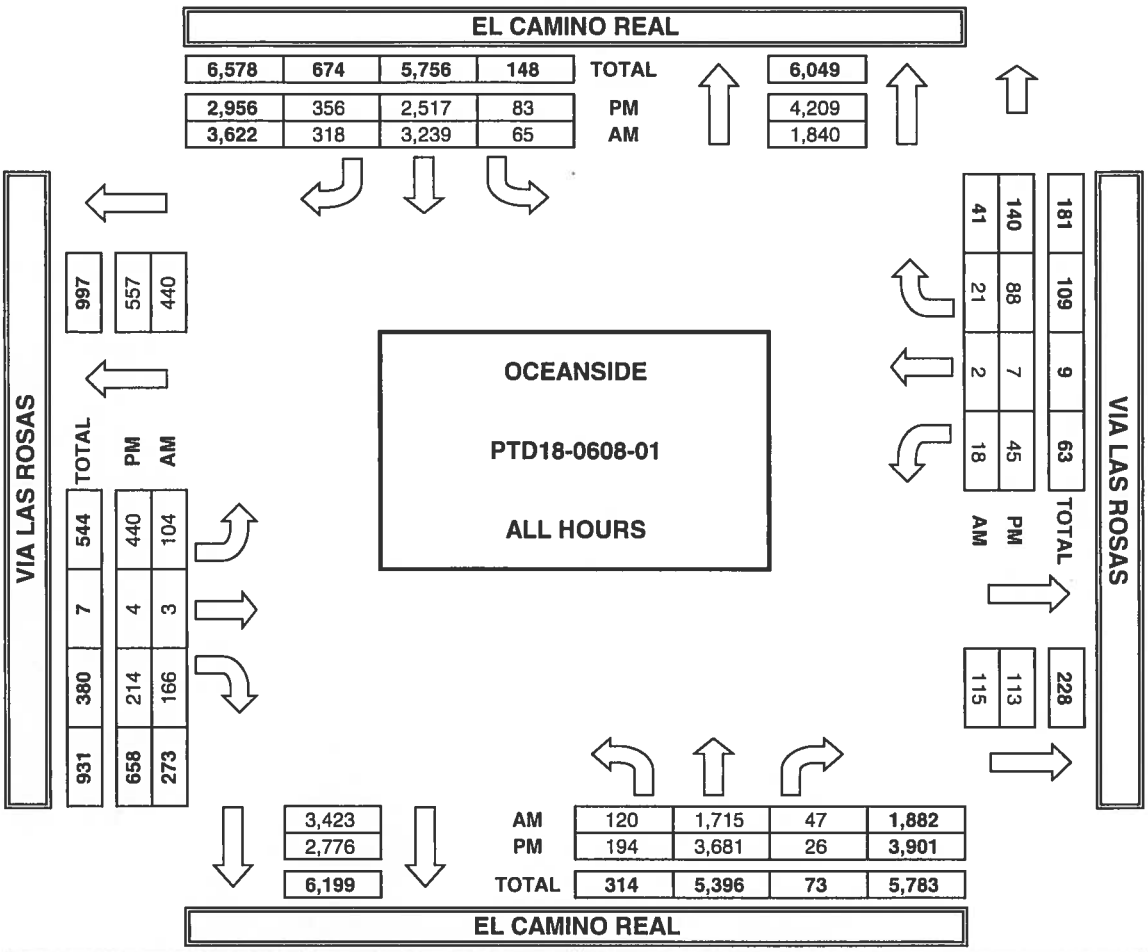
		PEDESTRIAN CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
AM	7:00 AM					0
	7:15 AM					0
	7:30 AM					0
	7:45 AM		1			1
	8:00 AM		1		1	2
	8:15 AM		1			1
	8:30 AM		2			2
	8:45 AM			1		1
	TOTAL	0	5	1	1	7
PM	4:00 PM					0
	4:15 PM				1	1
	4:30 PM		1	1	1	3
	4:45 PM		1	2		3
	5:00 PM				1	1
	5:15 PM				1	1
	5:30 PM					0
	5:45 PM					0
	TOTAL	0	2	3	4	9

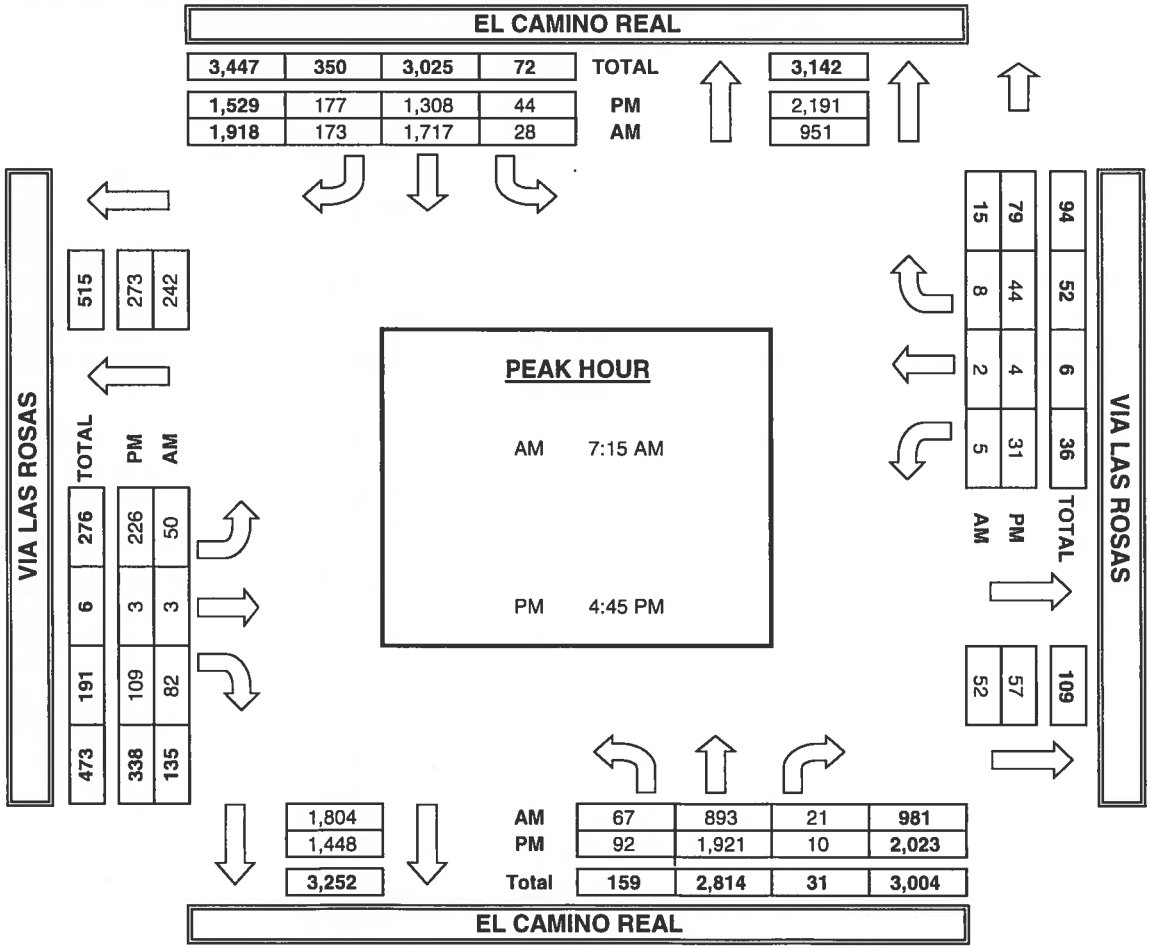
PEDESTRIAN ACTIVATIONS				
N SIDE	S SIDE	E SIDE	W SIDE	TOTAL
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	0	0

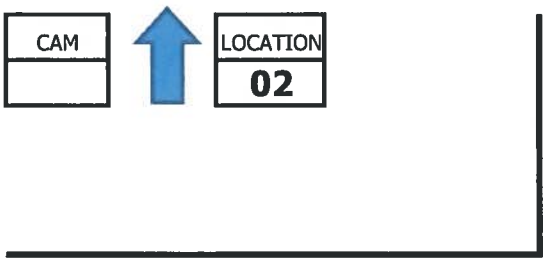
BICYCLE CROSSINGS				
NS	SS	ES	WS	TOTAL
		1		1
				0
			1	1
				0
				0
				0
				0
		1		1
0	0	2	1	3
			1	1
				0
				0
				0
				0
				0
				0
				0
				0
0	0	0	1	1

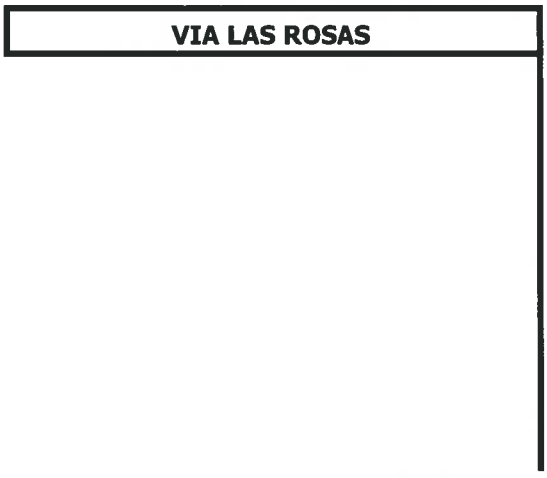
PACIFIC TECHNICAL DATA

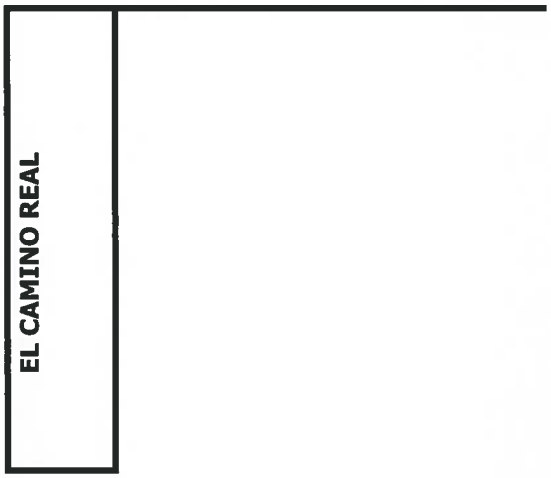
TURNING MOVEMENT COUNTS











NORTH/SOUTH STREET	EL CAMINO REAL
EAST/WEST STREET	VIA LAS ROSAS

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
0700												
1600												

INTERSECTION TURNING MOVEMENT COUNTS

PREPARED BY: PACIFIC TECHNICAL DATA

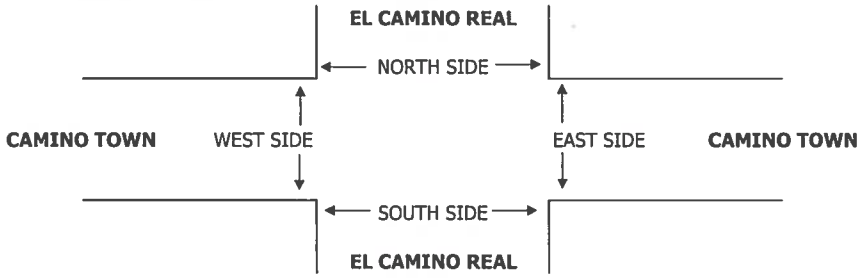
DATE:	LOCATION:	OCEANSIDE	PROJECT #:	PTD18-0608-01
6/5/18	NORTH & SOUTH:	EL CAMINO REAL	LOCATION #:	3
TUESDAY	EAST & WEST:	CAMINO TOWN	CONTROL:	SIGNAL

NOTES:

INCLUDES BIKE PED

AM / PM / MD / OTHER / OTHER — ▲ N ◄ W E ► S ▼

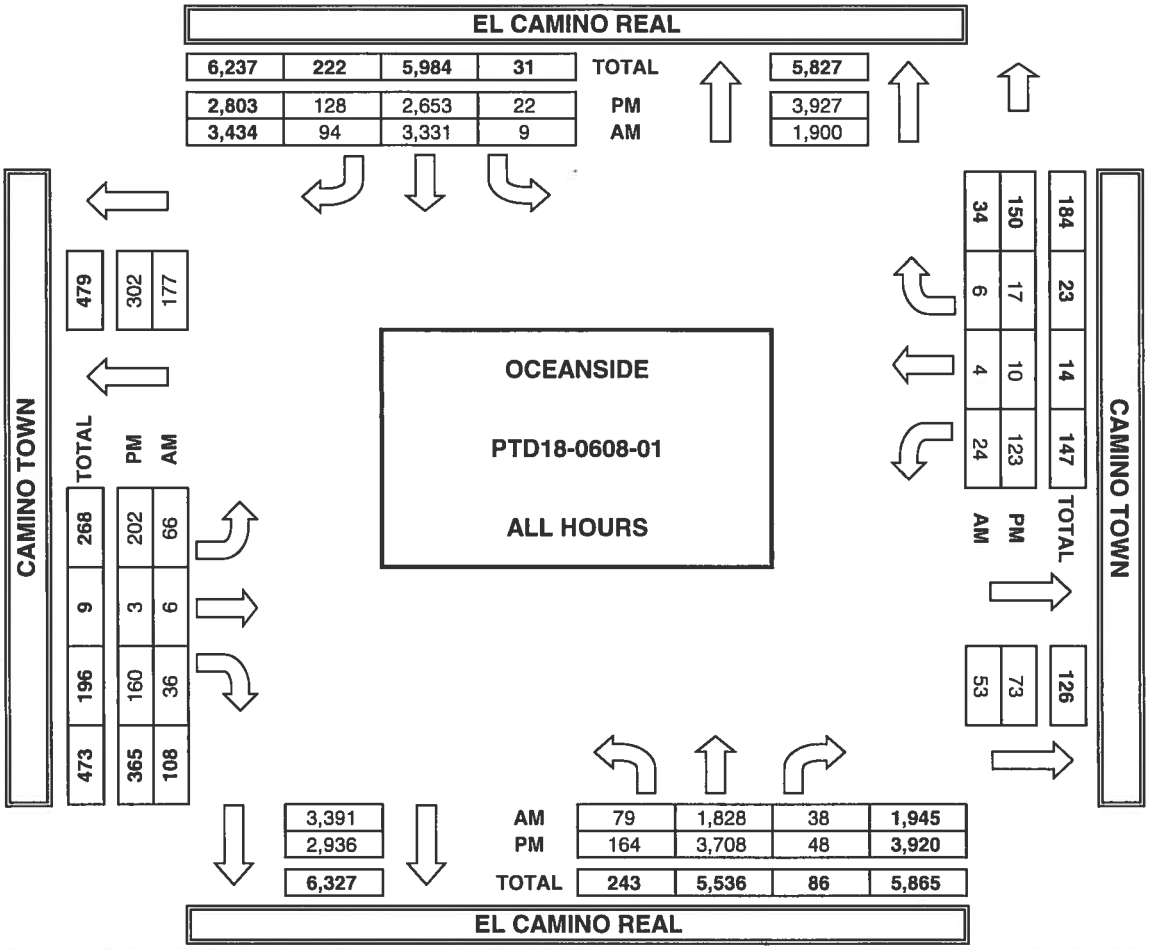
		NORTHBOUND EL CAMINO REAL			SOUTHBOUND EL CAMINO REAL			EASTBOUND CAMINO TOWN			WESTBOUND CAMINO TOWN				U-TURNS				
	LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL	NB X	SB X	EB X	WB X	TTL
AM	7:00 AM	3	173	0	0	440	6	4	0	1	0	0	0	627	2				2
	7:15 AM	6	191	5	1	461	6	10	0	6	1	0	0	687	1	1			2
	7:30 AM	8	215	4	0	464	13	6	0	8	0	0	1	719	1				1
	7:45 AM	12	297	7	1	410	21	2	2	1	1	0	2	756	1				1
	8:00 AM	11	225	2	0	421	12	14	0	2	1	3	0	691	1				1
	8:15 AM	10	254	10	1	404	5	8	2	6	4	0	1	705	2				2
	8:30 AM	14	232	5	3	384	18	10	0	7	9	0	0	682					0
	8:45 AM	15	241	5	3	347	13	12	2	5	8	1	2	654					0
	VOLUMES	79	1,828	38	9	3,331	94	66	6	36	24	4	6	5,521	8	1	0	0	9
	APPROACH %	4%	94%	2%	0%	97%	3%	61%	6%	33%	71%	12%	18%						
	APP/DEPART	1,945	/	1,900	3,434	/	3,391	108	/	53	34	/	177	0					
	BEGIN PEAK HR		7:30 AM																
	VOLUMES	41	991	23	2	1,699	51	30	4	17	6	3	4	2,871					
	APPROACH %	4%	94%	2%	0%	97%	3%	59%	8%	33%	46%	23%	31%						
	PEAK HR FACTOR		0.835			0.918			0.797			0.650		0.949					
	APP/DEPART	1,055	/	1,025	1,752	/	1,722	51	/	29	13	/	95	0					
PM	4:00 PM	21	444	10	1	297	11	30	1	19	17	2	2	855	8		1		9
	4:15 PM	16	483	6	1	319	23	17	0	19	14	2	1	901	2				2
	4:30 PM	23	427	9	4	339	14	17	1	21	16	0	3	874	3				3
	4:45 PM	14	486	7	7	346	16	25	0	18	13	0	2	934	1				1
	5:00 PM	26	451	4	2	357	17	22	0	26	20	3	3	931	8		1		9
	5:15 PM	25	482	1	2	363	17	27	0	14	13	1	2	947	4				4
	5:30 PM	21	484	9	4	329	17	27	0	26	19	0	2	938	6				6
	5:45 PM	18	451	2	1	303	13	37	1	17	11	2	2	858	3				3
	VOLUMES	164	3,708	48	22	2,653	128	202	3	160	123	10	17	7,238	35	0	2	0	37
	APPROACH %	4%	95%	1%	1%	95%	5%	55%	1%	44%	82%	7%	11%						
	APP/DEPART	3,920	/	3,927	2,803	/	2,936	365	/	73	150	/	302	0					
	BEGIN PEAK HR		4:45 PM																
	VOLUMES	86	1,903	21	15	1,395	67	101	0	84	65	4	9	3,750					
	APPROACH %	4%	95%	1%	1%	94%	5%	55%	0%	45%	83%	5%	12%						
	PEAK HR FACTOR		0.978			0.967			0.873			0.750		0.990					
	APP/DEPART	2,010	/	2,013	1,477	/	1,544	185	/	36	78	/	157	0					

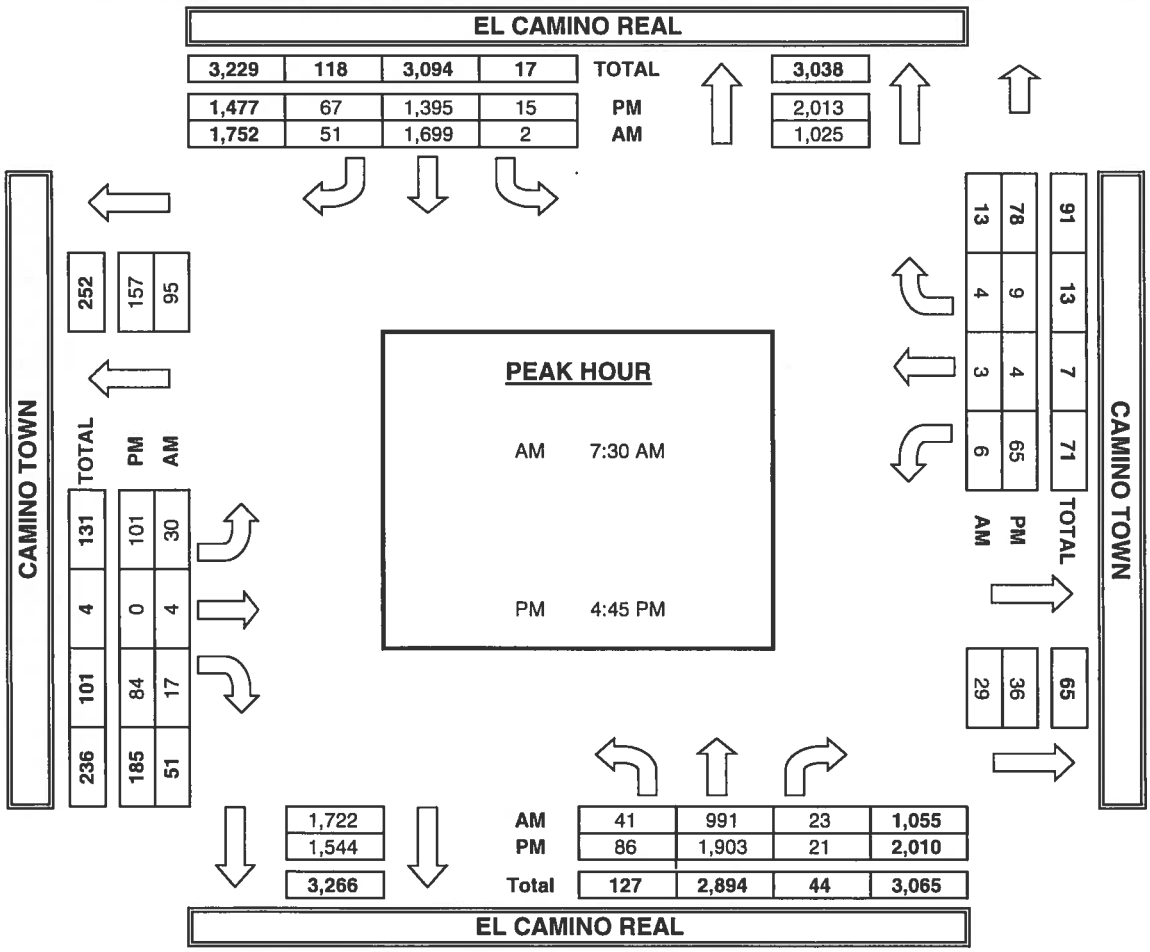


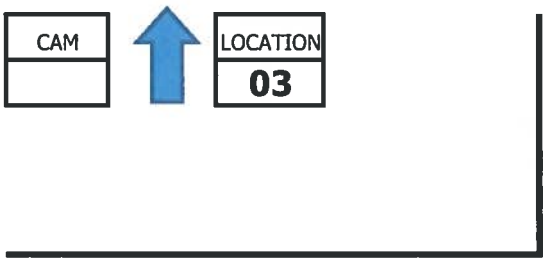
		PEDESTRIAN CROSSINGS					PEDESTRIAN ACTIVATIONS					BICYCLE CROSSINGS				
		N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	N SIDE	S SIDE	E SIDE	W SIDE	TOTAL	NS	SS	ES	WS	TOTAL
AM	7:00 AM		1		2	3					0			1		1
	7:15 AM				2	2					0					0
	7:30 AM	1				1					0				2	2
	7:45 AM					0					0					0
	8:00 AM		1	1		2					0					0
	8:15 AM				1	1					0					0
	8:30 AM	1			1	2					0					0
	8:45 AM				1	1					0			1		1
	TOTAL	2	2	1	7	12	0	0	0	0	0	0	0	2	2	4
PM	4:00 PM	2		2		4					0					0
	4:15 PM				1	1					0					0
	4:30 PM		2			2					0					0
	4:45 PM				1	1					0					0
	5:00 PM					0					0					0
	5:15 PM				1	1					0					0
	5:30 PM				1	1					0					0
	5:45 PM					0					0				1	1
	TOTAL	2	2	2	4	10	0	0	0	0	0	0	0	0	1	1

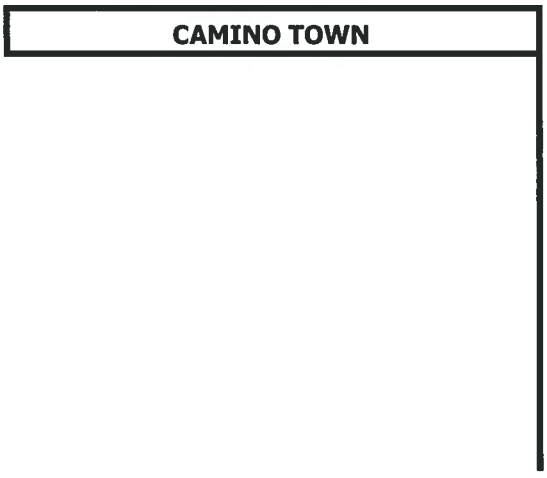
PACIFIC TECHNICAL DATA

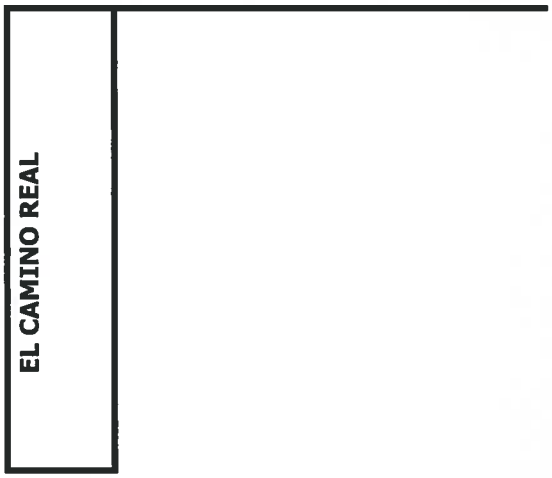
TURNING MOVEMENT COUNTS











NORTH/SOUTH STREET	EL CAMINO REAL
EAST/WEST STREET	CAMINO TOWN

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
0700												
1600												

INTERSECTION: El Camino and Camino Town

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **18**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **4/3/2018 14:20**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	2	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	18	<C+0+3>
QuicNet Channel	Serial:COM36:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

Row	Column Numbers —> / Phase Names —>	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	5	0	5	0	5	0	2
1	Ped FDW	0	11	0	26	0	14	0	2
2	Min Green	5	10	3	15	5	10	3	8
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0
5	Veh Extension	3.0	5.5	0.5	3.0	3.0	5.5	0.5	3.0
6	Max Gap	3.0	7.5	0.5	3.0	3.0	7.5	0.5	3.0
7	Min Gap	3.0	3.0	0.5	3.0	3.0	3.0	0.5	3.0
8	Max Limit	15	50	17	30	30	50	17	10
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0
D	Reduce Every	0.0	0.6	1.0	0.0	0.0	0.6	1.0	0.0
E	Yellow Change	4.1	4.8	3.0	3.6	4.1	4.8	3.0	3.6
F	Red Clear	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0

Phase Timing - Bank 1 <F Page>

E	
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	5
EV-B Delay	0
EV-B Clear	5
EV-C Delay	0
EV-C Clear	5
EV-D Delay	0
EV-D Clear	5
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Preempt Timing

F		Row
Permit	12_456_8	0
Red Lock	1___5___	1
Yellow Lock	_____	2
Min Recall	_2___6__	3
Ped Recall	_____	4
View Set Peds	-----	5
Rest In Walk	_____	6
Red Rest	_____	7
Dual Entry	_2_4_6_8	8
Max Recall	_____	9
Soft Recall	_____	A
Max 2	_____	B
Cond. Service	_____	C
Man Cntrl Calls	_____	D
Yellow Start	_2___6__	E
First Phases	___4___8	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

INTERSECTION: El Camino and Camino Town

Coordination <C Page>

Row	Column Numbers --->	Plan 1	2	3	4	5	6	7	8	9	Row
	Plan Name --->										
0	Cycle Length	0	150	150	130	110	0	150	140	100	0
1	Phase 1 - ForceOff	0	110	110	105	70	0	110	105	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	0	0	0	0	0	0	0	0	25	3
4	Phase 4 - ForceOff	0	90	90	85	55	0	90	85	40	4
5	Phase 5 - ForceOff	0	50	50	40	15	0	50	40	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	0	0	0	0	0	0	0	0	25	7
8	Phase 8 - ForceOff	0	90	90	85	55	0	90	45	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	0	65	65	35	20	0	65	35	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	12	12	12	12	12	12	12	12	0	D
E	Hold Release	255	255	255	255	255	255	255	255	0	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

(* = Coordination Recall)

Sync Phases <C Page>

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync	2 6	2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync	2 6	5
6	Plan 6 - Sync	2 6	6
7	Plan 7 - Sync	2 6	7
8	Plan 8 - Sync	2 6	8
9	Plan 9 - Sync	2 6	9
A	Coord Ped *	8	A
B	NEMA Hold		B
C			C
D			D
E			E
F			F

Configuration <E Page>

Row	Column Numbers --->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	
C	EV-C Phases	1 6
D	EV-D Phases	
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	4
Ped 8P	8
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

Row		F	Row
0	Free Lag	2 4 6 8	0
1	Plan 1 - Lag	2 4 6 8	1
2	Plan 2 - Lag	2 45 8	2
3	Plan 3 - Lag	2 45 8	3
4	Plan 4 - Lag	2 45 8	4
5	Plan 5 - Lag	2 45 8	5
6	Plan 6 - Lag	2 45 8	6
7	Plan 7 - Lag	2 45 8	7
8	Plan 8 - Lag	2 45 8	8
9	Plan 9 - Lag	2 45 8	9
A	Coord Max *		A
B	Coord Lag *	5	B
C			C
D			D
E			E
F			F

INTERSECTION: El Camino and Camino Town

Row	Time	Plan	Offset	Day of Week
0	06:30	5	A	1234567
1	09:30	4	A	1234567
2	10:45	8	A	7
3	12:00	3	A	6
4	15:00	3	A	2345
5	15:00	4	A	7
6	18:00	2	A	6
7	18:30	4	A	2345
8	19:00	E	A	12345_7
9	21:00	4	A	6
A	22:00	E	A	6
B	00:00	0	0	
C	00:00	0	0	
D	00:00	0	0	
E	00:00	0	0	
F	00:00	0	0	

TOD Coordination
<9 Key with C+D+9=0>

Time	Funct.	Day of Week	Column F Phases/Bits
00:00	0	1234567	
00:00	0	1234567	
00:00	0	1234567	
00:00	0	1234567	
00:00	0		
00:00	0		
00:00	0		
00:00	0		
00:00	0		
00:00	0		
00:00	0		
00:00	0		
00:00	0		
00:00	0		
00:00	0		
00:00	0		

TOD Function
<7 Key>

<D Page>

Time	Plan	Offset	Day of Week
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

Holiday # 1
TOD Coordination
<9 Key with C+D+9=1>

Time	Plan	Offset	Day of Week
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	
00:00	0	0	

Holiday # 2
TOD Coordination
<9 Key with C+D+9=2>

Time	Plan	Offset	Day of Week	Row
00:00	0	0		0
00:00	0	0		1
00:00	0	0		2
00:00	0	0		3
00:00	0	0		4
00:00	0	0		5
00:00	0	0		6
00:00	0	0		7
00:00	0	0		8
00:00	0	0		9
00:00	0	0		A
00:00	0	0		B
00:00	0	0		C
00:00	0	0		D
00:00	0	0		E
00:00	0	0		F

Holiday # 3
TOD Coordination
<9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	0.0	0.0		I-6U	3
8	7.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	7.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	0.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	0.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	0.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 – – – –	1234____
C	13 14 15 16 17 18 19 20	12345678
D	– – – – 21 22 23 24	____5678
E	– – – – – – – –	1234____
F	– 25 26 27 28 – – –	_2345___

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications

(If set to a non-zero value, parity will be disabled)

INTERSECTION: El Camino and Camino Town

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	5	0	5	0	5	0	2
1	Ped FDW	0	11	0	26	0	14	0	2
2	Min Green	4	10	3	5	4	10	3	5
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0
5	Veh Extension	3.0	5.5	0.5	3.0	3.0	5.5	0.5	3.0
6	Max Gap	3.0	7.5	0.5	3.0	3.0	7.5	0.5	3.0
7	Min Gap	3.0	3.0	0.5	3.0	3.0	3.0	0.5	3.0
8	Max Limit	15	50	17	30	30	50	17	10
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0
D	Reduce Every	0.0	0.6	1.0	0.0	0.0	0.6	1.0	0.0
E	Yellow Change	3.2	4.3	3.0	3.6	3.2	4.3	3.0	3.6
F	Red Clear	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0

Phase Timing - Bank 2 <F Page>

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	5	0	5	0	5	0	2
1	Ped FDW	0	11	0	26	0	14	0	2
2	Min Green	4	10	3	5	4	10	3	5
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	2.5	0.0	0.0	0.0	2.5	0.0	0.0
5	Veh Extension	3.0	5.5	0.5	3.0	3.0	5.5	0.5	3.0
6	Max Gap	3.0	7.5	0.5	3.0	3.0	7.5	0.5	3.0
7	Min Gap	3.0	3.0	0.5	3.0	3.0	3.0	0.5	3.0
8	Max Limit	15	50	17	30	30	50	17	10
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0
D	Reduce Every	0.0	0.6	1.0	0.0	0.0	0.6	1.0	0.0
E	Yellow Change	3.2	4.3	3.0	3.6	3.2	4.3	3.0	3.6
F	Red Clear	1.0	1.0	0.0	1.0	1.0	1.0	0.0	1.0

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0	Delay Only --->	0	---	---	---	---	---	---	---	---
1		0	0							
2		0	0							
3		0	0							
4		0	0							
5		0	0							
6		0	0							
7		0	0							
8		0	0							
9	Limited Service Int. --->	0	0							
A		---	0							
B		0	0							
C		0	0							
D		0	0							
E		0	0							
F		0	0							

Special Event Schedule <C Page with F+9+F=22>

<--- **Limited Service Interval** (Set Dwell = 255)

INTERSECTION: El Camino & Fire Mountain

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **20**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **1/22/2018 12:29**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	3	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	20	<C+0+3>
QuicNet Channel	Serial:COM36:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

	Phase							
Column Numbers --->	1	2	3	4	5	6	7	8
Row / Phase Names --->								
0 Ped Walk	0	7	7	7	0	7	0	0
1 Ped FDW	0	14	22	22	0	14	0	0
2 Min Green	5	10	8	8	5	10	3	5
3 Type 3 Limit	0	99	0	0	0	99	0	0
4 Added Initial	0.0	2.0	0.0	0.0	0.0	2.0	0.0	0.0
5 Veh Extension	3.0	5.0	3.0	3.0	3.0	5.0	0.5	3.0
6 Max Gap	3.0	7.0	3.0	3.0	3.0	7.0	0.5	3.0
7 Min Gap	3.0	4.0	3.0	3.0	3.0	4.0	0.5	3.0
8 Max Limit	20	50	20	30	20	50	17	30
9 Max Limit 2	20	50	30	30	20	50	30	30
A ------	0	0	0	0	0	0	0	0
B Call To Phase	0	0	0	0	0	0	0	0
C Reduce By	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.0
D Reduce Every	0.0	1.0	0.0	0.0	0.0	1.0	1.0	0.0
E Yellow Change	4.1	4.8	4.1	4.1	4.1	4.8	3.0	3.6
F Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0

Phase Timing - Bank 1 <F Page>

E	
RR-1 Delay	0
RR-1 Clear	10
EV-A Delay	0
EV-A Clear	10
EV-B Delay	0
EV-B Clear	10
EV-C Delay	0
EV-C Clear	10
EV-D Delay	0
EV-D Clear	10
RR-2 Delay	0
RR-2 Clear	10
View EV Delay	---
View EV Clear	---
View RR Delay	---
View RR Clear	---

Preempt Timing

F		Row
Permit	123456__	0
Red Lock	_____	1
Yellow Lock	_____	2
Min Recall	_2___6__	3
Ped Recall	_____	4
View Set Peds	-----	5
Rest In Walk	_____	6
Red Rest	_____	7
Dual Entry	_2___6__	8
Max Recall	_____	9
Soft Recall	_____	A
Max 2	_____	B
Cond. Service	_____	C
Man Cntrl Calls	_____	D
Yellow Start	_2___6__	E
First Phases	__3____	F

Phase Functions <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

Coordination <C Page>

Row	Column Numbers ---->	Plan 1	2	3	4	5	6	7	8	9	Row
	Plan Name ---->										
0	Cycle Length	100	100	100	100	100	100	100	100	100	0
1	Phase 1 - ForceOff	55	60	60	63	60	61	65	65	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	20	15	20	25	20	25	25	25	25	3
4	Phase 4 - ForceOff	40	40	40	40	40	40	40	40	40	4
5	Phase 5 - ForceOff	55	60	60	61	60	63	65	65	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	20	15	20	25	20	25	25	25	25	7
8	Phase 8 - ForceOff	40	40	40	40	40	40	40	40	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	0	0	0	0	0	0	0	0	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	12	12	12	12	12	12	12	12	0	D
E	Hold Release	255	255	255	255	255	255	255	255	0	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

(* = Coordination Recall)

Sync Phases <C Page>

	E	Row
		0
Plan 1 - Sync	2 6	1
Plan 2 - Sync	2 6	2
Plan 3 - Sync	2 6	3
Plan 4 - Sync	2 6	4
Plan 5 - Sync	2 6	5
Plan 6 - Sync	2 6	6
Plan 7 - Sync	2 6	7
Plan 8 - Sync	2 6	8
Plan 9 - Sync	2 6	9
Coord Ped *		A
NEMA Hold		B
		C
		D
		E
		F

Configuration <E Page>

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4 7
C	EV-C Phases	1 6
D	EV-D Phases	3 8
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	4
Ped 8P	3
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	0

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

	F	Row
Free Lag	2 4 6 8	0
Plan 1 - Lag	2 4 6 8	1
Plan 2 - Lag	2 4 6 8	2
Plan 3 - Lag	2 4 6 8	3
Plan 4 - Lag	2 4 6 8	4
Plan 5 - Lag	2 4 6 8	5
Plan 6 - Lag	2 4 6 8	6
Plan 7 - Lag	2 4 6 8	7
Plan 8 - Lag	2 4 6 8	8
Plan 9 - Lag	2 4 6 8	9
Coord Max *		A
Coord Lag *		B
		C
		D
		E
		F

Row	Time	Plan	Offset	Day of Week
0	00 : 00	0	0	
1	00 : 00	0	0	
2	00 : 00	0	0	
3	00 : 00	0	0	
4	00 : 00	0	0	
5	00 : 00	0	0	
6	00 : 00	0	0	
7	00 : 00	0	0	
8	00 : 00	0	0	
9	00 : 00	0	0	
A	00 : 00	0	0	
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination
<9 Key with C+D+9=0>

Time	Funct.	Day of Week	Column F Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function
<7 Key>

<D Page>

Time	Plan	Offset	Day of Week
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday # 1
TOD Coordination
<9 Key with C+D+9=1>

Time	Plan	Offset	Day of Week
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday # 2
TOD Coordination
<9 Key with C+D+9=2>

Time	Plan	Offset	Day of Week	Row
00 : 00	0	0		0
00 : 00	0	0		1
00 : 00	0	0		2
00 : 00	0	0		3
00 : 00	0	0		4
00 : 00	0	0		5
00 : 00	0	0		6
00 : 00	0	0		7
00 : 00	0	0		8
00 : 00	0	0		9
00 : 00	0	0		A
00 : 00	0	0		B
00 : 00	0	0		C
00 : 00	0	0		D
00 : 00	0	0		E
00 : 00	0	0		F

Holiday # 3
TOD Coordination
<9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest In Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	6.0	0.0		I-5	16
7	2.0	0.0		I-6U	3
8	10.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	0.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	2.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	0.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	0.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 – – – –	1234____
C	13 14 15 16 17 18 19 20	12345678
D	– – – – 21 22 23 24	____5678
E	– – – – – – – –	1234____
F	– 25 26 27 28 – – –	_2345___

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications

(If set to a non-zero value, parity will be disabled)

INTERSECTION: El Camino & Fire Mountain

Phase Timing - Bank 2

<F Page>

Row	Column Numbers ⟶ / Phase Names ⟶	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 3

<F Page>

Row	Column Numbers ⟶ / Phase Names ⟶	Phase 1	2	3	4	5	6	7	8
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Special Event Schedule

<C Page with F+9+F=22>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0	Delay Only ⟶	0	---	---	---	---	---	---	---	---
1		0	0							
2		0	0							
3		0	0							
4		0	0							
5		0	0							
6		0	0							
7		0	0							
8		0	0							
9	Limited Service	0	0							
A	Int. ⟶	---	0							
B		0	0							
C		0	0							
D		0	0							
E		0	0							
F		0	0							

Row

⟵ **Limited Service Interval** (Set Dwell = 255)

INTERSECTION: El Camino & Via Los Rosas

Group Assignment: **NONE**
Field Master Assignment: **NONE**
System Reference Number: **19**

N/S Street Name: **Not Assigned**
E/W Street Name: **Not Assigned**

Last Database Change: **1/24/2018 8:09**

Change Record					
Change	By	Date	Change	By	Date

Notes:

Drop Number	8	<C+0+0>
Zone Number		<C+0+1>
Area Number	1	<C+0+2>
Area Address	19	<C+0+3>
QuicNet Channel	Serial:COM36:	(QuicNet)

Communication Addresses

Manual Plan		<C+A+1>
Manual Offset		<C+B+1>

Manual Selection

Max Initial	20	<F+0+E>
Red Revert	2.0	<F+0+F>
All Red Start	5.0	<F+C+0>

Start / Revert Times

	Phase							
Column Numbers —>	1	2	3	4	5	6	7	8
Row *Phase Names —>*								
0 Ped Walk	0	5	0	5	0	5	0	7
1 Ped FDW	0	13	0	21	0	15	0	10
2 Min Green	5	6	8	8	3	6	3	7
3 Type 3 Limit	0	99	0	0	0	99	0	0
4 Added Initial	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
5 Veh Extension	3.0	4.0	3.0	3.0	3.0	4.0	0.5	3.5
6 Max Gap	3.0	6.0	3.0	3.0	3.0	6.0	0.5	5.0
7 Min Gap	3.0	3.0	3.0	3.0	3.0	3.0	0.5	2.0
8 Max Limit	25	50	20	30	30	50	17	40
9 Max Limit 2	30	70	30	70	30	70	30	70
A ------	0	0	0	0	0	0	0	0
B Call To Phase	0	0	0	0	0	0	0	0
C Reduce By	0.0	0.1	0.0	0.0	0.0	0.1	0.1	0.1
D Reduce Every	0.0	0.8	0.0	0.0	0.0	0.8	1.0	1.0
E Yellow Change	4.1	4.8	3.6	3.6	4.1	4.8	3.0	4.0
F Red Clear	1.0	1.0	1.0	1.0	1.0	1.0	0.0	1.0

Phase Timing - Bank 1 <F Page>

Row	E	F	Row
RR-1 Delay	0	Permit 123456__	0
RR-1 Clear	10	Red Lock 1_____	1
EV-A Delay	0	Yellow Lock 1_____	2
EV-A Clear	5	Min Recall _2___6__	3
EV-B Delay	0	Ped Recall _____	4
EV-B Clear	5	*View Set Peds* -----	5
EV-C Delay	0	Rest In Walk _____	6
EV-C Clear	5	Red Rest _____	7
EV-D Delay	0	Dual Entry _2___6__	8
EV-D Clear	5	Max Recall _____	9
RR-2 Delay	0	Soft Recall _____	A
RR-2 Clear	10	Max 2 _____	B
View EV Delay	---	Cond. Service _____	C
View EV Clear	---	Man Cntrl Calls _____	D
View RR Delay	---	Yellow Start _2___6__	E
View RR Clear	---	First Phases ___4___	F

Preempt Timing **Phase Functions** <F Page>

Manual Plan
0 = Automatic
1-9 = Plan 1-9
14 = Free
15 = Flash

Manual Offset
0 = Automatic
1 = Offset A
2 = Offset B
3 = Offset C

INTERSECTION: El Camino & Via Los Rosas

Coordination <C Page>

Row	Column Numbers ---->	Plan 1	2	3	4	5	6	7	8	9	Row
	Plan Name ---->										
0	Cycle Length	100	150	150	130	110	0	150	140	100	0
1	Phase 1 - ForceOff	65	100	100	100	80	0	100	100	65	1
2	Phase 2 - ForceOff	0	0	0	0	0	0	0	0	0	2
3	Phase 3 - ForceOff	25	55	55	55	35	0	55	55	25	3
4	Phase 4 - ForceOff	40	80	80	80	60	0	80	80	40	4
5	Phase 5 - ForceOff	65	35	35	35	20	0	35	35	65	5
6	Phase 6 - ForceOff	0	0	0	0	0	0	0	0	0	6
7	Phase 7 - ForceOff	25	0	0	0	0	0	0	0	25	7
8	Phase 8 - ForceOff	40	0	0	0	0	0	0	0	40	8
9	Ring Offset	0	0	0	0	0	0	0	0	0	9
A	Offset 1	0	75	75	45	20	0	75	45	0	A
B	Offset 2	0	0	0	0	0	0	0	0	0	B
C	Offset 3	0	0	0	0	0	0	0	0	0	C
D	Permissive	12	12	12	12	12	12	12	12	0	D
E	Hold Release	255	255	255	255	255	255	255	255	0	E
F	Zone Offset	0	0	0	0	0	0	0	0	0	F

(* = Coordination Recall)

Sync Phases <C Page>

Row		E	Row
0			0
1	Plan 1 - Sync	2 6	1
2	Plan 2 - Sync	2 6	2
3	Plan 3 - Sync	2 6	3
4	Plan 4 - Sync	2 6	4
5	Plan 5 - Sync	2 6	5
6	Plan 6 - Sync	2 6	6
7	Plan 7 - Sync	2 6	7
8	Plan 8 - Sync	2 6	8
9	Plan 9 - Sync	2 6	9
A	Coord Ped *		A
B	NEMA Hold		B
C			C
D			D
E			E
F			F

Configuration <E Page>

Row	Column Numbers ---->	E
0	Exclusive Phases	
1	RR-1 Clear Phases	
2	RR-2 Clear Phases	
3	RR-2 Limited Service	
4	Prot / Perm Phases	
5	Overlap A - Green Omit	
6	Overlap B - Green Omit	
7	Overlap C - Green Omit	
8	Overlap D - Green Omit	
9	Overlap Yellow Flash	
A	EV-A Phases	2 5
B	EV-B Phases	4 7
C	EV-C Phases	1 6
D	EV-D Phases	3 8
E	Extra 1 Config. Bits	1 4
F	IC Select (Interconnect)	2

Configuration <E Page>

	F
RR Overlap A - Phases	
RR Overlap B - Phases	
RR Overlap C - Phases	
RR Overlap D - Phases	
Ped 2P	2
Ped 6P	6
Ped 4P	4
Ped 8P	8
Yellow Flash Phases	
Overlap A - Phases	
Overlap B - Phases	
Overlap C - Phases	
Overlap D - Phases	
Restricted Phases	
Assign 5 Outputs	

Extra 1 Flags
1 = TBC Type 1
2 = NEMA Ext. Coord
3 = Auto Daylight Savings
4 = EV Advance
5 =
6 = Special Event
7 = Pretimed Operation
8 = Split Ring Operation

Assign 5 Outputs
(Ped Loadswitch Yellows)
1 = Right Turn Overlap
2 = TOD Outputs
3 = EV Beacon - Steady
4 = EV Beacon - Flashing
5 = Special Event Outputs
6 = Phase 3 & 7 Ped
7 = Advanced Warning Sign
8 =

Force-Off Adjust	5

Coord Force-Off Adjust for Ped Service <C+D+F>

Transition Type	0

TBC Transition <C+D+D>

Transition Type
0 = Shortway
Non-zero = Lengthen

IC Select Flags
1 =
2 = Modem
3 = 7-Wire Slave
4 = Flash / Free
5 =
6 = Simplex Master
7 = 7-Wire Master
8 = Offset Interrupter

Lag Phases <C Page>

Row		F	Row
0	Free Lag	2 4 6	0
1	Plan 1 - Lag	2 4 6 8	1
2	Plan 2 - Lag	2 45	2
3	Plan 3 - Lag	2 45	3
4	Plan 4 - Lag	2 45	4
5	Plan 5 - Lag	2 45	5
6	Plan 6 - Lag	2 45	6
7	Plan 7 - Lag	2 45	7
8	Plan 8 - Lag	2 45	8
9	Plan 9 - Lag	2 4 6 8	9
A	Coord Max *		A
B	Coord Lag *	5	B
C			C
D			D
E			E
F			F

INTERSECTION: El Camino & Via Los Rosas

Row	Time	Plan	Offset	Day of Week
0	06 : 30	5	A	1234567
1	09 : 30	4	A	1234567
2	10 : 45	8	A	7
3	12 : 00	3	A	6
4	15 : 00	3	A	2345
5	15 : 00	4	A	7
6	18 : 00	2	A	6
7	18 : 30	4	A	2345
8	19 : 00	E	A	12345_7
9	21 : 00	4	A	6
A	22 : 00	E	A	6
B	00 : 00	0	0	
C	00 : 00	0	0	
D	00 : 00	0	0	
E	00 : 00	0	0	
F	00 : 00	0	0	

TOD Coordination
<9 Key with C+D+9=0>

Time	Funct	Day of Week	Column F Phases/Bits
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		
00 : 00	0		

TOD Function
<7 Key>

<D Page>

Time	Plan	Offset	Day of Week
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday # 1
TOD Coordination
<9 Key with C+D+9=1>

Time	Plan	Offset	Day of Week
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	
00 : 00	0	0	

Holiday # 2
TOD Coordination
<9 Key with C+D+9=2>

Time	Plan	Offset	Day of Week	Row
00 : 00	0	0		0
00 : 00	0	0		1
00 : 00	0	0		2
00 : 00	0	0		3
00 : 00	0	0		4
00 : 00	0	0		5
00 : 00	0	0		6
00 : 00	0	0		7
00 : 00	0	0		8
00 : 00	0	0		9
00 : 00	0	0		A
00 : 00	0	0		B
00 : 00	0	0		C
00 : 00	0	0		D
00 : 00	0	0		E
00 : 00	0	0		F

Holiday # 3
TOD Coordination
<9 Key with C+D+9=3>

Plan Select
1 thru 9 = Coordination Plan 1 thru 9
14 or E = Free
15 or F = Flash

Offset Select
A = Offset A
B = Offset B
C = Offset C

T.O.D. Functions
0 = Permitted Phases
1 = Red Lock
2 = Yellow Lock
3 = Veh Min Recall
4 = Ped Recall
5 =
6 = Rest in Walk
7 = Red Rest
8 = Double Entry
9 = Veh Max Recall
A = Veh Soft Recall
B = Maximum 2
C = Conditional Service
D = Free Lag Phases
E = Bit 1 - Local Override
Bit 2 - Phase Bank 2
Bit 3 - Phase Bank 3
Bit 4 - Disable Detector OFF Monitor
Bit 7 - Detector Count Monitor
Bit 8 - Real Time Split Monitor
F = Output Bits 1 thru 4

Month Select
1 = January
2 = February
3 = March
4 = April
5 = May
6 = June
7 = July
8 = August
9 = September
A = October
B = November
C = December

Row		Day	Year	Month	Day of Week
A	Holiday # 1 Date	0	0	0	
B	Holiday # 2 Date	0	0	0	
C	Holiday # 3 Date	0	0	0	

Holiday Dates
<8 Key>

Row	1 Delay	3 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		I-1	14
1	0.0	0.0		I-2U	1
2	0.0	0.0		I-2L	5
3	0.0	0.0		I-3U	21
4	0.0	0.0		I-3L	25
5	0.0	0.0		I-4	9
6	0.0	0.0		I-5	16
7	2.0	0.0		I-6U	3
8	2.0	0.0		I-6L	7
9	0.0	0.0		I-7U	23
A	15.0	0.0		I-7L	27
B	0.0	0.0		I-8	11
C	0.0	0.0		I-9U	18
D	8.0	0.0		I-9L	20
E	---	---	---	---	---
F	---	---	---	---	---

Row	2 Delay	4 Carry-over	Detector Name	332 Input File	Detector Number
0	0.0	0.0		J-1	13
1	0.0	0.0		J-2U	2
2	0.0	0.0		J-2L	6
3	0.0	0.0		J-3U	22
4	0.0	0.0		J-3L	26
5	0.0	0.0		J-4	10
6	0.0	0.0		J-5	15
7	0.0	0.0		J-6U	4
8	0.0	0.0		J-6L	8
9	0.0	0.0		J-7U	24
A	0.0	0.0		J-7L	28
B	0.0	0.0		J-8	12
C	0.0	0.0		J-9U	17
D	0.0	0.0		J-9L	19
E	---	---	---	---	---
F	---	---	---	---	---

Detector Delay & Carryover <D Page>

Row		9 Green Clear	C Yellow Change	D Red Clear	0 Load-Switch #
A	Overlap A	0.0	0.0	0.0	0
B	Overlap B	0.0	0.0	0.0	0
C	Overlap C	0.0	0.0	0.0	0
D	Overlap D	0.0	0.0	0.0	0

Overlap Timing <F Page> <D Page>

Row	Detector Numbers	E
A	1 2 3 4 5 6 7 8	12345678
B	9 10 11 12 – – – –	1234___
C	13 14 15 16 17 18 19 20	12345678
D	– – – – 21 22 23 24	___5678
E	– – – – – – – –	1234___
F	– 25 26 27 28 – – –	_2345___

Active Detectors <D Page>

Note: Initialized data is for all detectors to be active (ie, all flag bits set). A Detector which is "not flagged", will not be active as a Phase Detector, and WILL NOT call or extend its associated phase. It will still function as a System Detector.

Row		0 Detector Number
0		
1	System Det. # 1	0
2	System Det. # 2	0
3	System Det. # 3	0
4	System Det. # 4	0
5	System Det. # 5	0
6	System Det. # 6	0
7	System Det. # 7	0
8	System Det. # 8	0

System Detectors <D Page>

Max ON (minutes)	5	<D+A+E>
Max OFF (minutes)	60	<D+A+F>

Detector Failure Monitor

Phase Number	0	<F+C+1>
Time Before Yellow	0.0	<F+C+3>

Advance Warning Beacon - Sign 1

Phase Number	0	<F+D+1>
Time Before Yellow	0.0	<F+D+3>

Advance Warning Beacon - Sign 2

Long Failure	0.0	<F+0+6>
Short Failure	0.0	<F+0+7>

Power Cycle Correction (Default = 0.5)

Disable Parity	0	<D+B+0>

Dial-Up Telephone Communications

(If set to a non-zero value, parity will be disabled)

INTERSECTION: El Camino & Via Los Rosas

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 2 <F Page>

Row	Column Numbers --->	Phase 1	2	3	4	5	6	7	8
	Phase Names --->								
0	Ped Walk	0	7	0	7	0	7	0	7
1	Ped FDW	0	10	0	10	0	10	0	10
2	Min Green	3	7	3	7	3	7	3	7
3	Type 3 Limit	0	0	0	0	0	0	0	0
4	Added Initial	0.0	1.2	0.0	1.2	0.0	1.2	0.0	1.2
5	Veh Extension	0.5	3.5	0.5	3.5	0.5	3.5	0.5	3.5
6	Max Gap	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0
7	Min Gap	0.5	2.0	0.5	2.0	0.5	2.0	0.5	2.0
8	Max Limit	17	40	17	40	17	40	17	40
9	Max Limit 2	30	70	30	70	30	70	30	70
A	------	0	0	0	0	0	0	0	0
B	Call To Phase	0	0	0	0	0	0	0	0
C	Reduce By	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
D	Reduce Every	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
E	Yellow Change	3.0	4.0	3.0	4.0	3.0	4.0	3.0	4.0
F	Red Clear	0.0	0.5	0.0	1.0	0.0	0.5	0.0	1.0

Phase Timing - Bank 3 <F Page>

Row		7 Time	8 Dwell	9 Hold	A Advance	B Force Off	C Vehicle Call	D Permit Phases	E Ped Omit	F Output
0	Delay Only -->	0	---	---	---	---	---	---	---	---
1		0	0							
2		0	0							
3		0	0							
4		0	0							
5		0	0							
6		0	0							
7		0	0							
8		0	0							
9	Limited Service Int. -->	0	0							
A		---	0							
B		0	0							
C		0	0							
D		0	0							
E		0	0							
F		0	0							

Special Event Schedule <C Page with F+9+F=22>

<--- Limited Service Interval (Set Dwell = 255)