STATE OF CALI	FORNIA • DEPA	RTMENT OF T	RANSP	ORTAT	ION			Page 1 of 3
STANDAR	D ENCRO	ACHMENT	PEF	RMIT	AP	PLICATIO	N	FOR CALTRANS USE
TR-0100 (REV.	03/2015)							PERMIT NO.
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Applicant's l	Reference Numbe	r / Utility Work C	rder Nur	mber _				<u> </u>
16. Have your pla	ıns been reviewed	l by another Cal	trans bra	anch?		✓NO	YES (If "YES") Who?
17. Completely d	escribe work to be	e done within S1	ATE Hig	hway ri	ight-o	f-way:		
Attach 6 complete	sets of plans (folde	d to 8.5" x 11") a	nd any ap	plicable	spec	ifications, calcula	tions, maps, etc.	
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STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

STANDARD ENCROACHMENT PERMIT APPLICATION

TR-0100 (REV. 03/2015)

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Page 2 of 3

The following questions must be completed when a City, County or other public agency IS NOT involved in the approval of this project.

Your answers to these questions will assist Departmental staff in identifying any physical, biological, social or economic resources that may be affected by your proposed project within State Highway right-of-way and to determine which type of environmental studies may be required to approve your application for an encroachment permit.

It is the applicant's responsibility for the production of all required environmental documentation and supporting studies and in some cases this may be costly and time consuming. If possible, attach photographs of the location of the proposed project. Please answer these questions to the best of your ability. Provide a description of any "YES" answers (type, name, number, etc.)

B. Are there waterways (e.g. river, creek, pond, natural pool or dry streambed) adjacent to or within the limits of the project or State Highway right-of-way?
C. Is the proposed project located within five miles of the coast line?
D. Will the proposed project generate construction noise levels greater than 86 dBA (e.g. jack-hammering, pile driving)?
E. Will the proposed project incorporate land from a public park, recreation area or wildlife refuge open to the public?
F. Are there any recreational trails or paths within the limits of the proposed project or State Highway right-of-way?
G. Will the proposed project impact any structures, buildings, rail lines or bridges within State Highway right-of-way?
H. Will the proposed project impact access to any businesses or residences?
I. Will the proposed project impact any existing public utilities or public services?
J. Will the proposed project impact existing pedestrian facilities, such as sidewalks, crosswalks or overcrossings?
K. Will new lighting be constructed within or adjacent to State Highway right-of-way?
9. Will this project cause a substantial change in the significance of a historical resource (45 years or older), or cultural resource? YES NO If "YES", provide a description)
0. Is this project on an existing State Highway or street where the activity involves removal of a scenic resource including a significant tree or stand of trees, a significant tree or stand or stand or stand or significant tree or significant tree or significant tree or stand or significant tree or significan
I. Is work being done on the applicant's property? YES NO (If "YES", attach 6 complete sets of site and grading plans.)
2. Will the proposed project require the disturbance of soil?
If "YES", estimate the area within State Highway right-of-way in square feet AND acres:
. Will the proposed project require dewatering?
If "YES", estimate total gallons AND gallons/month(gallons) AND(gallons/month) SOURCE*: STORM WATER NON-STORM WATER
(*See Caltrans SWMP for definitions of non-storm water discharge: http://www.dot.ca.gov/hq/env/stormwater/index.htm)
4. How will any storm water or ground water be disposed of from within or near the limits of the proposed project? Storm Drain System Combined Sewer / Storm System Storm Water Retention Basin
Other (explain):

STANDARD ENCROACHMENT PERMIT APPLICATION

TR-0100 (REV. 03/2015)

PERMIT NO.
IPERMITINO.

PLEASE READ THE FOLLOWING CLAUSES PRIOR TO SIGNING THIS ENCROACHMENT PERMIT APPLICATION.

The applicant, understands and herein agrees that an encroachment permit can be denied, and/or a bond required for non-payment of prior or present encroachment permit fees. Encroachment Permit fees may still be due when an application is withdrawn or denied, and that a denial may be appealed, in accordance with the California Streets and Highways Code, Section 671.5. All work shall be done in accordance with the California Department of Transportation's (Department) rules and regulations subject to inspection and approval.

The applicant, understands and herein agrees to the general provisions, special provisions and conditions of the encroachment permit, and to indemnify and hold harmless the State, its officers, directors, agents, employees and each of them (Indemnitees) from and against any and all claims, demands, causes of action, damages, costs, expenses, actual attorneys' fees, judgments, losses and liabilities of every kind and nature whatsoever (Claims) arising out of or in connection with the issuance and/or use of this encroachment permit and the placement and subsequent operation and maintenance of said encroachment for: 1) bodily injury and/or death to persons including but not limited to the Applicant, the State and its officers, directors, agents and employees, the Indemnities, and the public; and 2) damage to property of anyone. Except as provided by law, the indemnification provisions stated above shall apply regardless of the existence or degree of fault of Indemnities. The Applicant, however, shall not be obligated to indemnify Indemnities for Claims arising from the sole negligence and willful misconduct of State, its officers, directors, agents or employees.

An encroachment permit is not a property right and does not transfer with the property to a new owner.

COMPLIANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA) OF 1990: All work within State Highway right-of-way shall be conducted in compliance with all applicable Federal, State and Local Access laws, regulations and guidelines including but not limited to the Americans with Disabilities Act Accessibility Guidelines (ADAAG), the Public Rights-of-Way Guidelines (PROWG), the Department's current Design Information Bulletin 82, "Pedestrian Accessibility Guidelines for Highway Projects", the Department's Encroachment Permits Manual and encroachment permit.

DISCHARGES OF STORM WATER AND NON-STORM WATER: All work within State Highway right-of-way shall be conducted in compliance with all applicable requirements of the National Pollutant Discharge Elimination System (NPDES) permit issued to the Department, to govern the discharge of storm water and non-storm water from its properties. Work shall also be in compliance with all other applicable Federal, State and Local laws and regulations, and with the Department's Encroachment Permits Manual and encroachment permit. Compliance with the Department's NPDES permit requires amongst other things, the preparation and submission of a Storm Water Pollution Protection Plan (SWPPP), or a Water Pollution Control Program (WPCP), and the approval of same by the appropriate reviewing authority prior to the start of any work. Information on the requirements may also be reviewed on the Department's Construction Website at:

http://www.dot.ca.gov/hg/construc/stormwater

25. NAME OF APPLICANT OR ORGANIZATION CITY OF MILLBRAE					
ADDRESS OF APPLICANT OR ORGANIZATION WHERE PER 621 Magnolia Avenue Millbrae, CA 94030		clude City and Zip C	ode)	a.	
E-MAIL ADDRESS	-	PHONE NUMBER		FAX NUMBER	
@ci.millbrae.ca.us		650-259-241	9	650-697-815	3
26. NAME OF AUTHORIZED AGENT / ENGINEER (A "Letter	of authorization" is required	d if different from #	25) IS A LET	TER OF AUTHORIZ	ATION ATTACHED?
Khee Lim				☐ YES	☑ NO
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28. SIGNATURE OF APPLICANT OR AUTHORIZED AGENT	29. PRINT OR TYPE NAME		30.TITLE		31. DATE
price.	Khee Lim		City Engine	er	04/07/2016

STATE OF CAL	IFORNIA • DEPA	RTMENT OF 1	RANSP	ORTATIO	N			Page 1 of 3
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STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION

STANDARD ENCROACHMENT PERMIT APPLICATION

TR-0100 (REV. 03/2015)

PERMIT NO.	

Page 2 of 3

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B. Are there waterways (e.g. river, creek, pond, natural pool or dry stre No	eambed) adjacent to or within the limits of the	project or State Highway right-of-wa	y?
C. Is the proposed project located within five miles of the coast line?			
D. Will the proposed project generate construction noise levels greater No	than 86 dBA (e.g. jack-hammering, pile drivir	ng)?	
E. Will the proposed project incorporate land from a public park, recrea	ation area or wildlife refuge open to the public	?	
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K. Will new lighting be constructed within or adjacent to State Highway No	right-of-way?		
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STATE OF CALIFORNIA	DEPARTMENT (OF TRANSPORTATION
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STANDARD ENCROACHMENT PERMIT APPLICATION

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Page 3 of 3

PLEASE READ THE FOLLOWING CLAUSES PRIOR TO SIGNING THIS ENCROACHMENT PERMIT APPLICATION.

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http://www.dot.ca.gov/hg/construc/stormwater

25. NAME OF APPLICANT OR ORGANIZATION						
City of Millbrae						
ADDRESS OF APPLICANT OR ORGANIZATION WHERE PEI 621 Magnolia Avenue, Millbrae, CA 9403		clude City and Zip C	ode)			
E-MAIL ADDRESS		PHONE NUMBER		FAX NU	MBER	
@ci.millbrae.ca.us		650.259.234	7	650.6	97.8158	
26. NAME OF AUTHORIZED AGENT / ENGINEER (A "Letter	of authorization" is require	d if different from #	(25) IS A	LETTER OF A	AUTHORIZA	TION ATTACHED?
Khee Lim				☐ YES		✓ NO
ADDRESS OF AUTHORIZED AGENT / ENGINEER (Include C 621 Magnolia Avenue, Millbrae, CA 940			•			
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27. NAME OF BILLING CONTACT (Same as #25 / Same	as #26 🔲)		5			
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28. SIGNATURE OF APPLICANT OR AUTHORIZED AGENT	29. PRINT OR TYPE NAME		30.TITLE			31. DATE
fure	Khee Lim		City Engi	neer		4-15-2016



MEMORANDUM

DATE:

March 29, 2016

TO:

Khee Lim, PE, City of Millbrae, CA

FROM:

Kenny Jeong, PE, DKS Associates

SUBJECT:

Millbrae Automated Red Light Enforcement – Traffic Engineering Study

P#16015--000

The purpose of this memorandum is to document the findings of a study into the effectiveness of two traffic signals with automated red light enforcement (ARLE) in the City of Millbrae, CA on California Department of Transportation (Caltrans)-operated State Highways. Specifically, the study sought to evaluate the effect of the ARLE system on crash rates and the issuance of citations at the two study intersections.

BACKGROUND

On August 5, 2015 (effective January 1, 2016), Caltrans issued Traffic Operations Policy Directive TR-0011, Number 14-01, Revision 1, requiring all municipalities that operate one or more ARLE-equipped traffic signal on State Highways to evaluate the safety performance of such ARLE systems once every five years. The Policy Directive directs municipalities to consider the following aspects of safety performance at and near the study intersections equipped with ARLE:

- Collision rates;
- Citation rates for through movement, left turn, and, where prohibited, right turn on red infractions;
- Site conditions, current signal operation, and driver behavior; and
- Perceptions of parties familiar with the intersection(s) regarding traffic safety.

In 2006, the Millbrae City Council approved the use of ARLE cameras given increased vehicle traffic, roadway congestion and traffic collisions in the Millbrae Avenue traffic corridor. Red light safety cameras are located at three intersections with a total of seven cameras. Along with being very congested and well-traveled, these intersections are among the largest in the city and include multiple lanes. The existing roadway geometry does not provide for a safe space to pull violators over for enforcement at any of the intersections. To rely solely on traditional enforcement efforts in these areas present extreme challenges in achieving law enforcement objectives and enhancing safety for the public.

Despite the size and amount of daily traffic, collision statistics are low. The level of awareness associated with the ARLE program has contributed to maintain the low frequency of collisions at these intersections.



Since the program began, the ARLE program has resulted in the issuance of between 250 and 1200 citations per month. This process is administered by the San Mateo County Sheriff's Department. Approximately 96% of the citations issued as a result of the ARLE program are upheld in the local court system. Repeat violations are rare which indicates success in changing driving behavior.

STUDY AREA

The City of Millbrae operates ARLE at three intersections along Millbrae Avenue:

- 1. El Camino Real (State Route 82) / Millbrae Avenue;
- 2. Rollins Road / Millbrae Avenue; and
- 3. Southbound US101 Off-ramp / Millbrae Avenue.

Because these intersections are closely spaced, they are managed as a single system. As such, many of the program metrics are reported as a system instead of as individual intersections. Since the intersections of Rollins Road / Millbrae Avenue is not within the State-governed right-of-way, it is not directly included as part of this study. However, because the records of the three intersections are reported as a single system, the records for this intersection cannot be separated from the others and will therefore be included indirectly as part of the study. The study area showing the locations of each intersection are provided in **Figure 1**.

ARLE is equipped for the southbound left-turn at the intersection of El Camino Real / Millbrae Avenue and for the all southbound movements at the intersection of US101 Southbound Off-ramp / Millbrae Avenue. The ARLE system at the intersections of El Camino Real / Millbrae Avenue and US101 Southbound Off-ramp / Millbrae Avenue was installed and activated in November 2009. Photos of the ARLE equipment at each study intersection are provided in **Appendix A**.

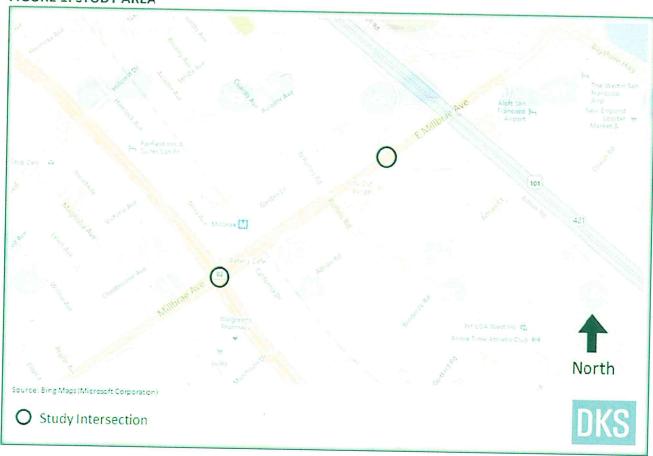
Within the study area, the following roadway facilities are of note:

<u>El Camino Real</u> (SR-82) is a six-lane arterial that runs north-south through the study area and is parallel to US 101. The posted speed limit along this portion of El Camino Real is 35 MPH.

Millbrae Avenue is a primarily six-lane, east-west arterial that provides access between US 101 and El Camino Real. The posted speed limit of Millbrae Avenue is 35 MPH. The Millbrae Intermodal BART-Caltrain Station is located just north of Millbrae Avenue and uses the Rollins Road intersection as its primary access point.



FIGURE 1: STUDY AREA



ORIGINAL SIGNAL WARRANT

The study intersections at El Camino Real / Millbrae Avenue and US101 Southbound Off-ramp/Millbrae Avenue have been signalized for many decades. Because the intersections were signalized so many years ago, both governing agencies (The City of Millbrae or Caltrans) were not able to produce a copy of the original signal warrant.

SIGNAL TIMING

Signal timing sheets for the study intersections were provided by Caltrans District 4 staff and are included in **Appendix B**.

Determination of Yellow Change Interval

Observed yellow change intervals for the ARLE-equipped intersection approaches (southbound left at El Camino Real/Millbrae Avenue and southbound approach at US101 Southbound Off-ramp/Millbrae



Ave) were determined from a video survey of signal operation, taken during a recent weekday afternoon field visit conducted on March 8, 2016. These observed intervals were averaged and then compared with the required intervals, as specified by Section 4D.10 and Table 4D-102 in the California Edition of the Manual on Uniform Traffic Control Devices (CaMUTCD). Table 1 summarizes this comparison for the relevant approaches at both study intersections.

TABLE 1: SUMMARY OF YELLOW CHANGE INTERVAL

Intersection and Approach	Observed Average Yellow Change Interval by Approach	Required Yellow Change Interval ¹
El Camino Real and Millbrae Ave (southbound left-turn)	3.9	3.6
US101 Southbound Off-ramp and Millbrae Ave (southbound left, right-turn)	3.6	3.6

Posted speed limit along departure street was the controlling factor in determining the required yellow change interval.

Based on a review of the video survey, DKS confirms that the observed yellow change interval for both ARLE installed movements satisfies the required yellow change intervals specified by the California MUTCD.

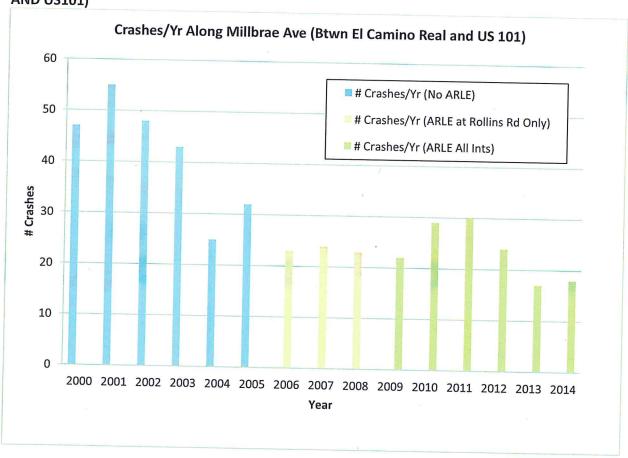
SAFETY PERFORMANCE

The City of Millbrae provided historical traffic counts along Millbrae Avenue for a multiday period in April 1999. DKS conducted new counts at the same location as the April 1999 counts on March 22, 2016. Using these two count sources, DKS estimated the Annual Average Daily Traffic and Vehicle Miles Traveled along Millbrae Avenue for each year between 1999 and 2015. Using crash history provided by the San Mateo County Sheriff's Department for the years 2000 through 2015, DKS estimated the crash rate for the study segment (including each ARLE equipped intersection).

Figure 2 illustrates the number of total crashes. Figure 3 shows the yearly estimated crash rate. Summary of recorded crashes and traffic counts used are provided in Appendices C and D, respectively.



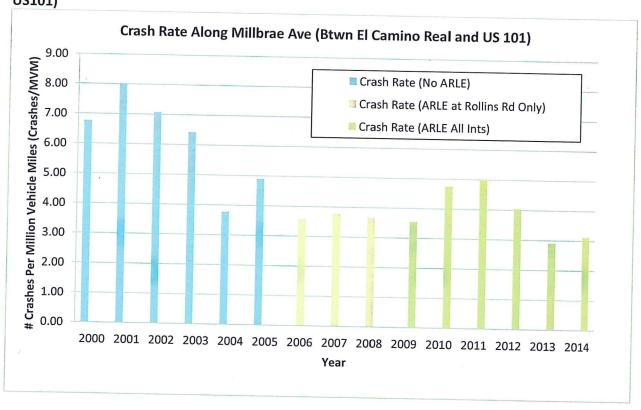
FIGURE 2: SUMMARY OF TOTAL CRASHES ALONG MILLBRAE AVENUE BETWEEN EL CAMINO REAL AND US101)



Source: City of Millbrae, San Mateo County Sheriff's Department, DKS, 2016.



FIGURE 3: SUMMARY OF CRASH RATE ALONG MILLBRAE AVENUE BETWEEN EL CAMINO REAL AND US101)



Source: City of Millbrae, San Mateo County Sheriff's Department, DKS, 2016.

The overall number of crashes per year are generally lower with the ARLE program in operation (years 2006 to 2014) than without the ARLE program (2000 to 2006). The average number of crashes per year for the six year period between 2000 and 2005 is 41.7 crashes per year. With the introduction of the ARLE system at the Rollins Road intersection (years 2006 to 2008), the average number of crashes per year lowers to 23.3 crashes per year. This number is lowered yet again with the addition of the intersections at El Camino Real and Southbound US101 off-ramp to an average of 21.1 crashes per year.

Similarly the average crash rate has generally decreased from 6.16 crashes per million-vehicle-miles without the ARLE program to 3.89 crashes per million-vehicle-miles with the ARLE program in operation. This is a higher rate than the reported statewide average rate of 1.48 as published by Caltrans in the 2012 Collision Data on California State Highways.



CONTACTING PARTIES FAMILIAR WITH THE INTERSECTION

DKS conducted a telephone interview with Deputy James Aboud from the San Mateo County Sheriff's Department regarding the operation and safety performance of the ARLE system along Millbrae Avenue. Deputy Aboud is a long-time current employee of the police department who has been on staff since the years prior to ARLE activation. According to Deputy Aboud, the activation of the ARLE system has contributed to greater lawfulness at these intersections. His personal observation is that since the ARLE program was activated in 2006/2009 that drivers are more cautious when driving along Millbrae Avenue and that he personally believes that the system has contributed to lower number of traffic violations as well as crashes.

FIELD REVIEW

DKS visited the study area during the afternoon of March 8, 2016. During this visit, DKS observed that drivers would approach each intersection normally without abrupt stopping to avoid a red light violation. At the intersection of the southbound US101 Off-ramp and Millbrae Avenue, DKS staff did observe some vehicles failing to come to a complete stop for the southbound right turn onto Millbrae Avenue. These "rolling stops" are a violation of California Vehicle Code (CVC) 21453c and may result in a citation being issued to the driver.

IDENTIFICATION AND EVALUATION OF PREVIOUS COUNTERMEASURES

A study commissioned by the Millbrae Police Department and conducted by American Traffic Solutions (ATS) showed that there were high rates of red light violations at the study intersections. Unfortunately, all copies of this report were lost when the Millbrae Police Department was merged with the San Mateo County Sheriff's Department in March 2012.

In an attempt to reduce the number of violations, the San Mateo County Sheriff's Department considered a traditional approach to improve safety by reducing traffic violations by increasing the presence of uniformed officers along the corridor. However, this was difficult to accomplish because this segment of Millbrae Avenue is rather constrained with narrow lanes and no shoulder. There are no places to safely pull violators over for traditional enforcement at any of the ARLE equipped intersections. To rely on traditional enforcement efforts in these areas present challenges in achieving law enforcement objectives and enhancing the safety for the motoring public.

The San Mateo County Sheriff's Department concluded that it would not be feasible for law enforcement to continuously monitor the intersections as effectively as the ARLE system does today. Even if it were possible to provide the same level of enforcement through traditional enforcement efforts, associated court appearances would make it difficult to staff daily patrol shifts. The cost to the



city to transition from automated to staffed enforcement would likely be extremely high. Even then, the current level of enforcement could not be maintained.

EVALUATION OF CITATIONS

The San Mateo County Sheriff's Department provided the citation records from the ARLE system. Citation records prior to 2009 were unavailable. All violation events are logged into the ARLE system and then reviewed by a trained San Mateo County Sheriff's Department Police Officer before citation is issued.

Table 2 below summarizes the total number of violation events vs actual citations issued for the study intersections ARLE system. A copy of the citation summary report is provided in **Appendix E**.

TABLE 2 – SUMMARY OF CITATIONS

	Number Cit	ations Issued
Year	El Camino Real at Millbrae Avenue	Southbound US101 Off-ramp at Millbrae Avenue
2009	317	1,006
2010	1,976	2,769
2011	1,743	2,368
2012	817 2,179	
2013	1,377	1,121
2014	1,700	3,891
2015	1,710	4,418

Source: San Mateo County Sheriff's Department, 2016

Appendix A

Field Photos

Taken: March 2016

El Camino Real / Millbrae Avenue





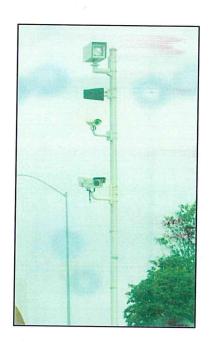








Southbound US101 Off-ramp / Millbrae Avenue







Appendix B

Signal Timing Sheets

RAM Checksum Page 2: 636C Page 8 Page 3: 180E Page 9 Page 4: F29E Page 9 Page 5: 191A Page 1 Page 6: 191A Page 1
Page 7: AE27

Printed: 11/24/2015

Doct Milo: CM 002 15 0/

TSCP 2.20 (BUILD 120) - 12/24/2014 Connected to Central Systems via Network Port thru Actelis ML684 (Port 4)

Comments and Notes:

Post Mile: SM-082-15.946

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Restricted	

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CONFIGURATION PHASE FLAGS

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Yellow	
Force/Max	

Phase Features (2-1-1-4)	s (2-1-1-4)
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Rest In Walk	:
Rest In Red	:
Walk 2	:
Max Green 2	:
Max Green 3	

First Green Phases.26Yellow Start PhasesVehicle Calls12345678Pedestrian Calls.2.4.6.8Yellow Start OverlapsStartup All-Red5.0	Startup (2-1-1-5)	
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	Pedestrian Calls	.2.4.6.8
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-3)	:	:	:	
Special Operation (2-1-2-3	Single Exit Phase	Driveway Signal Phases	Driveway Signal Overlaps	Leading Ped Phases

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PAGE 2

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Post Mile: SM-082-15.946

Location: MILLBRAE AVE & EL CAMINO REAL

California Department of Transportation, Caltrans

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Post Mile: SM-082-15.946

F29E

Location: MILLBRAE AVE & EL CAMINO REAL

Local Plan 11...19 (7-2) TIMING DATA

California Department of Transportation, Caltrans

COORDINATION

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Plan 19	:	:						:

PAGE 5

Location: MILLBRAE AVE & EL CAMINO REAL

California Department of Transportation, Caltrans

Local Plan 21...29 (7-3) TIMING DATA

COORDINATION

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Local Plan 21...29 (7-3) PHASE FLAGS

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Plan 28	-	:	:	:		:	:	:
Plan 29	:		:	:		:		

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Post Mile: SM-082-15.946

CHECKSUM:

191A

Printed: 11/24/2015

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WEEKDAY ASSIGNMENT

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liday Ta	Day	+																		Action	17														
Fived Ho	# Mnth		2	က	4	5	9	7	8	6	10	11	12	13	14	15	16			WC	TFSS	:	:	:			:	:	:	:	:	:	:		:
	Table	_																NS	3-3)	DC	MIW	•	:	i	:	•	:	:	:	:	:	÷	÷	:	:
8			:	:	:							:						NCTIO	tions (8	End	1900														
S-2-8) ale	DOW																	TOD FUNCTIONS	TOD Functions (8-3)	Start	0200											01			10
Floating Holiday Table (8-2-8)	Week														+		_	ř	ĭ	#	7	7	က	4	2	<u>ဖ</u> ၊	7	∞	<u></u>	위	<u> </u>	12	13	14	15
ling Hol	Mnth V	$\overline{}$																																	
loa	#	-	2	က	4	10	9	7	8	6	9	=	12	13	14	15	16																		

PAGE 9

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COMMUNICATIONS

C2 (6-1-1)		C20 (6-1-
Address	3	Address
rotocol	AB3418	Protocol
imit Access	0	Limit Ac
Saud	0096	Band
arity	NONE	Parity
Data Bits	80	Data Bits
Stop Bits	-	Stop Bits
TS On Time	20	RTS On
RTS Off Time	20	RTS Off
landshaking	NORMAL	Handsha
	Address Protocol Limit Access Baud Parity Data Bits Stop Bits RTS On Time RTS Off Time	

C21 (6-1-3)	Address	Protocol	Limit Access	Band	Parity	Data Bits	Stop Bits	RTS On Time	RTS Off Time	Handshaking
		AB3418	0	1200	NONE	ω	-	20	20	NORMAL
1-2)	S	lo	ccess			ts	its	Time חiT	f Time	naking

S	
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AB3418

0-None

1-Status Only

NONE 1200

∞

2-Status, Set Pattern, Time

3-Status, Set Pattern, Time, Manual Plan

SOFT LOGIC

OP

Data

OP

Data

OP

Soft Logic (6-2) Data

CALLBACK NUMBERS

rs (6-33)				10			
Callback Numbers (6-33)	Line Out	Local Toll	Long Distance	Delay	Area Code	Phone Number	
	Data						

	4.			10							
	Line Out	Local Toll	Long Distance	Delay	Area Code	Phone Number		Line Out	Local Toll	Long Distance	
Т	$\overline{}$	Т	$\overline{}$	1	1	$\overline{}$	_				

The second secon				10		
	Line Out	Local Toll	Long Distance	Delay	Area Code	Phone Number
					Codes	
					O pue e	5
					al for Dai	
					*Befer to User's Manual for Data and OP Codes	
3.65					ar to Use	
	13	14	15	16	*Bof	2

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NORMAL

20 20

Address 1 Protocol AB3418 Port 27000 IP Mode STATIC IP Address 172 Netmask 255 Broadcast 0 Gateway 172 172 255 255 255 255 255 257 254 37 254 37 254 37 254 38 1	Network (6-4)	(
AB3418 27000 STATIC SS 172 22 8 . 255 255 255 . st 0 0 0 .	Address		_				
27000 STATIC SS 172 22 8 . 255 255 255 . st 0 0 0 172 22 8 .	Protocol	AB	4	8			
STATIC SS 172 22 8 . 255 255 255 . st 0 0 0 172 22 8 .	Port	27(ĕ	0			
ss 172 22 8	IP Mode	ST/	E	ပ			
st 0 . 0 . 0 . 0	IP Address	172		22		œ	41
st 0 0 0 0 . 0	Netmask	255		255	٠	255	0
. 172 . 22 .	Broadcast	0		0		0	254
	Gateway	172		22	•	ω	_

Post Mile: SM-082-15.946

RAILROAD PREEMPTION

							20				
RR	(3-1-1)	Timing	Pha	Phase Flags (3-1-2)	5)	Pedes	Pedestrian Flags (3-1-3)	(3-1-3)		Overlap Flags (3-1-4)	3-1-4)
-	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
	Clear 1	10	.25	:				.2.4.6.8	:	:	
	Clear 2		:	:	:		:::::::::::::::::::::::::::::::::::::::				
	Clear 3	7		:	:		:		1		
	Hold				12345678						ABCDEF
-	Exit										
	Min		Exit Parameters (3-1-5)	ers (3-1-5)			J	Configuration (3-1-6)	3-1-6)		
			Phase Green	Overlan Gree	Phase Green Overlan Green Vehicle Call	Dod Call	_	Dort	Cate Dort	Latching	Downer IIn
	Ped Clr			200	cii reillole dall		_	100	ממוב רסוו	Latelling	Lower-op
			:	:	12345678	12345678 .2.4.6.8		2.5	0.0	YES	FLASHING
										•	

		Red Flash	:								Power-up	à	DARK
	s (3-2-4)	H			 	<u> </u>	G					2	4
	Overlap Flags (3-2-4)	Yel Flash					0				Latching	OLA.	
36	0	Grn Hold		:	:				2-6)		Gate Port	0	2.5
	3-2-3)	Solid DW	.2.4.6.8	:	:	48			Configuration (3-2-6)		Port	3 6	2.4
i	Pedestrian Flags (3-2-3)	Flash DW		:::::::::::::::::::::::::::::::::::::::		:			ŏ	L		L	
	Pedes	Walk	:			.26			700	L	Ped Call		
	The same of the same of	Red Flash						100 to 10			p Green Venicle Call	7 7	
L	Phase Flags (3-2-2)	Yel Flash F	:::::::::::::::::::::::::::::::::::::::				22	1100	S (3-2-5)		Overlap Green		
	Phase	Grn Hold	47.	:		1236		T	Exit Parameters (3-2-5)	District Control	Phase Green Overlag		
Timing	6uuun	•	10		•	1							
1001	(1-2-6)	Delay	Clear 1	Clear 2	Clear 3	Hold	Exit		Min Grn		Ped Clr		
_	ב	7			4							The State of the S	

EMERGENCY VEHICLE PREEMPTION

EVA Preempt Timers Phase Green Overlap Green (3-A) Delay Clear Max Green ADVANCE Clear ADVANCE EVC Preempt Timers Phase Green Green (3-C) Delay Clear Max Green (3-C) Delay Clear Max Green Port Latching Phase Termination EVD		Dela) I	ß		Dela			P(
Preempt Timers Phase Green Delay Clear Max 30 30 .25 Fort Latching Phase Termin 5.5 NO ADVANC Preempt Timers Phase Green C Delay Clear Max C Both Clear Max C Port Latching Phase Termina	EVB	(3-B)				EVD	(3-D)	12		
Preempt Timers Phase Delay Clear Max .2 Port Latching .2 5.5 NO .2 Preempt Timers Phase Delay Clear Max Delay Clear Max Port Latching 1	Overlap	Green	2	mination	NCE	Overlap	Green			mination
Preempt Ti Delay Clear Port 5.5 Preempt Ti Annual Clear Delay Clear Annual Clear Port	Phase Green		.25	Phase Ter	ADVA	Phase Green		16		Phase Teri
Preempt Ti Delay Clear Port 5.5 Preempt Ti Annual Clear Delay Clear Annual Clear Port	iers	Max	30	atching	NO	ers	Max	30		atching
Delay	empt Tin	Clear	30			empt Tim	Clear	30		
EVA (3-A) (3-C) (3-C)				Port	5.5	Pre	Delay			Port
	EVA	(3-A)				EVC	(3-C)	L L	L	

			П			1						
Overlap	Green	•••••		Phase Termination	NCE		Overlap	Green	• • • • •		mination	NCE
Phase Green	T	47.		Phase Ter	ADVANCE		Phase Green	0	38		Phase Termination	ADVANCE
ers	Max	30		Latching	NO		ers	Max	30		Latching	NO
Preempt Timers	Clear	30		Ľ			Preempt Timers	Clear	30		Ľ	
Free	Delay			Port	2.6		Pree	Delay			Port	5.8
EVB	(3-B)		•				EVD	(0-5)	100	-		

ADVANCE

INPUTS

	C.	7 Wire I/C (2-1-5-1	5-1)		
		Input	Port	Input	Port
Enable	ON	R1	3.8	Free	3.6
Max on		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Cabinet Status (2-1-5-3	(2-1-5-3)	
Input	Port	
Flash Bus		5 -
Door Ajar		
Flash Sense	6.7	
Stop Time	6.8	

Special Function (2-1-5-4)	Port				
Special Fur	Input	-	2	ဇ	4

Manual Control (2-1-5-2	.1-5-2)
Input	Port
Manual Advance	9.9
Advance Enable	9.9

-1-5-5)	Operation	NORMAL
Battery Backup (2-1-5-5)	Port	

(2-1-5-6)	Port D	2.8
Y-Coordination (2-1-5-6)	Port C	6.1

OUTPUTS

Loadswitch Codes:

51-57 Special Functions 71-72 Seven Wire I/C

0 Unused (no output)

9-14 Overlap A-F 1-8 Vehicle 1-8

21-28 Ped 1-8

41-47 Special Functions

+ middle output of loadswitches 3 and 6

Channel 9 and 10

41 Protected Permissive Flashing Phase 1

43 Protected Permissive Flashing Phase 3

45 Protected Permissive Flashing Phase 5

47 Protected Permissive Flashing Phase 7

Loadswitch Assignments (2-1-6)

4	-	2	22	3	4	24	6
В	2	9	26	7	8	28	10
×	13	14	0	11	12	0	0

TRANSIT PRIORITY

Plan 1 Green Factor Plan 2 Green Factor Plan 3 Green Factor Plan 4 Green Factor Plan 5 Green Factor Plan 6 Green Factor Plan 7 Green Factor Plan 8 Green Factor Plan 8 Green Factor		Green	Extend	Cycles	Minimum Minimum	linimum	Minimum	Minimum	Minimum	Minimum Minimum	Minimum Minimum	Minimum
	20 20 20 20 20 20 20 20 20 20 20 20 20 2											
	20 20 20 20 20 20 20 20 20 20 20 20 20 2											
	20 20 20 20 20 20 20 20 20 20 20 20 20 2											
1 1 1 1	20 20 20 20		4									
	20 20 20		×.									
	or or											
	or											
	or											
Plan 9 Green Factor	or											
Dion 44 Croom Cooper	-		_	_								
בי ייי ייי מוכפון ו מכון	5											
Plan 12 Green Factor	J.											
Plan 13 Green Factor	or											
Plan 14 Green Factor	or											
Plan 15 Green Factor	or											
Plan 16 Green Factor	or											
Plan 17 Green Factor	or											
Plan 18 Green Factor	or	-										
Plan 19 Green Factor	or											
Transit Priority Configuration (3-E-A)	ation (3-E		Indic	Indicator Output		Queue Jump (3-E-B)	E-B)	Free Pla	Free Plans (3-E-E)	E)	Access	Access Utilities (9-5)
Enable in Plans	lnp	Input Ty	ype Stop	ob do	Grn Hold	\vdash	Hold Phase	Max Gr	Hold I	Max Grn Hold Hold Phase	Password	*** pro
Plan 1-9		0.0	OPT 0	0		•				• • • • • • • • • • • • • • • • • • • •	Timeout	30
Plan 11-19		0.0	OPT 0	0		:						

YELLOW YIELD COORDINATION

	Restricted	:	:
	Min Recall Restricted	:	:
	Lag	.26 2.4.6.8	.262.4.6.8
	Coord	.26	.26
	ф		
	-7-		
	-12345678-		
Force-Offs	ι¦		
Force	-4-		
	င့်		
	-2-		
	+		
	Perm		
	Offset		
	lo Grn		
	Long Grn N		
	/-Coord Plans (7-C,D) Long Grn No Grn Offset Perm	Plan C	Plan D
	Y-C		

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver C	Clearance	Next	Phase Green I	Det 2	Det 3	Det 4	Det 2 Det 3 Det 4 Sign	Slave	Slave Slave
				Priority		Port	Port	Port	Port Port Output Input	Indul	Output
						0.0	0.0	0.0	0	0.0	0

Post Mile: SM-082-15.946

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CHECKSUM:

2498

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Location: MII System: Master At:	Location: MILLBRAE AVE & RTE 101 SB RAMPS System: Master At:	District: 04 I/C:	Designed By: Installed By: Service Info:	
Timing Change:	ge: Date Start:	Date End:	Designed:	Installed:
	FLASH	-	Intersection Layou	no/
σ π α α υ α α α α α				4
		9	ላ V	MILLBRAE AVE
		SBON	✓ 4	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			/SBOFF/	
Comments and Notes:	nd Notes:		9	RAM Checksum

PAGE 1

TSCP: 2.20

2070 Controller Timing Chart

California Department of Transportation, Caltrans

Comments and Notes: TSCP 2.20 (BUILD 120) – 07/21/2015 Connected to Central Systems Via Network Port thru Hirschman Switch (Port 8)

 Page 2:
 2502
 Page 8:
 85AF

 Page 3:
 3F2C
 Page 9:
 1F3A

 Page 4:
 F29E
 Page 10:
 9619

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 191A
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 D4E0

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 EF20

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 8796
 Page 13:
 33F6

Printed: 12/1/2015

Post Mile: SM-101-17.963

CONFIGURATION PHASE FLAGS

. 2 . . 6 . .

(2-1-1-4)

Phases (2-1-1-1	1)
Permitted	.2.4.6
Restricted	

Permitted	.2.4.6
Restricted	:
hase Recalls (2-1-1-2)	(2-1-1-2)
/ehicle Min	.26
/ehicle Max	:
edestrian	
Sicycle	:

S						
Phase Features	Double Entry	Rest In Walk	Rest In Red	Walk 2	Max Green 2	Max Green 3
2-1-1-3)	:		:			
Phase Locks (2-1-1-3)	Red	Yellow	Force/Max			

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Startup (2-1-1-5)	
First Green Phases	.26
Yellow Start Phases	
Vehicle Calls	.2.4.6
Pedestrian Calls	
Yellow Start Overlaps	
Startup All-Red	5.0

×	Special	Single E	Drivewa	Drivewa	Leading			
			:		:		-2-4)	
	Flashing Colors (2-1-2-2)	Yellow Flash Phases	Yellow Flash Overlap	Flash In Red Phases	Flash In Red Overlap		Protected Permissive (2-1-2-4)	Protected Permissive
Omit On Green	:	:::::::::::::::::::::::::::::::::::::::	:	:::::::::::::::::::::::::::::::::::::::	:			:::::::::::::::::::::::::::::::::::::::
	-	0	က	4	2	9	7	ω
Call To Phase (2-1-2-1)	:::::::::::::::::::::::::::::::::::::::			:	:			
Ca	_	2	က	4	2	9	7	œ

:-2)		••••		
Flashing Colors (2-1-2-2)	Yellow Flash Phases	Yellow Flash Overlap	Flash In Red Phases	Flash In Red Overlap

Special Operation (2-1-2-3)	
Single Exit Phase	
Driveway Signal Phases	
Driveway Signal Overlaps	:::
Leading Ped Phases	

Pedestrian (2-1-3)	***************************************			
Pede	P1	P2	P3	P4

	Not		:				
	No Start						
	Omit						
2-1-4)	Parent			ž	*********		
Overlap (2-1-4)	Overlap	Α	В	၁	D	Е	ш

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P7

P8

P5 **P**6

PAGE 2

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California Department of Transportation, Caltrans

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10 16 0 30 50 50

0

0 10 10 10 50 50 50 5.0 5.0

10

10 9 16

Flash Don't Walk

-- Walk 1

Phase (2-2)

Minimum Green

9 0 0

> 10 10 50 50 50

5.0 5.0 5.0 1.0 0.0 1.0 5.0

5.0 5.0 5.0 1.0 0.0 1.0 5.0 1.0

0.0 3.5 2.5 0.0

0.0 2.0 1.0 0.0

> 5.0 5.0

3.5 2.5 0.0

0.0

5.0 5.0 5.0 1.0

50

50

50

50

50

50 50 50

50

24 50

30 20

50 50

> Max Green 2 Max Green 3

Max Green 1

Max Initial

Det Limit

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0 0

> Delay/Early Walk Solid Don't Walk

-- Walk 2 --

Ped/Bike (2-3)

AII-Red

Yellow

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G

0.0

4.0

1.2 4.0 0.0

0.8 3.6

1.2

1.0 5.0 0.1

0.1

0.0 1.0 5.0 1.0

0.1

0.0

Add Per Vehicle

Maximum Gap Minimum Gap

Extension

Reduce Gap By

 \geq

Reduce Every

5.0

1.0

0.0

0.1

5.0

1.0 0.0 1.0 0 0 0

0 0 0

0 0 0

> 0 0

> 0 0

0 0 Max 2 Extension

Red Revert

0.0

0.0

0.0

0.0

0.0

Bike All-Red

Bike Green

Red Revert (2-5

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Overlap (2-4)

Yellow Green

Red

OVERLAP TIMING

Max/Gap Out (2-7)

0

Max Cnt Gap Cnt

2.0

Time

0.0 5.0 0.0

0.0 5.0 0.0

0.0 5.0 0.0

0.0

0.0 5.0 0.0

5.0 0.0

All-Red Sec/Min (2-6)

5.0

SEC

0.0 All-Red Sec/Min:

PAGE 3

Location: MILLBRAE AVE & RTE 101 SB RAMPS

TSCP 2.20

15 or 254 = Flash14 or 255 = Free MANUAL RESIDENT ASSESSED FRANCIS MANUAL RESIDENT SECURIOR **FREE PLAN PHASE FLAGS** MANUAL COMMANDS Cond Grn Veh Max Master Timer Sync (7-A) Manual Plan (4-1) Plan: 1-9 Bike Omit **Enable in Plans** Master Sub Master OffSet 2.4.6.8 .2..6.. Veh Min : : : : : 7-E) Free Cond Lag Ped Output Input 11-19 21-29 Plan 1-9 ф : Green Factors or Press [F] to Select Force-Off Bike -7-9 Ped 4 -4-Veh Max : : : : : COORDINATION ငှ -2-Veh Min + O : : : : : : : : : : : : Omit Offsets m Local Plan 1...9 (7-1) PHASE FLAGS Local Plan 1...9 (7-1) TIMING DATA V Hold Cycle Multi Lag Gap Sync : : : : : Plan 2 Green Factor Plan 3 Green Factor Plan 6 Green Factor Plan 7 Green Factor Plan 8 Green Factor Plan 1 Green Factor Plan 4 Green Factor Plan 5 Green Factor Plan 9 Green Factor Lag Plan 1 Plan 2 Plan 3

Checksum:

PAGE 4

F29E

Printed: 12/1/2015

Offset A, B, or C

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Special Function Override (4-2)

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Plan 4 Plan 5 : : : : :

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Plan 6

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Plan 7

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Plan 8

Control

က 4

NORMAL NORMAL

NORMAL

NORMAL Control

(4-3) OFF

Detector Reset

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Local Manual (4-4)

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Plan 9

Location: MILLBRAE AVE & RTE 101 SB RAMPS

CHECKSUM: 191A

Printed: 12/1/2015

Local Plan 11...19 (7-2) TIMING DATA

California Department of Transportation, Caltrans

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					1	[Offsets	s]	ຜັ	een Fa	ctors o	r Press	s [F] to	Select	Green Factors or Press [F] to Select Force-Off	JJC.
		Cycle	Multi	Cycle Multi Lag Gap	4	В	ပ	-1-	-2-	-3-	-4-	ا ب	-9-	-7-	8-
Plan 11 Green Factor	en Factor	9						2				- 7			
Plan 12 Green Factor	en Factor											-			
Plan 13 Green Factor	en Factor														
Plan 14 Green Factor	en Factor						9								
Plan 15 Green Factor	en Factor														
Plan 16 Green Factor	en Factor														
Plan 17 Green Factor	en Factor											3			
Plan 18 Green Factor	en Factor														
Plan 19 Green Factor	en Factor														

Local Plan 11...19 (7-2) PHASE FLAGS

	Lag	Sync	Hold	Omit	Veh Min	Veh Max	Ped	Bike
Plan 11	:	:	:	:	:	:	:	:
Plan 12	:	:	:	:	:	:	:	
Plan 13	:	:		:	:			:
Plan 14	:	:	:	:	:	:	:	:
Plan 15	:	:			:	:		:
Plan 16	:	:	:	:		:	:	:
Plan 17	:							
Plan 18	:	:	:					
Plan 19	:	:	:	:	:	:	:	

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COORDINATION

Local Plan 21...29 (7-3) TIMING DATA

California Department of Transportation, Caltrans

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Printed: 12/1/2015

		Cycle	Multi	Cycle Multi Lag Gap	0 1	Offsets]	O	Greer -1-	Fact	ors or F	Press [Green Factors or Press [F] to Select Force-Off -234567-	elect Fe	orce-O	≖ Ψ
Plan 21 G	Plan 21 Green Factor														
Plan 22 G	Green Factor														
Plan 23 G	Green Factor														
Plan 24 G	Plan 24 Green Factor														
Plan 25 G	Plan 25 Green Factor				-			5							
Plan 26 G	Plan 26 Green Factor					,									
Plan 27 G	Plan 27 Green Factor														
Plan 28 G	Green Factor														
Plan 29 G	Green Factor														
Loca	Local Plan 21.		7-3) F	2129 (7-3) PHASE FLAGS	FLA	GS				3					
	Lag	Sync	nc	Hold		Omit		Veh Min		Veh Max	X	Ped		Bike	d)
Plan 21			:						_			,	•		:
Plan 22	:	:	:						_		:			i	:
Plan 23			:					,	_					i	:
Plan 24		•	:	••••	•	:			_		:		•		:
Plan 25		i	:		•	:			_		:				:
Plan 26	:	i	:						_		:		:		:
Plan 27		:	:						_						:
Plan 28		i	:		·	:					:		:	i	:
Plan 29		:	:			:		:	_		:	:	:		:

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Delectors Please Cook Countrol Co	ete	Detector Attributes (5-1)			Slot	Dete	ctor Cor	Detector Configuration (5-2)	n (5-2)		Failure Times(5-3)	Minutes	tes	Failure	Failure Override (5-4)	(5-4)	*	-
Continue	Det	Туре	Phases	Lock		Det	Delay	Extend	Recall	Port	Maximum On Tin	le le		Detect	- 1			
Continue		COUNT+CALL+EXTEND	1	Q Q	IIU	-			9	3.2	Fail Rocat Time		Γ	Detect	ors 9-16	.0	:	:
System Detectors 25-52 The system Detector Assignment (5-5) The system Detectors 25-52 The syst		COUNT+CALL+EXTEND	1	N _O	IIL	7			10	7.2	וווום שפפר וווום	$\frac{1}{2}$	7	Detect	ors17-24	_		
Particular State	_	COUNT+CALL+EXTEND		9	IZU	က			10	-:								
Peretors 33-40 191 5 10 6.2 10 10 10 10 10 10 10 1	_	COUNT+CALL+EXTEND		9	12L	4			9	5.				Detect	Ors 25-3	7	:	:
Continue	_	COUNT+CALL+EXTEND	2	9	I3U	S			9	4.5				Detect	ors 33-4	0		:
System Det No. 34 7 0.5 10 2.4 2.4 2 3 4 5 6 7 8 4 5 6 7 8 4 5 6 7 8 4 5 6 7 8 4 5 6 7 8 4 5 6 7 8 4 5 6 7 8 4 5 6 7 8 5 6 7 8 5 6 7 8 6 7	_	LIMITED		2	I3L	ဖ		0.5	은	6.2				Detect	ors 41-4	4		
System Detector Assignment (5-5) System Detector Assignment Detector Assignment Detector Assignment Detector Detector	_	LIMITED		9	I4U	7		0.5	9	2.1						-		
Sys Def No 15t 10 13t 15 10 13t 15 15 15 15 15 15 15 1	_	COUNT+CALL+EXTEND		9	I4L	00			9	7.4	System Detector	Assignm	ent (5-	<u>(</u>				
Det No. 15 10 75	_	COUNT+CALL+EXTEND		2	ISU	တ			9	3.4	Sve Dot	0	8	L	L	_	α	
Color Colo	_	COUNT+CALL+EXTEND	3	2	ISL	우			9	9.7	Oys Del	1	,	+	+	1	>	_
SYS DET SYS	_	COUNT+CALL+EXTEND	4	2	N9I	÷		1.5	9	1.3	Det Nu							
Color Colo		COUNT+CALL+EXTEND	4	2	19I	12		1.5	10	1.7	L	_	\vdash		က	15	16	
Control Cont		COUNT+CALL+EXTEND	4	2	170	13		1.5	0	4.7	-		+	+	+		1	_
CIC Operation (5-6-1) Enable in Plans	_	CALL+EXIEND	4	2	17L	14			0	6.4	20120		1	1	_		4	_
Comparison	_	CALL+EXTEND	4	9	I8U	12			우	2.3		noration	(F-6-1)					
CIC Values (5-6-2) Volume Occupancy Demand Streets Occupancy Detector occupancy Occupancy Occupancy Detector occupancy O	- '	COUNT+CALL+EXTEND	4	2	I8L	16			2	7.8	5 1	peration.	1-0-0	ŀ		Γ		
The first column The first c	-	COUNT+CALL+EXTEND	1	2	190	17			10	3.6	Enab	le in Pla	ns	:				
CIC Values (5-6-2) Volume Occupancy Demand	-	COUNT+CALL+EXTEND	3	9	10I	18			9	3.8		L				ıL		Г
The particular The	-	COUNT+CALL+EXTEND		9	110U	13			9	4.1	CIC Values (5-6	-5)	Volun		ccupanc		mand	
Table Tabl		COUNT+CALL+EXTEND	4	2	I10L	20			10	4.2	Smoothin	0	99.0		99.0		0.66	_
Factorial Color Factorial		COUNT+CALL+EXTEND	5	9	JIU	7			10	3.1	Militini		0 1	t	0 00	\downarrow		7
Particular Par		COUNT+CALL+EXTEND	5	9	JIL	22			10	7.1	Mainplie		† 5.	+	0.00	_		
Phase No 12L 24 10 16 16 16 16 16 16 16		COUNT+CALL+EXTEND		9	JZU	23			10	1.2	Exponent		0.50		1.00			
Sys Det 1 2 3 4 5 6 7 8 8 8 8 8 8 8 8 8	_	COUNT+CALL+EXTEND	9	2	J2L	24			우	9.1	10000	or to Db.	A CO		9 4/E	6		
Sys Det 1 2 3 4 5 6 7 8 8 1 1 2 3 4 5 6 7 8 8 1 2 3 4 5 6 7 8 8 1 2 3 4 5 6 7 8 8 1 2 3 4 5 6 7 8 8 1 3 4 5 6 7 8 8 1 3 4 5 6 7 8 8 1 4 4 5 6 7 8 8 1 4 4 5 6 7 8 8 1 4 4 5 6 7 8 8 1 4 4 4 4 4 4 4 4 4		COUNT+CALL+EXTEND	9	9	J3U	22			9	4.6		-10-FU	ase As	Signin	-o-c) 1ua	\sim		
Phase Color 140 140 141 15 16 16 173 18 18 18 19 19 19 19 19		LIMITED	6	9	J3L	56		0.5	9	6.3	Sys Det 1					7	∞	
The first color between the		LIMITED	9	9	J4U	27		0.5	9	2.2	Phase							
System S		COUNT+CALL+EXTEND	9	2	J4L	78			우	7.3		+	+	+	+	L	,	
Phase Phas		COUNT+CALL+EXTEND	7.	9	JSU	53			우	3.3		\dashv	\dashv	\dashv	\dashv	2	٩	
Table Tabl		COUNT+CALL+EXTEND	7.	2	JSL	30			9	7.5	Phase							
Table Tabl		COUNT+CALL+EXTEND	ω	0	JeU	31			0	1.4						İ		
The time The time		COUNT+CALL+EXTEND	ω.	0	J9F	32			9	φ.								
171 34		COUNT+CALL+EXTEND		02	J7U	33			0 5	4.8	du	out File	Pol (t-Bil	Assic	Muk	ents	
+EXTEND 18U 35 10 2.4 32. Cabinet - For Reference Only +EXTEND 18L 36 10 7.7 1 2 4 5 6 7 8 9 10 11 12 13 4 5 6 7 8 9 10 11 1 13 13 1 1 2 3 4 5 6 7 8 9 10 11 1 1 1 3 4 5 6 7 8 9 10 11 1 1 1 3 4 5 6 7 8 9 10 11 <		CALL+EXIEND		2 2	JJL	34			2 5	0.0				1				
+EXTEND 18L 36 10 77 1 2 3 4 5 6 7 8 9 10 11 12 13 +EXTEND 5 NO 19U 37 10 4.4 1 4.5 1.1 4.5 2.1 4.5 2.1 4.5 7.2 1.3 4.7 2.3 3.6 4.1 6.6 5.1 5.2 +EXTEND		LIMITED	xo (2 2	J&U	35			0 :	2.4		332 Ca	pinet -	For R	eterence	Only		
HEXTEND HOLLOW HOLLOW HEXTEND HOLLOW HO		COUNI+CALL+EXIEND	20	2 2	.I8L	36			0 5	1.7	H	\vdash	H	1	0	\vdash	\vdash	\vdash
+EXTEND 7. NO J9L 38 10 3.7 I. 3.2 I.1 4.5 2.1 3.4 I.3 4.7 2.3 3.6 4.1 6.6 5.1 5.2 +EXTEND		COUNT+CALL+EXTEND		2	Jec	37			9	3.5	4	ţ		1	^	-	-	-
-+EXTEND6 NO JIOU 39 100 4.3 10. 4.3 10. 4.4 10		COUNT+CALL+EXTEND	7.	9	.19L	38			9	3.7		2.1	1	4.7	3.6	_	5.1	_
-+EXTEND8 NO J10L 40 10 4.4 10 5.1 10. 4.4 10 5.1 10. 4.4 10 5.1 10. 4.4 10 5.1 10. 4.4 10 5.1 10. 4.4 10. 5.1 10. 4.4 10. 5.1 10. 4.4 10. 5.2 10. 4.4 10. 5.2 10. 4.4 10. 5.2 10. 4.4 10. 5.2 10. 4.4 10. 5.4 1		COUNT+CALL+EXTEND	9	9	J10U	33			10	4.3	7	7 7	_	7 7	3.0	+	+	-
2 NO I12U 41 42 10 5.1 42 10 5.3 11 1.6 6.3 7.3 1.4 4.8 2.4 3.5 4.3 2.8 5.5 5.6 6 NO I13U 43 10 5.2 1.6 6.3 7.3 7.5 1.8 6.5 7.7 3.7 4.4 6.1 5.7 5.8 I13U 43 10 5.4 10 5.4 10 5.4 6.1 5.7 3.7 4.4 6.1 5.7 5.8		COUNT+CALL+EXTEND		9	J10L	9			9	4.4	1	•	-	†	0.0	-	3	_
4 NO I12L 42 10 5.3 6 NO I13U 43 10 5.2 6 NO I13L 44 10 5.4	_	PEDESTRIAN	2	9	112U	41			10	5.1	3.1	2.7		4.8	3.5	_	5.5	_
6 NO II3U 43 10 5.2		PEDESTRIAN	4	2	112L	42			9	5.3	_	7.3		6.5	3.7		5.7	
8 NO II3L 44 10		PEDESTRIAN	9	9	113U	43			9	5.2	_		_					
		PEDESTRIAN	8	ON N	113L	44			10	5.4								

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TOD SCHEDULE

Ţ,	SO	⋖	4	4	4	4	4	4	4	4	4	<	4	4	4	4	4
(8-2-6)	Plan																
Table 6 (8-2-6)	Time							_	_	_		1					
	so	۷	⋖	۷	⋖	⋖	4	4	⋖	⋖	4	⋖	⋖	۷	⋖	⋖	⋖
(8-2-5)	Plan																
Table 5 (8-2-5)	Time																
	SO	A	A	A	A	A	A	A	A	A	A	A	A	A	4	A	A
(8-2-4)	Plan																
Table 4 (8-2-4)	Time																
	so	A	4	4	4	4	4	4	4	4	4	A	4	4	4	4	4
(8-2-3)	Plan																
Table 3 (8-2-3)	Time																
	SO	4	4	4	4	4	4	⋖	⋖	⋖	⋖	⋖	⋖	⋖	⋖	۷	4
(8-2-2)	Plan																
Table 2 (8-2-2)	Time								٠								
	SO	A	4	A	4	A	A	A	A	A	٩ _.	А	A	A	A	A	A
(8-2-1)	Plan								15	7		*					
Table 1 (8-2-1)	Time								1								Ţ

WEEKDAY ASSIGNMENT

Weekday Lable Assignments						
Mon	Tue	Wed	Thu	Fri	Sat	Sun
-	-	-	-	-	2	7

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	Solar Clock Data (8-4)	North Latitude 34	West Longitude 118	Local Time Zone 8		Sabbatical Clock (8-5)	/ Ped Recall	:	•		Daylight Saving (8-6)	(2) S								18. Max Green 3	19. Rest in Walk	20. Rest in Red	21. Free Lag Phases	22. Special Functions	23. Truck Preempt	24. Conditional Service	25. Conditional Service	26. Leading Ped	27. Traffic Actuated Max 2	41 Protected Permissive	A Drotototol Compositor	4Z. FI Olected Fermissive	Action Code = Phases added to normal setting	100+Action Code = Phases removed	200+Action Code = Phases replaced		
	Solar C	North L	West L	Local 1		Sabbat	Hebrew	Sabbath	Holiday		Dayligh	Enoblod	Ellable							odes:		ted	cted	in Recall	5. Veh Max Recall	ecall	ecall	ock	Lock	10. Force/Max Lock	e Entry	ord C	ord D		ing	2	Green 2
		Table																		Action Codes:	0. None	1. Permitted	2. Restricted	4. Veh Min Recall	5. Veh M	6. Ped Recall	7. Bike Recall	8. Red Lock	9. Yellow Lock	10. Force	11.Double Entry	12. Y-Coord C	13. Y-Coord D	14. Free	15. Flashing	16. Walk 2	17. Max Green 2
	Fixed Holiday Table (8-2-9)	MOG																			Phases	4			:			:						:	:	:	
	iday Tab	Day															, A.				Action	17	13														
	ixed Hol	# Mnth	_	2	3	4	5	9	2	8	6	10	11	2	3	14	5	9				TF	TF		:	:	:	:				:				:	::
-	<u>L</u>	Table							•			_		,	_	1	-	_	1	-3)	DOW	MTWTF	MTWTF			:	:	•		•	:	:		:	•	:	:
	3)				•														NCTIO	tions (8	End	1900	1900														
S	ble (8-2-8	DOW				:						:						:	TOD FUNCTIONS	TOD Functions (8-3)	# Start	0020	2 0700	3	4	2	9		8	6	10	-	12	13	14	15	16
HOLIDAY TABLES	Floating Holiday Table (8-2-8)	Week	^																-	Ė	1	-	.4	۳,	4.	4)	۳	7	w	6	Ť	1	=	_	-	<u> </u>	<u> </u>
LIDAY	ating Ho	Mnth					4																														
¥	음	#	-	7	က	4	2	9	7	8	6	10	1	12	13	14	15	16																			

COMMUNICATIONS

C20 (6-1-2)	Address	Protocol	Limit Access	Band	Parity	Data Bits	Stop Bits	RTS On Time	RTS Off Time	Handshaking
		AB3418	0	1200	NONE	80	1	20	20	NORMAL
C2 (6-1-1)	Address	Protocol	Limit Access	Baud	Parity	Data Bits	Stop Bits	RTS On Time	RTS Off Time	Handshaking

Address AB3418 0 Limit Access 1200 NONE 8 Data Bits 1 Stop Bits 20 RTS Off Time Handshaking			AB3418	0	1200	NONE	8	1	20	20	NORMAL
AB3418 0 1200 NONE 8 1 1 20 20 20 NORMAL	C21 (6-1-3)	Address	Protocol	Limit Access	Band	Parity	Data Bits	Stop Bits	RTS On Time	RTS Off Time	Handshaking
			AB3418	0	1200	NONE	80	1	20	20	NORMAL

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0-None

1-Status Only

2-Status, Set Pattern, Time

3-Status, Set Pattern, Time, Manual Plan

SOFT LOGIC

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LLBA	
LLBA	
ALLB4	
LLBA	
LLBA	
LLBA	

Data

OP

Data

OP

Data

OP

Soft Logic (6-2) Data

Callback Numbers (6-33)	(6-33)
Line Out	
Local Toll	
Long Distance	
Delay	10
Area Code	
Phone Number	

			10		5	
Line Out	Local Toll	Long Distance	Delay	Area Code	Phone Number	

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Line Out	Local Toll	Long Distance	Delay	Area Code	Phone Number
				*Refer to User's Manual for Data and OP Codes	
13	14	15	16	*Be	

10

NETWORK

Network (6-4)	(1						
Address	_	_					
Protocol	AB3418	41	8				
Port	27000	lğ					
IP Mode	STATIC	Ė	ပ				
IP Address	172		22		œ		97
Netmask	255		255	٠	255		0
Broadcast	0		0		0	•	254
Gateway	172		22	٠	8		_

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RAILROAD PREEMPTION

RH	(3-1-1)	Timing	Pha	Phase Flags (3-1-2)		Pede	Pedestrian Flags (3-1-3)	-1-3)		Overlap Flags (3-1-4)	3-1-4)
	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash
Ť	Clear 1	10	.25		:	::		.2.4.6.8	:	:	
	Clear 2				:	::	:	:		:	
	Clear 3					::	:	:	:	:	
	Hold		:		12345678	:	:	:	:	:	ABCDEF
	Exit		Evit Darameters (3.1.5)	ars (3-1-5)			2	Configuration (3-1-6)	1-6)		
	Min		בעוניו מומוווכני	(0-1-0)			3	IIII Ballation (2	(0-1		
	5		Phase Green	Phase Green Overlap Green Vehicle Call	Vehicle Call	Ped Call		Port	Gate Port	Latching	Power-Up
	Ped CIr		9 9 9	5 0 0	19345678	10345678 0 4 6 8		2.5	00	VEC	EI ACHING
					1001071			9	2		

		The same of the sa										
RH	(3-2-1)	Timing	Pha	Phase Flags (3-2-2)		Pede	Pedestrian Flags (3-2-3)	(3-2-3)		Overlap Flags (3-2-4)	3-2-4)	
N	Delay		Grn Hold	Yel Flash	Red Flash	Walk	Flash DW	Solid DW	Grn Hold	Yel Flash	Red Flash	
	Clear 1	10	47.			:		.2.4.6.8		:		Т
	Clear 2		:	:::::::::::::::::::::::::::::::::::::::	:			:	:	:		Т
	Clear 3		::	:	:	:		:	:	:		Τ
	Hold		1236	::	:	.26		48	:	:	:	Т
	Exit		c L	í				-	-			1_
	Min Grn		EXIT Parameters (3-2-5)	ers (3-2-5)	NOT THE RESIDENCE TO SECURITY OF THE PERSON.	Contract Substantial Contract		Configuration (3-2-6)	-2-6)	S. 1.35 C. Donbilli or album 32.	(株式 100mm	
	1000		- Phase Green	Phase Green Overlap Green Vehicle Call	Vehicle Call	Ped Call		Port	Gate Port	Latching	Power-up	
September 1	15 000				7		T			CL.		
			-					2.6	0.0	YES	DAKK	

EMERGENCY VEHICLE PREEMPTION

EVA		Preempt Timers	ners	Phase Green	Overlap
(3-A)	Delay	Clear	Max		Green
		2	35	.25	••••
	Port		Latching	Phase Te	Phase Termination
	5.5		NO	ADVA	ADVANCE
FVC	Pre	Preemnt Timers	pre	Phase Green	Overlan
(3-C)	Delay	Clear	Max		Green
1 2		S	35	16	:
	Port	1	Latching	Phase Ter	Phase Termination

EVB	Pre	Preempt Timers	ıers	Phase Green	Overlap	
(3-B)	Delay	Clear	Max	×	Green	
		5	35	47.	•••••	$\overline{}$
	Port		Latching	Phase Ter	Phase Termination	
	5.6		NO	ADVANCE	NCE	
		100				
EVD	Pro	Preempt Timers	ıers	Phase Green	Overlap	
(U-c)	Delay	Clear	Max		Green	
34		2	35	38	•••••	_
	Port		Latching	Phase Termination	mination	
	5.8		NO	ADVANCE	NCE	

	The state of the s	PAGE 11
ADVANCE		
ON		
5.7		17.963

INPUTS

		7 Wire I/C (2-1-5-1	5-1)		
		Input	Port	Input	Port
Enable	NO	R1	3.8	Free	3.6
Max ON		R2	3.5	D2	2.8
Max OFF		R3	3.7	D3	6.1

Cabinet Status (2-1-5-3	(2-1-5-3)
Input	Port
Flash Bus	
Door Ajar	
Flash Sense	6.7
Stop Time	6.8

Specia	Special Function (2-1-5-4)
Input	Port
-	
2	
က	
4	

Maildal Colling (2-1-3-2)	17-0-1
Input	Port
Manual Advance	9.9
Advance Enable	9.9

Operation	FLASHING
Port	2.7

Battery Backup (2-1-5-5)

(2-1-5-6)	Port D	2.8
Y-Coordination (2-1-5-6	Port C	6.1

OUTPUTS

0 Unused (no output) Loadswitch Codes:

9-14 Overlap A-F 1-8 Vehicle 1-8

41-47 Special Functions 21-28 Ped 1-8

10 0

24 28 0

4 ω

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22 26 0

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Loadswitch Assignments (2-1-6)

0

12

F

4

13 D

+ middle output of

loadswitches 3 and 6 Channel 9 and 10 41 Protected Permissive Flashing Phase 1

45 Protected Permissive Flashing Phase 5

51-57 Special Functions 71-72 Seven Wire I/C

43 Protected Permissive Flashing Phase 3

47 Protected Permissive Flashing Phase 7

California Department of Transportation, Caltrans

TRANSIT PRIORITY

Local FI	Local Plans (3-E) 19 1119	Early		Green	Innibit	Fnase 1	rugse z	Phase 3	Frase 4	Phase 5	Phase 6	Phase /	Phase &
		Green		Extend (Cycles	Minimum	Minimum	Minimum	Minimum	Minimum	<u> Minimum Minimum Minimum Minimum Minimum Minimum Minimum Minimum</u>	Minimum	Minimum
Plan 1	Green Factor												
Plan 2	Green Factor												
Plan 3	Green Factor												
Plan 4	Green Factor					2							
Plan 5	Green Factor												
Plan 6	Green Factor												
Plan 7	Green Factor												
Plan 8	Green Factor												
Plan 9	Green Factor												
			• 1										
Plan 11	Plan 11 Green Factor												
Plan 12	Plan 12 Green Factor				5								
Plan 13	Plan 13 Green Factor												
Plan 14	Plan 14 Green Factor												
Plan 15	Plan 15 Green Factor												
Plan 16	Plan 16 Green Factor											-	
Plan 17	Plan 17 Green Factor												
Plan 18	Plan 18 Green Factor								*				
Plan 19	Plan 19 Green Factor												
nsit Prio	Fransit Priority Configuration (3-E-A)	(3-E-A)		Indicate	Indicator Output		Queue Jump (3-E-B)	-E-B)	Free PI	Free Plans (3-E-E)	(=	Access	Access Utilities (9-5)
Enable in Plans	lans	Input	Type	Stop	Go	Grn	Grn Hold Ho	Hold Phase	Max G	rn Hold	Max Grn Hold Hold Phase	Password	vord ***
Plan 1-9		0.0	OPT	0	0							Timeout	ut 30
DIO 44 40		0	F	•	•								

YELLOW YIELD COORDINATION

	Restricted	:	:
	Min Recall Restricted	.262.4.6.8	.262.4.6.8
	Lag	.2.4.6.8	.2.4.6.8
	Coord	.26	.26
	ф ф		
The second second	-7-		3
	-123- -4567-		
Force-Offs	- 2 -		
Force	-4-		09
Ī	-3-		
	-5-		
	Perm		ř.
	Offset		13
	No Grn		140
	Long Grn		75
	Y-Coord Plans (7-C,D) Long Grn No Grn Offset Perm	Plan C	Plan D

TRUCK PRIORITY

Truck Priority (3-F)	Passage	CarryOver	er Clearance	Next	Phase Green Det 2 Det 3 Det 4 Sign Slave Slave	Det 2	Det 3	Det 4	Sign	Slave	Slave
				Priority		Port	Port	Port	Port Port Output Input Output	Input	Outpu
						0.0	0.0	0.0	0	0.0	0

Appendix C

Crash Summary

Accident report statistics, taken at red light camera intersections (El Camino/Millbrae Ave., Millbrae Ave/Rollins Rd., s/b Hwy 101/E Millbrae Ave).

<u>Year</u>	# Acc	eidents
2000	47	
2001	55	
2002	48	
2003	43	
2004	25	a.
2005	32	
2006	23	
2007	24	
2008	23	
2009	22	
2010	29	
2011	30	
2012	24	
2013	17	
2014	18	
2015	8	(1/1/2015 thru 6/30/2015)

Appendix D

Traffic Counts

```
Volume
                  MSC3( Version
Generated
                                       2.01 Copyright 1990-1! Mitron Systems Corporation
             Millbrae Avenue
                            El Camino Real to Rollins Road
Location
                .....SAN MATEO
 County
                                   CO.
Recorder
             Set
                                       11:58
                          4/15/1999
Recording
Recording
             End
                          4/23/1999
                                      11:15
             Time
                                 15 Minutes
Operator
             Numbe ...
                                 22
             Numbe ....
Machine
                                  2
               .....
Divide
             Ву
                                  2
Summation
Two-Way
             .....No
                             Direction: Easthound
Thursday 04/15/1999 channel 1
       1300 1400 1500
                              1600
                                                1800 1900 2000
                                                                       2100 2200 2300 2400 100 200 300 400 500 600 700 800 900 1000 1100 1200 Totals
                                       1700
                                                2147
                                                       1787
                                                                        1403
                                                                              1307
                                                                                      803
                                                                                            510 231 128
                                                                                                           76 113 252 753
                                                                                                                                1834
                                                                                                                                      2652 2569 2014 1871 2132
                                                                                                                                                                          35895
                                555
                                                                                                                                 287
                                                                                                                                       581
                                                                                                                      49
64
91
                                                                                                      40
33
26
                                                                                                                                 430
440
477
        676
               633
                     565
                                596
                                        532
                                                 559
                                                        456
                                                               409
                                                                         353
                                                                               358
                                                                                      211
                                                                                            151
                                                                                                  75
                                                                                                            18
                                                                                                                 27
                                                                                                                          175
187
                                                                                                                                       625
723
                                                                                                                                              684
537
                                                                                                                                                    548
531
                                                        445
432
         731
               B37
                     530
                               554
                                        492
                                                 537
                                                               365
                                                                         355
                                                                               314
                                                                                                                 26
                                                                                                                                                          423
                                569
                                        570
                                                 492
                                                               393
                                                                         384
                                                                               296
                                                                                      190
                                                                                                                          250
                                                                                                                                              537
AM
AM
PM
             Peak
                                       7:30 to
                                                       8:30 (2961 vehicles)
                   Hour
             Peak Hour Factor
                                             91.30%
             Peak
                                       12:15 lo
                                                       13:15 (2784 vehicles)
                         Factor
            Peak
                  Hour
                                              95.20%
Friday 04/16/1999 channel 1
                          Direction: Eastbound
       1300 1400 1500
                              1600
                                       1700
                                                1800 1900 2000
                                                                       2100 2200 2300 2400 100 200 300 400 500 600
                                                                                                                               700 800
                                                                                                                                             900 1000 1100 1200 Totals
       2659 2548 2371
                              2252
                                       1915
                                                1900
                                                       1778
                                                             1515
                                                                        1361
                                                                              1319
                                                                                            673 463 291 142 142 187 369
                                                                                                                                      1059
                                                                                                                                            1437
                                                                                                                                                        1843 1924
                                                                                                                                                                          31449
        619
                               605
                                        465
                                                 498
                                                        476
                                                               394
                                                                        330
                                                                               332
                                                                                     331
                                                                                                152
                                                                                                                 41
                                                                                                                      26
                                                                                                       58
                                                                                                                           79
                                                                                                                                 140
                                                                                                                                       249
                                                                                                                                              303
                                                                                                                                                    446
                                                                                                                                                          422
                                                                                                                                                                446
                                                        423
447
                                                                        329
365
                                                                               303
353
                                                                                                      45
87
                                                                                                                                 152
170
                                                                                                                                       274
265
                                                                                                                                              332
346
        705
               643
                     593
                               609
                                        490
                                                 461
                                                               369
                                                                                     238
                                                                                            95
                                                                                                143
                                                                                                            47
                                                                                                                 31
31
                                                                                                                       54
63
                                                                                                                                                                509
477
                                                                                      222
                                                                                            :79
                                                                                                            27
                                                                                                  82
                                                                                                                           129
                                                                                                                                                    388
                                                                                                                                                          518
              602
                     594
                               520
                                        526
                                                 481
                                                        432
                                                               388
                                                                         337
                                                                                      185
                                                                                                  86
                                                                                                     101
AM
AM
PM
PM
             Peak Hour
                                      10:30 to
                                                      11:30 (1935 vehicles)
            Peak Hour Factor
Peak Hour .....
                                              93.40%
                                                      13:15 (2684 vehicles)
                        Factor
                                             95.20%
            Peak Hour
Saturday 04/17/1999 channel 1 Direction: Eastbound
       1300 1400 1500
                              1600
                                       1700
                                                1800 1900 2000
                                                                       2100 2200 2300 2400 100 200 300 400 500 600 700 800 900 1000 1100 1200 Totals
       2176 2172 1841
                              1720
                                       1618
                                                1614
                                                       1516
                                                             1270
                                                                        1252
                                                                                     919
                                                                                            635 300
                                                                                                     190 159 117 142 258
                                                                                                                                            1015
                                                                                                                                                  1277
                                                                                                                                                        1581 1762
                                                                                                                                                                          25917
                               440
                                        438
                                                 370
                                                               316
                                                                        323
                                                                                     273
                                                                                                                                 102
                                                                                                                                              205
                                                                                                                                                    263
                                                                                                                                                          351
                                                                                                                                                                389
                                                                                                 68
63
69
                                                                                                                      47
36
34
                                                 421
403
                                                                        296
333
                                                                              347
303
                                                                                     248
208
                                                                                            180
                                                                                                       46
43
41
                                                                                                           38
29
                                                                                                                 24
40
                                                                                                                           66
65
                                                                                                                                 107
138
                                                                                                                                       166
                                                                                                                                             261
247
                                                                                                                                                   322
348
                                                                                                                                                                490
420
        562
               548
                     496
                               442
                                        365
                                                       359
                                                               307
                     435
                               408
                                        376
                                                        408
              546
                     483
                               430
                                        439
                                                 420
                                                       385
                                                               360
                                                                        300
                                                                              266
                                                                                                                                       203
AM
AM
PM
PM
                                      11:00 to
                                                      12:00 (1762 vehicles)
            Peak
                  Hour
            Peak Hour Factor
                                             89 90%
                                      12·15 to
                                                      13:15 (2187 vehicles)
                         Factor
                                             97.30%
            Peak
                  Hour
Sunday 04/18/1999 channel 1 Direction: Eastbound
       1300 1400 1500
                              1600
                                       1700
                                                1800 1900 2000
                                                                       2100 2200 2300 2400 100 200 300 400 500 600 700
                                                                                                                                     800
                                                                                                                                           900 1000 1100 1200 Totals
       2250 2168 2156
                              1774
                                       1508
                                                1562
                                                      1498
                                                             1231
                                                                       1295
                                                                              1165
                                                                                     685
                                                                                                159
                                                                                                      95
                                                                                                           50 104 311 976 2055 3456
                                                                                                                                           3267
                                                                                                                                                  2382
                                                                                                                                                        2287
                                                                                                                                                               1814
                                                                                                                                                                         34637
        579
                               425
                                        383
                                                 436
                                                        406
                                                               309
                                                                        305
                                                                              303
                                                                                     212
                                                                                            114
                                                                                                 64
                                                                                                       16
                                                                                                            17
                                                                                                                 12
                                                                                                                      46 184
                                                                                                                                345
                                                                                                                                                                484
                                                                                                                                       699
                                                                                                                                             988
                                                                                                                                                   586
                                                                                                                                                          545
        574
              519
                     570
                               508
                                        395
                                                 370
                                                       354
                                                              296
316
                                                                        369
                                                                              294
327
                                                                                     187
                                                                                            122
88
                                                                                                 36
26
                                                                                                      25
22
                                                                                                            9
                                                                                                                35
22
                                                                                                                      65
93
                                                                                                                         214
249
                                                                                                                                550
592
                                                                                                                                       862
985
                                                                                                                                             928
                                                                                                                                                    586
                                                                                                                                                          586
590
                               122
                                        372
                                                 419
                                                                        277
                                                                                      137
                                                                                                                                             700
                                                                                                                                                   813
              523
                     436
                               419
                                        358
                                                 337
                                                       391
                                                              310
                                                                                     149
                                                                                            65
                                                                                                      32
                                                                                                                     107
                                                                                                                                       910
                                                                                                                                                   597
            Peak
                  Hour
                                       7 30 10
                                                       8:30 (3811 vehicles)
AM
PM
            Peak
Peak
                  Hour
                        Factor
                                             96.40%
                                      13:30 to
                                                      14:30 (2261 vehicles)
PM
            Peak
                  Hour
                        Factor
                                             96.80%
Monday 04/19/1999 channel ) Direction: Eastbound
       1300 1400 1500
                                                1800
                                                      1900
                                                             2000
                                                                       2100 2200 2300 2400 100 200 300 400 500 600
                                                                                                                                     800
                                                                                                                                                  1000 1100 1200 Totals
       2053 2046 1877
                              1749
                                       1438
                                                1426
                                                       1266
                                                               930
        464
              557
                    464
                               477
                                        393
                                                 430
                                                       358
                                                              225
                                                                        208
                                                                              229
                                                                                     120
                                                                                                                          119
                                                                                                                                                    399
389
                               431
444
                                                                                                 35
33
25
                                                                                                                      45
46
76
                                        351
                                                 327
                                                        329
                                                              248
                                                                        249
                                                                                                       16
                                                                                                                 19
                                                                                                                          149
                                                                                                                                             554
522
                                                                               188
                                                                                     119
                                                                                            99
57
47
                                                                                                            15
17
                                                                                                                                       571
                                                                                                                                                          422
                                                                                                                                                                376
                                                                                                                                339
                                                                                                                 25
26
                                                       275
                                                                                                                                      635
587
                                                                                                                                                   387
396
        582
              528
                     450
                                        364
                                                 335
                                                              234
                                                                        314
                                                                               177
                                                                                     116
                                                                                                                          163
                                                                                                                                364
                                                                                                                                                          342
                                                                                                                                                                373
               480
                     500
                               397
AM
AM
PM
            Peak
                                       7:15 to
                                                       8:15 (2439 vehicles)
                  Hour Factor
                                             94.40%
            Peak
            Peak
                  Hour
                                      12 15 10
                                                      13:15 (2146 vehicles)
                                             92.20%
Tuesday 04/20/1999 channel 1 Direction Eastbound
       1300 1400 1500
                             1600
                                     1700 1800 1900 2000
                                                                      2100 2200 2300 2400 100 200 300 400 500 600 700 800 900 1000 1100 1200 Totals
       2045 1995 1837
                              1810
```

981 823 516 277 135 74 53 73 208 632 1365 2405 2315 1701 1551 1744

1551 1268 1035

	469 536 534 506	526 511 473 485	450 438 477 472	453 437	377 377 433 406	383 407 402 359	340 310 298 320	265 253 270 247	245 247 226 263	229 231 193 170	154 132 109 121	86 101 61 29	36 37 23 39	16 18 19 21	16 11 7 19	13 19 15 26	29 45 58 76	112 140 170 210	264 356 336 409	497 589 662 657	652 625 554 484	497 441 410 353	379 404 380 388	390 463 443 448	
AM AM PM PM		Peak Peak Peak Peak	Hour		7:30 t	98.00%			vehicles)																
Wedne		4/21/19 1400		annol 1 Direct	tion: East 1700	0081	1900	2000	2100	2200	2300	2400	100	200	300	400	500	600	700	800	900	.000	1100	1200 Tota	ils
	2216	2048	1893	1807	1626	1683	1382	999	963	873	532	334	137	86	66	81	206	624	1387	2269	2167	:737	1699	1869	28684
	522 524 557 613	542 499 523 484	485 491 452 465	491 411	366 434 379 447	450 406 412 415	370 346 351 315	258 265 215 261	260 233 230 240	226 232 200 215	179 127 120 106	118 99 55 62	45 28 38 26	24 24 20 18	16 16 17	23 17 16 25	37 40 50 79	125 132 158 209	243 368 349 427	480 549 652 588	634 581 498 454	437 442 423 435	441 412 425 421	441 500 477 451	
АМ АМ РМ РМ			Hour		7:30 t	94.10%		• •	vehicles)																
Thursd		2/1999		nel 1 Direction	n: Eastbou 1700	ınd 1800	1900	2000	2100	2200	2300	2400	100	200	300	400	500	600	700	800	900	1000	1100	1200 Tota	Is
	2310	2165	1894	1889	1706	1694	1400	1188	998	945	557	347	133	105	56	92	226	669	1355	2418	2508	1816	1773		28,718 arest to
	524 567 616 603	638 544 491 492	478 475 457 484	468 465	383 432 420 471	457 437 422 378	375 330 374 321	306 325 279 278	278 265 242 213	237 229 262 217	190 143 124 100	129 84 69 65	35 41 27 30	25 29 33 18	15 18 9 14	20 31 14 27	31 51 57 87	108 146 180 235	240 350 351 414	493 563 695 667	750 656 572 530	503 443 430 440	452 457 397 467		average
AM AM PM PM			Hour		7:30 t	92.30%			vehicles)												C	dally av	erage		30,032

.

Volume General Location County Records Records Sample Operato Machine Channel Divide Summal	r vg vg	Count by Code Sel Slari End Timo Number Number Number	Report MSC3000 MILLBRAE SAN 	AVE MATEO 4/15 4/15	ECR 86 CO. /1999 /1999 15 Menul 22 1	11.58 12:00 11.15		1990-1892 ROLLINS	Mitron	Systems	Corporati WESTBC															
Two-Wa	y	• • • • • • • • • • • • • • • • • • • •	No																							
Thursda	1300	4/15/1999 1400	Channel: 150	ю	I Direct	tion, W 1700	1800	1900	2000	2100	2200	2300	2400	100	200	300	400	500 G	00 70	008 0	900	1000	1100	1200 T	otals	
	2126	1717	200		1212	3076	3020	1817	1407	1028	931	752	372	184	95	62	68	105 2	24 59	1 978	1204	1258	1354	2397	27958	
	570 546	394	47	3	539 283	738 788	750 810	547 407	394 345	281 260	254 228	212 183	133 81	56 35	24 30	14 18	19 17		39 S			294 308	325 345	431 525		
	510 500	394 611			11 379	722 828	786 674	468 395	354 314	255 232	229 220	162	81 77	40 33	25 16	13 17	18		71 17 70 17			308 348	331 353	694 757		
AM AM		Ревк Реак	Hour Hour	Factor		11.00 to	79.20%			vehides)																
PM PM		Peak Peak	Hour Hour	Factor		16:45 to	95.80%	17.45	(3174	vehicles)																
Friday	1300	4/16/1999 1400		0	1 Direct	lian: W 1700	1800	1900	2000	2100	2200	2300	2400	100	200	300	400	500 60	0 70	0 800	900	1000	1100	1200 T	ofals	
	2538	2055	264	5	2806	2883	2826	2006	1385	998	960	857	607	346	218	180	123	115 16	50 41			1206		1992		
	733 648	462 517			767 698	725 679	769 718	580 532	385 403	260 263	2?7 252	207 203	187 154	118	54 50	56 57	50 28		39 5 39 7			265 280	370 378	446 472		
	612 545	51 6 560			678 663	723 756	659 680	500 394	315 292	248 227	259 192	245 202	139 127	87 59	55 59	43 24	21 24		39 13 13 14	8 166	244	338 325	429 441	502 572		
AM AM		Peak Peak	Hour Hour	Factor		11.00 to	87,10%	12:00	1992	vehicles)																
PM PM			Hour Hour	Factor		16:30 to	96.40%	17-30 (2966	vehides)																
Saturday	1300	4/17/1909		0	1 Direct	ion: W 1700	1800	1900	2000	2100	2200	2300	2400	100	200	300	400 9	500 60	xo 70	0 800	900	1000	1100	1200 To	otals	
	2084	1810	179	7	1828	1599	1459	1429	1074	868	737	691	531	274	187	111	76	65 12	0 24					1492		
	508 539	473 461	47 45		442 477	414	390 399	375 379	254 299	235 215	187 158	161 196	154 153	80 77	47 61	30 35	25 17		6 3		89 130	172 189	272 306	391 332		
	531 506	438 438			464 445	394 387	356 314	307 368	239 282	224 194	222	176 158	113	55 62	36 43	24 22	16	17 3		98	131 156	259 225	358 304	389 380		
AM AM			Hour Hour	Factor		11/00 10	95.40%	12.00 (1492	vehides)																
PM PM			Hour Hour	Factor		12 [.] 00 lo 	96.70%	13;00 (2084	vehides)																
Sunday	1300	4/19/1999		0	1 Direct	on: W	1800	1900	2000	2100	2200	2300	2400	100	200	300	400 5	500 60	0 70	008 0	900	1000	1100	1200 To	otals	
	1601	1591	151	4	1243	1251	1221	1160	938	691	620	443	249	112	74	45	45	86 23	0 58	960	1165	1157	1249	1732	19957	
	436 370	403 350			305 331	286 325	351 272	274 307	264 239	185 186	178 155	126 107	78 65	36 32	19 23	12		15 3	5 9		254	297 269	276 289	378 414		
	381 414	411 427		0	313 294	343 297	285 313	310 269	215 220	163 157	134 153	106 104	59 47	31 13	18 14	14	12	29 €	5 169 3 18	238	323 299	289 303	334 350	442 498		
AM AM			Hour Hour	Factor		11:00 lo	86.90%	12:00 (1732	vehicles)																
РМ РМ			Hour	Factor		13;15 to 	94.50%	14:15 (1614	vistides)																
Monday	1300	4/19/1999 1400		.	I Directi 1600	ion: W 1700	1800	1900	2000	2100	2200	2300	2400	100	200	300 4	100 5	500 60	0 70	900	900	1000	1100	1200 To	otals	
	2055	1781				2301	2240	1710	1156	857	762	562	285							1058					25966 noard	
	513 498	495 470			503 603	520 509	642 550	455 463	324 291	234 246	226 216	164 134	95 73	54 46					6 10		323 323	333 276	331 303	384 419	to ave	erage
	520 524	433 383	489	9	472 517	605 667	542 506	453 339	273 268	193 184	159 161	143 121	65	29	12	19	14	30 7	7 178		326 318	308 341	329 358	505 535		
AM AM			Hour	Factor		11 00 10	86.10%	12:00 (1843	vehicles)																
PM PM	1	Peak	Hour	Factor		16 30 10	92.40%	17.30 (2484	vehides)																
Tuesday	1300	4/20/1999)	1 Directi 1600	ion W 1700	1900	1900	2000	2100	2200	2300	2400	100	200 :	300 4	100 5	00 60	0 700	BO0	900	1000	1100	1200 To	ntals	
	1850	1704	209			1890	1935	1355	1005	769	569	459												1694 2		
	511 456	487 406	513 513		510 538	513 422	520 505	371 368	289 271	204 188	171	112	82 61	39 28	19	13		16 4 22 4	3 99		262 241	310 263	260 285	398 406		
	420 463	432 399		2	497 513	456 499	488 422	332 284	228 217	190 187	143	116	64	33	17	14	11	27 6	3 172		303	269 292	316 345	435 455		
AM AM			Hour Hour	Factor		11:00 to	93.10%	12:00 (1694	vehicles)																
PM PM		Peak	Hour Hour			14.30 to	98.20%	15,30 (2113	vahides)																

Wednesday 1300		/1999 Ch 1400	armel: 1500		Olrection, W 1700	1800	1900	2000	2100	2200	2300	2400	100	200	300	400	500	600	700	800	900	1000	1100	1200 Totals	
1685		1530	1772	1891	1996	1980	1565	\$114	866	€98	521	288	160	89	52	45	90	206	572	899	1123	1157	1333	1997 23634	4
460 420 405 400	•	354 402 371 403	392 413 487 480	493 507	505 492	520 481 505 474	459 411 355 340	306 296 257 255	252 214 206 194	203 174 170 151	133 126 139 123	92 76 66 54	48 36 42 34	24 28 12 25	21 12 6 13	13 9 9	13 20 28 29	38 46 54 68	92 128 179 173	180 212 274 233	275 254 293 306	296 312 263 286	323 288 384 339	416 472 493 616	
AM AM PM PM	Peak Peak Peak Peak	Ho Ho Ho	our our	Factor	11:00 to	81.00%	12.00 (1 17·15 (3		vehicles)																
Thursday 1300		6272 Ch 1400	nannel: 1500		Direction: W	1800	1900	2000	2100	2200	2300	2400	100	200	300	400	500	600	700	800	900	1000	1100	1200 Totals	
1991		1890	2313	2595	2519	2490	1829	1315	1039	836	676	387	208	134	98	80	114	307	716	1123	1303	1510	1601	1870 2894	4
527 506 509 449	i	534 433 447 476	519 503 615 676	659 657	574 626	658 673 632 527	556 451 427 395	372 318 313 312	254 282 252 251	229 223 194 190	191 170 169 146	126 104 79 78	50 60 50 48	32 38 34 30	33 24 17 24	23 17 20 20	20 12 43 39	55 55 87 110	127 148 212 229	243 285 309 286	332 311 310 350	380 416 354 360	354 400 429 419	485 430 455 500	
AM AM PM PM	Peak Peak Peak Peak	Ho Ho Ho	nir ilir	Factor	0.4270633 to 0.6979167 to	0.893	0.46875 (1 0.73958333 (2		vehicles)												0	dally av	eraga	25169	9

Prepared by NDS/ATD

VOLUME

Millbrae Avenue between El Camino Real and Rollins Road

Day: Tuesday Date: 3/22/2016 City: Millbrae Project #: 16-7210-001

A STATE	DAI	LY TOTALS			NB		SB		EB	175	WB	Wight.				To	otal
			740.0		0		0		19,083		23,591					42	,674
AM Period	NB	SB	EB		WB			TAL	PM Period	NB	SB	EB		WB		TO	TAL
00:00 00:15	0	0 0	38 42 '		67 60		105 102		12:00 12:15	0	0 0	308 301		388 382		696 683	
00:30	0	0	31		52		83		12:30	0	0	324		362		686	
00:45	0	0	32	143	62	241	94	384	12:45	Ö	Ö	318	1251	369	1501	687	2752
01:00	0	0	23		40		63		13:00	0	0	326		379		705	
01:15 01:30	0	0 0	28 25		46		74		13:15 13:30	0	0	310		366		676	
01:45	0	0	25	101	39 33	158	64 58	259	13:45	0	0 0	332 359	1327	379 388	1512	711	2839
02:00	0	0	15	101	26	150	41	233	14:00	0	0	292	1327	374	1312	666	2033
02:15	0	0	23		30		53	-	14:15	0	0	318		366		684	
02:30	0	0	21	70	22	404	43	474	14:30	0	0	340		389		729	
02:45 03:00	0	0	14 19	73	23 18	101	37 37	174	14:45 15:00	0	0	319 311	1269	380 416	1509	699 727	2778
03:15	Ö	Ö	11		15		26	7 100	15:15	0	0	341		384		725	
03:30	0	0	18		25		43	- 3	15:30	0	Ö	319		380		699	
03:45	0	0	20	68	31	89	51	157	15:45	0	0	325	1296	424	1604	749	2900
04:00	0	0	19		27		46	10	16:00	0	0	295		417		712	- 19
04:15 04:30	0	0	24 43		36 28		60 71		16:15 16:30	0	0	285 274		458 450		743 724	-
04:45	0	Ö	48	134	46	137	94	271	16:45	0	0	312	1166	455	1780	767	2946
05:00	0	0	71		65		136		17:00	0	0	313	1100	514	1700	827	23 10
05:15	0	0	84		73		157		17:15	0	0	303		473		776	
05:30	0	0	108	272	78	24.4	186	507	17:30	0	. 0	267		244		511	12
05:45 06:00	0	0	110 141	373	98	314	208	687	17:45 18:00	0	0	262 257	1145	484 506	1715	746 763	2860
06:15	Ö	0	151		124		275	-	18:15	0	0	227		476		703	
06:30	0	0	204		160		364		18:30	Ö	Ö	242		448		690	
06:45	0	0	242	738	205	579	447	1317	18:45	0	0	247	973	425	1855	672	2828
07:00	0	0	297		190		487		19:00	0	0	213		442		655	
07:15 07:30	0	0 0	321 318		202 225		523 543		19:15 19:30	0	0 0	206 196		363 378		569 574	
07:45	0	0	375	1311	273	890	648	2201	19:45	0	0	175	790	312	1495	487	2285
08:00	0	0	367		247		614		20:00	0	0	225	,,,,	333	1155	558	
08:15	0	0	384		259		643	3	20:15	0	0	166		318		484	
08:30	0	0	365	1.402	247	1105	612	2500	20:30	0	0	175	740	265	4470	440	4000
08:45 09:00	0	0	367 322	1483	352 288	1105	719 610	2588	20:45 21:00	0	0	144 165	710	256 256	1172	400	1882
09:15	Ö	Ö	295		298		593	100	21:15	0	0	145		227		372	3 3
09:30	0	0	271		275		546		21:30	0	0	168		211	~	379	-40
09:45	0	0	286	1174	272	1133	558	2307	21:45	0	0	144	622	220	914	364	1536
10:00 10:15	0	0	274		309		583		22:00	0	0	143		208		351	
10:30	0	0	242 285		284 327		526 612	Ц	22:15 22:30	0	0	141 99		178 172		319 271	1 2
10:45	Ö	Ö	281	1082	334	1254	615	2336	22:45	0	0	87	470	169	727	256	1197
11:00	0	0	273		326		599		23:00	0	0	76		110		186	180
11:15	0	0	273		313		586		23:15	0	0	72		96		168	
11:30 11:45	0	0 0	278 281	1105	365	1200	643	2504	23:30	0	0	80	270	101	407	181	coc
TOTALS	U	U	201	7785	395	1399 7400	676	2504 15185	23:45 TOTALS	U	0	51	279 11298	100	407 16191	151	686 27489
SPLIT %						48.7%	_	35.6%	SPLIT %				Manage Convertion				
JELII /0				51.3%		40.7%		33.0%	JELII 76				41.1%		58.9%		64.4%
	DAI	LY TOTALS			NB		SB		EB		WB						ital
	NAME OF TAXABLE PARTY.		Call Street		0		0		19,083	Pile.	23,591	-			PART	42,	674
AM Peak Hour				07:45		11:30		11:45	PM Peak Hour				13:00		17:45	H)C	16:30
AM Pk Volume				1491		1530		2741	PM Pk Volume				1327		1914		3094
Pk Hr Factor				0.971		0.968		0.985	Pk Hr Factor				0.924		0.946		0.935
7 - 9 Volume				2794		1995		4789	4 - 6 Volume		2		2311		3495		5806
7 - 9 Peak Hour				07:45		08:00		08:00	4 - 6 Peak Hour				16:30		16:30		16:30
7 - 9 Pk Volume			4	1491		1105	1	2588	4 - 6 Pk Volume				1202	1	1892		3094
Pk Hr Factor			1	0.971		0.785	- /	0.900	Pk Hr Factor				0.960	15	0.920		0.935

Appendix E

Citation Summary

Location Performance Summary SB El Camino Real SB 101 to Millbrae Ave

	Violation ivents	Citations issued
SB El Camino Real		
2009	646	317
2010	3,692	1,976
2011	2,989	1,743
2012	1,249	817
2013	1,935	1,377
2014	2,408	1,700
2015	2,847	1,710
	15,766	9,640
SB 101 to Millbtae Ave		
2009	1,921	1,006
2010	4,851	2,769
2011	6,969	2,368
2012	7,554	2,179
2013	4,860	1,121
2014	7,400	3,891
2015	7,885	4,418
	41,440	17,752

STATE OF CALIFORNIA • DEPARTMENT OF TRANSPORTATION ENCROACHMENT PERMIT	Permit No.	
TR-0120 (REV 6/2012)	0416-NUM0923	
	Dist/Co/Rte/PM	
In compliance with (Check one):	04-SM-82 PM Var	
∑ Your application of April 25, 2016	DATE May 6, 2016	
Utility Notice No. of	Fee Paid \$ 492.00	Deposit \$
Agreement No. of	Performance Bond Amount \$	Payment Bond Amount \$
R/W Contract No of	Bond Company	
	Bond Number (1)	Bond Number (2)
TO: City of Millbrae 621 Magnolia Avenue Millbrae, CA 94030 Attn: Khee Lim Phone: (650) 259-2339	, PERMITTEE	
And subject to the following, PERMISSION IS HEREBY GRA		
Perform routine and emergency maintenance work on permittee's various post miles, in the County of San Mateo.	facilities located on conventional Sta	te Highways 04-SM-82, at
Any work involving bona-fide emergency repairs on permittee's for Center at (510) 286-6359 to obtain appropriate lane closure or wo conditions that require immediate action to prevent property dama. All permitted work requires the permittee to apply for and obtain "Encroachment Permit Project Work Scheduling Procedures" and Additional time beyond the minimum seven-day advanced notice approval.	rk authorization number. Emergencie age, loss of service, or life-safety risks a work authorization number prior to the attached "Permit Project Work So	s are defined as those s. start of work. See the attached cheduling Request Form".
THIS PERMIT IS NOT A PROPERTY RIGHT AND DOES NO		
The following attachments are also included as part of this permit (<i>Check</i> Yes No General Provisions (TR-0045)	actual costs for:	e, the permittee will be billed
✓ Yes ☐ No Utility & Tree Trimming Provisions (03/2013) ✓ Yes ☐ No Storm Water Special Provisions (TR-0400) ☐ Yes ☐ No A Cal-OSHA permit, if required: Permit No ☐ Yes ☐ No As-Built Plans Submittal Route Slip for Locall ☐ Yes ☐ No Storm Water Pollution Prevention Plan	y Advertised Projects	No Review No Inspection Field Work Caltrans effort expended)
Yes No The information in the environmental documer		
This permit is void unless the work is completed before December 3		r to approvat of this points.
This permit is to be strictly construed and no other work other than speci. No project work shall be commenced until all other necessary permits an	fically mentioned is hereby authorized.	tained.
ML/ml	APPROVED:	
c: Glee, ESherman III (2)	BIJAN SARTIPI, District Director	or, District 4
	DAVID SALLADAY/District Pe	rmit Engineer
ADA Notice For individuals with sensory disabilities, this documen	nt is available in alternate formats. For in	ornation call (916) 654-6410 or

City of Millbrae 0416-NUM0923 May 6, 2016 Page 2 of 3

A minimum of one week prior to the start of work under this permit, notice shall be given and advance approval of construction detail, operations, public safety and traffic control shall be obtained from the following State Representative:

In Southern San Mateo County, George Lee, 380 Foster City Blvd., Foster City, CA 94404, at (650) 573-8669, or at add.ca.gov, weekdays between 7:30am and 4:15pm.

When approved, traffic control under this permit must comply with Caltrans Standard Plans RSP T9 through RSP T14 (available at http://www.dot.ca.gov/hq/esc/oe/construction_standards.html).

All work shall comply with the attached "Encroachment Permit General Provisions" (TR-0045, Rev. 05/2007) (available at http://www.dot.ca.gov/hq/traffops/developserv/permits/).

All the permittee's personnel must wear appropriate and approved personal protective equipment per Chapter 12 of Caltrans "Safety Manual" (available at http://www.dot.ca.gov/hq/opo/safety/safetymanual/Chap_12-Sept2012.pdf), including hard hats and bright-colored safety vests, shirts or jackets with retro-reflective material, while on the State right-of-way.

The job site must be enclosed by suitable barricades, signs, and lights to warn and protect traffic effectively, as approved by the State Representative.

No lane closure is allowed on the highway without pre-approval from the District Traffic Manager. Shoulder may be closed between 9:00 AM and 3:00 PM, Monday through Friday, except holidays, as authorized by the State Representative, or otherwise approved by the District Traffic Manager.

No work on freeways/expressways or their ramps, including traffic control, is allowed under this permit.

Streets and highways in the Bay Area contain a significant number of existing underground utilities. This includes traffic signal conduits that are installed 9 inches or less in depth. Permittee is responsible for necessary site investigations for identification of the location and depth of existing underground facilities prior to excavation (e.g. pothole or hand-dig) to avoid damage or disruption in services.

The permittee must be responsible for all compliance with the Caltrans Storm Water Program and NPDES permit requirements.

Any change or damage to any existing facilities, landscaping, irrigation or drainage pattern, whether occasioned by increase or diversion, and the cost of any damage, repairs or restoration within the State right-of-way must be the responsibility of the permittee.

In accordance with subdivision (a) of Streets and Highways Code section 682.5, Caltrans shall not be responsible for the conduct or operation of the permitted activity, and permittee agrees to indemnify and hold harmless the State and the City or the County against any and all claims arising out of any activity for which the permit is issued.

If an accident or other incident (related to or not related to the permitted activity) occurs within, or close to the permitted activity, the Permittee shall immediately stop work and remove traffic controls from the highway unless public health, welfare and safety is endangered by unfinished work. Only traffic control to protect open excavations may remain in place. After free traffic flow is restored, work in accordance with the conditions of the permit may be resumed.

Trench backfill must comply with the most current Caltrans Standard Specifications and Standard Plans (both available at http://www.dot.ca.gov/hq/esc/oe/construction_standards.html). Tests for relative compaction of structure backfill material used in backfilling trenches can use California Test Method 231, "Method of Test for Relative Compaction of Untreated and Treated Soils and Aggregates Using Nuclear Gage" (available at http://www.dot.ca.gov/hq/esc/ctms/pdf/CT_231_Mar2013.pdf). Any base, surfacing, or pavement must be replaced in kind, or as otherwise approved by the State Representative.

Pavement to be removed must be saw cut to a minimum depth of 4 inches to provide a neat and straight pavement break along both sides of trench. Asphalt Concrete (AC) pavement must be saw cut to the full depth.

No excavation must be left open overnight or unless otherwise authorized by the State Representative. After backfilling the trench, temporary surfacing must be placed if required by the State Representative.

City of Millbrae 0416-NUM0923 May 6, 2016 Page 3 of 3

Where the edge of trench is within 2 feet of existing curb, gutter, or pavement edge, Asphalt Concrete (AC) pavement between the trench and curb, gutter, or pavement edge must be removed, or as otherwise authorized by the State Representative.

Immediately following completion of the work permitted herein, the permittee shall fill out and mail the Notice of Completion attached to this permit.

DEPARTMENT OF TRANSPORTATION

111 GRAND AVENUE P.O. BOX 23660 OAKLAND, CA 94623-0660 PHONE (510) 286-5900 FAX (510) 286-5903 TTY 711 www.dot.ca.gov

RECEIVED

JUL 18 2016

CITY OF MILLBRAE PW/ENGINEERING DEPT.



July 7, 2016

04-SM-101 PM 17.9 0416-NSN1019

Khee Lim City of Milbrae 621 Magnolia Avenue Millbrae, CA 94030

Dear Mrs Lim:

This letter is regarding your encroachment permit application dated May 4, 2016 to comply with the Traffic Operations Policy Directive 14-01 Revision 1 for ARLES at the El Camino Real and Millbrae Avenue intersection, on State Highway 04-SM-101, Post Mile 17.9, in the City of Millbrae.

The following comments must be satisfactorily addressed before a permit can be issued:

Traffic (Safety)

- 1. Provide a table that summarizes the total number of violation events versus the number of citations issued. The table provided in the traffic engineering study submitted with the application provides only the number of citations issued each year.
- 2. In Appendix C of the traffic study, provide a breakdown of the crash number by each intersection and the type of crash.
- 3. In Appendix E of the traffic study, replace the word "ivent" to "event" on the second page.

Please respond to all review comments, and revise the plans and specifications as necessary. Submit six (6) sets of revised plans (11" x 17") and six (6) sets of specifications for our review. Please direct all questions and inquiries regarding your application status to Markus Lansdowne at (510) 286-4419 or email at markus.lansdowne@dot.ca.gov. Reference permit number 0416-NSN1019 with all correspondence.

City of Millbrae July 7, 2016 0416-NSN1019 Page 2

If no response is received within forty five (45) days from the date of this letter, your encroachment permit application may be cancelled.

Sincerely,

AMJAF NASÉER, PE Servior Permit Engineer

DEPARTMENT OF TRANSPORTATION

111 GRAND AVENUE P.O. BOX 23660 OAKLAND, CA 94623-0660 PHONE (510) 286-5900 FAX (510) 286-5903 TTY 711 www.dot.ca.gov

July 7, 2016



Serious Drought.

Serious drought.

Help save water!

CITY OF MILLBRAE PW/ENGINEERING DEPT.

> 04-SM-82 PM 15.9 0416-NSN1018

Khee Lim City of Milbrae 621 Magnolia Avenue Millbrae, CA 94030

Dear Mrs Lim:

This letter is regarding your encroachment permit application dated May 4, 2016 to comply with the Traffic Operations Policy Directive 14-01 Revision 1 for ARLES at the El Camino Real and Millbrae Avenue intersection, on State Highway 04-SM-82, Post Mile 15.9, in the City of Millbrae.

The following comments must be satisfactorily addressed before a permit can be issued:

Traffic (Safety)

- 1. Provide a table that summarizes the total number of violation events versus the number of citations issued. The table provided in the traffic engineering study submitted with the application provides only the number of citations issued each year.
- 2. In Appendix C of the traffic study, provide a breakdown of the crash number by each intersection and the type of crash.
- 3. In Appendix E of the traffic study, replace the word "ivent" to "event" on the second page.

Please respond to all review comments, and revise the plans and specifications as necessary. Submit six (6) sets of revised plans (11" x 17") and six (6) sets of specifications for our review. Please direct all questions and inquiries regarding your application status to Markus Lansdowne at (510) 286-4419 or email at markus.lansdowne@dot.ca.gov. Reference permit number 0416-NSN1018 with all correspondence.

City of Millbrae July 7, 2016 0416-NSN1018 Page 2

If no response is received within forty five (45) days from the date of this letter, your encroachment permit application may be cancelled.

Sincerely.

AMJAD KASTER, PE Senior Permit Engineer