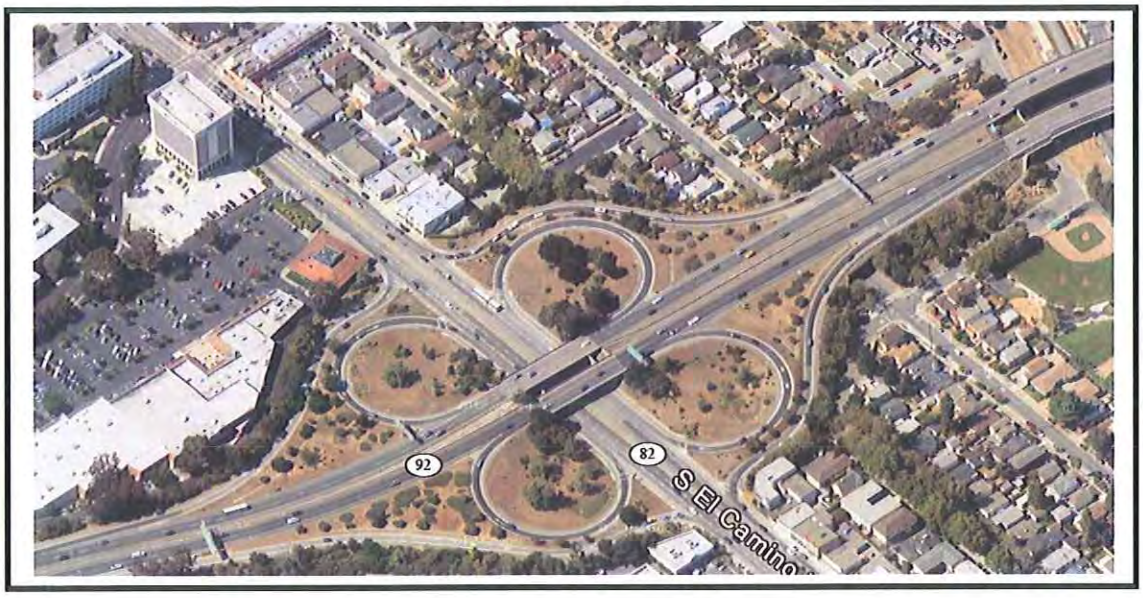
04-SM -92-PM 11.0/11.5
04-SM -82-PM 10.3/10.7
04-719-EA-235520
04120004961
APRIL 2014

PROJECT REPORT



In San Mateo County in the City of San Mateo at the SR 92/SR 82 Interchange
04-SM -92-PM 11.0/11.5, 04-SM -82-PM 10.3/10.7

I have reviewed the right of way information contained in this Project Report and the Right of Way Data Sheet attached hereto, and find the data to be complete, current, and accurate:

MARK L. WEAVER, DEPUTY DISTRICT DIRECTOR, RIGHT OF WAY & LAND SURVEYS

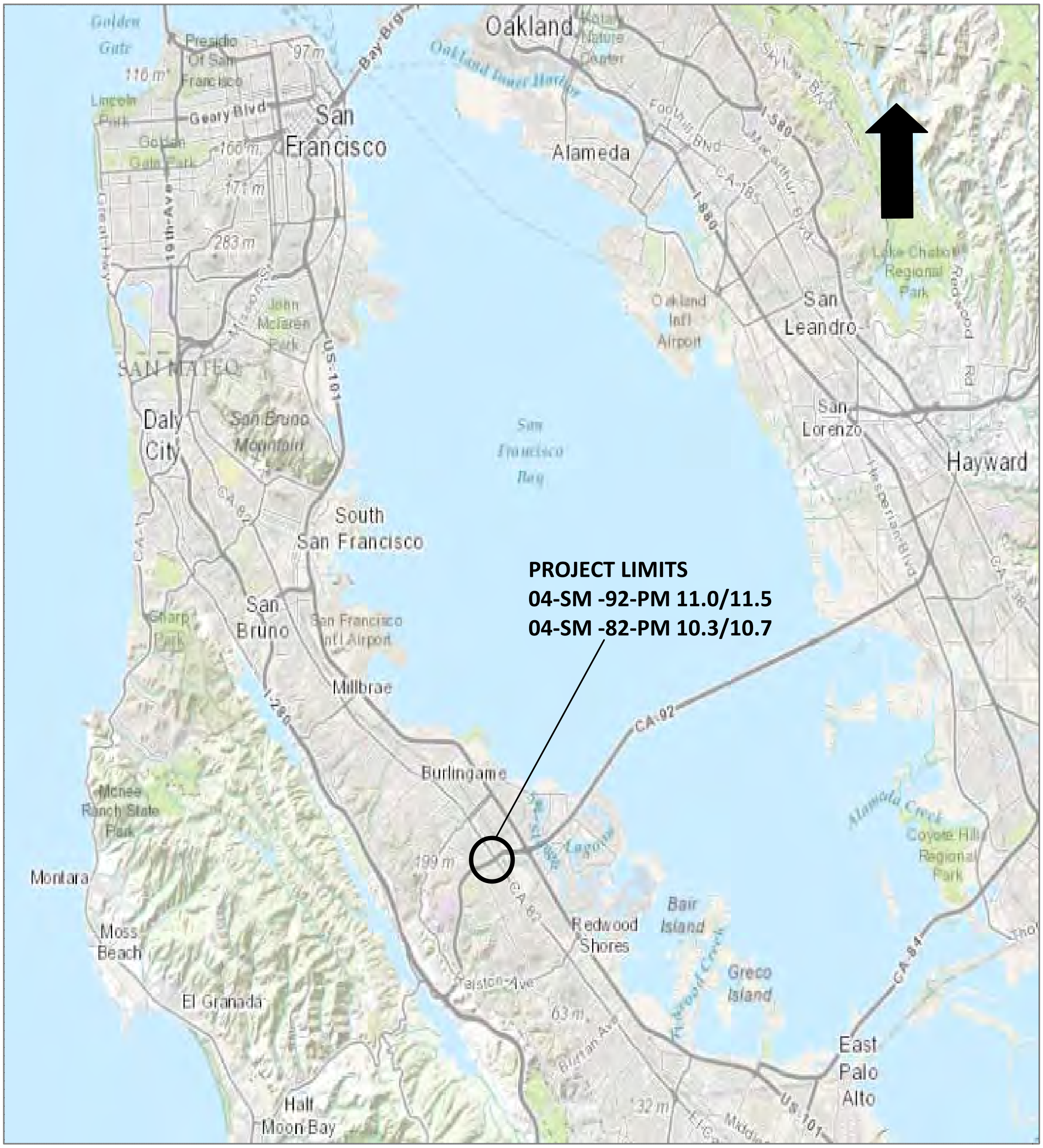
APPROVAL RECOMMENDED:

AL B. LEE, PROJECT MANAGER

KEYHAN MOGBEL, DISTRICT OFFICE CHIEF-DESIGN

APPROVED:

HELENA (LENKA) CULIK-CARO, DEPUTY DISTRICT DIRECTOR, DESIGN — DATE 5/6/14


PROJECT LIMITS
04-SM -92-PM 11.0/11.5
04-SM -82-PM 10.3/10.7
Oakland
San Francisco
Alameda
San Leandro
San Lorenzo
Hayward
Daly City
South San Francisco
San Bruno
Millbrae
Burlingame
Redwood Shores
East Palo Alto
Montara
Moss Beach
El Granada
Half Moon Bay
San Francisco Bay
CA-92
US-101
I-280
I-880
I-580
CA-84

04-SM -92-PM 11.0/11.5
04-SM -82-PM 10.3/10.7
04-719-EA-235520
04120004961
APRIL 2014

This Project Report has been prepared under the direction of the following registered civil engineer. The registered Civil Engineer attests to the technical information contained herein and the engineering data upon which recommendations, conclusions, and decisions are based.

H. Khodabakhsh 05/06/14

HOSSEIN KHODABAKHSH, REGISTERED CIVIL ENGINEER DATE

Table of Contents

1. INTRODUCTION 1
2. RECOMMENDATION 2
3. BACKGROUND 2
4. PURPOSE AND NEED 4
   4A. Problems, Deficiencies, Justification 5
   4B. Regional and System Planning 8
   4C. Traffic 9
5. ALTERNATIVES 14
   5A. Viable Alternative 14
   5B. Rejected Alternatives 27
6. CONSIDERATIONS REQUIRING DISCUSSION 29
   6A. Hazardous Waste 29
   6B. Value Analysis 29
   6C. Resource Conservation 29
   6D. Right of Way 30
   6E. Environmental 30
   6F. Air Quality Conformity 33
   6G. Title VI Considerations 33
   6H. Noise Abatement Decision Report 34
7. OTHER CONSIDERATIONS AS APPRORIATE 36
   7A. Public Participation 36
   7B. State Route Matters 36
   7C. Permits 36
   7D. Cooperative Agreements 36
   7E. Transportation Management Plan 36
   7F. Other Agreements 37
   7G. Graffiti Control 37
8. FUNDING/PROGRAMMING 37
9. SCHEDULE 40

10. RISKS 41
11. FHWA COORDINATION 41
12. PROJECT REVIEWS 41
13. PROJECT PERSONNAL 42
14. LIST OF ATTACHMENTS 43

1. INTRODUCTION

Project Description:

It is proposed to improve and reconstruct the existing SR 92/SR 82 interchange to a partial cloverleaf interchange (L-9). The project is located on SR 92 and SR 82 (El Camino Real; aka ECR) in the City of San Mateo and the project limits are from post mile 11.0 to 11.5 on SR 92 and 10.3 (at intersection of ECR/W. 20th Avenue) to 10.7 (at intersection of ECR/17th Avenue & Bovet Avenue) on SR 82. In general, the following major components are proposed:

- Realign and widen the diagonal off-ramps to provide additional storage and construct signalized intersections at the off-ramp terminals.
- Add exclusive right turn lanes to the loop on-ramps on SR 82.
- Construct concrete barrier between the on-ramps and diagonal off-ramps in the southwest quadrant and northeast quadrant.
- Realign and widen the diagonal and loop on-ramps to add storage lanes for future ramp metering.
- Provide maintenance vehicle pullouts and CHP enforcement areas on the on-ramps.
- Construct soundwall and retaining walls at the diagonal on-ramps and off-ramps as needed.
- Add provisions for safe bicyclist travel in the northbound and southbound direction on SR 82 within the ramp intersections.

Project Limits	04-SM -92-PM 11.0/11.5, 04-SM -82-PM 10.3/10.7
Number of Alternatives	One
Current Capital Outlay Support Estimate	$2,750,000
Current Capital Outlay Construction Estimate	$16,260,000
Current Capital Outlay Right-of-Way Estimate	$1,501,000
Funding Source	RIP, DEMO/FED, LOCAL FUNDS and MEASURE A Additional Funds to be determined.
Funding Year	16/17
Type of Facility	Interchange Type L-9
Number of Structures	4 (1 Soundwall & 3 Retaining Walls)
Environmental Determination or Document	CEQA - Initial Study/Negative Declaration (IS/ND) and NEPA CE
Legal Description	SR 92/SR 82 interchange
Project Development Category	Category 3

2. RECOMMENDATION

It is recommended that the project be approved using the preferred Build Alternative and that the project proceed to the Design phase.

The City of San Mateo has been consulted with respect to the recommended plan, their views have been considered and the City is in general accord with the plan as presented.

3. BACKGROUND

Project History

This interchange and section of SR 92 was originally constructed as part of two new freeway projects. The section from West Hillsdale Boulevard to Grant Street, as well as the first stage of the SR92/US101 Interchange, was constructed prior to 1965. The interchange is virtually unchanged since its original construction except for median paving and concrete median barrier construction on SR 92.

An approved 1992 PSR had the scope of widening SR 92 by adding a lane in both directions within the same project limits. The 1992 PSR contained no plan to modify the interchanges except as would have been required by the widening. The project described in the 1992 PSR was not programmed.

An updated 2001 PSR (EA 23551K) that was subsequently approved proposed providing an additional through lane in each direction of SR 92 by widening to the outside of the existing roadway (except for the eastbound railroad overcrossing which would be widened to the inside). This proposed widening would have necessitated interchange modifications at the SR 92/SR 82 interchange. Consequently, the PSR proposed modifying the existing cloverleaf at SR 92/SR 82 to a partial cloverleaf as one of the alternatives studied.

In 2010, Metropolitan Transportation Commission (MTC) and California Department of Transportation (Caltrans) completed a study of the US 101 corridor through San Mateo County[1]. Freeway mainline operations were evaluated (for US 101), but neither the details of operations at specific interchanges of freeways, nor the intersecting freeways themselves, were included.

In January, 2012 a focused analysis of the SR 92/SR 82 interchange was done for MTC by Dowling Associates, Inc[2]. This report concluded that the partial cloverleaf alternative identified in the earlier 2001 PSR was worth pursuing in more detail through subsequent analysis

[1] *San Mateo US-101 Freeway Corridor Technical Analysis for Corridor System Management Plan, Dowling Associates, Inc., September 27, 2010.*
[2] *State SR 92/El Camino Real Focused Analysis, Dowling Associates, Inc., January 12, 2012.*

involving micro-simulation of the larger US 101/SR 92 interchange area. This focused analysis also identified that a diamond I/C alternative was possible, but had some concerns with capacity of the left turn lanes because of high EB 92 volumes.

A Traffic Operations Analysis Report (TOAR) for SR 92/SR 82 interchange was prepared by Fehr & Peers as part of this Project Report. The purpose of this report was to document the existing and future traffic conditions associated with the SR92/El Camino Real interchange, including the projected level of growth in traffic in future years as well as an assessment of the traffic operational aspects of an improvement alternative. The results contained in this report serve as the basis for the traffic operations section of the PA&ED. The TOAR study limits on SR 92 include the Hillsdale, Alameda De La Pulgas, SR 82 and Delaware interchanges and US 101/SR 92 connector. The study limits along SR 82 are between 17th/Bovet and 20th Avenue at intersections . This report concluded that the Partial Cloverleaf alternative provided substantial improvement in network operations over the No Build alternative with large decreases in travel time and delay and increases in average speed and volume served.

A draft Project Report authorizing circulation of Initial Study/Negative Declaration (IS/ND) for public review was approved on December 20, 2013. The scope of the draft Project Report was limited to improving operations of the SR 92/SR 82 interchange and increasing performance of the ramps.

Community Interaction

The state and the local agencies consulted and coordinated extensively throughout the development of the project specifically through the monthly PDT meetings.

Caltrans Public Information Program distributed approximately 2000 Project Fact Sheets to interested organizations, businesses, property owners and the public in the project area to inform them about the current status of the project.

A public information meeting with an open house format was held on January 29, 2014 to present information regarding the build alternative and seek public comment on the Draft Environmental Document. Forty written comments pertaining to Landscape, Sound Barriers, Traffic flow, Pedestrian and Bicyclists Safety were received during the open comment period.

Pedestrian and Bicyclist improvement were discussed throughout the development of this project and after the public meeting. The City of San Mateo, the Chair for the District 4 Caltrans Pedestrian Advisory Committee, Caltrans Pedestrian and Bicyclist Coordinator, HQ Design Coordinator , Traffic Safety and Design staff reviewed and revised the pedestrian and bicyclist features of the Partial Cloverleaf alternative. In response to comments by community bicycle groups and individuals, improvements were made for the safe travel of cyclist in the

northbound and southbound direction on SR 82 within the bounds of the newly signalized intersections. Bicycle pavement markup per Class II Bike lane standard will be used. However, it should be noted that the improvements within new intersections are not meant to conflict with the existing City of San Mateo or C/CAG bike path plan nor implies a new bike path on ECR.

Existing Facility

The SR 92/SR 82 interchange is a Type L-10 full cloverleaf configuration that provides full access. All ramps are a single-lane entry or exit. Off-ramps are yield controlled at El Camino Real and on-ramps are all free movements.

Within the project area, SR 92 is a four-lane freeway, with 12-foot lanes, 1.5 to 3-foot inside shoulders and 8-foot outside shoulders. Auxiliary lanes exist between the El Camino Real loop ramps. An auxiliary lane is provided in the eastbound direction between the El Camino Real on-ramp and Delaware Avenue off-ramp. In the westbound direction drivers treat the segment between the Delaware on-ramp and the El Camino Real off-ramp as an auxiliary lane although it is not striped. All the ramps are single lane with widths between 11-feet to 12-feet and shoulders varying from 2-feet to 6-feet.

El Camino Real (SR 82) is a four- to six-lane arterial that runs north-south along the San Francisco peninsula between San Jose and San Francisco. It primarily runs parallel to US 101. In the project area it is a six-lane road with painted and raised medians and a posted speed limit of 35 mph. Lane widths range from 11 to 12-feet with 8-foot outside shoulders and no inside shoulders.

The SR 92/SR 82 separation structure has 4-span continuous Reinforced Concrete (RC) box girder (5 cell) on a Reinforced Concrete (RC) column (2) bent, Reinforced Concrete (RC) wall piers, and diaphragm abutments. All are founded on concrete piles.

4. PURPOSE AND NEED

Purpose

The purpose of the project is to improve traffic operations at the SR 92/SR 82 interchange and to increase performance at the on-ramps and off-ramps which are creating secondary deficiencies at the SR 92 mainline.

Need

This project is needed to address the traffic congestion and queuing at the SR 92/SR 82 interchange off-ramps. This project will also eliminate the short weave distance between the

loop on-ramp and the loop-off-ramp on SR 92 and enhance pedestrian access at the ramp-terminal intersections.

4A. Problems, Deficiencies, Justification

The 2013 Traffic Operations Report by Fehr & Peers documented the existing and future traffic conditions associated with the SR 92/SR 82 interchange and provided an assessment of traffic operations of the Partial Cloverleaf alternative. The results contained in the report are summarized in the section below.

Existing

Existing bottleneck locations and causes which occur on both eastbound and westbound SR 92 during the AM and PM peak periods are summarized in **Table 4-1**.

TABLE 4-1
BOTTLENECK LOCATIONS AND CAUSES ON SR 92

Peak Period	Direction	Location	Cause
AM	Eastbound	SR 82 Interchange	The on-ramp volume from southbound SR 82 plus the upstream volume on SR 92 exceeds capacity of SR 92; short weave distance between loop on-ramp and loop off-ramp reduces capacity of SR 92 at the SR 82 interchange.
	Westbound	Northbound SR 82 Off-ramp	Queue spillback from ramp-terminal intersection reaches mainline
PM	Eastbound	SR 82 Interchange	On-ramp volume from southbound SR 82 exceeds capacity of SR 92; short weave distance between loop on-ramp and loop off-ramp reduces capacity of SR 92 at the SR 82 interchange
	Westbound	Northbound SR 82 Off-ramp	Queue spillback from ramp-terminal intersection reaches mainline

Source: Fehr & Peers, 2013.

In the westbound direction, SR 92 through the project limit operates at LOS D, or F during the AM peak hour with average speeds ranging 40 to 54 mph. Vehicle queues spillback from the northbound SR 82 off-ramp terminal intersection and result in congestion upstream to the Delaware Avenue on-ramp. The downstream segment between the northbound SR 82 off-ramp and the northbound SR 82 on-ramp is also shown to be operating at LOS F due to the short distance and low speeds between the ramps.

In the westbound direction during the PM peak hour, SR 92 through the project limit operates at LOS E, or F with average speeds ranging from 34 to 36 mph. Vehicle queues spillback from the northbound SR 82 off-ramp terminal intersection and result in congestion upstream to the Delaware Avenue on-ramp. The downstream segment between the northbound SR 82 off-ramp and the northbound SR 82 on-ramp is also shown to be operating at LOS F due to the short distance and low speeds between the ramps.

In the eastbound direction, SR 92 through the project limit operates at LOS E, or F during the AM peak hour with average speeds ranging 36 to 40 mph. The bottleneck location at the SR 82 loop on-ramp causes congestion back to the Hillsdale Boulevard on-ramp, with speeds of less than 40 mph. The downstream segment between the northbound SR 82 off-ramp and the northbound SR 82 on-ramp is also shown to operate at LOS F. This segment is relatively short and vehicle speeds are influenced by the upstream bottleneck.

In the eastbound direction during the PM peak hour, SR 92 through the project limit operates at LOS E, or F with average speeds ranging from 29 to 41 mph. The bottleneck location at the SR 82 loop on-ramp causes congestion back to the Alameda de las Pulgas off-ramp, with speeds of less than 35 mph. Speeds continue to be low east of the bottleneck location.

The westbound SR 92 off-ramp to northbound SR 82 operates at LOS F during both peak hours. This is caused by insufficient gaps in northbound SR 82 traffic to allow off-ramp traffic to merge onto SR 82. The congestion on this ramp often spills back onto SR 92 during the peak hours.

Design Year 2038

In the No Build alternative, bottlenecks identified under existing conditions are made worse with the increased traffic volume. During the AM and PM peak hours, increased queue spillback from the westbound SR 92 off-ramp to northbound SR 82 further reduces mainline SR 92 capacity and results in worse operations from the SR 82 off-ramp to the on-ramp from US 101 and substantial vehicle queuing.

In the eastbound direction, the bottleneck between the loop on-ramp and loop off-ramp at SR 82 causes vehicles queues that extend outside of the project limit during both the AM and PM peak hours.

During the AM peak hour with the Partial Cloverleaf alternative, queue spillback from the westbound SR 92 off-ramp to northbound SR 82 ramp terminal intersection is eliminated from the mainline. This results in increased mainline capacity through this segment and improved mainline operations upstream of the off-ramp. However, demand exceeds capacity between the Delaware Avenue off-ramp and on-ramp and the bottleneck shifts upstream to this segment. During the PM peak hour, queue spillback from the westbound SR 92 off-ramp to

northbound SR 82 ramp terminal intersection is eliminated from the mainline. However, demand exceeds capacity between the Delaware Avenue on-ramp and SR 82 off-ramp, and the bottleneck remains at this segment.
In the eastbound direction, the combination of the SR 82 loop and diagonal off-ramp into a single diagonal off-ramp under the Partial Cloverleaf alternative removes the bottleneck between the loop on-ramp and loop off-ramp. However, during the AM peak hour, a bottleneck appears between the Alameda de las Pulgas on-ramp and SR 82 off-ramp due to demand exceeding capacity on this segment. A bottleneck also develops between the SR 82 diagonal on-ramp and the Delaware Avenue off-ramp, as more traffic is able to reach this location with the elimination of the bottleneck between the loop ramps. During the PM peak hour, a bottleneck appears between the Alameda de las Pulgas on-ramp and SR 82 off-ramp due to demand exceeding capacity on this segment. However, the queue is reduced with the Partial Cloverleaf alternative.

The El Camino Real/Bovet Road/17th Avenue intersection is shown to operate at LOS E during the AM peak hour and LOS F during the PM peak hour under the No Build alternative. The El Camino Real/20th Avenue intersection is shown to operate at LOS F during the PM peak hour under the No Build alternative. The westbound SR 92 off-ramp to northbound SR 82 movement continues to operate at LOS F during both the AM and PM peak periods. The eastbound SR 92 off-ramp to southbound SR 82 movement is shown to operate at LOS F during the PM peak hour.

Under the Partial Cloverleaf alternative, the two existing and two proposed traffic signals are operated as a coordinated system. It was also assumed that right turns on red would be prohibited for the westbound right-turn at the westbound SR 92 ramp terminal intersection and the eastbound right-turn at the eastbound SR 92 ramp terminal intersection when pedestrians are present. This is to avoid a multiple-threat situation for pedestrians in the crosswalk and would be accomplished with an extinguishable message sign.

Under the Partial Cloverleaf alternative, the westbound SR 92 ramp terminal intersection operates at LOS C during the AM and PM peak hours. The eastbound SR 92 ramp terminal intersection is expected to operate at LOS B during the AM peak period and LOS C during the PM peak period. This is largely due to the coordination between all four signalized intersections that provides signal progression through the corridor. Therefore, the additional signals add little delay to the system overall. LOS at the El Camino Real/Bovet Road/17th Avenue and the El Camino Real/20th Avenue intersections are not shown to change between the No Build and Partial Cloverleaf alternatives.

Implementation of the Partial Cloverleaf alternative would improve traffic operations at the SR 92/SR 82 interchange ramp terminal intersections and reduce vehicle queue spillback to

westbound SR 92 during the typical weekday AM and PM peak periods. The operational benefits from the project would continue through to the design year (2038).

The following is a summary of the major potential Project benefits to the SR 92/SR 82 interchange:

1. Improve operations at the westbound SR 92 off-ramp to northbound El Camino Real ramp terminal intersection. Queuing storage is improved to avoid backups onto the mainline and reduce rear end collisions.
2. Improve operations at the eastbound SR 92 off-ramp to southbound El Camino Real ramp terminal intersection.
3. Decrease in average vehicle delay within the project limit. An average estimated delay savings range between 34% and 58% per vehicle in the study area.
4. Decrease in travel time within the project limit. An average estimated travel time savings range between 17% and 35% per vehicle in the study area.
5. Improve pedestrian access by providing signalized crossings at the ramp terminal intersections and by squaring up the on- and off-ramp approaches to reduce vehicle speeds entering the intersection.
6. Eliminate short weaving segments and decrease the potential for accidents to occur.
7. Maintain or provide current Caltrans standards where possible.
8. Improve bicyclist and pedestrian movements within project limits per Caltrans Complete Streets requirements.
9. Deter the Graffiti at the SR 92 overcrossing abutment at El Camino Real.
10. Provide landscaping plan and complimentary architectural lighting.

4B. Regional and System Planning

Modification of the SR 92/SR 82 interchange is listed under the Widen Route 92 between San Mateo-Hayward Bridge to I-280 corridor projects in the Plan Bay Area 2040 plan. The project is further identified as Reconfigure the El Camino Real Interchange and the following information pertains to this project:

- Project #21613; Reconfigure the El Camino Real Interchange; Total committed cost is $19.3M for this project, including support and capital.

The proposed project is consistent with the City of San Mateo “Vision 2030” General Plan and the San Mateo Countywide Transportation Plan 2010.

SR 92 and SR 82 are part of the California Freeway and Expressway System. SR 92 within the study area is classified as a National Surface Transportation Assistance Act (STAA) truck route.

SR 82 within the study area is classified as a Terminal Access truck route. STAA trucks may travel on Terminal Access State Routes.

4C. Traffic

Current and Forecasted Traffic

Traffic data for the existing base year of 2012 and the forecast design year of 2038 was obtained from Caltrans Office of Advance Planning and Fehr and Peers Traffic Operations Analysis Report .

TABLE 4-2
EXISTING YEAR 2012 AND DESIGN YEAR 2038 (ADT) AVERAGE DAILY TRAFFIC VOLUMES

No.	Location	Direction	Existing Year 2012	Design Year 2038 (No Build)	Design Year 2038 (Build)
1	SR 92 - West of SR 82 I/C	EB	44,886	55,413	55,413
2	SR 92 - West of SR 82 I/C	WB	48,971	59,156	59,156
3	SR 92 - East of SR 82 I/C	EB	54,947	66,269	66,269
4	SR 92 - East of SR 82 I/C	WB	55,122	66,306	66,306
5	EB Off-Ramp to SR 82 NB	EB	5,853	8,980	13,807
6	EB Off-Ramp to SR 82 SB	EB	3,021	4,827	
7	EB On-Ramp From SR 82 NB	EB	8,002	10,131	10,131
8	EB On-Ramp From SR 82 SB	EB	11,100	15,228	15,228
9	WB Off- Ramp to SR 82 NB	WB	7,816	11,373	20,063
10	WB Off-Ramp to SR 82 SB	WB	6,915	8,690	
11	WB On-Ramp From SR 82 NB	WB	2,438	2,893	2,893
12	WB On-Ramp From SR 82 SB	WB	6,191	10,020	10,020

No.	Location	Direction	Existing Year 2012	Design Year 2038 (No Build)	Design Year 2038 (Build)
13	SR 82 - North of SR 92 I/C	NB	30,956	42,568	42,568
14	SR 82 - North of SR 92 I/C	SB	36,972	53,447	53,447
15	SR 82 - South of SR 92 I/C	NB	25,302	32,098	32,098
16	SR 82 - South of SR 92 I/C	SB	28,070	39,348	39,348

TABLE 4-3

EXISTING YEAR 2012 AND DESIGN YEAR 2038 PEAK HOUR VOLUMES (VEHICLES/HOUR)

No.	Location	Direction	Existing Year 2012		Design Year 2038 (No Build)		Design Year 2038 (Build)	
			AM	PM	AM	PM	AM	PM
1	SR 92 - West of SR 82 I/C	EB	3,910	3,680	4,810	4,560	4,810	4,560
2	SR 92 - West of SR 82 I/C	WB	3,940	4,080	4,830	4,850	4,830	4,850
3	SR 92 - East of SR 82 I/C	EB	4,280	4,480	5,150	5,420	5,150	5,420
4	SR92 - East of SR 82 I/C	WB	4,590	4,350	5,770	4,980	5,770	4,980
5	EB Off-Ramp to SR 82 NB	EB	560	580	800	950	1160	1,380
6	EB Off-Ramp to SR 82 SB	EB	230	260	360	430		
7	EB On-Ramp From SR 82 NB	EB	400	660	520	820	520	820
8	EB On-Ramp From SR 82 SB	EB	760	980	980	1,410	980	1,410
9	WB Off-Ramp to SR 82 NB	WB	680	610	1,210	670	2,030	1,160
10	WB Off-Ramp to SR 82 SB	WB	580	460	820	490		
11	WB On-Ramp From SR 82 NB	WB	140	240	160	290	160	290
12	WB On-Ramp From SR 82 SB	WB	470	560	930	740	930	740

Collision Analysis

Accident data from Caltrans Traffic Accident and Analysis System (TASAS) Table B was evaluated for the period between April 1, 2008 to March 31, 2011 and is presented below.

TABLE 4-4
SR 92/82 ACCIDENT RATE DATA

Location	No. of Accidents	*Average Actual Rates			*Average Accident Rates		
		Fat	F + I	Total	Fat	F + I	Total
SR 82, PM 10.3-10.7	21	**0.052**	**0.83**	1.08	0.009	0.69	1.48
SR 82/20th Ave Intersection	6	0.00	0.10	0.12	0.001	0.11	0.27
SR 82/Bovet Rd-17th Ave Intersection	3	0.00	0.00	0.05	0.001	0.11	0.27
SR 92,	55	0.00	0.25	1.08	0.007	0.37	1.14
WB On-Ramp From SR 82 SB	2	0.00	0.00	**0.36**	0.003	0.11	0.32
EB Off-Ramp to SR 82 SB	4	0.00	0.00	**1.37**	0.005	0.13	0.38
WB Off-Ramp to SR 82 SB	2	0.00	0.00	0.26	0.004	0.20	0.68
EB On-Ramp From SR 82 SB	0	0.00	0.00	0.00	0.004	0.21	0.72
WB On-Ramp From SR 82 NB	0	0.00	0.00	0.00	0.004	0.21	0.72
EB Off-Ramp to SR 82 NB	3	0.00	0.17	0.50	0.004	0.20	0.68
WB Off-Ramp to SR 82 NB	16	0.00	**0.57**	**1.53**	0.005	0.13	0.38
EB On-Ramp From SR 82 NB	2	0.00	0.00	0.26	0.003	0.11	0.32

*Per Million Vehicle Miles for mainlines and Per Million Vehicles for ramps and intersections

Bold text highlights Actual Accident Rates that are higher than Average Accident Rates.

Within the 3-year period from April 1, 2008 to March 31, 2011, a total of 21 accidents occurred on SR 82 mainline within the project limits. The actual total accident rate was less than the statewide average total accident rate. However, the actual fatality, and fatality plus injury accident rates exceeded the statewide average fatality, and fatality plus injury accident rates.

Of the 21 accidents on SR 82, one was a fatal accident and 15 were injury accidents. The fatal accident involved a vehicle exiting the driveway of a shopping center and hitting a pedestrian in the sidewalk area. Approximately 62% or 13 accidents were of the rear end type. Eleven of these rear end type accidents resulted in injuries. At the intersection of 20th Avenue within the SR 82 project limits, five out of the total 6 accidents were injury accidents and all of these accidents were rear end accidents. Two out of the total 3 accidents occurring at the 17th Avenue/Bovet Road intersection with SR 82 were no injury, rear end type accidents.

For SR 92 within the 3-year period, a total of 55 accidents occurred along the mainline. The actual accident rates for this segment of highway were lower than the statewide average accident rates. On SR 92, thirteen of the 55 accidents were injury accidents. There was no fatal accident. Approximately 62% or 34 accidents were rear end accidents. Seven of the rear end accidents involved injuries, which accounted for almost 54% of all injury accidents.

Three ramps at the SR 92/82 interchange had higher actual total accident rates than the statewide average total accident rates. One of these 3 ramps also had the actual fatality plus injury accident rate exceeding the statewide average fatality plus injury accident rate.
All of the SR 92 off-ramps within the interchange had a combined total of 25 accidents. All but two of the accidents were rear end accidents and all occurred at and/or near the terminus of the off-ramps. The most accident prone ramp was the westbound SR 92 to northbound SR 82 off-ramp where 16 accidents occurred. Of the 16 accidents, 15 were rear end accidents.

In summary, the majority of all the accidents occurred within the project limits on both SR 82 and SR 92 were rear end type accidents. The primary collision factors for these accidents were speeding and other violations mainly caused by driver carelessness. The rear end type accidents were principally congestion related due to the stop and go traffic caused by heavy traffic volume in the SR 92/SR 82 interchange area.

Since the proposed project would provide overall operational improvements, the overall number of accidents within the project limits is expected to be reduced. At a minimum, the listed exceptions would maintain or improve existing geometric conditions at spot locations and would therefore not contribute to an increase in accident rates.

5. ALTERNATIVES

5A. Viable Alternative

Build Alternative (L-9 Partial Cloverleaf Interchange)

This alternative addresses the need and the purpose of the project and proposes to modify the full cloverleaf interchange to a partial cloverleaf. The modification of the interchange consists of the following major elements:

Proposed Engineering Features

1. Eliminate the existing westbound SR 92 loop off-ramp to SR 82 in the northwest quadrant.
2. Eliminate the existing eastbound SR 92 loop off-ramp to SR 82 in the southeast quadrant.
3. Realign and widen the existing SR 92 westbound diagonal off-ramp to SR 82 in the northeast quadrant of the interchange. The ramp would be widened to two-lanes. At the ramp terminal, it would be widened to provide two left turn lanes and two right turn lanes. All lanes would be 12-foot wide with 4-foot left shoulder and right shoulder between 4-foot and 8-foot. A new traffic signal would be installed at the ramp terminal.
4. Realign and widen the existing SR 92 eastbound diagonal off-ramp to SR 82 in the southwest quadrant of the interchange. The ramp would be widened to two-lanes. At the ramp terminal, it would be widened to provide two left turn lanes and two right turn lanes. All lanes would be 12-foot wide with left shoulder varying between 4-foot and 6.5-foot and right shoulder varying between 4-foot and 8-foot. A new traffic signal would be installed at the ramp terminal.
5. Realign and widen the existing SR 92 westbound diagonal on-ramp from southbound SR 82 in the northwest quadrant of the interchange. The ramp would be widened to provide 12- foot HOV and SOV lanes with 4-foot left shoulder and 8-foot right shoulder.
6. Realign and widen the existing SR 92 eastbound diagonal on-ramp from northbound SR 82 in the southeast quadrant of the interchange. The ramp would be widened to provide 12- foot HOV and SOV lanes with 4-foot left shoulder and 8-foot right shoulder.
7. Realign and widen the existing SR 92 eastbound loop on-ramp from southbound SR 82 in the southwest quadrant of the interchange. The ramp would be widened to provide two 12- foot SOV lanes with 4-foot left shoulder and 8-foot right shoulder.
8. Realign and widen the existing SR 92 westbound loop on-ramp from northbound SR 82 in the northeast quadrant of the interchange. The ramp would be widened to provide a 12- foot HOV lane and a 12-foot SOV lane with 4-foot left shoulder and 8-foot right shoulder.

9. The southwest quadrant diagonal off-ramp would have a soundwall of approximately 536 feet. Retaining walls will be added to diagonal ramps at the northeast (370 feet), southwest (650 feet) and southeast (300 feet) quadrants to facilitate the widening.
10. Concrete barriers would be installed between the ramps in both the southwest and northeast quadrants.
11. Widen SR 82 in the northbound and southbound direction to add 11-foot right turn lane, 8-foot sidewalk and pavement markings per Class II bike lane standards within the bounds of the newly signalized intersections.
    Additionally, Caltrans will consider the following design conceptual elements and will explore them further in the design phase:
    - A 10 to 12-foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps. The width of the sidewalk would be 10 feet under the structure and 12 feet beyond the structure.
    - A Class II bike lane on SR 82 between the ramps of the intersection that is 5-feet in width in each direction
12. Outside shoulder widening on eastbound and westbound SR 92 .

Nonstandard Mandatory and Advisory Design Features

The Fact Sheets for Exceptions to Mandatory and Advisory Design Standards were reviewed and approved on November 13, 2013.

The following is a summary of the mandatory and advisory design exception standards being proposed:

TABLE 5-1
MANDATORY DESIGN EXCEPTIONS

Design Exception Feature No.	Location	HDM Section Standard	Standard/Proposed Nonstandard Values
1	R92 EB on-ramp from R82 SB CLVR2 Line STA 12+78.75 to 15+36.02	203.2 Standard for Curvature	130’ (20 mph)/127’ (19 mph)
2	R92 WB on-ramp from R82 NB CLVR3 Line STA 12+28.09 to 15+15.40	203.2 Standard for Curvature	130’ (20 mph)/120’ (19 mph)
3	R92 EB off-ramp to R82 CLVR1 Line STA 18+10.07 to 19+32.22	202.2 Standard for Curve Superelevation	0.12/0.08 Superelevation less than standard for this radius 165’. Proposed design speed to be 25 mph approaching intersection with signal lights.
4	R92 WB off-ramp to R82 CLVR4 Line STA 15+54.55 to 17+29.52	202.2 Standard for Curve Superelevation	0.12/0.08 Superelevation less than standard for this radius 180’. Proposed design speed to be 25 mph approaching intersection with signal lights.
5	R92 EB on-ramp from R82 NB CLVR5 Line STA 10+58.28 to 12+68.20	202.2 Standard for Curve Superelevation	0.12/0.08 Superelevation less than standard for this radius 264’. Proposed design speed is 25 mph leaving intersection with controlled traffic lights.
6	R92 WB on-ramp from R82 SB CLVR6 Line STA 11+32.69 to 12+47.07	202.2 Standard for Curve Superelevation	0.12/0.08 Superelevation less than standard for this radius 250’. Proposed design speed is 25 mph leaving intersection to go on ramp.
7	R92 WB off-ramp to R82 CLVR4 Line STA 12+26.22 to 14+75.95	201.1 (Horizontal) Stopping Sight Distance	300’ (40 mph)/150’ (25 mph) Stopping sight distance less than desired 300’. Propose to reduce speed to 25 mph.

Design Exception Feature No.	Location	HDM Section Standard	Standard/Proposed Nonstandard Values
8	R92 WB off-ramp to R82 CLVR4 Line STA 15+54.55 to 17+29.52	201.1 (Horizontal) Stopping Sight Distance	150’ (25 mph)/125’ (20 mph) Stopping sight distance less than desired 150’. Propose to reduce speed to 20 mph.
9	Southbound and Northbound R82	302.1 Shoulder Width 309.1(3)a, Horizontal Clearance	8'/0' Shoulder Width 4'/3'Horizontal Clearance
10	Eastbound and Westbound Route 92 Bridge (PM 11.19)	302.1 Shoulder Width 309.1(3)a, Horizontal Clearance	10' right, 5' left/0' Shoulder Width 4'/1'Horizontal Clearance

TABLE 5-2
ADVISORY DESIGN EXCEPTIONS

Design Exception Feature No.	Location	HDM Section Standard	Standard/Proposed Nonstandard Values
1	R92 EB off-ramp to R82 CLVR1 Line EC 16+13.88	202.5 (1) Superelevation Transition Length	240'/192'
2	R92 EB off-ramp to R82 CLVR1 Line BC 18+10.07	202.5 (1) Superelevation Transition Length	210'/154'
3	R92 EB off-ramp to R82 CLVR1 Line EC 19+32.22	202.5 (1) Superelevation Transition Length	210'/163'
4	R92 EB on-ramp from R82 SB CLVR2 Line BC 11+33.70	202.5 (1) Superelevation Transition Length	300'/221'
5	R92 EB on-ramp from R82 SB CLVR2 Line EC 15+36.02	202.5 (1) Superelevation Transition Length	300'/204'
6	R92 WB on-ramp from R82 NB CLVR3 Line BC 11+08.25	202.5 (1) Superelevation Transition Length	300'/240'
7	R92 WB on-ramp from R82 NB CLVR3 Line EC 15+15.40	202.5 (1) Superelevation Transition Length	300'/187'
8	R92 WB off-ramp to R82 CLVR4 Line EC 14+75.95	202.5 (1) Superelevation Transition Length	300'/176'
9	R92 WB off-ramp to R82 CLVR4 Line BC 15+54.55	202.5 (1) Superelevation Transition Length	210'/117'
10	R92 WB off-ramp to R82 CLVR4 Line EC 17+29.52	202.5 (1) Superelevation Transition Length	210'/193'

Design Exception Feature No.	Location	HDM Section Standard	Standard/Proposed Nonstandard Values
11	R92 EB on-ramp from R82 NB CLVR5 Line BC 10+58.28	202.5 (1) Superelevation Transition Length	210'/134'
12	R92 EB on-ramp from R82 NB CLVR5 Line EC 12+68.2	202.5 (1) Superelevation Transition Length	210'/121'
13	R92 EB on-ramp from R82 NB CLVR5 Line BC 13+70.33	202.5 (1) Superelevation Transition Length	300'/182'
14	R92 EB on-ramp from R82 NB CLVR5 Line EC 16+17.44	202.5 (1) Superelevation Transition Length	300'/213' Roadway design to conform 26.44 feet before EC at a superelevation of 8.4 %.
15	R92 WB on-ramp from SB R82 CLVR6 Line 92 BC 11+32.69	202.5 (1) Superelevation Transition Length	210'/147'
16	R92 WB on-ramp from SB R82 CLVR6 Line EC 12+47.07	202.5 (1) Superelevation Transition Length	210'/135'
17	R92 WB on-ramp from SB R82 CLVR6 Line BC 13+92.35	202.5 (1) Superelevation Transition Length	300'/202'
18	R92 EB off-ramp to R82 CLVR1 Line EC 16+13.88	202.5 (2) Superelevation Transition Runoff	2/3(L)within tangent, 1/3(L) within curve/ 0.42 within curve, 0.58 within tangent
19	R92 EB off-ramp to R82 CLVR1 Line BC 18+10.07	202.5 (2) Superelevation Transition Runoff	1/3(L) within curve, 2/3(L) within tangent/ 0.55 within curve, 0.45 within tangent
20	R92 EB off-ramp to R82 CLVR1 Line EC 19+32.22	202.5 (2) Superelevation Transition Runoff	2/3(L) within tangent, 1/3(L) within curve/ 0.32 within curve, 0.68 within tangent
21	R92 EB on-ramp from R82 SB CLVR2 Line BC 11+33.70	202.5 (2) Superelevation Transition Runoff	1/3(L) within curve, 2/3(L) within tangent/ 0.45 within curve, 0.55 within tangent

Design Exception Feature No.	Location	HDM Section Standard	Standard/Proposed Nonstandard Values
22	R92 EB on-ramp from R82 SB CLVR2 Line EC 15+36.02	202.5 (2) Superelevation Transition Runoff	1/3(L) within curve, 2/3(L) within tangent/ 1/3(L) within curve, 2/3(L), all in the curve
23	R92 WB on-ramp from R82 NB CLVR3 Line EC 15+15.40	202.5 (2) Superelevation Transition Runoff	1/3(L) within curve, 2/3(L) within tangent/ Proposed 187 feet, 0.84 within curve, 0.16 within tangent
24	R92 WB off-ramp to R82 CLVR4 Line EC 14+75.95	202.5 (2) Superelevation Transition Runoff	1/3 within curve, 2/3 within tangent/ 0.65 within curve, 0.35 within tangent
25	R92 WB off-ramp to R82 CLVR4 Line BC 15+54.55	202.5 (2) Superelevation Transition Runoff	1/3 within curve, 2/3 within tangent / 0.65 within curve, 0.35 within tangent
26	R92 WB off-ramp to R82 CLVR4 Line EC 17+29.52	202.5 (2) Superelevation Transition Runoff	1/3 within curve, 2/3 within tangent/ 0.36 within curve, 0.64 within tangent
27	R92 EB on-ramp from R82 NB CLVR5 Line BC 10+58.28	202.5 (2) Superelevation Transition Runoff	1/3 within curve, 2/3 within tangent/ 0.79 within curve, 0.21 within tangent
28	R92 EB on-ramp from R82 NB CLVR5 Line EC 12+68.2	202.5 (2) Superelevation Transition Runoff	1/3 within curve, 2/3 within tangent/ 0.8 within curve, 0.2 within tangent
29	R92 EB on-ramp from R82 NB CLVR5 Line BC 13+70.33	202.5 (2) Superelevation Transition Runoff	1/3 within curve, 2/3 within tangent/ 0.57 within curve, 0.43 within tangent
30	R92 EB on-ramp from R82 NB CLVR5 Line EC 16+17.44	202.5 (2) Superelevation Transition Runoff	1/3 within curve, 2/3 within tangent/ 0.42 within curve, 0.58 within tangent
31	CLVR6 Line SB SR 82 on-ramp to WB SR 92 BC 11+32.69	202.5 (2) Superelevation Transition Runoff	1/3 within curve, 2/3 within tangent/ 0.25 within curve, 0.75 within tangent due to conform to El Camino Real

Design Exception Feature No.	Location	HDM Section Standard	Standard/Proposed Nonstandard Values
32	CLVR6 Line SB SR 82 on-ramp to WB SR 92 EC 12+47.07	202.5 (2) Superelevation Transition Runoff	1/3 within curve, 2/3 within tangent/ 0.42 within curve, 0.58 within tangent
33	CLVR6 Line SB SR 82 on-ramp to WB SR 92 BC 13+92.35	202.5 (2) Superelevation Transition Runoff	202.5 (2) 1/3 within curve, 2/3 within tangent/ 0.67 within curve, 0.33 within tangent
34	R92 WB off-ramp to R82 CLVR4 Line EC 14+75.95	202.5 (3) Superelevation Transition Runoff (rate of change of cross slope)	202.5 (3) 6%/6.8%
35	R92 WB off-ramp to R82 CLVR4 Line BC 15+54.55	202.5 (3) Superelevation Transition Runoff (rate of change of cross slope)	202.5 (3) 6%/6.8%
36	R92 EB on-ramp from R82 NB CLVR5 Line EC 12+68.2	202.5 (3) Superelevation Transition Runoff (rate of change of cross slope)	202.5 (3) 6%/6.6%
37	R92 EB on-ramp from R82 NB CLVR5 Line BC 13+70.33	202.5 (3) Superelevation Transition Runoff (rate of change of cross slope)	202.5 (3) 6%/6.6%
38	CLVR5 Line From NB route 82 on-ramp to EB route 92	Freeway to Freeway Connection (Branch Connections): Merging Length	504.4 (6) 600 feet/200 feet
39	CLVR5 Line NB route 82 on-ramp to EB route 92. Auxiliary Lane from Diagonal Eastbound on Ramp to Delaware Blvd.	Auxiliary Lanes	504.5 2000 feet/465 feet

- Interim Features

  Interim features are not requested for the build alternative.

- High Occupancy Vehicle (HOV) (Bus and Carpool) Lanes

  HOV bypass lanes and will be provided for all on ramps with the exception of the Eastbound loop on-ramp from southbound SR 82 where only 2 mixed flow lanes will be provided.

- Ramp Metering

  The SR 92 freeway corridor is included in the Statewide Ramp Meter Development Plan (RMDP). Ramp metering equipment (infrastructure) will be installed as part of this project, but activation of meters will be done separately when metering is implemented on the 92 corridor. An Exception to Ramp Metering Policy Fact Sheet was approved on 11/27/13 as the HOV lane requirement for the SR 92 Eastbound loop on-ramp from southbound SR 82 could not be met.

  All existing Ramp Metering and TOS elements will be kept operational throughout the construction phase of this project. Any Ramp Metering and TOS elements that may be affected by this project will be relocated or replaced as necessary.

- California Highway Patrol (CHP) Enforcement Areas

  There are separate CHP Enforcement areas for the build alternative on the two diagonal on-ramps. However, at the loop on-ramps the CHP Enforcement Areas and the Maintenance Vehicle Pullouts have been combined due to space constraints.

- Park and Ride Facilities

  Park and Ride facilities are not proposed for the build alternative. The nearest park and ride lot is at the SR 101/92 interchange which will not be impacted by this project. The public transport agency in and around the City of San Mateo is the San Mateo County Transit District (Samtrans). Samtrans does not use the on-ramps at this location.

- Utility and Other Owner Involvement

  Verification of utilities will require extensive potholing at the PS&E phase of this project. The utility owners within the project limits are the City of San Mateo, AT&T, County of

San Mateo and PG&E. Utility relocation costs have been included in the overall project estimates.

- Railroad Involvement

  Caltrain and Union Pacific Railroad facilities are within the project limits, but are not in conflict. Due to the proximity of the project to the Cal train rail tracks, a railroad short and standard clause will need to be inserted into the PS&E package as a note to the contractor.

- Highway Planting

  The estimated area of replacement highway planting is 9.0 acres. The total disturbed soil area (DSA) for the Sub-EA's highway widening work was estimated at 12.0 acres, as shown in the projects Storm Water Data Report (May 2012). Approximately 75 percent of the DSA included existing planting--9.0 acres of existing roadside planting, is estimated to be removed/impacted, from construction of the parent highway and sound wall projects. The overall limits of replacement planting work are within the overall project limits of parent EA 04-235520. The replacement planting/irrigation work is planned at the project interchange location, including outside of the diagonal ramps, and within current Caltrans Right of Way areas. The standard replacement highway planting work will be conducted as a separate sub-contract/design to parent contract/design EA-235520.

  Replacement highway planting will help preserve the project route's current Caltrans classification as "Landscaped Freeway", and to exclude outdoor advertising and billboards. A Landscaped Freeway is a section of freeway with planting that meets the criteria of the Outdoor Advertising Regulations. It is used in the control and regulation of Outdoor Advertising Displays. The existing roadside highway planting is mostly oak, pine, and plain trees, with some shrubs and ground cover. There are no measurable absolute gaps in the existing roadside landscape as measured parallel to the SR-92 highway mainline. Upon death and/or removal of freeway roadside planting, this project route could potentially be de-classified as Landscaped Freeway.

  The general replacement highway planting design concept is "relate to California natural and cultural history". The design objectives are to: control soil erosion, provide storm water treatment, utilize a combination of drought tolerant and California native plant species, minimize/eliminate long-term irrigation and maintenance requirements, improve roadside safety to maintenance/operations personnel, screen views of traffic to neighboring residences, and maintain visual quality. Native oak trees (Quercus) and non-native olive trees (Olea Europaea, non-fruiting), are two primary tree species

identified for the project. They are drought tolerant, hardy, attractive, and long-lived; and they already exist in and around San Mateo as well. Rows of street trees will be incorporated, to complement the conventional highway SR 82 in San Mateo. The design objective for the landscape ground plane is to be somewhat uniform and low, and will be made up of grasses and shrubs. Some ground plane variation will be achieved by the use of rock and bark mulches, low-growing shrubs, and various plant species having unique color, form, and texture. Larger shrubs and trees will be utilized along the outside of the diagonal ramps, to screen views of traffic and the sound wall to neighboring residences. Careful plant spacing will be used to avoid creating a total roadside plant inventory that is too dense and maintenance intensive. Low-maintenance vines are proposed to grow on the new sound wall, to deter graffiti and screen views from adjacent residences. Layout of roadside planting will consider highway sight distances, clear recovery zones, and clearance from drainage facilities and utilities. Compost will be used extensively throughout the project area. Added to the soil, compost improves soil fertility, storm water infiltration, plants rooting depth, and water holding capacity, as well as help to reduce soil erosion.

Existing irrigation infrastructure items, such as water meters, backflow preventers, irrigation crossovers, and electrical service (for irrigation controllers), will be assessed and updated as needed. It is the design intent to rely upon the irrigation system during the initial three year duration of the Plant Establishment Work (PEW), and afterwards as needed.

The existing remaining planting within the project limits will be selectively preserved to respect an overall corridor planting theme, maintain visual character and reduce maintenance. Trees and shrubs that are problematic, dead, or showing a decline in health will be removed. Quercus *Oak trees* are the dominant remnant tree species occurring along the SR 92 corridor, and project limits. New trees and shrubs species, noted for their foliage color, texture and drought tolerance, will be incorporated to enhance the dark green foliage and character of the oak trees.

- Erosion Control

Temporary and permanent erosion control measures will be installed to protect disturbed soils, at various phases of highway planting construction. Erosion control will provide highway facility protection, roadside slope stabilization, source control of any soil silts, reduction/management of any concentrated storm water flow conditions, and cover for disturbed soil areas from construction operations/staging impacts. Additionally, erosion control is necessary to help meet water quality discharge requirements. Permanent erosion control will be achieved by installation of planting (trees, shrubs, groundcovers, and grasses) and other landscape materials (compost,

mulches, and netting). Temporary erosion control will be achieved through placement of straw fiber rolls and organic/inorganic materials to cover soil areas and drain inlets, etc.. Compost will be used extensively to improve soil fertility, storm water infiltration, plants rooting depth and water holding capacity, as well as reduce soil erosion and improve water quality.

- Roadside Management

  Roadside Management measures shall be considered and incorporated to minimize long-term roadside maintenance and life-cycle costs, and to reduce or eliminate maintenance worker exposure to traffic. Roadside management features include: vegetation control beneath guardrails, paving in narrow areas, adequate access gates/points for maintenance personnel and equipment, and improved access to roadside facilities. New maintenance vehicle pullouts and access gates will be provided at appropriate locations.

- Noise Barriers

  A separate Noise Abatement Decision Report (NADR) recommended that a 14-foot high and 536-foot long masonry soundwall at the southwest quadrant diagonal off-ramp is feasible and preliminarily reasonable under the code of federal regulations 23 CFR 772 and the Caltrans Traffic Noise Analysis Protocol. The determination of final reasonableness has been documented in the final environmental document.

- Nonmotorized and Pedestrian Features

  Pedestrian and Bicycle features on SR 82 will adhere to the Caltrans Complete Streets Deputy Directive on Complete Streets - Integrating the Transportation System (DD-64-R1) to develop a transportation facility that is planned, designed, operated, and maintained to provide safe mobility for all users, including bicyclists, pedestrians, transit riders, and motorists.

  For pedestrians on SR 82, shorter and squared up crosswalks will be provided to cross the SR 92 ramps. A minimum of 8-foot wide sidewalk will be provided at the areas on SR 82 where widening will be done and curb ramps will be upgraded to current ADA standards. Refuse islands will be designed to the maximum area with raised nose sections if feasible. "No Right Turn on Red" extinguishable sign will be installed at the off ramp crosswalks.

In addition, the project will be ADA compliant throughout the project area. For the safety of cyclists, pavement markings per Class II Bike lane standards will be added in the northbound and southbound direction on SR 82 within the ramp intersections.

- Needed Roadway Rehabilitation and Upgrading

Lane widths and shoulders will be upgraded to standards where possible. The roadway segment of Rte 82 within the project limits and all the ramps will be overlaid as needed.

- Cost Estimates

A detailed cost estimate has been developed for the project. The Current Capital Outlay Construction Estimate is $16,260,000. Unit prices of major items were obtained from Caltrans Contract Cost Data Webpage. The cost estimate included Time Related Overhead (TRO), Mobilization and Contingencies and is attached as Attachment E.

- Right of Way Data

A Right of Way Data Sheet has been prepared based on the scope of the work and the maps provided by Design. New parcels or construction easements are not required. Utility relocation costs have been included in the ROW Data Sheet and the overall project estimates.

- Materials

A Life Cycle Cost Analysis (LCCA) was performed to evaluate the cost effectiveness of structural options and has been reviewed and approved by the Office of Materials. The Office of Materials recommended Alternative 2 (0.15', RHMA-G, 0.8 HMA-Type A) for ease of construction and minimal handling of different materials types. A Pavement Strategy Checklist and LCCA results are included in attachment H. Table 5-2 below is a summary of Roadway Structural Sections based on recommendations by the Office of Materials.

TABLE 5-2 SUMMARY OF ROADWAY STRUCTURAL SECTIONS

Section	Traffic Index (TI_{20})	R Value	RHMA-G (feet)	HMA-A (feet)
Ramp Widening	8.5	25	0.15	0.80
Existing Areas	N/A	N/A	0.15 (after cold planning)	-
CHP Enforcement & MVP Pullout	6	25	-	0.65
SR 82	9.5	25	0.15	0.90
SR 92	11.5	25	0.15	1.15

RHMA - G Rubberized Hot Mix Asphalt - Type G
HMA - A Hot Mix Asphalt - Type A

- Effect of Projects Funded by Others on State Highway

With the Build Partial Cloverleaf alternative, queue spillback from the westbound SR92 off-ramp to northbound SR 82 ramp terminal intersection is eliminated from the mainline. This results in improved mainline operations upstream of the on-ramp. Since this improvement allows more traffic to reach segments of westbound SR92 downstream of the SR 82 interchange, there is a slight increase in density at these segments.

5B. Rejected Alternatives

This section includes a brief write up of other alternatives that were considered but did not meet the purpose and need and were not within the budgeted cost of the project.

L-2 Spread Diamond Interchange

This alternative would eliminate all the loop ramps. Two new traffic signals would be installed at the off-ramp intersections at SR 82. The SR 92 diagonal eastbound and westbound off-ramps would still be one lane off ramps but would transition to 4 lanes before the junction with SR 82

to provide adequate storage lanes for turns into SR 82. The diamond on-ramps at the SR 82 Interchange would be two-lane entrance ramps transitioning to a single lane before reaching SR 92.
This alternative was found to be operationally not feasible during the TOAR process. Generally, the proposed diamond configuration would not support the projected growth in volumes and resulted in poor level of service for the ramp terminal intersection.

L-8 Configuration Interchange

This alternative would eliminate ramps in the northeast quadrant and the loop off-ramp in the southeast quadrant. All the remaining ramps would be widened to at least 2 lanes at the intersection with SR 82 with the exception of the westbound SR 92 loop off-ramp which would be 4 lanes wide. This option was initially considered for TOAR study but geometric constraints eliminated the potential alternative from further consideration. The widening of the loop off-ramp would provide a tight radius curve where the motorist would have to decelerate from freeway speeds to a design speed of 25 mph around the loop off-ramp. In addition, the loop-off ramp would likely not have enough storage. It is likely that more accidents would occur due to the congestion and minimal sight distances.

Roundabout Diamond

A roundabout diamond interchange has a similar ramp configuration to a spread diamond interchange with two on-ramps and two off-ramps; however, the ramp terminal intersections are controlled with roundabouts instead of stop signs or traffic signals. Roundabouts at the SR92/SR 82interchange would need to be two- or three-lane to accommodate the high traffic volumes on El Camino Real. To accommodate pedestrians at multilane roundabouts, pedestrian activated signalization is needed at the crosswalks, thus reducing the operational benefits of the roundabout. Additionally, a roundabout would not be able to accommodate the high volume of left-turning traffic from southbound SR 82to westbound SR92.

Single Point Urban Interchange (SPUI)

A single point urban interchange (SPUI) is similar to a diamond interchange; however, there is a single ramp terminal intersection instead of two. SPUIs typically show the most benefit at locations with closely spaced intersections, since they eliminate one intersection and provide better spacing between remaining intersections. In the case of the SR92/SR 82interchange, there is already sufficient spacing between ramp terminal intersections and adjacent downstream intersections. A SPUI would also require complete reconstruction of the existing SR 92 structure over El Camino Real, adding significant cost over the other alternatives considered.

Diverging Diamond Interchange (DDI)

The diverging diamond interchange (DDI) is a type of diamond interchange that uses crossover movements at the ramp terminal intersections to increase capacity. The design allows for fewer lanes on the local street compared to a regular diamond interchange because left-turn storage lanes are not needed. The DDI is more efficient because all turns onto on-ramps are uncontrolled and the signals at the ramp terminal intersections can be operated with two phases instead of three. However, a DDI does not accommodate high volumes of through traffic on the local street since opposing directions of traffic have conflicting green phases. Signal progression through the corridor is therefore sacrificed. This treatment would not be appropriate at this location due to the high volume of through traffic on El Camino Real.

6. CONSIDERATIONS REQUIRING DISCUSSION

6A. Hazardous Waste

An environmental regulatory database search revealed that there are two underground storage tank sites close to the project limits that might negatively impact the proposed project. The excavation for the project's proposed retaining wall might be affected by one of these two sites depending on the wall's final design details.
Based upon the wall design and the project's estimated soil excavation quantity, a subsurface investigation (SI) may be necessary for the project. This field work will be planned and executed during the PS&E phase, when the project footprint and potential impacts are better defined.

6B. Value Analysis

Project cost threshold is not met and Value Analysis is not required. An extensive research of alternative designs was performed and evaluated on cost and benefits.

6C. Resource Conservation

Measures that will be taken to conserve energy and nonrenewable resources during construction, operations and maintenance are as follows:

- Existing pavement sections removed will be recycled and incorporated into the new pavement sections.
- Activities will be planned and scheduled to maximize the efficient use of construction manpower and equipment to reduce the use of fuel and power consumption.
- HOV lanes have been added to the ramps where possible to encourage carpooling.
- Stage construction and lane closures will be planned and scheduled to minimize impacts to existing traffic flows.

6D. Right of Way

- General- A right of way data sheet has been prepared based on the scope of work described and on maps provided by Design. Estimated cost information is contained in the Right of Way Data sheet in attachment "D" of this report. There is no additional right of way anticipated for this project.

- Railroad- Caltrain and Union Pacific Railroad facilities are within the project limits, but are not in conflict. Due to the proximity of the project to the Cal train rail tracks, a railroad short and standard clause will need to be inserted into the PS&E package as a note to the contractor.
- Utilities- Verifications of utilities will be required. Potholing will be done during the PS&E phase. The potential utility conflicts identified within the project limits include City of San Mateo sewer, water, and lighting, AT&T communication line, and PG&E gas and electrical lines.

Per Departments general policy, a longitudinal encroachment exception is not required because there are no utilities located within the SR 92 mainline and the utilities located on El Camino Real are allowable and do not pose a safety hazard to the travelling public.

6E. Environmental

The Initial Study/Negative Declaration (IS/ND) has been prepared in accordance with Caltrans' environmental procedures, as well as state and federal environmental regulations. The Initial Study/Negative Declaration (IS/ND) and National Environmental Policy Act Categorical Exclusion (NEPA CE) are the appropriate documents for the proposed project. The signature sheets are included in Attachment C.

Water Quality

This project is located within San Francisco Bay Regional Water Quality Control Board.
The total disturbed soil area (DSA) will be approximately 12.0 acres, which includes staging areas, temporary grading, cut and fill areas, new pavement, and pavement replacement areas. The net additional impervious area will be about 4.0. The existing impervious surface is about 4.7 acres.

The project will include four different types of Best Management Practices, Construction Site BMPs, Design Pollution Prevention BMPs, Permanent Treatment BMPs and Maintenance BMPs. A Storm Water Data Report was prepared to summarize all the proposed measures for the project. The approved signature sheet is attached.

Since the project have a disturbed soil area (DSA) of more than 1 acre, to comply with the conditions of the Construction General Permit (NPDES No. CAS000002) and Caltrans NPDES Permit (NPDES No. CAS000003), and address the temporary water quality impacts resulting from the construction activities in this project, compliance with Storm Water Pollution Prevention Plan Standard specifications is required. This Standard Specification will address the preparation of Storm Water Pollution Prevention Plan (SWPPP) document and the implementation of SWPPP during construction. A risk level determination for construction activities will be performed and depending to construction period and location, the project will be designated as risk level 1, 2 or 3. Risk level 3 would be the highest Water Quality risk.

Best Management Practices (BMPs) need to be implemented to address the temporary water quality impacts resulting from the construction activities in the project. BMPs will include the measures of soil stabilization, sediment control, wind erosion control, tracking control, non-storm water management, and waste management/materials pollution control. Appropriate BMPs and their quantities need to be developed during the PS & E phase. In addition depending on project risk level certain Monitoring and reporting will be required.

Permanent Erosion Control measures will be implemented in the project to stabilize all the disturbed area as a mean of source control. Permanent treatment BMPs will also be constructed to treat storm water.

If significant amount of groundwater will be encountered in the deep excavations, dewatering may be required. Early discussion shall be initiated with the Water Pollution Control Branch. As part of the Hazardous Waste Site Investigation, ground water testing may be required to determine if it is contaminated to develop contract provisions for its handling and disposal during construction.

Wetland and Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Plans (FIRM) show that the majority of residential development and properties are not within the boundaries of the base floodplain. The Technical Information for the Location Hydraulic Study and Floodplain Evaluation Summary is presented in Attachment E.

Visual/Aesthetics

Potential Visual Impacts

Caltrans completed a Visual Impact Assessment Technical Report in June 2013.

The interchange is adjacent to developed areas--mostly commercial and some residential. The existing undercrossing structure appears old and plain looking in visual quality, and the existing landscaping of the interchange is mature and fairly attractive visually. Some noteworthy mature plants include: oak trees, pine trees, plain trees, and acacia shrubs. It is anticipated that much of the existing landscaping will have to be removed to accommodate the interchange improvements and construction. Trees removed to accommodate construction of the project will be replaced at a density sufficient to create an equal amount of screening and green cover at maturity.

Architectural treatment will be included on new sound walls that exhibit attractive pattern, color and texture and improve visual quality of the walls.

The removal of some trees within the interchange, the addition of a new soundwall and three new retaining walls, and the addition of two new traffic interchanges will be the most notable visible changes to the environment from this project.

Context Sensitive Solutions

Context Sensitive Solutions practices have been incorporated into the project so as to respond to the context and needs of the local community and project stakeholders and to minimize any impacts. Contextual issues that have been addressed include: safety, maintenance feasibility, traffic demand, impacts on alternate routes, funding feasibility, local aesthetics, visual quality, relevant laws and regulations, natural environment, and pedestrian and bicycle circulation.

Input from the project stakeholders (City of San Mateo, and San Mateo County Transportation Authority) and the local community of San Mateo was received. The community's comments and needs were gathered formally during a city-hosted public meeting. Their needs will continue to be addressed throughout the PS&E (Plans Specifications & Estimate) project phase.

The visual quality of the project will draw upon the existing aesthetics of the project site and the immediate vicinity and highway corridors. The existing aesthetic elements (form, line, color, and texture) of the project and vicinity are typical suburban, comprising of: paved conventional multi-lane highway and ramps, concrete bridge structure, traffic signals and signage, sidewalks, and roadside landscaping and native oak trees. Attractive commercial buildings and residential houses and street trees are immediately adjacent to the project site.

The project proposed elements--paved highway ramps, concrete retaining walls, sound wall, sidewalks, street lights, and roadside landscaping will continue with similar and enhanced form, line, color, and textures. Design intent is for architectural treatment on the retaining walls, bridge abutment, and sound wall, composed colors/textures for landscaping, and dark colored metal appurtenances (traffic signals, signage, fences, etc.). The general replacement highway planting design concept is to be drought tolerant, and to "relate to California natural and cultural history".

The proposed project improvements will be constructed to provide a more pedestrian and bicycle friendly/safe condition, namely: curb ramps, bike lanes, crosswalks, and wider sidewalks.

6F. Air Quality Conformity

This is an interchange reconfiguration project, which is one of the types of projects listed in Table 3 of Code of Federal Regulations 40 CFR § 93.127. As defined in the regulations, projects of this type are exempt from regional analysis requirements, but are required to have project-level conformity determinations related to hot-spot requirements for Carbon Monoxide (CO) and Particulate Matter (PM2.5). The following describes how those requirements were met:

- A hot-spot analysis was performed for Carbon Monoxide, using the "Transportation Project-Level Carbon Monoxide Protocol" (December 1997), which is allowable for use in the Bay Area. The analysis demonstrated that the project will not cause future exceedances of the CO National Ambient Air Quality Standard.
- For PM2.5 hot-spot analysis, under the March 10, 2006 Transportation Conformity Rule revision, interagency consultation concurrence is required for determinations that a non-exempt project is not a "Project of Air Quality Concern" (POAQC) regarding particulate matter (PM2.5) as defined in 40 CFR 93.123(b)(1). A project that is deemed not to be a POAQC is considered to have met Clean Air Act and 40 CFR 93.116 requirements without the need for an explicit hot-spot analysis. The project was reviewed by the air conformity task force on February 28, 2013, and the task force concurred with the Department's finding that the project is not a POAQC.

Therefore, the project has met all air quality conformity requirements of the Clean Air Act.

6G. Title VI Considerations

The proposed project is designed to maintain or improve the current accessibility of the public to the area. The ramp improvements and better signage will further facilitate access to the area. For pedestrians on SR 82, shorter and squared up crosswalks will be provided to cross the SR 92 ramps. A curbed island refuge will be provided at new crosswalks. Also, a "No Right Turn

on Red" extinguishable sign for pedestrians using the crosswalk will be installed for further pedestrian safety. At pedestrian crossings, curb ramps will be installed in accordance with Caltrans standards and in compliance with the American Disabilities Act (ADA). Public accessibility is further enhanced with street lighting improvements along SR 82.

6H. Noise Abatement Decision Report

The Noise Study Report for this project was prepared by Glenn Kinoshita and his staff on 8/13/13 and approved by Allen Baradar on 8/13/13. This report was prepared in conformance with the procedures outlined in Title 23, Part 772 of the US Code of Federal Regulations (23 CFR 772), entitled " Procedures for Abatement of Highway Traffic Noise and Construction Noise", and Caltrans Traffic Noise Analysis Protocol (TNAP, 2011). This project is classified as a Type I project under those guidelines.

There are residential, park and commercial developments present in the project area. They are identified as land use Activities Categories B, C and E as defined in 23 CFR 772. A multi-story apartment building is currently under construction adjacent to the interchange. The existing noise levels range from 58 to 65 dBA Leq(h) at noise receptors within the project limits. The predicted future noise levels range from 58 to 65 dBA Leq(h) for all receptors except the apartment units under construction. The future noise levels at the exterior patios in the apartment building are predicted to range from 69 to 76 dBA, which exceed the Noise Abatement Criteria (NAC) specified in 23 CFR 772

A 536 foot long soundwall, SW-1, along the edge of shoulder of the proposed westbound SR 92 diagonal off-ramp to SR 82 was found to be feasible as it would reduce the future noise levels by more than 5 dBA. The soundwall would meet the 7dBA noise reduction goal and address the reasonableness goal at the minimum height of 10 feet. At the height of 14-feet, SW-1 would break the line-of-sight between truck stacks and the receptors on the second level of the apartment building, but not be able to do so for receptors on higher levels.

The number of benefited receptors would vary depending on the height of the barrier selected. Benefited receptors are those predicted to receive at least a 5 dBA noise reduction from the proposed abatement measure. Units on the third and fourth levels of the building would not be benefited at any barrier heights.

The engineer's cost estimate includes costs required to construct the abatement. Wall construction cost is be based on masonry construction, in accordance with Caltrans' standard specifications. The cost calculations of the noise abatement measure includes all items appropriate and necessary for the construction of the noise abatement measure and only those items directly related to the construction of the noise abatement have been included in the

noise abatement construction estimate. These items incude the following: mason blocks, excavation, backfill, concrete barrier, traffic control and landscape.
The site conditions require modification of a planned retaining wall for the proposed noise barrier foundation and the cost of related modifications (additional reinforcement) is included in the construction cost estimate.

TABLE 6-1
SUMMARY OF KEY ABATEMENT INFORMATION

Barrier	Height (feet)	Acoustically Feasible?	Number of Benefited Residences	Design Goal Achieved?	Reasonable Allowance per Residence	Total Reasonable Allowance	Estimated Construction Cost	Cost Less than Allowance?
SW-1	10	Yes	3	No	3	$165,000	$255,000	No
	12	Yes	4	No	4	$220,000	$305,000	No
	14	Yes	9	Yes	9	$495,000	$356,000	Yes

The 14-foot high masonry soundwall is recommended for construction for the following reasons:

- It is the only barrier that costs less than the allowance.
- It breaks the line-of-sight break between a receptor and an 11.5-foot-high truck stack (per Chapter 1100 of the Highway Design Manual),
- Has the maximum number of benefited receptors which in this case is 9.
- Provides a maximum of 10 dBA of noise reduction with minimal increase in cost
- Meets the15-year minimum life cycle as there is no planned future construction at this ramp.

The preliminary noise abatement decision presented here is based on preliminary project alignments and profiles, which may be subject to change. As such, the physical characteristics of noise abatement described herein also may be subject to change. If pertinent parameters change substantially during the final project design, the noise abatement may be changed or eliminated from the final project design. A final decision to construct noise abatement will be made upon completion of the project design.

7. OTHER CONSIDERATIONS AS APPRORIATE

7A. Public Participation

A public information meeting with an open house format was held on January 29, 2014 to present information regarding the build alternative and seek public comment on the Draft Environmental Document. Forty written comments pertaining to Landscape, Sound Barriers, Traffic flow, Pedestrian and Bicyclists Safety were received during the open comment period.

As a result of the public review process, bicycle pavement marking per Class II Bike lane standards were added in the northbound and southbound direction on SR 82 within the ramp intersections.

7B. State Route Matters

State Route matters do not need to be addressed for this project.

7C. Permits

Permits are not needed for this project.

7D. Cooperative Agreements

Cooperative Agreement No. 04-2448 was executed between the City of San Mateo, the project sponsor and the department, the implementing agency. This cooperative agreement outlines the roles and responsibilities of the project sponsor and the implementing agency and outlines reimbursement of $585,000 dollars of Federal Earmark and local funds to the Department to begin development of the DED/DPR and the final PA &ED. Amendment No. 1 (04-2448-A1) added additional Federal Earmark and Local funding for a total of $1,300,000.

A draft executable design cooperative agreement No. 04-2536 is included in Attachment L. This cooperative agreement outlines the roles and responsibilities of the project sponsor and the implementing agency where the department will perform the PS&E services, advertising, award and provide construction administration (AAA- "Triple A" service).

7E. Transportation Management Plan

A Traffic Management Plan (TMP) will be developed in detail during the design phase. A TMP typically includes information regarding project impacts and transportation management measures. Project impacts include lane closures and modified access and transit, pedestrian and bicycle impacts. Transportation management measures include the following components: public information, motorist information, incident management, construction strategies and

demand management strategies. This interchange is centrally located in San Mateo. It is therefore critical to coordinate with the City to develop a Transportation Management Plan to minimize delays and any inconveniences to the public and businesses nearby. The Transportation Management Plan for this project has been estimated to be $450,000.

7F. Other Agreements

There is an existing freeway agreement for Route 92 from Hillsdale Blvd to Grant Street dated 3/20/61. That agreement does cover the interchange with El Camino Real (SR-82), but the limits of Route 92 in that agreement extend substantially beyond the El Camino Real interchange and affect other local roads, which is what warranted that agreement.

A superseding freeway agreement is not required for this project because the scope of work is limited to permanent modification of access control to a conventional highway (SR 82 – El Camino Real).

The following Maintenance agreements exist: SM-92-PM 9.5/11.7 dated 8/5/1963.

A specific maintenance agreement for SR 92/ SR 82 is recommended to discuss landscape and other maintenance responsibilities and will be prepared at 65% PS&E phase. An update to the traffic signal and intersection lighting agreement may be needed for new lighting on El Camino Real. The proposed new signalized intersection lighting and operations are within the Department's jurisdiction.

7G. Graffiti Control

This project is in San Mateo County which is an identified graffiti-prone area. Architectural treatment along face of existing bridge structure abutments next to pedestrian sidewalks will be considered to prevent graffiti. The new retaining walls and sound walls will include architectural treatment or landscape features to discourage graffiti.

8. FUNDING/PROGRAMMING

The City of San Mateo, as the project sponsor is responsible for programming capital and support cost. The current proposed funding is provided in the tables below and in summary includes the following:

PS&E Phase	Fund Type	Dollar Amount	FY
	EarMark T2 Demo (FED)	$1,000,000	14
	Local	$100,000	14
	Local – SMCTA Measure Tax	$1,500,000	14
	Total = $2,600,000		

RW Capital	Fund Type	Dollar Amount	FY
	Developer	$501,000	17
	Local	$1,000,000	17
	Total = $1,501,000		

Construction Capital	Fund Type	Dollar Amount	FY
	EarMark T2 Demo (FED)	$865,000	17
	Local – Developer Fee	$530,000	17
	RIP-T4-12-FED-SM	$5,500,000	17
	Local – SMCTA Measure Tax	$4,000,000	17
	Total = $10,395,000		

The City will be applying for the Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grants Program to construct the State Route 92/82 (El Camino Real) Interchange Improvement Project. The City is seeking $12,205,000 in grant funding for construction of the project, including utility relocation and construction management.

Capital Outlay Support and Project Estimates

Fund Source	Fiscal Year Estimate							
RIP	Prior	2012/13	2013/14	2014/15	2015/16	2016/17	Future	Total
Component	In thousands of dollars ($1,000)							
PA&ED Support								
PS&E Support								
Right-of-Way Support								
Construction Support								
Right-of-Way								
Construction						5,000		5,000
Total						5,000		5,000

Fund Source	Fiscal Year Estimate							
Demo/FED	Prior	2012/13	2013/14	2014/15	2015/16	2016/17	Future	Total
Component	In thousands of dollars ($1,000)							
PA&ED Support								
PS&E Support				1000				1000
Right-of-Way Support								
Construction Support								
Right-of-Way								
Construction						865		865
Total	980					1,865		1,865

Fund Source	Fiscal Year Estimate							
1/2 cent sales tax	Prior	2012/13	2013/14	2014/15	2015/16	2016/17	Future	Total
Component	In thousands of dollars ($1,000)							
PA&ED Support								
PS&E Support				1,500				1,500
Right-of-Way Support								
Construction Support								
Right-of-Way								
Construction						4,000		4,000
Total				1,500		4,000		5,500

Fund Source	Fiscal Year Estimate							
Local City	Prior	2012/13	2013/14	2014/15	2015/16	2016/17	Future	Total
Component	In thousands of dollars ($1,000)							
PA&ED Support								
PS&E Support			100					100
Right-of-Way Support								
Construction Support								
Right-of-Way						1,000		1,000
Construction								
Total			100			1,000		1,100

Fund Source	Fiscal Year Estimate							
Local Developer	Prior	2012/13	2013/14	2014/15	2015/16	2016/17	Future	Total
Component	In thousands of dollars ($1,000)							
PA&ED Support								
PS&E Support								
Right-of-Way Support								
Construction Support								
Right-of-Way						501		501
Construction						530		530
Total						1030		1031

9. SCHEDULE

Project Milestones		Scheduled Delivery Date(Month/Day/Year)
PROGRAM PROJECT	M015	5/1/12
BEGIN ENVIRONMENTAL	M020	8/15/12
CIRCULATE DPR & DED EXTERNALLY	M120	1/8/14
PA & ED	M200	5/15/14
DRAFT STRUCTURES PS&E	M378	8/1/15
PROJECT PS&E	M380	2/28/16
RIGHT OF WAY CERTIFICATION	M410	4/30/16
READY TO LIST	M460	6/30/16
AWARD	M495	11/1/16
APPROVE CONTRACT	M500	12/31/16
CONTRACT ACCEPTANCE	M600	5/30/18
END PROJECT	M800	12/1/19

10. RISKS

A comprehensive risk management plan (RMP) was utilized for this project (See Attachment J). The risk management effort was discussed at monthly PDT meetings and updated as needed. Major high risk included managing the critical path TOAR which took longer than originally scheduled, higher than anticipated structures cost for retaining walls and sound wall, and risk of studying the Diamond and L-8 alternatives before dismissing those alternatives from further study.

The RMP identifies future design and construction risk with low to medium risk levels. Such risk items are fairly standard risk related to the design and construction phase. Items such as unforeseen utilities or buried objects, construction cost and funding issues, and environmental related issues risks are listed.

11. FHWA COORDINATION

The Project Report was reviewed by Lanh Phan, FHWA Senior Transportation Engineer on April 28, 2014.

This project is considered to be a delegated Project in accordance with the current Federal Highway Administration (FHWA) and Department of Transportation (Caltrans) Joint Stewardship and Oversight Agreement.

12. PROJECT REVIEWS

District Program Advisor	Ron Moriguchi	Date	05/2/14
Headquarters Design Coordinator	Larry Moore	Date	05/2/14
Project Manager	Al Lee	Date	04/16/14
District Safety Review	Katie Yim	Date	05/2/14
Constructability Review	Allen Dadafarin	Date	05/2/14
Constructability Review	Mario Jerez	Date	05/2/14
FHWA Area Engineer	Lanh Phan	Date	04/24/14

13. PROJECT PERSONNAL

Contact Name	Function	Phone Number
Abby Emmazadeh	Senior- Design	510-286-4895
Al B. Lee	Project Manager	510-715-8663
Hossein Khodabakhsh	Project Engineer - Design	510-622-1789
Keyhan Moghbel	Office Chief - Design	510-286-7189
Lance Hall	Senior - Highway Operations	510-286-6311
Philip Cox	Senior - Forecasting	510-286-5584
Ron Moriguchi	Regional Project Manager	510-286-5073
Larry Moore	HQ- Design Reviewer	916-653-2647
Dixon Lau	Senior - Hydraulics	510-286-4854
Yolanda Rivas	Senior - Environmental Planning	510-286-6216
Glenn Kinosita	Senior -Air & Noise	510-286-5677
Ron Kyutoku	Senior - Hwy Operations	510-286-4640
Syed Noorbakhsh	Senior - Traffic Management	510-286-5517
Lester Lee	Senior – Traffic Systems	510-286-4528
Mark Powers	Senior – Traffic Systems	510-286-4529
Roger Dayoan	Project Engineer - Design	510-286-5870
Min Lee	Senior - Electrical	510-286-4624
Roland Au-Yeung	Office Chief - Traffic Safety	510-2864560
Robin B. Pon	Traffic Safety	510-286-4580
Anna Uribe	Environmental Engineering	510-286-4914
Christopher Wilson	Senior - Hazardous Waste	510-286-5647
Glenn Kinoshita	Senior - Air Quality/Noise	510-286-5677
Muthanna Omran	Senior - Structures	510-286-5798
Beth Thomas	Senior - Pedestrian and Bicycle Planning	510-286-7227
Ron Ho	Senior -TMP	510-286-6932
Sunnie Stanton	Senior - Project Coordination	510-286-5476
Jerilyn Struven	Senior - Traffic Signing	510-286-4613
Richard Chan	Senior - Materials	510-286-5881
Ravi R Singh	Design Peninsula	510-622-5436
Leahnora Romaya	Associate Environmental Planner	510-286-6303
Aprile Smith	Pedestrian & Bicycle Planning	510-286-5518
Emily Darko	Environmental - Cultural	510-622-1673

Contact Name	Function	Phone Number
Ping Tsai	R/W Project Coordination	510-286-5467
David S. Wong	Project Controls	510-286-0810
Eric K. Wong	Hydraulics	510-208-4844
Sam Fielding	Environmental Planning & Engineering	510-286-5342
Michael D. Baker	Office of Biology	510-622-1771
Scott Bottari	Landscape Design	510-286-5955
Eric K. Wong	Hydraulics	510-208-4844
Elizabeth Engle	R/W Utilities	510-286-5335
Derek Man	Traffic Forecasting	510-286-5715
Aprile Smith	Pedestrian & Bicycle Planning	510-286-5518
Kimberly White	Senior - Landscape Design	510-286-6370

14. LIST OF ATTACHMENTS

A. Project Location Map
B. Layout and Typical Cross Section Plans
C. Initial Study/Negative Declaration (IS/ND) Signature Page
D. Right of Way Data Sheet
E. Project Cost Estimate
F. Storm Data Report Approval Sheet
G. Technical Information for Location Hydraulic Study and Floodplain Evaluation Summary
H. Life Cycle Cost Analysis (LCCA), Pavement Strategy Checklist and Recommendations
I. TMP Data Sheet
J. Risk Management Plan
K. Structure Advance Planning Studies
L. Draft Cooperative Agreement

ATTACHMENT A

PROJECT LOCATION MAP

INDEX OF PLANS

STATE OF CALIFORNIA

DEPARTMENT OF TRANSPORTATION

PROJECT PLANS FOR CONSTRUCTION ON

STATE HIGHWAY

IN SAN MATEO COUNTY

NEAR THE CITY OF SAN MATEO

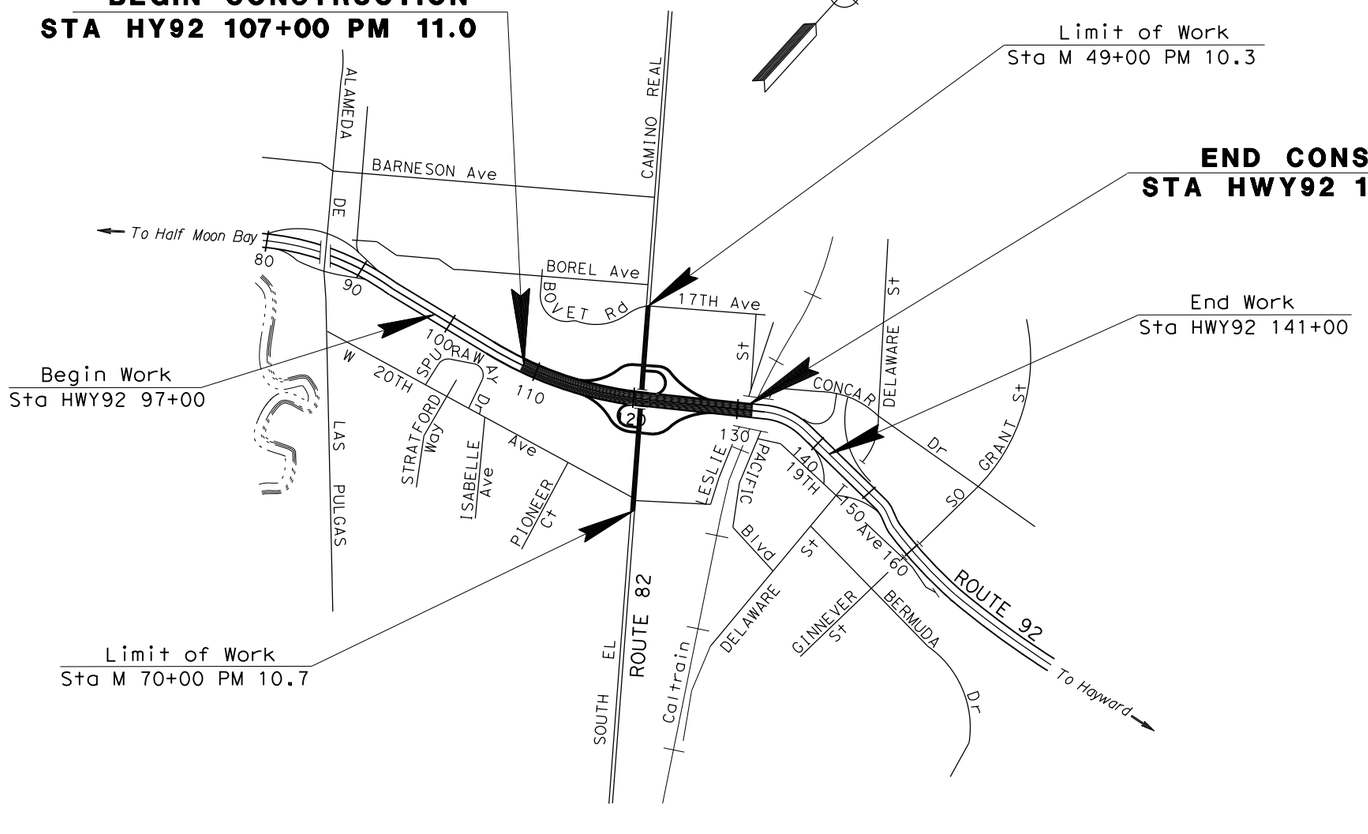
AT THE ROUTE 92/82 INTERCHANGE

TO BE SUPPLEMENTED BY STANDARD PLANS DATED MAY 2010

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	SM	92,82	11/11.5 10.3/10.7		

LOCATION MAP

BEGIN CONSTRUCTION
STA HY92 107+00 PM 11.0



END CONSTRUCTION
STA HWY92 131+00 PM 11.5

NO SCALE

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO BIDDERS."

PROJECT ENGINEER — DATE
REGISTERED CIVIL ENGINEER

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CONTRACT No.	04-235521
PROJECT ID	0412000496

PROJECT MANAGER

DESIGN ENGINEER

LAST REVISION — DATE PLOTTED => $DATE — TIME PLOTTED => $TIME — 11-21-13

ATTACHMENT B

LAYOUT AND TYPICAL CROSS SECTION PLANS

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

ABBREVIATION:

CHP CALIFORNIA HIGHWAY PATROL

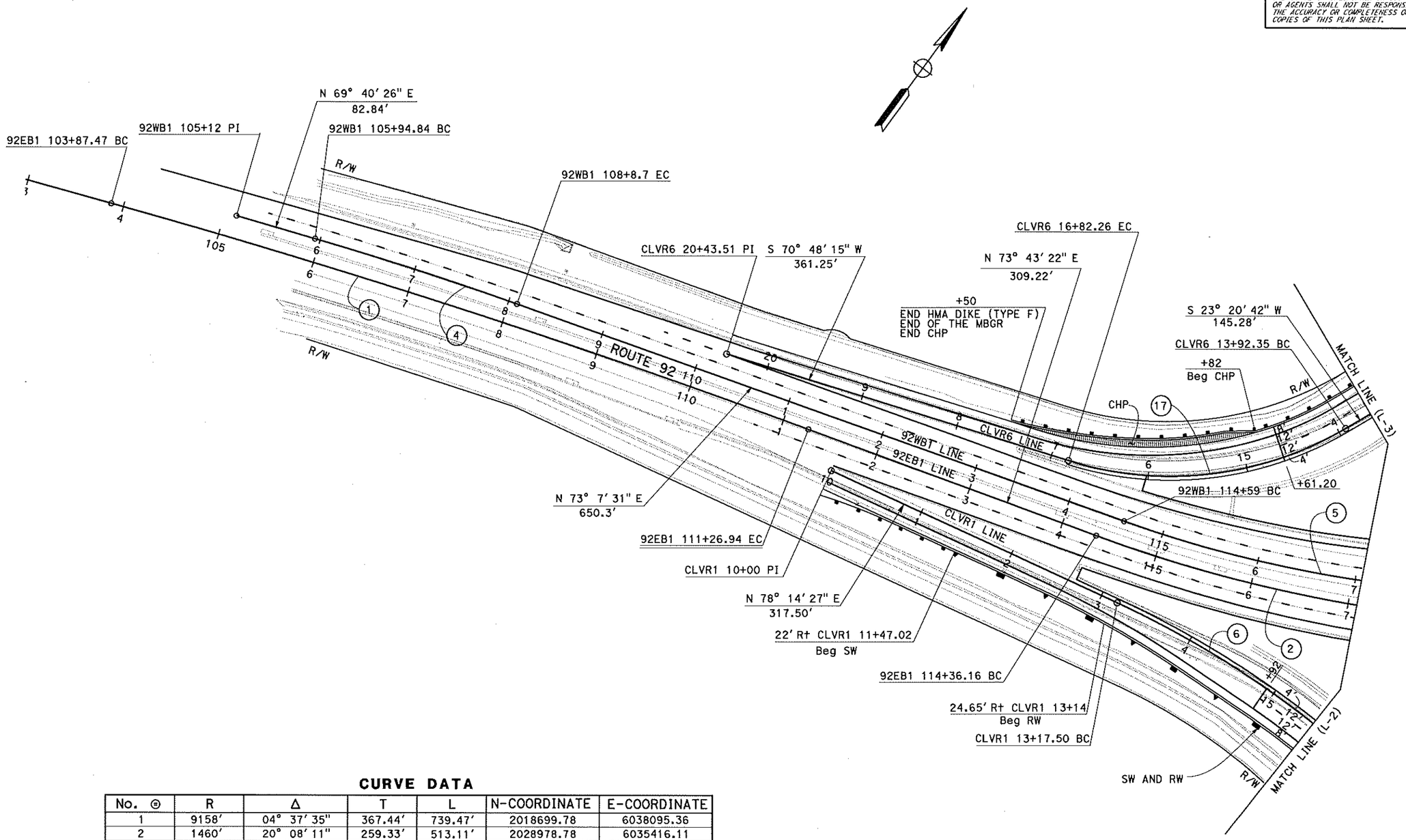
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



CURVE DATA

No. ⓔ	R	Δ	T	L	N-COORDINATE	E-COORDINATE
1	9158′	04° 37′ 35"	367.44′	739.47′	2018699.78	6038095.36
2	1460′	20° 08′ 11"	259.33′	513.11′	2028978.78	6035416.11
4	3550′	03° 27′ 06"	106.96′	213.86′	2024019.87	6036247.67
5	1250′	20° 05′ 38"	221.47′	438.38′	2028801.89	6035476.64
6	1000′	16° 58′ 53"	149.28′	296.38′	2026557.01	6036086.14
17	350′	47° 27′ 34"	153.86′	289.91′	2027951.50	6035643.20

LAYOUT
SCALE: 1" = 50′

L-1

REVISED BY	HK		
DATE REVISED	8/26/13		
CALCULATED-DESIGNED BY	HOSSEIN KHODABAKHSH		
CHECKED BY	ABOLFAZL EMADZADEH		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans
DESIGN
FUNCTIONAL SUPERVISOR: ABOLFAZL EMADZADEH

LAST REVISION 05-01-14 DATE PLOTTED => 06-MAY-2014 TIME PLOTTED => 10:39

BORDER LAST REVISED 2/1/2013 | USERNAME => s130819 DGN FILE => 04120004496ea001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0719 | PROJECT NUMBER & PHASE 04120004961

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

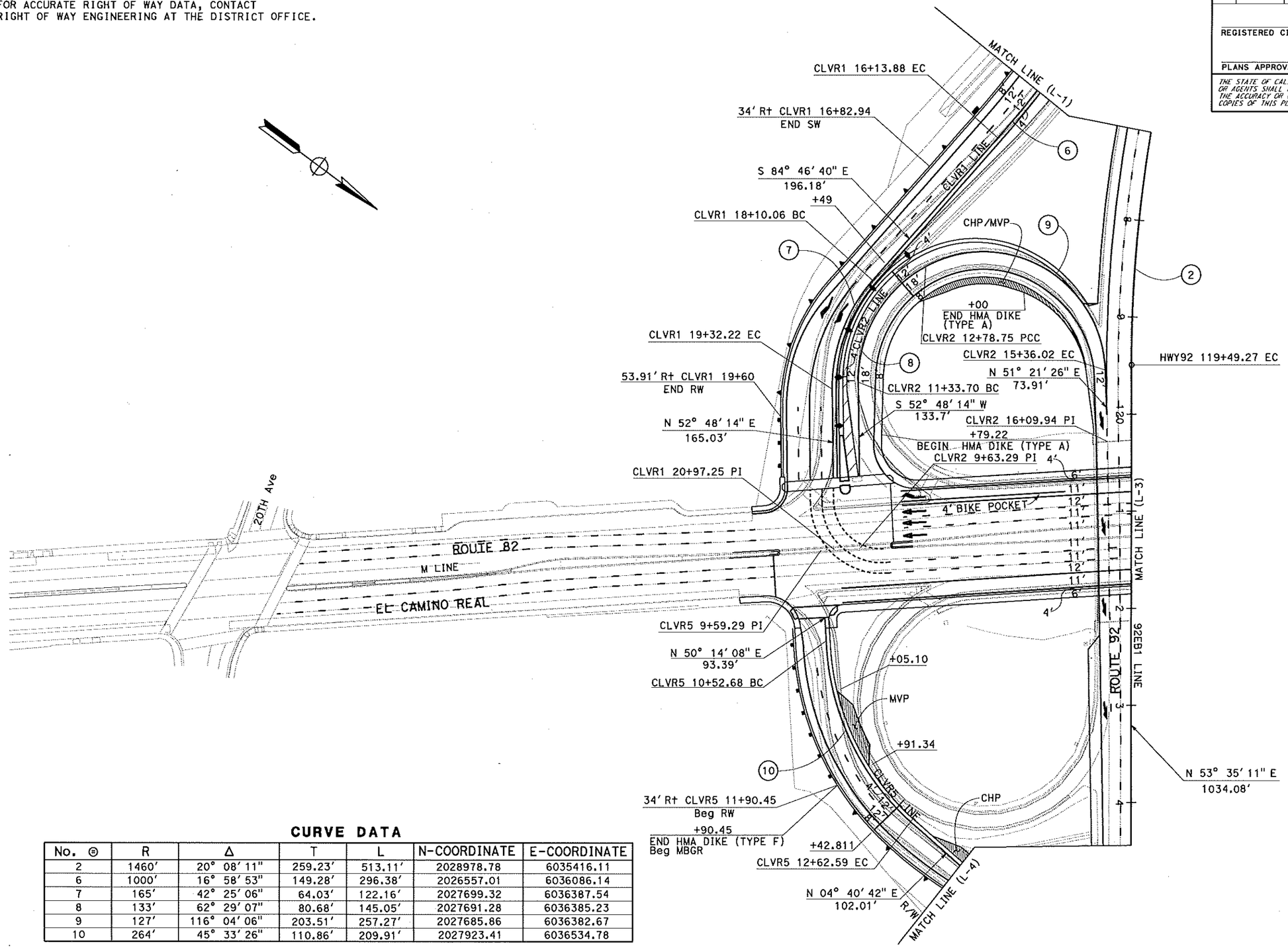
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



CURVE DATA

No. ⊕	R	Δ	T	L	N-COORDINATE	E-COORDINATE
2	1460′	20° 08′ 11"	259.23′	513.11′	2028978.78	6035416.11
6	1000′	16° 58′ 53"	149.28′	296.38′	2026557.01	6036086.14
7	165′	42° 25′ 06"	64.03′	122.16′	2027699.32	6036387.54
8	133′	62° 29′ 07"	80.68′	145.05′	2027691.28	6036385.23
9	127′	116° 04′ 06"	203.51′	257.27′	2027685.86	6036382.67
10	264′	45° 33′ 26"	110.86′	209.91′	2027923.41	6036534.78

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

LAYOUT

SCALE: 1" = 50′

L-2

CALCULATED-DESIGNED BY	HOSSEIN KHODABAKHSH	
CHECKED BY	ABOLFAZL EMADZADEH	
REVISED BY	HK	
DATE REVISED	8/26/13	
FUNCTIONAL SUPERVISOR	ABOLFAZL EMADZADEH	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION 05-01-14
DATE PLOTTED => 06-MAY-2014
TIME PLOTTED => 10:58

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

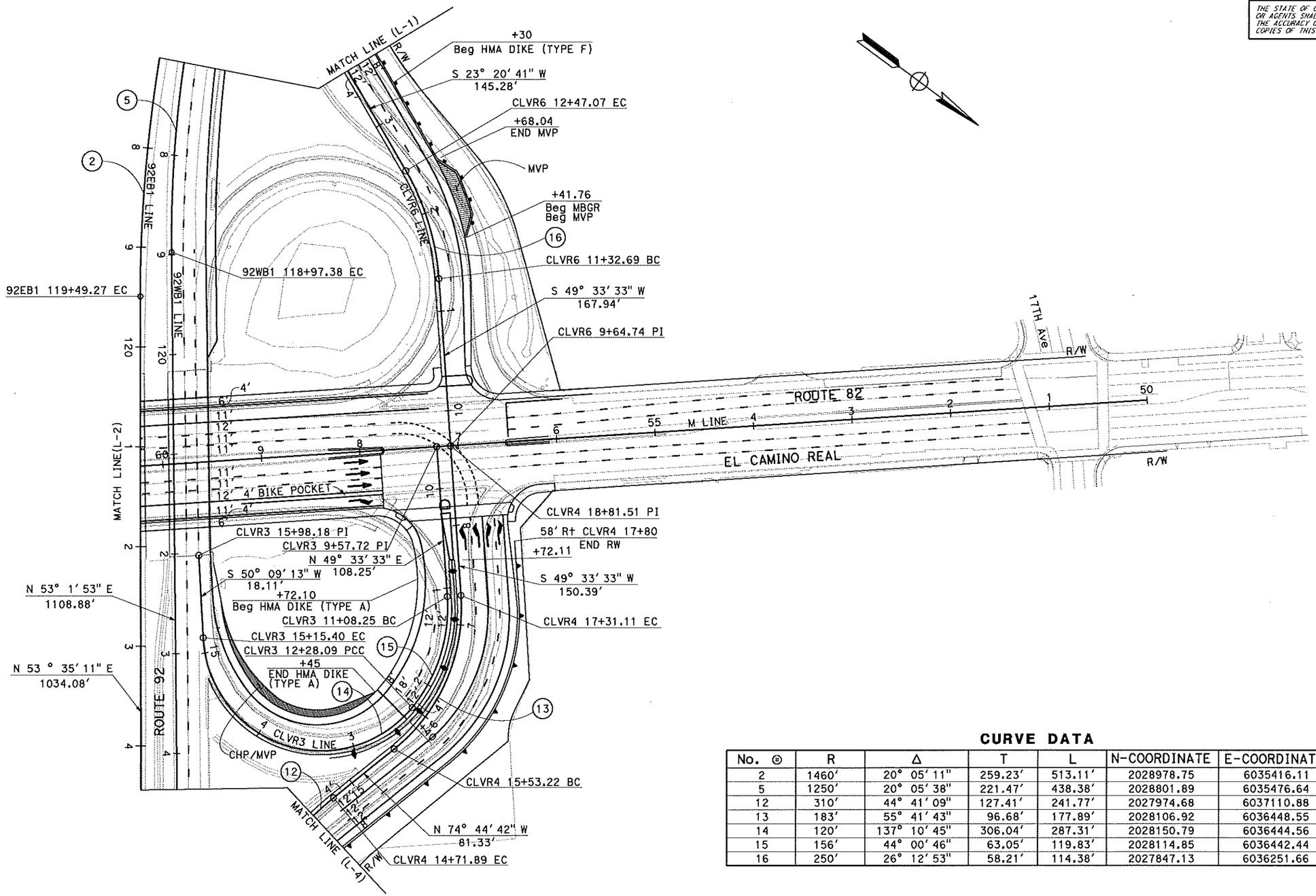
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.



CURVE DATA

No. ⊛	R	Δ	T	L	N-COORDINATE	E-COORDINATE
2	1460′	20° 05′ 11"	259.23′	513.11′	2028978.75	6035416.11
5	1250′	20° 05′ 38"	221.47′	438.38′	2028801.89	6035476.64
12	310′	44° 41′ 09"	127.41′	241.77′	2027974.68	6037110.88
13	183′	55° 41′ 43"	96.68′	177.89′	2028106.92	6036448.55
14	120′	137° 10′ 45"	306.04′	287.31′	2028150.79	6036444.56
15	156′	44° 00′ 46"	63.05′	119.83′	2028114.85	6036442.44
16	250′	26° 12′ 53"	58.21′	114.38′	2027847.13	6036251.66

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

LAYOUT
SCALE: 1" = 50′

L-3

CALCULATED-DESIGNED BY HOSSEIN KHODABAKHSH
CHECKED BY ABOLFAZL EMADZADEH
FUNCTIONAL SUPERVISOR ABOLFAZL EMADZADEH
REVISED BY HK
DATE REVISED 8/26/13
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
Caltrans DESIGN

LAST REVISION 05-02-14 DATE PLOTTED => 07-MAY-2014 TIME PLOTTED => 16:18

BORDER LAST REVISED 2/1/2013 | USERNAME => s130819 | DGN FILE => 0412000496ea003.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0719 | PROJECT NUMBER & PHASE 0412D004961

NOTE:

FOR ACCURATE RIGHT OF WAY DATA, CONTACT
RIGHT OF WAY ENGINEERING AT THE DISTRICT OFFICE.

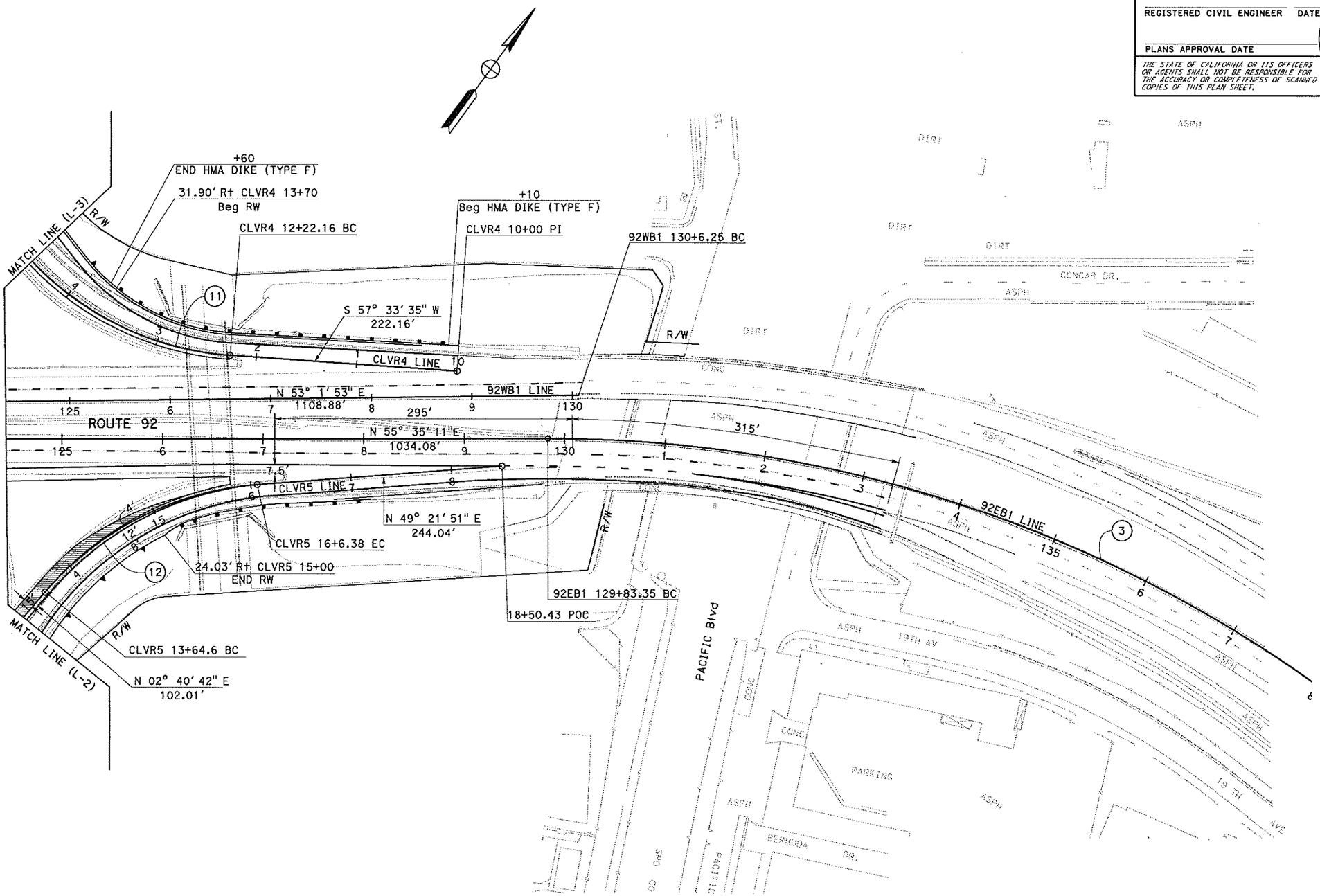
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



CURVE DATA

No. ⊕	R	Δ	T	L	N-COORDINATE	E-COORDINATE
3	1330'	36° 24' 49"	437.46'	845.26'	2027347.45	6039904.46
11	300'	47° 41' 42"	132.61'	249.73'	2028551.50	6036654.09
12	310'	44° 41' 09"	127.41'	241.77'	2027974.68	6037110.88

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET L-1

LAYOUT

SCALE: 1" = 50'

L-4

CALCULATED-DESIGNED BY	HK	REVISED BY	8/26/13	DATE REVISED
CHECKED BY	ABOLFAZL EMAOZADEH			
FUNCTIONAL SUPERVISOR	ABOLFAZL EMAOZADEH			
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN			

LAST REVISION 05-02-14 | DATE PLOTTED => 07-MAY-2014 | TIME PLOTTED => 16:20

BORDER LAST REVISED 2/1/2013 | USERNAME => s130819 | DGN FILE => 0412000496ea004.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0719 | PROJECT NUMBER & PHASE 04120004961

NOTES:

1. DIMENSIONS OF THE PAVEMENT STRUCTURES (STRUCTURAL SECTIONS) ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
2. SUPERELEVATIONS ARE SHOWN ON THE SUPERELEVATION DIAGRAMS.

ABBREVIATIONS:

&	AND
CHP	CALIFORNIA HIGHWAY PATROL
LL	LANE LINE

STRUCTURAL SECTION:

1 — 0.15' RHMA-G; 1.15' HMA (TYPE A)

2 — 0.15' RHMA-G; 0.80' HMA (TYPE A)

3 — 0.15' RHMA-G; 0.90' HMA (TYPE A)

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

CLVR1 LINE ℄ ETW

ES 4' Shld | 12' OR Var | ETW | 8' Shld | ES 2' | Var | R/W

2:1 OR FLATTER; OG; 2% & Var; SOUND WALL; Ret WALL (SEE Ret WALL PLANS); 2

CLVR1 13+14 TO 16+82.94

CLVR2 LINE ℄; CLVR1 LINE ℄ ETW

EP ES | 18.6-6.5' Var | 6.5' | 12' | LL | 12' | LL | 12' | LL | 12' | ETW | ES 4' Shld | 3' | Var | R/W

Conc BARRIER (TYPE 60C); OG; 12% & Var; MBGR; 10:1 OR FLATTER; 2:1 OR FLATTER; END Conc BARRIER CLVR1 19+60; END MBGR CLVR1 20+25; 2

CLVR1 19+60 TO 19+80

CLVR1 LINE ℄ ETW

ES 4' Shld | 12' | ETW | 8' Shld | ES 2' | 3' | Var | R/W | R/W

2:1 OR FLATTER; OG; 2% & Var; SOUND WALL; 2:1 OR FLATTER; 2

CLVR1 11+47.02 TO 13+14

CLVR2 LINE ℄; CLVR1 LINE ℄ ETW

ES | 18.6' Var | 4' Shld | 12' TO 24' Var | LL | 12' TO 24' Var | ETW | ES 8' Shld | 2' | Var | R/W

Conc BARRIER (TYPE 60C); OG; 12% & Var; Ret WALL (SEE Ret WALL PLANS); 2

CLVR1 17+90 TO 19+60

CLVR1 LINE ℄ ETW

ES 4' Shld | 12' | LL | 12' | ETW | ES 8' Shld | 2' | Var | R/W

2:1 OR FLATTER; OG; 2% & Var; Ret WALL (SEE Ret WALL PLANS); 2

CLVR1 16+82.94 TO 17+90

CLVR1 LINE ℄ ETW

ES 4' Shld | 12' | ETW | 8' Shld | ES 3' | Var | R/W

CONFORM; HMA DIKE TYPE F; MBGR; 10:1 OR FLATTER; OG; 2% & Var; 2

CLVR1 10+10 TO 11+47.02

CLVR1 LINE

TYPICAL CROSS SECTIONS

NO SCALE

X-1

CALCULATED-DESIGNED BY	HK	REVISED BY	
CHECKED BY	8/26/13	DATE REVISED	
FUNCTIONAL SUPERVISOR	HOSSEIN KHODABAKHSH		
	ABOLFAZL EMADZADEH		

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION — DESIGN

Caltrans

LAST REVISION 05-02-14 — DATE PLOTTED => 02-MAY-2014 — TIME PLOTTED => 11:27

BORDER LAST REVISED 2/1/2013 | USERNAME => s130819 | DGN FILE => 0412000496ca001.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0719 | PROJECT NUMBER & PHASE 04120004961

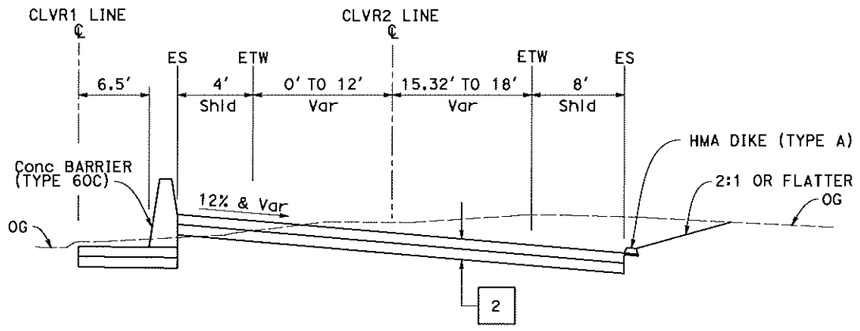
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

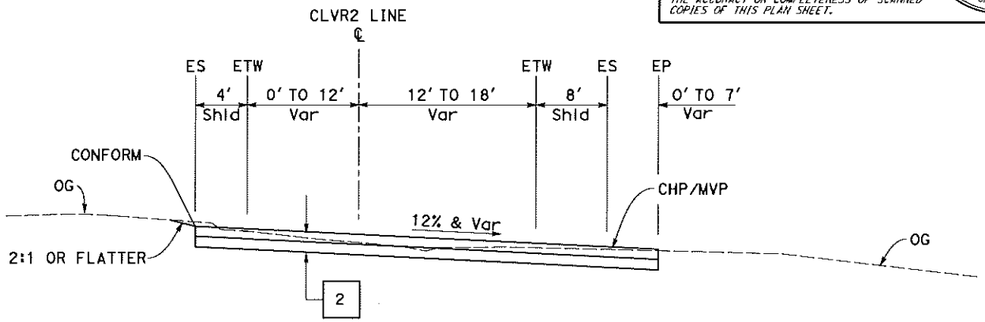
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA

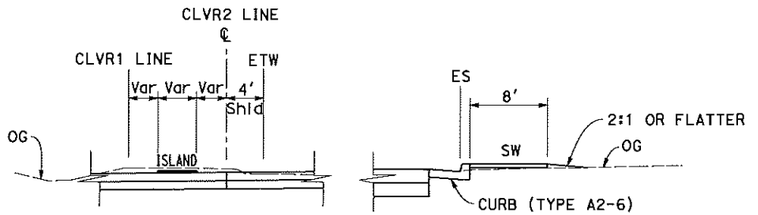
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



CLVR2 10+79.22 TO 12+49

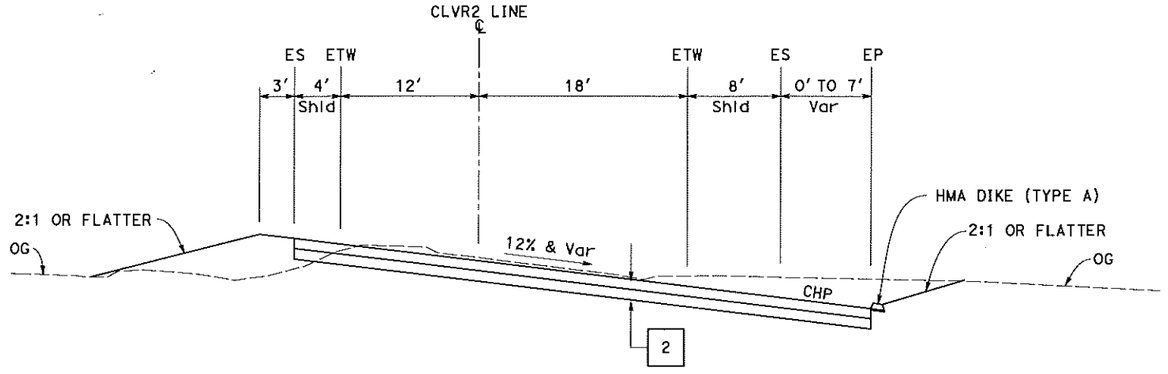


CLVR2 14+00 TO 15+35.35



CLVR2 10+23.75 TO 10+79.22

CLVR2 10+23.75 TO 10+67



CLVR2 12+80 TO 14+00

CLVR2 10+18.96 TO 10+23.76

CLVR2 12+49 TO 12+80

CLVR2 LINE

TYPICAL CROSS SECTIONS

NO SCALE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

X-2

LAST REVISION 04-29-14 | DATE PLOTTED => 30-APR-2014 | TIME PLOTTED => 14:01

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | Caltrans | DESIGN

FUNCTIONAL SUPERVISOR: ABOLFAZL EMADZADEH

CALCULATED-DESIGNED BY: HOSSEIN KHODABAKHSH | DATE REVISED: 8/26/13

CHECKED BY: ABOLFAZL EMADZADEH | REVISED BY: HK

BORDER LAST REVISED 2/1/2013 | USERNAME => s130819 | DGN FILE => 0412000496ca002.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0719 | PROJECT NUMBER & PHASE 04120004961

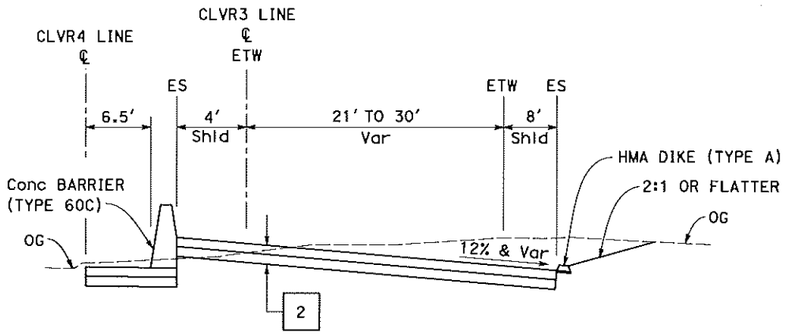
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

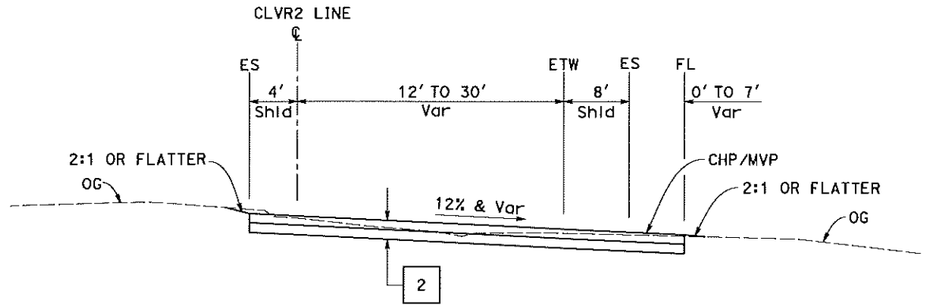
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

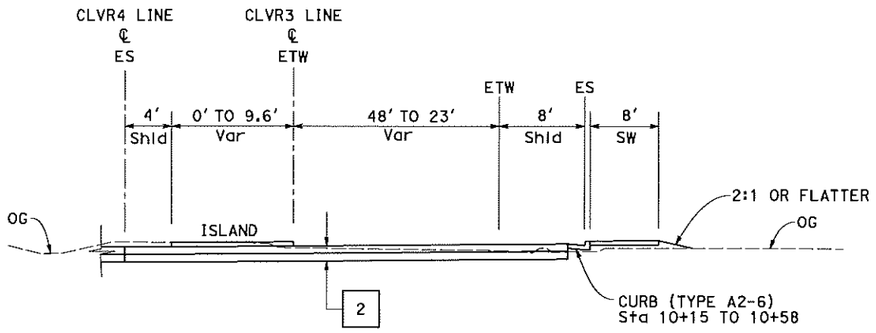
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



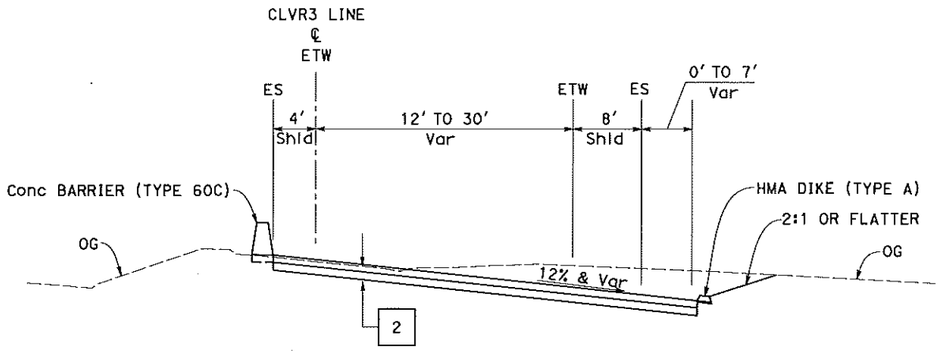
CLVR3 10+72.10 TO 12+40



CLVR3 13+25 TO 15+35.35



CLVR3 10+10.65 TO 10+72.10



CLVR3 12+40 TO 13+25

CLVR3 LINE

TYPICAL CROSS SECTIONS

NO SCALE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

X-3

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
Caltrans
FUNCTIONAL SUPERVISOR: ABOLFAZL EMADZADEH
CALCULATED-DESIGNED BY: HOSSEIN KHODABAKHSH
CHECKED BY: ABOLFAZL EMADZADEH
REVISED BY: HK
DATE REVISED: 8/26/13
LAST REVISION: 11-25-13
DATE PLOTTED => 30-APR-2014
TIME PLOTTED => 14:02

BORDER LAST REVISED 2/1/2013

USERNAME => s130819
DGN FILE => 0412000496ca003.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0719

PROJECT NUMBER & PHASE 04120004961

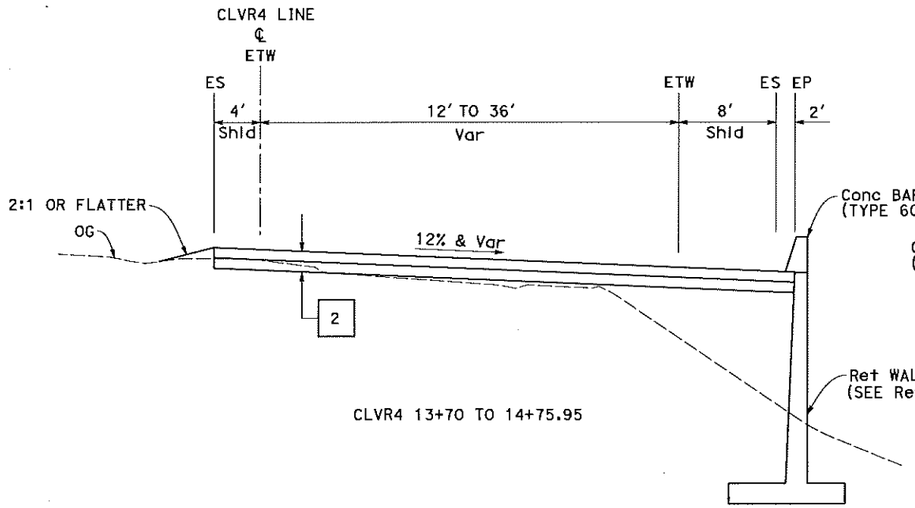
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

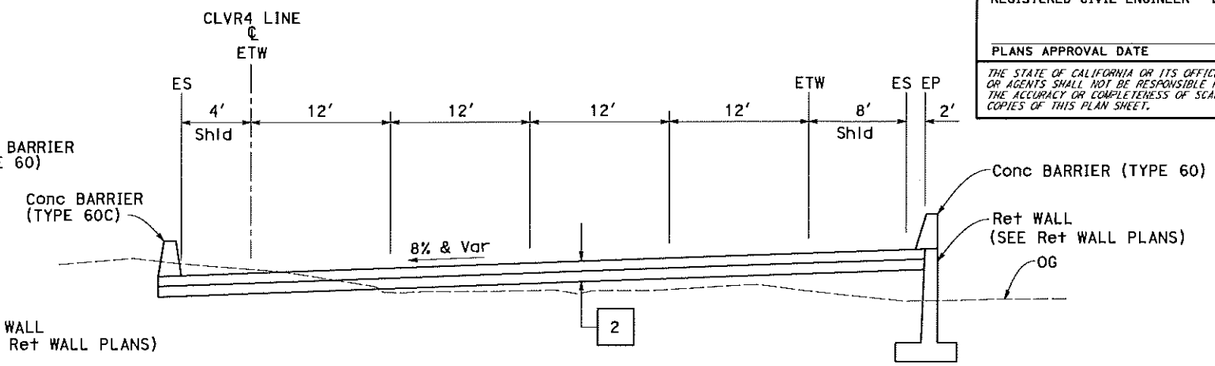
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA

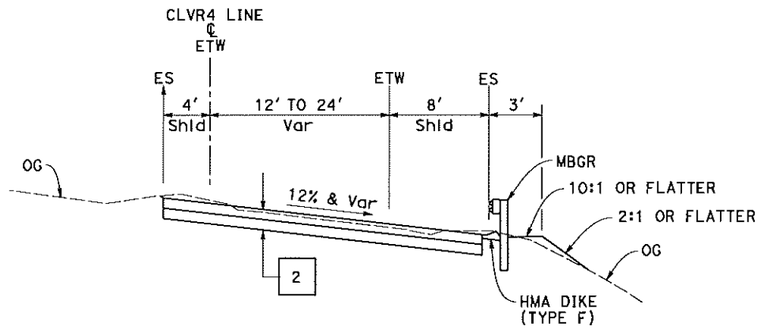
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



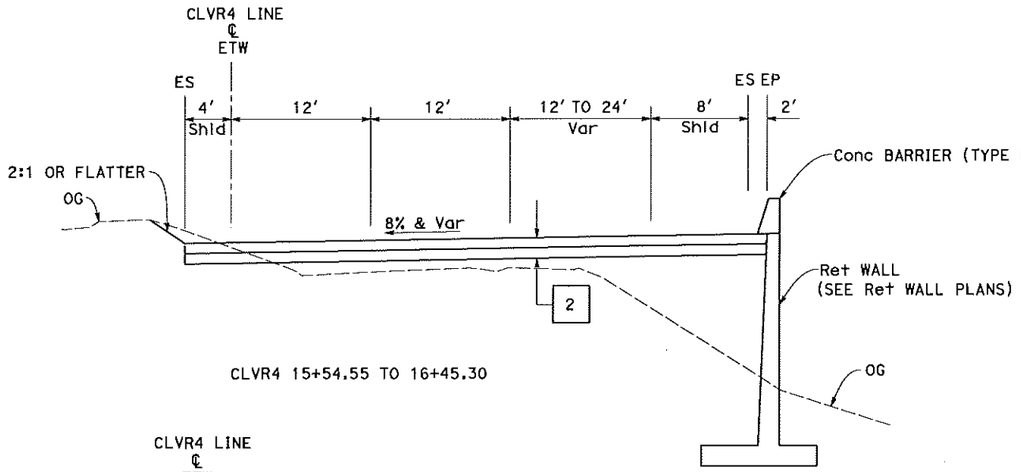
CLVR4 13+70 TO 14+75.95



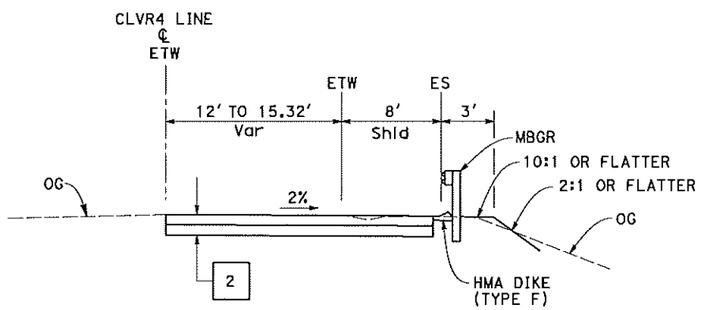
CLVR4 16+45.30 TO 16+70



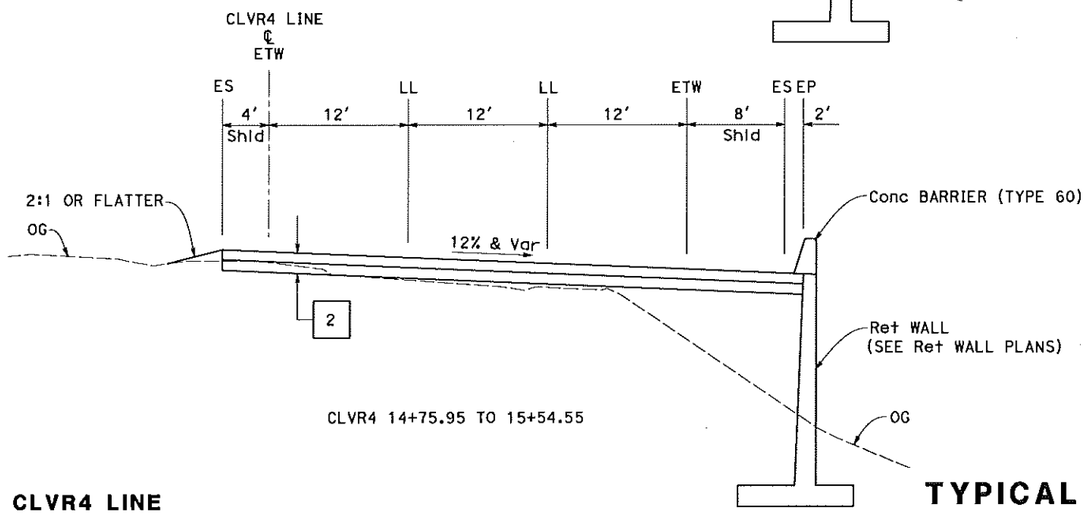
CLVR4 12+26.22 TO 13+70



CLVR4 15+54.55 TO 16+45.30



CLVR4 10+10 TO 12+26.22



CLVR4 14+75.95 TO 15+54.55

CLVR4 LINE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

TYPICAL CROSS SECTIONS

NO SCALE

X-4

DATE PLOTTED => 29-APR-2014
TIME PLOTTED => 15:50
LAST REVISION 04-29-14

REVISED BY	DATE REVISED
HK	8/26/13

CALCULATED-DESIGNED BY: HOSSEIN KHODABAKHSH
CHECKED BY: ABOLFAZL EMADZADEH
FUNCTIONAL SUPERVISOR: ABOLFAZL EMADZADEH

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN

Caltrans

BORDER LAST REVISED 2/1/2013

USERNAME => s130819
DGN FILE => 0412000496ca004.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0719

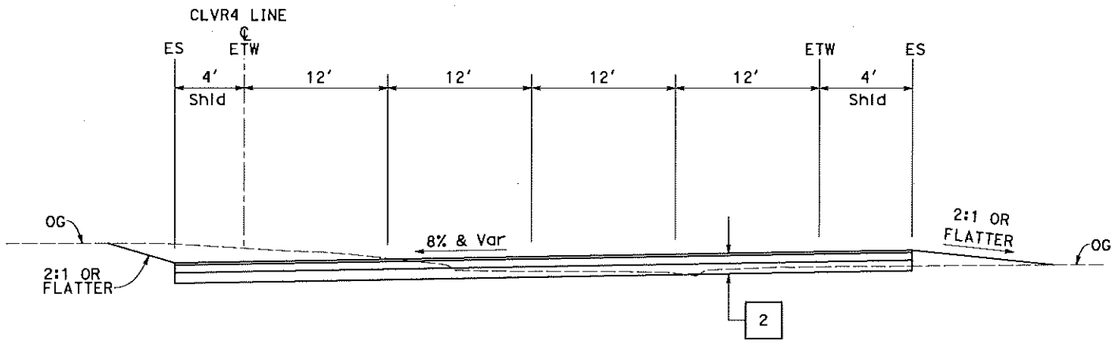
PROJECT NUMBER & PHASE 04120004961

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

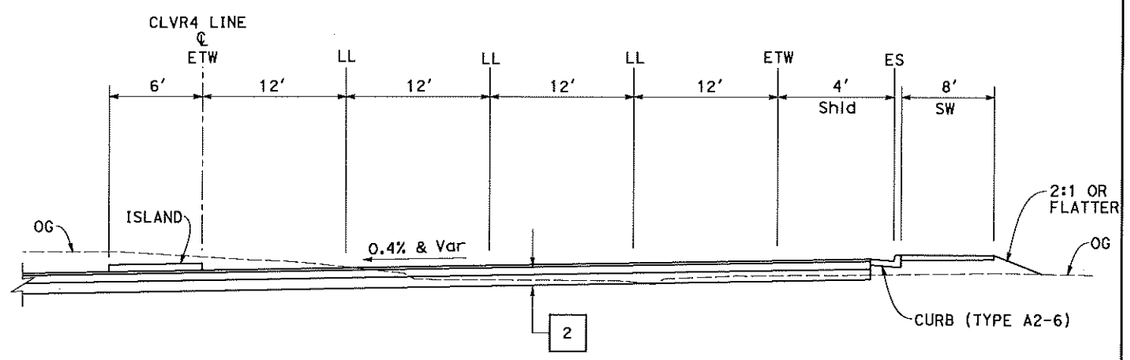
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

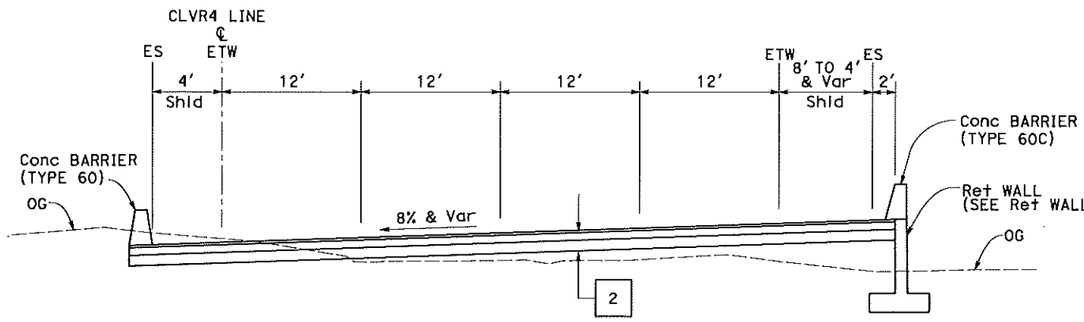
REGISTERED PROFESSIONAL ENGINEER — No. Exp. CIVIL — STATE OF CALIFORNIA



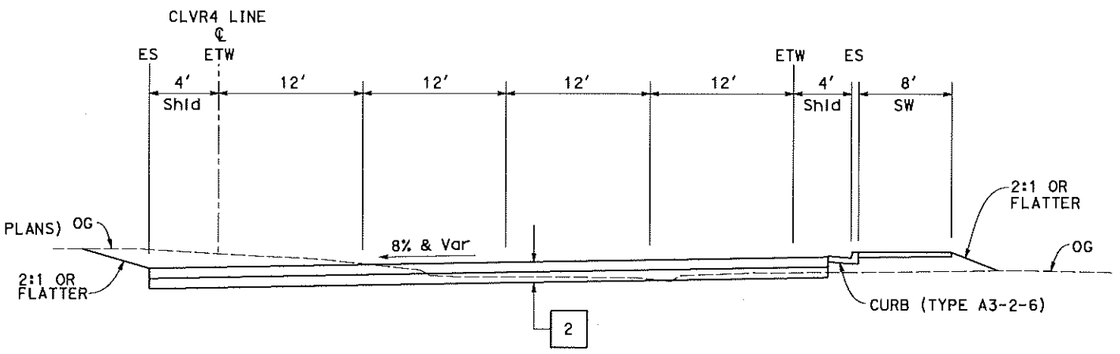
CLVR4 17+80 TO 18+00



CLVR4 18+15.85 TO 18+29.04



CLVR4 16+70 TO 17+80



CLVR4 18+00 TO 18+15.85

CLVR4 LINE

TYPICAL CROSS SECTIONS

NO SCALE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

X-5

LAST REVISION 05-02-14 DATE PLOTTED => 02-MAY-2014 TIME PLOTTED => 11:27

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: ABOLFAZL EMADZADEH
CALCULATED-DESIGNED BY: HOSSEIN KHODABAKHSH
CHECKED BY: ABOLFAZL EMADZADEH
REVISED BY: HK
DATE REVISED: 8/26/13

BORDER LAST REVISED 2/1/2013

USERNAME => s130819
DGN FILE => 0412000496ca005.dgn

RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3

UNIT 0719

PROJECT NUMBER & PHASE 04120004961

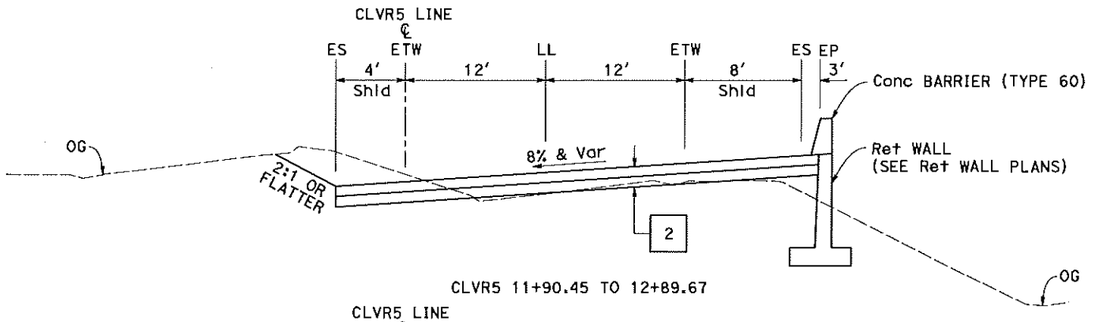
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

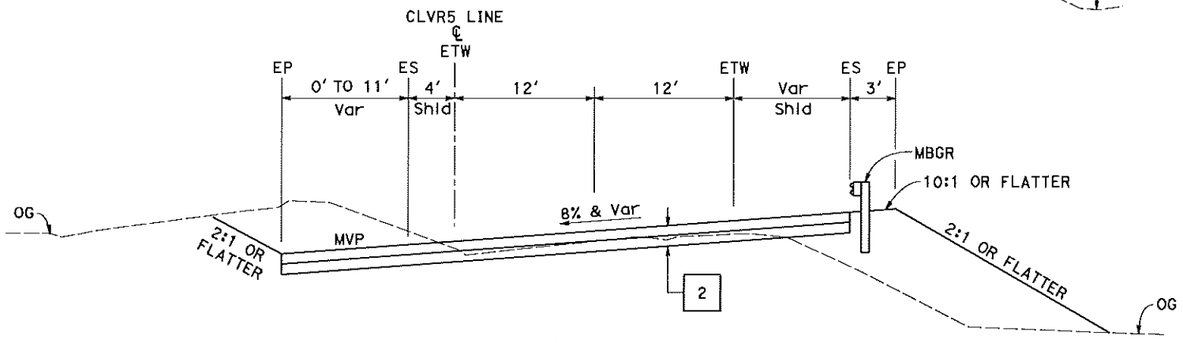
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

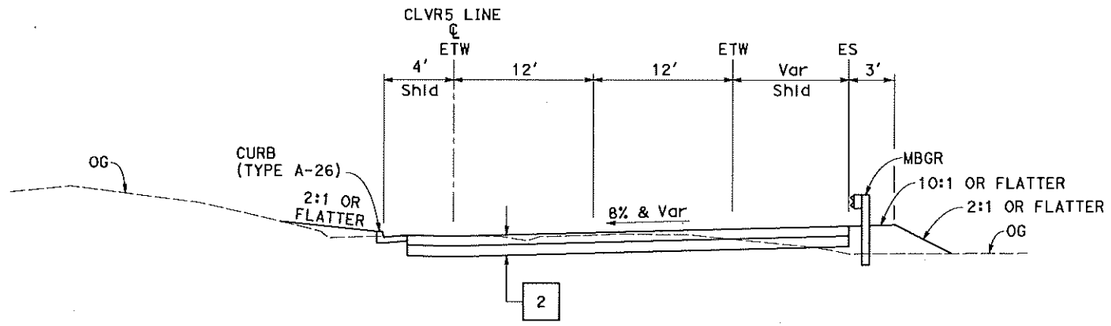
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



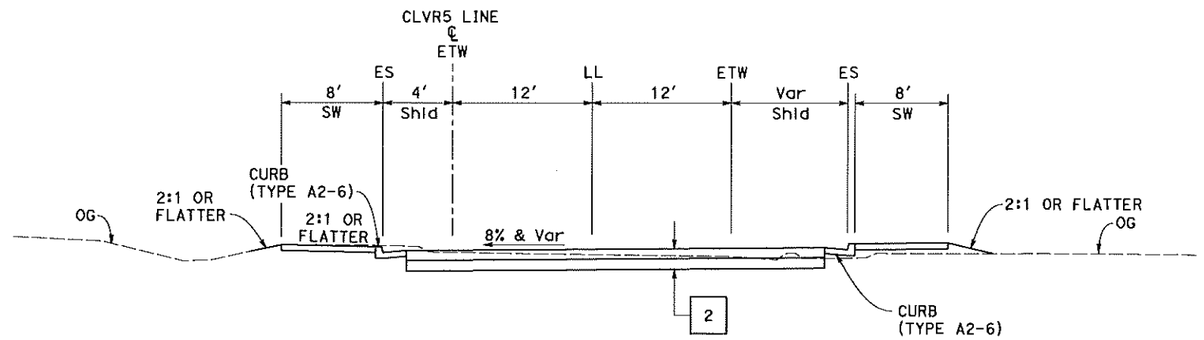
CLVR5 11+90.45 TO 12+89.67



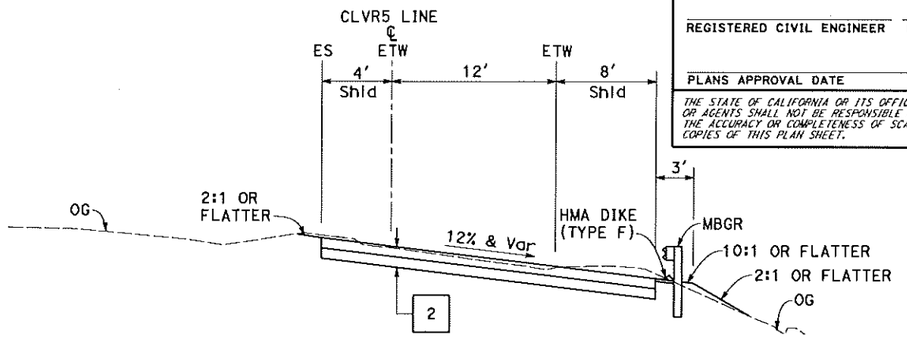
CLVR5 11+05.72 TO 11+90.45



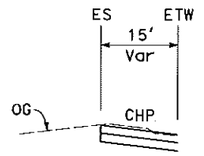
CLVR5 10+39.56 TO 11+05.72



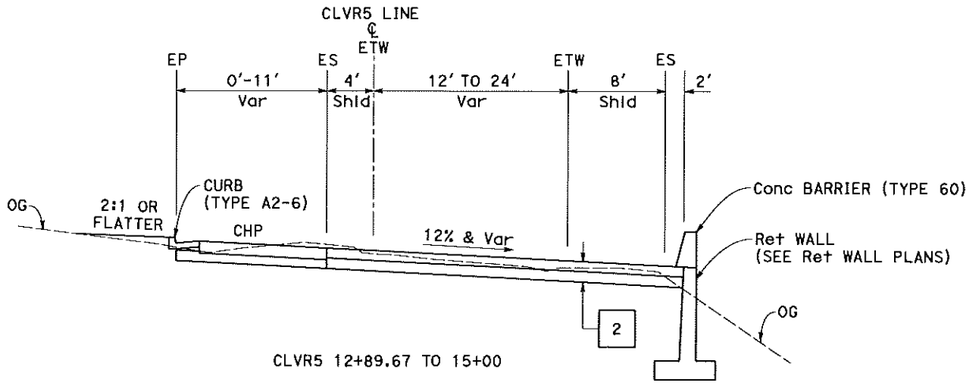
CLVR5 10+16.66 TO 10+39.56



CLVR5 15+34.32 TO 17+10



CLVR5 15+00 TO 15+34.32



CLVR5 12+89.67 TO 15+00

CLVR5 LINE

TYPICAL CROSS SECTIONS

NO SCALE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

X-6

CALCULATED-DESIGNED BY	HK	8/26/13
CHECKED BY	HOSSEIN KHODABAKHSH	DATE REVISED
FUNCTIONAL SUPERVISOR	ABOLFAZL EMADZADEH	REVISED BY
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	ABOLFAZL EMADZADEH

LAST REVISION 05-02-14 DATE PLOTTED => 02-MAY-2014 TIME PLOTTED => 11:27

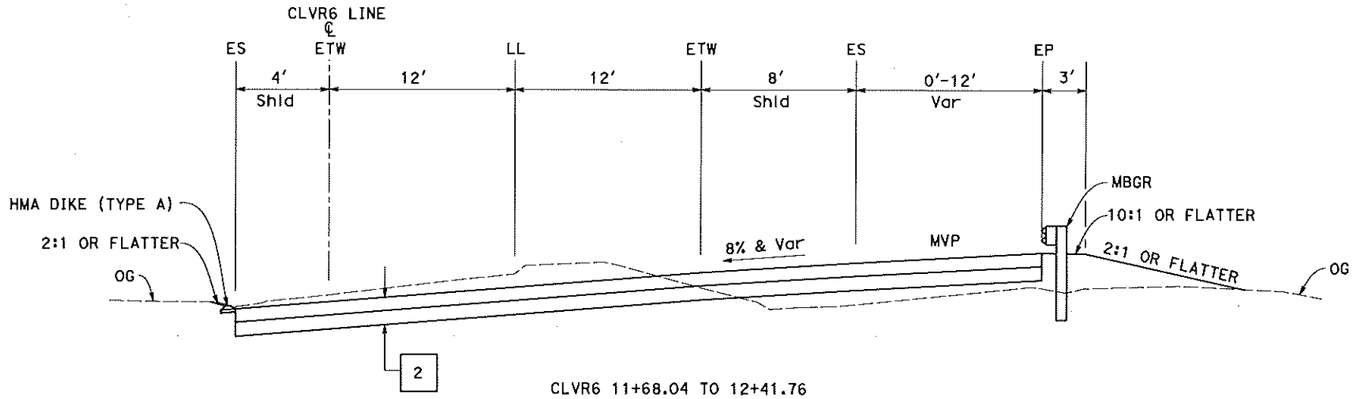
BORDER LAST REVISED 2/1/2013 | USERNAME => s130819 DGN FILE => 0412000496ca006.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0719 | PROJECT NUMBER & PHASE 04120004961

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

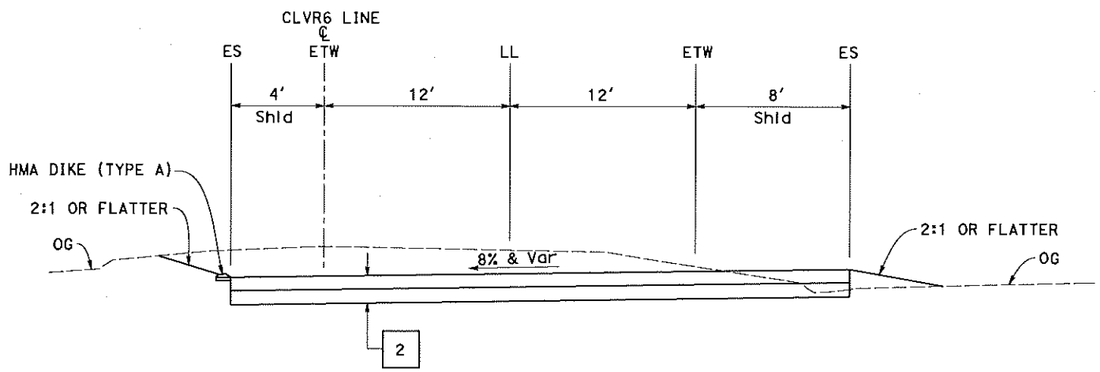
REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

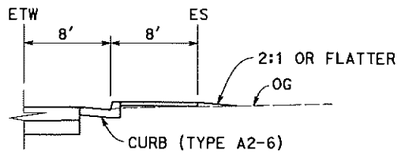
REGISTERED PROFESSIONAL ENGINEER — No. — Exp. CIVIL — STATE OF CALIFORNIA



CLVR6 11+68.04 TO 12+41.76



CLVR6 10+43.60 TO 11+68.04



CLVR6 10+25 TO 10+43.60

CLVR6 LINE

TYPICAL CROSS SECTIONS

NO SCALE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

X-7

CALCULATED-DESIGNED BY	HOSSEIN KHODABAKHSH	
CHECKED BY	ABOLFAZL EMADZADEH	8/26/13
FUNCTIONAL SUPERVISOR	ABOLFAZL EMADZADEH	DATE REVISED
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	DESIGN	REVISED BY: HK

LAST REVISION 05-02-14 | DATE PLOTTED => 02-MAY-2014 | TIME PLOTTED => 11:27

BORDER LAST REVISED 2/1/2013 | USERNAME => s130819 | DGN FILE => 0412000496ca007.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0719 | PROJECT NUMBER & PHASE 04120004961

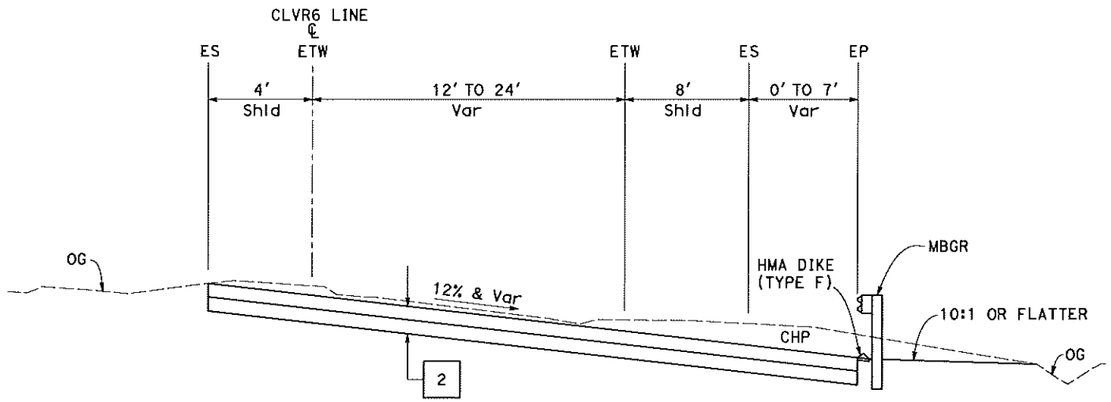
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

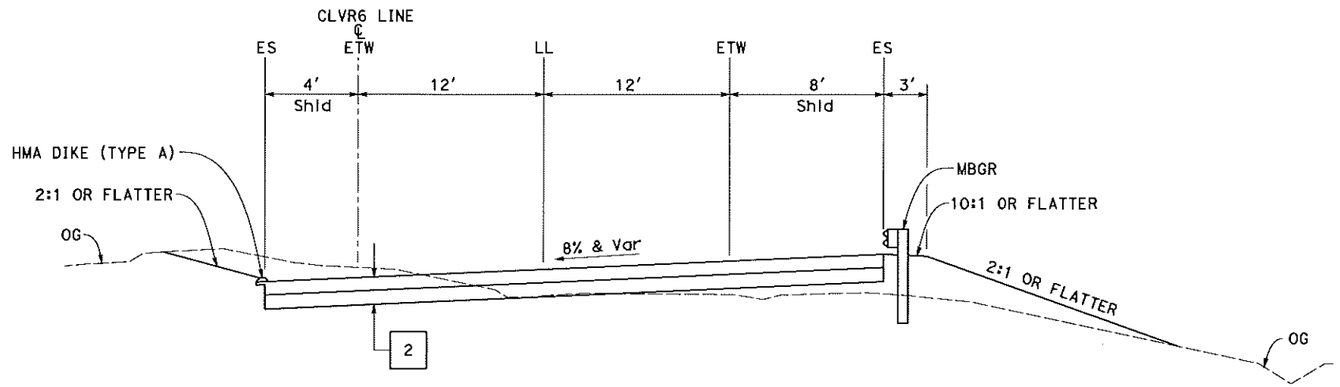
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA

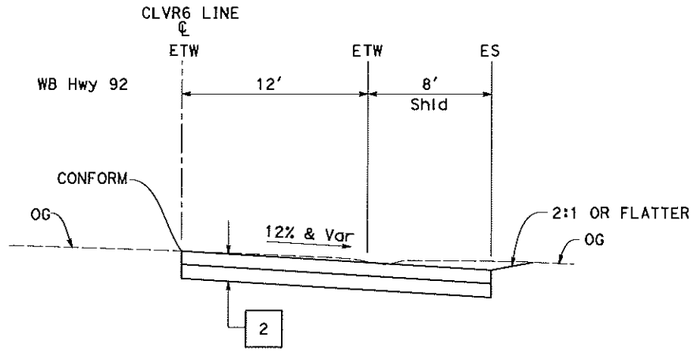
THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.



CLVR6 14+81.99 TO 17+49.77



CLVR6 12+41.76 TO 14+81.99



CLVR6 17+49.77 TO 17+80

CLVR6 LINE

TYPICAL CROSS SECTIONS

NO SCALE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

X-8

LAST REVISION 04-29-14 DATE PLOTTED => 29-APR-2014 TIME PLOTTED => 15:50

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
DESIGN
FUNCTIONAL SUPERVISOR: ABOLFAZL EMADZADEH
CALCULATED-DESIGNED BY: HOSSEIN KHODABAKHSH
CHECKED BY: ABOLFAZL EMADZADEH

REVISED BY	DATE REVISED
HK	8/26/13

BORDER LAST REVISED 2/1/2013 | USERNAME => s130819 DGN FILE => 0412000496ca008.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0719 | PROJECT NUMBER & PHASE 04120004961

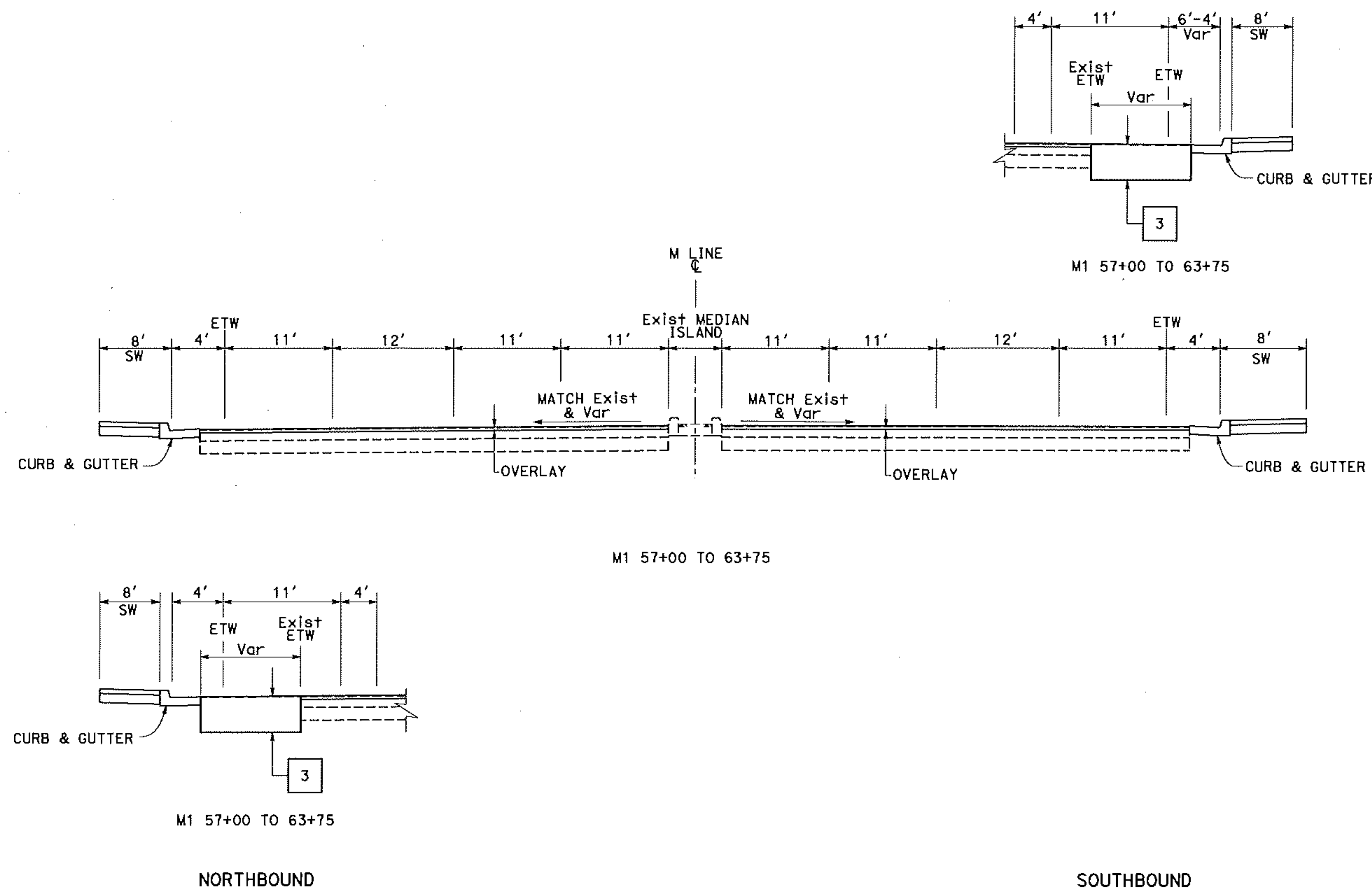
Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

PLANS APPROVAL DATE

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR THE ACCURACY OR COMPLETENESS OF SCANNED COPIES OF THIS PLAN SHEET.

REGISTERED PROFESSIONAL ENGINEER No. Exp. CIVIL STATE OF CALIFORNIA



ROUTE 82

EL CAMINO REAL

TYPICAL CROSS SECTIONS

NO SCALE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

X-9

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans

DESIGN

FUNCTIONAL SUPERVISOR: ABOLFAZL EMADZADEH

CALCULATED-DESIGNED BY: HOSSEIN KHODABAKHSH

CHECKED BY: ABOLFAZL EMADZADEH

REVISED BY: HK

DATE REVISED: 8/26/13

LAST REVISION 05-02-14

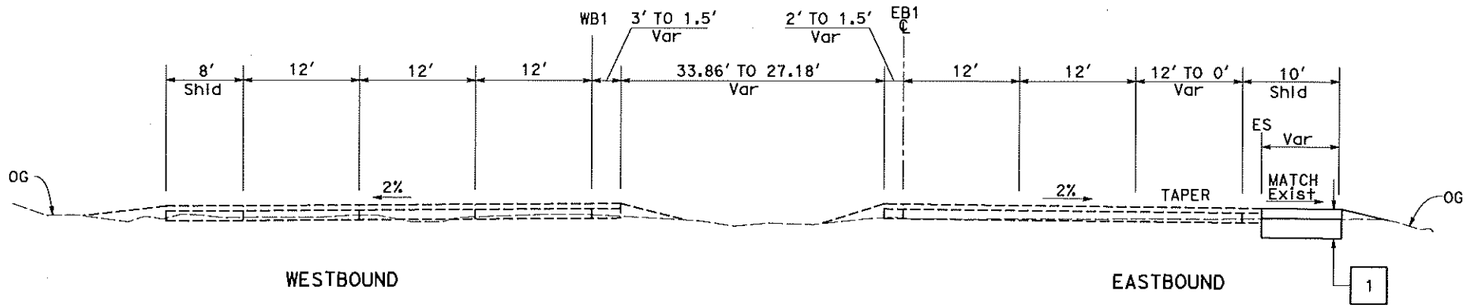
DATE PLOTTED => 02-MAY-2014
TIME PLOTTED => 11:27

Dist	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET No.	TOTAL SHEETS
04	SM	92, 82	11.0/11.5, 10.3/10.7		

REGISTERED CIVIL ENGINEER DATE

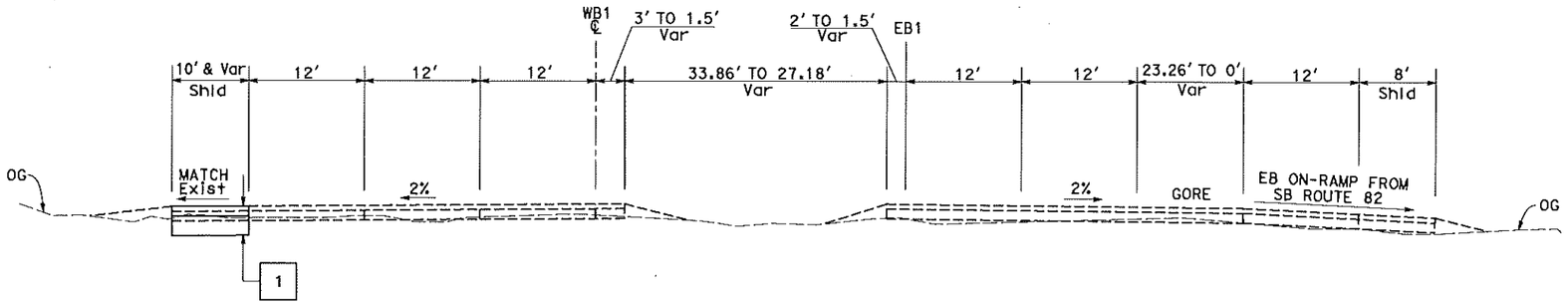
PLANS APPROVAL DATE

REGISTERED PROFESSIONAL ENGINEER — No. — Exp. — CIVIL — STATE OF CALIFORNIA



WESTBOUND EASTBOUND

EB LINE
122+30 TO 126+70



WESTBOUND EASTBOUND

WB LINE
114+60 TO 120+10

ROUTE 92

TYPICAL CROSS SECTIONS

NO SCALE

FOR NOTES, ABBREVIATIONS AND LEGEND, SEE SHEET X-1

X-10

LAST REVISION 05-02-14 | DATE PLOTTED => 02-MAY-2014 | TIME PLOTTED => 11:27

CALCULATED-DESIGNED BY	REVISED BY	DATE REVISED
HOSSEIN KHODABAKHSH	HK	8/26/13
CHECKED BY		
ABOLFAZL EMADZADEH		

FUNCTIONAL SUPERVISOR: ABOLFAZL EMADZADEH

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION

Caltrans DESIGN

BORDER LAST REVISED 2/1/2013 | USERNAME => s130819 | DGN FILE => 0412000496ca010.dgn | RELATIVE BORDER SCALE IS IN INCHES 0 1 2 3 | UNIT 0719 | PROJECT NUMBER & PHASE 04120004961

ATTACHMENT C

INITIAL STUDY/NEGATIVE DECLARATION (IS/ND) SIGNATURE PAGE

SR 92-82 Interchange Improvement Project

SAN MATEO (SM) COUNTY, CALIFORNIA
DISTRICT 4 – SM – 92-82(Post Miles 11.0/10.3, 11.5 /10.7)
Expenditure Authorization 23552/Project ID 0412000496

Initial Study with Negative Declaration

Prepared by the
State of California Department of Transportation

Caltrans

May 2014

SCH: 2014012036

NEGATIVE DECLARATION

Pursuant to: Division 13, Public Resources Code

Project Description

The California Department of Transportation (Caltrans) proposes to modify the SR 92-82 Interchange from Post Miles (PM) 11.0 to 11.5 and 10.3 to 10.7, in the City of San Mateo, in San Mateo County.

Determination

Caltrans has prepared an Initial Study (IS) for this project, and following public review, has determined from this study that the proposed project would not have a significant effect on the environment for the following reasons:

The proposed project would have no effect on the following resources: Air Quality, Community Character and Cohesion, Environmental Justice, Existing and Future Land Use, Farmlands and Timberlands, Mineral Resources, Parks and Recreation, Public Services, Right of Way and Wild and Scenic Resources. The project is consistent with state, regional and local plans and programs.

In addition, the proposed project would have less than significant effects to Aesthetics/Visual, Transportation/Traffic, Geology and Soils, and Noise resources.

Melanie Brent

Melanie Brent
Deputy District Director
District 4
California Department of Transportation

May 6, 2014
Date

CATEGORICAL EXEMPTION/CATEGORICAL EXCLUSION DETERMINATION FORM

04-SM-92-82	11.0/10.3-11.5/10.7	23552/0412000496	N/A
Dist.-Co.-Rte. (or Local Agency)	P.M./P.M.	E.A/Project No.	Federal-Aid Project No. (Local Project)/Project No.

PROJECT DESCRIPTION: (Briefly describe project including need, purpose, location, limits, right-of-way requirements, and activities involved in this box. *Use Continuation Sheet, if necessary.)*

The project proposes to improve and reconstruct the State (SR) 92/82 Interchange on its existing alignment to a partial cloverleaf interchange in the City of San Mateo.
(Continued on next page.)

CEQA COMPLIANCE *(for State Projects only)*

Based on an examination of this proposal and supporting information, the following statements are true and exceptions do not apply (See 14 CCR 15300 et seq.):

- This project falls within exempt class 3, 4, 5, 6 and/or 11, and it does not impact an environmental resource of hazardous or critical concern where designated, precisely mapped, and officially adopted pursuant to law.
- There will not be a significant cumulative effect by this project and successive projects of the same type in the same place, over time.
- There is not a reasonable possibility that the project will have a significant effect on the environment due to unusual circumstances.
- This project does not damage a scenic resource within an officially designated state scenic highway.
- This project is not located on a site included on any list compiled pursuant to Govt. Code § 65962.5 ("Cortese List").
- This project does not cause a substantial adverse change in the significance of a historical resource.

CALTRANS CEQA DETERMINATION (Check one)

☐ **Exempt by Statute.** (PRC 21080[b]; 14 CCR 15260 et seq.)

Based on an examination of this proposal, supporting information, and the above statements, the project is:

☐ **Categorically Exempt. Class** . (PRC 21084; 14 CCR 15300 et seq.)

☐ **Categorically Exempt. General Rule exemption.** [This project does not fall within an exempt class, but it can be seen with certainty that there is no possibility that the activity may have a significant effect on the environment (CCR 15061[b][3].)

N/A	N/A
Print Name: Environmental Branch Chief	Print Name: Project Manager/DLA Engineer
Signature Date	Signature Date

NEPA COMPLIANCE

In accordance with 23 CFR 771.117, and based on an examination of this proposal and supporting information, the State has determined that this project:

- does not individually or cumulatively have a significant impact on the environment as defined by NEPA and is excluded from the requirements to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS), and
- has considered unusual circumstances pursuant to 23 CFR 771.117(b).

CALTRANS NEPA DETERMINATION (Check one)

☒ **23 USC 326:** The State has determined that this project has no significant impacts on the environment as defined by NEPA, and that there are no unusual circumstances as described in 23 CFR 771.117(b). As such, the project is categorically excluded from the requirements to prepare an environmental assessment or environmental impact statement under the National Environmental Policy Act. The State has been assigned, and hereby certifies that it has carried out the responsibility to make this determination pursuant to Chapter 3 of Title 23, United States Code, Section 326 and a Memorandum of Understanding dated June 07, 2013, executed between the FHWA and the State. The State has determined that the project is a Categorical Exclusion under:

- ☐ **23 CFR 771.117(c): activity (c)(___)**
- ☒ **23 CFR 771.117(d): activity (d)(1)**
- ☐ **Activity ___ listed in Appendix A of the MOU between FHWA and the State**

☐ **23 USC 327:** Based on an examination of this proposal and supporting information, the State has determined that the project is a CE under 23 USC 327.

Yolanda Rivas	Al B. Lee
Print Name: Environmental Branch Chief	Print Name: Project Manager/DLA Engineer
Yolanda Rivas 5/5/14	Al B. Lee 5/5/14
Signature Date	Signature Date

Date of Categorical Exclusion Checklist completion:	Date of ECR or equivalent :

Briefly list environmental commitments on continuation sheet. Reference additional information, as appropriate (e.g., CE checklist, additional studies and design conditions).

04-SM-92-82	11.0/10.3-11.5/10.7	23552/0412000496	N/A
Dist.-Co.-Rte. (or Local Agency)	P.M./P.M.	E.A/Project No.	Federal-Aid Project No. (Local Project)/Project No.

Continued from page 1:

Project location limits are PM 11.0 to PM 11.5 for SR 92, and PM 10.3 (20th Ave.) to PM 10.7 (17th Ave./Bovet Rd.) for SR 82. The purpose and need of the project is to reduce existing traffic congestion, bottlenecks, weaving and queue spillback at the interchange on and off ramps. Based on the Traffic Operations Report for the State Route 92/82 Interchange, the partial cloverleaf design (Build Alternative) would eliminate the short weaving distances on SR 92 between the loop on and off-ramps to and from SR 82.

The Build Alternative consists of the following elements:

1. Eliminate the existing westbound SR 92 loop off-ramp to SR 82 in the northwest quadrant.
2. Eliminate the existing eastbound SR 92 loop off-ramp to SR 82 in the southeast quadrant.
3. Realign and widen the existing SR 92 westbound diagonal off-ramp to SR 82 in the northeast quadrant of the interchange. The ramp would be widened to two-lanes. At the ramp terminal, it would be widened to provide two left turn lanes and two right turn lanes. All lanes would be 12-foot wide with 4-foot left shoulder and right shoulder between 4-foot and 8-foot. A new traffic signal would be installed at the ramp terminal.
4. Realign and widen the existing SR 92 eastbound diagonal off-ramp to SR 82 in the southwest quadrant of the interchange. The ramp would be widened to two-lanes. At the ramp terminal, it would be widened to provide two left turn lanes and two right turn lanes. All lanes would be 12-foot wide with left shoulder varying between 4-foot and 6.5-foot and right shoulder varying between 4-foot and 8-foot. A new traffic signal would be installed at the ramp terminal.
5. Realign and widen the existing SR 92 westbound diagonal on-ramp from southbound SR 82 in the northwest quadrant of the interchange. The ramp would be widened to provide 12- foot HOV and SOV lanes with 4-foot left shoulder and 8-foot right shoulder.
6. Realign and widen the existing SR 92 eastbound diagonal on-ramp from northbound SR 82 in the southeast quadrant of the interchange. The ramp would be widened to provide 12- foot HOV and SOV lanes with 4-foot left shoulder and 8-foot right shoulder.
7. Realign and widen the existing SR 92 eastbound loop on-ramp from southbound SR 82 in the southwest quadrant of the interchange. The ramp would be widened to provide two 12- foot SOV lanes with 4-foot left shoulder and 8-foot right shoulder.
8. Realign and widen the existing SR 92 westbound loop on-ramp from northbound SR 82 in the northeast quadrant of the interchange. The ramp would be widened to provide a 12- foot HOV lane and a 12-foot SOV lane with 4-foot left shoulder and 8-foot right shoulder.
9. The southwest quadrant diagonal off-ramp would have a soundwall of approximately 536 feet. Retaining walls will be added to diagonal ramps at the northeast (370 feet), southwest (650 feet) and southeast (300 feet) quadrants to facilitate the widening.
10. Concrete barriers would be installed between the ramps in both the southwest and northeast quadrants.
11. Widen SR 82 in the northbound and southbound direction to add 11-foot right turn lane, a minimum 8-feet wide sidewalk and pavement markings per Class II bike lane standards within the bounds of the newly signalized intersections.
12. Outside shoulder widening on eastbound and westbound SR 92.

(Continued on next page.)

04-SM-92-82	11.0/10.3-11.5/10.7	23552/0412000496	N/A
Dist.-Co.-Rte. (or Local Agency)	P.M./P.M.	E.A/Project No.	Federal-Aid Project No. (Local Project)/Project No.

Continued from page 2:

The reconfiguration of the Interchange and its diagonal on/off ramps also includes the following improvements (subject to change during design phase):

1. Construction of a sound wall at the following location: one, approximately 530-foot (ft), soundwall installed at the southwest quadrant diagonal on-ramp.

2. Construction of retaining walls at the following locations: diagonal ramps at the northeast, southwest and southeast quadrants to facilitate the widening, as the existing terrain is on a slope.

In addition, Caltrans has planned the following project elements and will refine them further in the design phase:

1. A minimum 8- foot wide sidewalk on both sides of SR 82 from the outer edges of the on- and off-ramps.

2. A Class II bike lane on SR 82 between the ramps of the intersection that is 5-feet in width in each direction. The lane is adjacent to the sidewalk the duration of the undercrossing. At the end of the undercrossing, the lane angles 45 degrees left before realigning at 90 degrees. This design moves the bike lane leftward to make room for a right turn pocket for vehicles onto the on-ramps.

3. A Class III signed bicycle route on 20th Avenue east and west of SR 82. Class III bicycle routes with shared lane markings are planned on Bovet Road and 18th Avenue east and west of SR 82. Palm Drive, a parallel street to the east of SR 82 is the preferred bicycle route in the City.

Environmental commitments are described in the Environmental Commitment Record (ECR) for this project. (Attached).

ATTACHMENT D

RIGHT OF WAY DATA SHEET

T0: Office Design South-Peninsula

Date 7/5/2013
Dist 4 Co SM Rte 92/82
PM 11.0/11.5, 10.3/10.7

Attention: ABBY EMADZADEH
District Branch Chief

EA 235520 (04-1200-0496-0)

From: ENID LAU
Right of Way Resource Manager

Route 92/82 Interchange Improvement Project
D.S. #6239

Subject: Current Estimated Right of Way Costs

We have completed an estimate of the right of way costs for the above referenced project based on maps we received from you on June 14, 2013 and the following assumptions and limiting conditions.

[ ] 1. The mapping did not provide sufficient detail to determine the limits of the right of way required.

[ ] 2. The transportation facilities have not been sufficiently designed so our estimator could determine the damages to any of the remainder parcels affected by the project.

[ ] 3. Additional right of way requirements are anticipated, but are not defined due to the preliminary nature of the early design requirements.

[ ] 4. This estimate does not include $_____ right of way costs previously incurred on the project, which may affect the total project right of way costs for programming purposes.

[ ] 5. We have determined there are no right of way functional involvements in the proposed project at this time, as designed.

Right of Way Lead Time will require a minimum of 18 months after we begin receiving final right of way requirements (PYPSCAN node No. 224), necessary environmental clearance has been obtained, and freeway agreements have been approved. From the date of receipt of final right of way requirements (PYPSCAN node No. 265), we will require a minimum of 15 months prior to the date of certification of the project. Shorter lead times will require either more right of way resources or an increased number of condemnation suits to be filed. Either of these actions may reflect adversely on the District's other programs or our public image generally.

Right of Way Resource Manager

Attachments:

[✓] Right of Way Data Sheet – Page One (always required)
[✓] Right of Way Data Sheet – All Pages (required when interest in real property is being acquired)
[✓] Utility Information Sheet
[✓] Railroad Information Sheet

RIGHT OF WAY DATA SHEET

TO: Design South - Peninsula

Date 6/19/2013 D.S. # 6239

Dist. 04 Co. SM Rte 92/82 PM Var

EA 04-235520(0412000496)

ATTN: Abby Emadzadeh

Project Description: Interchange Improvement

SUBJECT: Right of Way Data - Alternate No.

1. Right of Way Cost Estimate:

		Current Value (Future Use)	Escalation Rate		Escalated Value
A.	Acquisition, including Excess Lands, Damages, and Goodwill	$0.00	%		$0.00
	Project Permit Fees				$0.00
	Environmental Mitigation				$0.00
	Grantor's Appraisal Cost				$0.00
B.	Utility Relocation (State Share)	$1,500,500.00	%		$1,500,500.00
C.	Railroad (from page 6)				$0.00
D.	Relocation Assistance	$0.00	%		$0.00
E.	Clearance Demolition	$0.00	%		$0.00
F.	Title and Escrow Fees	$0.00	%		$0.00
G.	TOTAL ESCALATED VALUE				$1,500,500.00
H.	Construction Contract Work	$0.00		RT	**$1,501,000.00**

2. Anticipated Date of Right of Way Certification

3. Parcel Data:

Type		Dual/Appr		Utilities		RR Involvements	
X				U4-1		None	
A				-2		C&M Agrmt	
B				-3		Svc Cont.	
C				-4	5	Design	
D				U5-7		Const.	
E	XXXX			-8		Lic/RE/Clauses	
F	XXXX			-9	5		X
						Misc R/W Work	
						RAP Displ	
						Clear Demo	0
Total	0					Const. Permits	0
						Condemnation	0

Areas: Right of Way ____ No. Excess Parcels ____ Excess ____ 0

Enter PMCS Screens 6/24/2013 By P.T.

Enter AGRE Screen (Railroad Data Only) ____ By ____

4. Are there any major items of construction contract work?
Yes ☐ No ☑ (If yes, explain)

5. Provide a general description of the right of way and excess lands required(zoning, use, major improvements critical or sensitive parcels, etc.).
No right of way required. ☑

6. Is there an effect on assessed valuation? (If yes explain)
Yes ☐ Not Significant ☐ No ☑

7. Are utility facilities or rights of way affected? Yes ☑ No ☐
If yes, attach Utility Information Sheet Exhibit 01-01-05)

8. Are railroad facilities or rights of way affected? Yes ☑ No ☐
If yes, attach Railroad Information Sheet Exhibit 01-01-06)

9. Were any previously unidentified sites with hazardous waste and/or material found?
Yes ☐ None evident ☑
(If yes, attach memorandum per Procedural Handbook Volume 1, Section 101.011)

10. Are RAP displacements required? Yes ☐ No ☑
(If yes, provide the following information)

No. of single family _____ No. of business/non profit _____

No. of multi-family _____ No. of farms _____

Based on Draft / Final Relocation Impact Statement / Study dated _____, it is anticipated that sufficient replacement housing will / will not be avaialable without Last Resort Housing.

11. Are material borrow and / or disposal sites required? Yes ☐ No ☑
(If yes, expalin)

12. Are there potential relinquishments / abandonments? Yes ☐ No ☑
(If yes, expalin)

13. Are there any existing and/or potential Airspace sites? Yes ☐ No ☑
(If yes, expalin)

14. Are there Environmental Mitigation costs? Yes ☐ No ☑
(If yes, explain)

15. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if District proposes less that PMCS lead time and / or if significant pressures for project advancement are anticipated.)

PYPSCAN lead time (from Regular R/W to project certification) 18 months.

16. Is it anticipated that all Right of Way work be performed by CALTRANS staff?
Yes ☑ No ☐ (If no, discuss)

Assumptions and Limiting Conditions

- This data sheet was completed without a hazardous waste/materials report.
- Information on this data sheet was based on maps provided by Abby Emadzadeh on 5/10/2013

Evaluation Prepared By: Lynn White

Right of Way: Name _____ Date 6-19-13

Railroad: Name _____ Date 6-20-13

Utilities: Name _____ Date 6-19-13

Recommended for Approval:

_____
Right of Way Capital Cost Coordinator

I have personally reviewed this Right of Way Data Sheet and all supporting information. It is my opinion that the probable Highest and Best Use, estimated values, escalation rates, and assumptions are reasonable and proper subject to the limiting conditions set fourth, and find this Data Sheet complete and current.

_____
Chief, R/W Appraisal Services

6-24-13
Date

cc: Program Manager
Project Manger

UTILITY INFORMATION SHEET

1. Utility owners located within project limits:
PG&E, water, sewer, stormwater, AT&T

2. Facilities potentially impacted by project (if known, include Owners(s) & facility type(s)):
Verifications with PG&E, AT&T, San Mateo County, City of San Mateo completed in 1/13. Per list of potential conflicts from Design(attached) cost of relocation of all listed facilities estimated at $1,500,500.00 for State share.

3. Anticipated Workload:

_____	Utility Verification required
_____	Positive Identification
5	Utility Relocation
_____	Other (Specify)

4. Additional information concerning anticipated utility involvements (include limiting conditions and a narative addressing likelihood that conflicts will occur);

_____ Involves possible relocation of electric transmission facilities
(If X'd, Data sheet should be forwarded to environmental)

5. PMCS input information

U4-1	_____	Owner Expense Involvements
U4-2	_____	State Expense Involvements *(Conventional, No Fed Aid)*
U4-3	_____	State Expense Involvements *(Freeway, No Fed Aid)*
U4-4	5	State Expense Involvements *(Conventional or Freeway, Fed Aid)*
U5-7	_____	Verifications - without involvements
U5-8	_____	Verifications - 50% involvements
U5-9	5	Verifications resulting in involvements

NOTE: The sum od U-4's must equal the sum of ½ of the U5-8's and all of the U5-9's.

ESTIMATED STATE SHARE OF COSTS $ 1,500,500.00

Perepared by: Elizabeth Engle

Right of Way Utility Coordinator

6-19-13
Date

RAILROAD INFORMATION SHEET

1. Describe railroad facilities or right of way affected.
   Caltrain, UPRR

2. When branch lines or spurs are affected, would acquisition and/or payment of damages to businesses and/or industries served by the railroad facility be more cost effective than construction of a facility to perpetuate the rail services? (See Procedural Handbook Volume 4a, Chapter 440 for further detail.)
   Yes ☐ No ☐ (If yes, explain)

3. Discuss types of agreements and rights required from the railroads. Are grade crossings requiring service contracts, or grade separations requiring construction and maintenance agreements involved?

4. Remarks (Nonoperating railroad right of way involved?)

5. PMCS Input Information

RR Involvements			Estimated Cost
None		_____	
C&M Agreement		_____	$ _____
Svc Contract		_____	$ _____
	Design	_____	
	Const.	_____	
Lic/RE/Clauses		X	

TOTAL ESTIMATED COST $ _____

Prepared by: Pat Coggins

Right of Way Railroad Coordinator

6-20-13
Date

ATTACHMENT E

PROJECT ESTIMATE

District-County: 04-SM-92/82
PM-Route: 92-11.0-11.5
PM-Route: 82-10.3-10.7
EA: 235520

PROJECT DESCRIPTION

Proposed Improvements: **Route 92/82 Interchange Reconstruction And Improvements**

Alternative: **Alternative No. 2 Partial Cloverleaf**

Limits: **92-11.0-11.5**
82-10.3-10.7

SUMMARY OF PROJECT COST ESTIMATE

TOTAL ROADWAY ITEMS	$10,583,000	
TOTAL STRUCTURE ITEMS	$4,176,000	
SUBTOTAL CONSTRUCTION COSTS	$14,759,000	
TOTAL RIGHT OF WAY ITEMS	$1,501,000	
TOTAL PROJECT CAPITAL OUTLAY COSTS		$16,260,000

Reviewed by Project Engineer:	Hossein Khodabakhsh	510-286-5870 (Phone)	12/17/13 (Date)
Approved by Project Manager:	Al B Lee	510-286-5073 (Phone)	12/17/13 (Date)

District-County: 04-SM-92/82
Route-PM: 92-11.0-11.5
Route-PM: 82-10.3-10.7
EA: 235520

Alternative No. 2 - Partial Cloverleaf

I. ROADWAY ITEMS

	Quantity	Unit	Unit Price	Unit Cost	Section Cost
Section 1 - Earthwork					
Roadway Excavation	8,000	CY	$37	$296,000	
Clearing & Grubbing	1	LS	$200,000	$200,000	
Develop Water Supply	1	LS	$50,000	$50,000	
				$0	
Imported Borrow	5,760	CY	$36	$207,360	
			Subtotal Earthwork		$753,360
Section 2 - Pavement Structural Section					
Open Graded Friction Concrete	0	TON	$80	$0	
Cold Plane AC Pavement	11,120	SQYD	$5	$55,600	
Rubberized HMA (Gap Graded)	4,100	TON	$132	$541,200	
Hot Mix Asphalt (Type A)	16,270	TON	$92	$1,496,840	
Lean Concrete Base	0	CY	$120	$0	
Remove Sidewalk and Curb	12,000	SQFT	$2	$24,000	
Class 4 Aggregate Subbase	0	CY	$20	$0	
Sub. Enhancement Geotextile	0	SQYD	$2	$0	
Tack Coat	70	Ton	$700	$49,000	
			Subtotal Pavement Structural Section		$2,166,640
Section 3 - Drainage					
Drainage	1	LS	$630,000	$630,000	
			Subtotal Drainage		$630,000

District-County: 04-SM-92/82
Route-PM: 92-11.0-11.5
Route-PM: 82-10.3-10.7
EA: 235520

Alternative No. 2 - Partial Cloverleaf

	Quantity	Unit	Unit Price	Unit Cost	Section Cost
Section 4 - Specialty Items					
SD Detention Allowance	1	LS	$0	$0	
Circulation/RD Imprv.	1	LS	$0	$0	
BMP Treatment Measures	1	LS	$0	$0	
Sampling and Analysis Plan	1	LS	$0	$0	
R. Engineer Office Space	1	LS	$0	$0	
Minor Con.Curb/Sidewalk	225	CY	$850	$191,250	
Landscaping/Irrigation	1	LS	$490,000	$490,000	
Permanent Erosion Control Mea	1	LS	$140,000	$140,000	
Temp. Water Pollution Control	1	LS	$160,000	$160,000	
Electrical Design	1	LS	$0	$0	
Lead Compliance Plan	1	LS	$0	$0	
			Subtotal Speciality Items		$981,250
Section 5 - Traffic Items					
TOS	2	EA	$40,000	$80,000	
Ramp Metering	4	EA	$150,000	$600,000	
Overhead Sign Structures	1	LS	$965,000	$965,000	
Roadside Signs	1	LS	$0	$0	
Traffic Intersection Signals	1	LS	$500,000	$500,000	
Traffic Management Plan	1	LS	$450,000	$450,000	
Temporary Railing (Type K)	0	LF	$10	$0	
				Subtotal Traffic Items	$2,595,000
				TOTAL SECTIONS 1 thru 5	$7,126,250

District-County: 04-SM-92/82
Route-PM: 92-11.0-11.5
Route-PM: 82-10.3-10.7
EA: 235520

Alternative No. 2 - Partial Cloverleaf

			Unit Cost	Section Cost
Section 6 - Minor Items				
Subtotal Sections 1 thru 5	$7,126,250	X 10%	$712,625	
			TOTAL MINOR ITEMS	$713,000
Section 7 - Roadway Mobilization				
Subtotal Sections 1 thru 5	$7,126,250			
Minor Items	$713,000			
Sum	$7,839,250	X 10%	$783,925	
			TOTAL ROADWAY MOBILIZATION	$784,000
Section 8 - Roadway Additions				
Supplemental Work				
Subtotal Sections 1 thru 5	$7,126,250			
Minor Items	$713,000			
Sum	$7,839,250	X 10%	$783,925	
Contingencies				
Subtotal Sections 1 thru 5	$7,126,250			
Minor Items	$713,000			
Sum	$7,839,250	X 15%	$1,175,888	
			TOTAL ROADWAY ADDITIONS	$1,960,000
			TOTAL ROADWAY ITEMS (Subtotal Sections 1 - 8)	$10,583,000

Estimate Prepared By: Ravi R Singh (Print Name) 510-622-5634 (Phone) (Date)

District-County: 04-SM-92/82
PM-Route: 92-11.0-11.5
PM-Route: 82-10.3-10.7
EA: 235520

Alternative No. 2 - Partial Cloverleaf

II. STRUCTURE ITEMS	Structure 4		
Bridge Name	$0		
Bridge No.			
Structure Type			
Width (FT) - out to out (			
Lengths (FT)			
Total Area (SF)			
Footing Type (pile/spread)	Pile		
Sound Walls / Retaining Wall	$2,114,036		
Retaining Walls	$2,061,500		
Cost per SF	N/A		
TRO:5%			
Mobilization: 10% &			
Contingency: 25%			
Ramp Structure			
Remove Bridge			
Total Cost For Structure	$4,175,536		
		SUBTOTAL STRUCTURE ITEMS	$4,175,536
Railroad Related Costs	$0		$0
		SUBTOTAL RAILROAD ITEMS	$0
		TOTAL STRUCTURES ITEMS	$4,176,000
		(Sum of Structures Items plus Railroad Items)	

COMMENTS:

Estimate Prepared By: Ravi R Singh 510-622-5634
(Print Name) (Phone) (Date)

District-County: 04-SM-92/82
PM-Route: 92-11.0-11.5
PM-Route: 82-10.3-10.7
EA: 235520

Alternative No. 2 - Partial Cloverleaf

III. RIGHT OF WAY ITEMS

A. Acquisition, including excess lands and damages to remainder(s) and Goodwill	$0	$0	$0
B. Utility Relocation (State/Local share)	$1,500,500	$1,500,500	
C. Relocation Assistance			
D. Clearance/Demolition			
E. Title and Escrow Fees			
TOTAL RIGHT OF WAY ITEMS			$1,501,000

Anticipated Date of Right of Way Certification 2015
(Date to which Values are Escalated)

F. Construction Contract Work

Brief Description of Work:

ATTACHMENT F

STORM DATA REPORT APPROVAL SHEET

Dist-County-Route: 04-SM-92&82
Post Mile Limits: R11.0/R11.5&10.3/107
Project Type: Interchange Improvement Project
Project ID (or EA): EA 235520 (0412000496)
Program Identification: HA 201.01
Phase: ☐ PID ☒ PA/ED ☐ PS&E

Regional Water Quality Control Board(s): San Francisco Bay RWQCB (Region 2)

Is the Project required to consider Treatment BMPs? Yes ☒ No ☐
If yes, can Treatment BMPs be incorporated into the project? Yes ☒ No ☐
If No, a Technical Data Report must be submitted to the RWQCB at least 30 days prior to the projects RTL date. List RTL Date: _____

Total Disturbed Soil Area: 12.0 ac Risk Level: 2
Estimated: Construction Start Date: June 2016 Construction Completion Date: April 2018
Notification of Construction (NOC) Date to be submitted: May 2016

Erosivity Waiver	Yes ☐	Date: _____	No ☒
Notification of ADL reuse (if Yes, provide date)	Yes ☐	Date: _____	No ☐ TBD
Separate Dewatering Permit (if yes, permit number)	Yes ☐	Permit # _____	No ☒

This Report has been prepared under the direction of the following Licensed Person. The Licensed Person attests to the technical information contained herein and the date upon which recommendations, conclusions, and decisions are based. Professional Engineer or Landscape Architect stamp required at PS&E.

H. Khodabakhsh — 1/16/13
Hossein Khodabakhsh, Registered Project Engineer/Landscape Architect — Date

I have reviewed the stormwater quality design issues and find this report to be complete, current and accurate:

Al B. Lee — 1/17/13
Al B. Lee, Project Manager — *Date*

Robert W. Braga — 1/17/13
Robert Braga, Designated Maintenance Representative — *Date*

David Yam — 1/17/13
David Yam, Designated Landscape Architect Representative — *Date*

Jaemyung Lee — 1/17/13
[Stamp Required for PS&E only] *Jae-Myung Lee, District/Regional Design SW Coordinator or Designee* — *Date*

ATTACHMENT G

TECHNICAL INFORMATION FOR LOCATION HYDRAULIC STUDY AND FLOODPLAIN VALUATION SUMMARY

TECHNICAL INFORMATION FOR LOCATION HYDRAULIC STUDY

Dist. 04 Co. San Mateo Rte. 92/82 P.M. 11-11.5/10.3-10.7
Project No. EA 235520 Bridge No. 35-0156L/R

Floodplain Description:
Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) show that the majority of residential development and the majority of properties are not within the boundary of the base floodplain.

1. Description of Proposal (include any physical barriers i.e. concrete barriers, soundwalls, etc. and design elements to minimize floodplain impacts)
The proposed project includes reconstructing the existing Route 92/82 Interchange to a partial cloverleaf interchange as one of the three options and will include new and modified Ramps. The project will construct retaining walls, soundwalls, and two new signalized intersections on El Camino Real Road at the terminus of the off-ramps. Both eastbound and westbound loop off-ramps will be closed. The proposed project will improve mobility, operation and safety.

2. ADT: Current 98,000 Projected 115,000 Year 2040

3. Hydraulic Data:
Base Flood Q_{100}= * ft^3 / s WSE_{100}= _____ ft
The flood of record, if greater than Q_{100}: Q=_____ ft^3 / s WSE=_____ ft
Overtopping flood Q= _____ ft^3 / s WSE= _____ ft
Are NFIP maps and studies available? Yes_____ No X

	Yes	No
4. Is the highway location alternative within a regulatory floodway?	n/a	
5. Attach map with flood limits outlined showing all buildings or other improvements within the base floodplain.		
Potential Q_{100} backwater damages:		
A. Residences?		X
B. Other Bldgs?		X
C. Crops?		X
D. Natural and beneficial Floodplain values?		X
6. Type of Traffic:		
A. Emergency supply or evacuation route?	X	
B. Emergency vehicle access?	X	
C. Practicable detour available?	X	
D. School bus or mail route?	X	

7. Estimated duration of traffic interruption for 100-year event ___0___ hours.

8. Estimated value of Q_{100} flood damages (if any) - moderate risk level.

A.	Roadway	$ minimal
B.	Property	$ minimal
	Total	$

9. Assessment of Level of Risk

Low__X___ Moderate ___ High ___

For High Risk projects, during design phase, additional Design Study Risk Analysis may be necessary to determine design alternative.

PREPARED BY:

_____ 1-7-2013

Signature - Dist. Hydraulic Engineer Date
(Item numbers 3, 4, 5, 7, 9)

Is there any longitudinal encroachment, significant encroachment, or any support of incompatible Floodplain development? No__X___ Yes ____

If yes, provide evaluation and discussion of practicability of alternatives in accordance with 23 CFR 650.113

Information developed to comply with the Federal requirement for the Location Hydraulic Study Shall be retained in the project files.

_____ _____

Signature - Dist. Project Engineer Date
(Item numbers 1, 2, 6, 8)

B. Floodplain Evaluation Report Summary

Floodplain Evaluation Report Summary

Dist. 04 Co. San Mateo Rte. 92/82 P.M. 11-11.5/10.3-10.7
Project No. EA 235520 Bridge No. 35-0156L/R

Floodplain Description
Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) show that the majority of residential development and the majority of properties are not within the boundary of the base floodplain.

	Yes	No
1. Is the proposed action a longitudinal encroachment of the base floodplain?		X
2. Are the risks associated with the implementation of the proposed action significant?		X
3. Will the proposed action support probable incompatible floodplain development?		X
4. Are there any significant impacts on natural and beneficial floodplain values?		X
5. Routine construction procedures are required to minimize impacts on the floodplain. Are there any special mitigation measures necessary to minimize impacts or restore and preserve natural and beneficial floodplain values? If yes, explain.		X
6. Does the proposed action constitute a significant floodplain encroachment as defined in 23 CFR, Section 650.105(q).		X
7. Are Location Hydraulic Studies that document the above answers on file? If not explain.	X	

PREPARED BY:

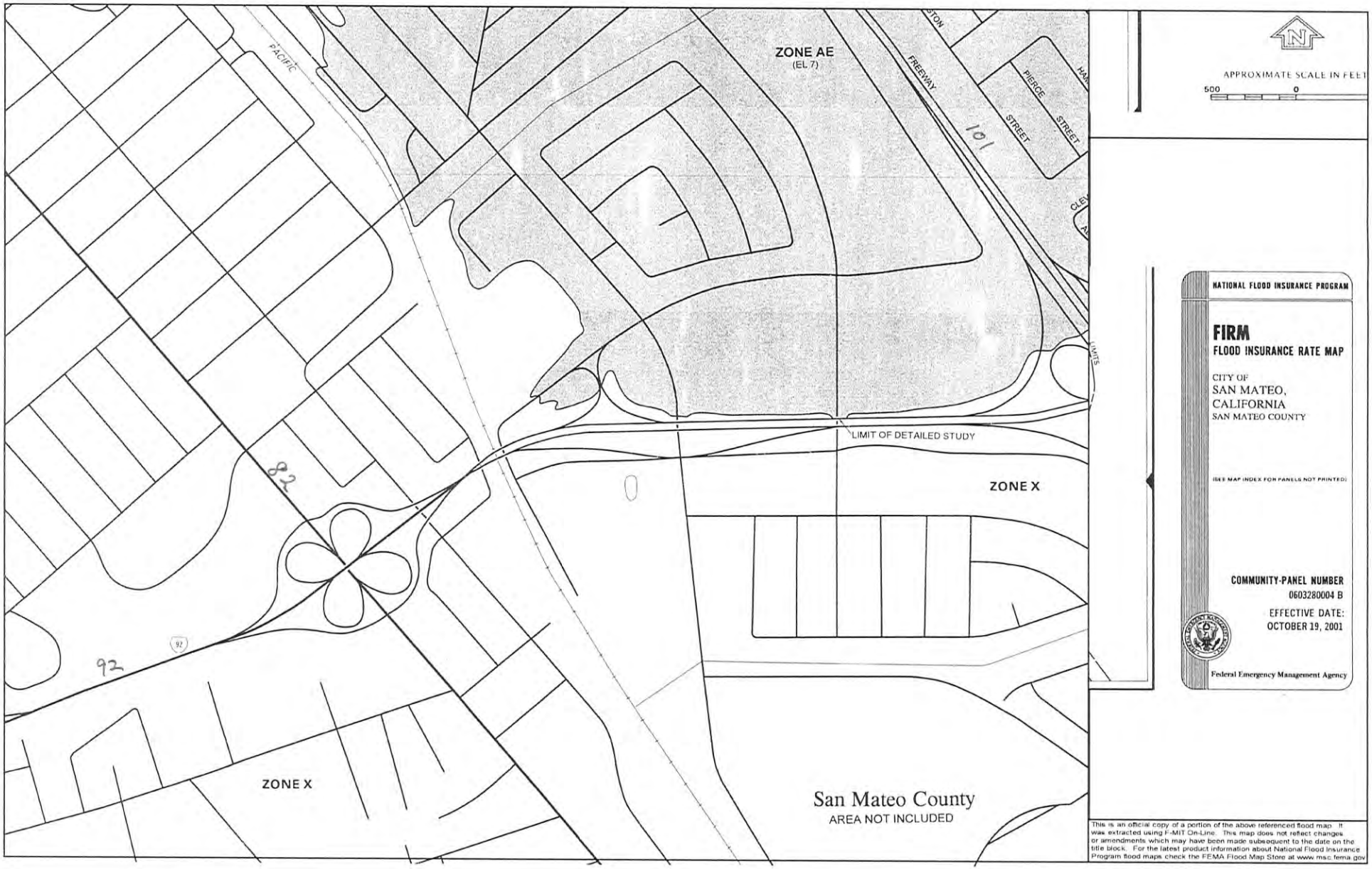
S Sud 1-7-2013

Signature - Dist. Hydraulic Engineer Date

Signature - Dist. Environmental Branch Chief Date

Signature - Dist. Project Engineer Date

C. Flood Insurance Rate Map (FIRM)



This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

ATTACHMENT H

MATERIALS - LIFE CYCLE COST ANALYSIS, PAVEMENT CHECKLIST AND RECOMMENDATIONS

(Rev. 3/04/10)

PAVEMENT STRATEGY CHECKLIST

Date: November 19, 2013

Project description and project elements:

It is proposed to improve and reconstruct the SR 92/82 interchange. The project is located on SR 92 and SR 82 (El Camino Real; aka ECR) in the City of San Mateo and the project limits are from post mile 11.0 to 11.5 on SR92 and 10.3 (at intersection of ECR/W. 20th Avenue) to 10.7 (at intersection of ECR/17th Avenue & Bovet Avenue) on SR 82.

The project's purpose and need is to improve traffic operations of the SR 92/82 interchange and increase performance at the on-ramps and off-ramps that is creating secondary operational deficiencies at SR 92 mainline. In general, the following major components are proposed:

- Realign and widen the diagonal off-ramps to provide additional storage and construct signalized intersections at the off-ramp terminals.
- Add exclusive right turn lanes to the loop on-ramps on SR 82.
- Construct concrete barrier between the ramps in the southwest quadrant and northeast quadrant.
- Realign and widen the diagonal and loop on-ramps to add HOV or SOV lanes.
- Provide maintenance vehicle pullouts and CHP enforcement areas on the on-ramps.
- Construct soundwall and retaining walls at the diagonal on-ramps and off-ramps if needed.

EA: 235520

Project Manager: Al Lee

Co/Rte: SM 92/82

Office: Design South

Project Engineer: Hossein Khodabakhsh Initial H.K. Program: HE 11

Design Senior: Abby Emmazadeh Initial

PM Limits: 04-SM -92-PM 11.0/11.5
04-SM -82-PM 10.3/10.7

Materials Engineer (8th floor) : Richard Chan

Signature

This project is at the following phase (please check one):

☐ PID (PSSR, etc.) ☐ PR ☐ PS&E ☒ OTHER (DPR)

Describe existing structural section (e.g., shoulder, traveled way). Show limits if different sections are within the project:

0.1' RHMA-G, 0.2 Var AC, 0.6' AC Base, 0.5" CTB, 0.33' Crusher Run Base, 0.5' Imported Sub-Base

What pavement types/structural sections does Materials propose for each segment (shoulders and traveled way)?

Materials recommended Full Depth HMA Section: 0.15' RHMA-G,0.80' HMA (Type A). See Memo Attached.

Pavement is involved in:

☒ Entire project OR ☐ Part of the project

Assumptions (Is future widening in Regional Transportation Plan? No,.

Please provide information for all of the following items that apply to this project.

	Yes	No	Question
1.	☐	☒	Are you implementing an innovative strategy (e.g., cold foam Hot-Mix Asphalt (HMA)), pre-cast concrete pavement, continuously reinforced pavement, etc)? If so, which are you implementing and why? If not, why not? The Office of Materials recommended this section considering the ease of construction. (Memo is attached)
2.	☐	☒	Has Rapid Rehab strategy been considered (e.g., weekend closures and lane replacements)? Explain: Construction work will be done behind K-rails so Rapid Rehab is not needed.
3.	☒	☐	Are you using Rubberized Hot-Mix Asphalt (RHMA) in this project? If not, justify:
4.	☒	☐	Was Life Cycle Analysis performed? Yes. Provide Life Cycle Analysis and results. Results are attached, but the Office of Materials recommended a different section considering the ease of construction. (Memo is attached)
5.	☐	☒	Does existing pavement have a settlement problem? Explain: No settlement reported by Offices of Materials and Geotechnical.
6.	☒	☐	a) Is this project (or part of project) maintaining the grade profile? b) If not, explain how the profile change affects the pavement strategy choice (cut v. fill):
7.	☒	☐	Will there be a new barrier? Retaining walls, a soundwall and concrete barriers are proposed on some of the off-ramps and on-ramps.

	Yes	No	Question
8.	☒	☐	Is the proposed structural section on cut or fill or both? Provide limits of both, if applicable. Most of the widening will be on fill. Exact limits will be determined during PS &E.
9.	☐	☒	Are highly expansive basement soils present?
10.	☒	☐	Are as-builts (including structural section information regarding edge drains, under drains, lime treatment, permeable blanket, etc.) available?
	☒	☐	If no, did you check map files and online?
			If yes, existing structural section was based on (check one): ☒ as-built ☐ actual boring. Actual boring maybe needed to confirm old as-builts.
11.	☐	☒	Do the project limits have problems with groundwater (e.g., high water table, flow requirements, etc.)? If yes, explain: None mentioned in Preliminary Geotechnical report. Area is not monitored by Caltrans. Will be measured when borings are advanced.
12.	☒	☐	Has the availability of pavement materials (i.e., long haul distances from plants) been considered? If yes, how does material availability affect pavement type selection? RAC Plant is in Redwood City close by.
13.	☒	☐	Will the existing pavement be rehabilitated? If damaged there will be 0.15'of coldplaning and placement of 0.15' of RHMA-G as recommended by Office of Materials.
	☐	☐	What are the age and condition of the existing adjacent lanes? Explain: Condition is fair to good.
14.	☐	☐	What is the type of pavement/structural section (corridor pavement type/structural section continuity) on upstream/downstream roadway? Explain if several: 0.1' RHMA-G, 0.2 Var AC, 0.6' AC Base, 0.5" CTB, 0.33' Crusher Run Base, 0.5' Imported Sub-Base
15.	☐	☒	Is TMP data (lane closure charts) available and was it considered? Detailed TMP will be developed during PS&E.
	☒	☐	Will there be night time paving? If so, provide lane closure hours: Most likely between 9 p.m. to 5 a.m.

	Yes	No	Question
16.	☒	☐	Was field Maintenance input considered? They have attended some PDT meetings.
7.	☒	☐	Were climate conditions (extreme temperature, rainfall, etc.) considered? SM County is above 55 deg F from March to Nov. If so, which ones do you anticipate affecting the pavement job? Most likely no.
18.			Which stage construction requirements (matching adjacent sections, temporary paving, etc.) were considered? Detailed TMP will be developed during PS&E.
19.	☐	☒	Is this a large-scale project? Explain all quantity take-off:
20.	☐	☒	Is there Open-Graded Hot-Mix Asphalt (OGHMA) on the existing pavement? Existing pavement is RHMA-G
21.	☒	☐	Was environmental impact considered? Explain: Draft Environmental Documents are being currently prepared.
22.			What is the proposed pavement design life? 20 years.
23.			What is the final lane line configuration? SOV and HOV lanes added to on-ramps. Off-ramps will be 2 lanes, widening to 4 lanes at the terminals.
24.	☐	☒	Are there vertical clearance issues? If yes, explain: Structural Bridge work is not part of the project scope.
25.			What is the traffic index? 20-year TI is 8.0-8.5 and 40-year TI is 9.0-9.5
26.	☐	☒	Are there existing retrofit edge drains? Will be considered during PS&E based on Hydraulics recommendation.
27.	☒	☐	Will shoulders be used as detours? More detailed TMP will be done during PS&E.
28.	☐ ☐	☒ ☒	Is there settlement at bridge approaches? Are bridge approach slabs being replaced? Does such replacement include shoulders? Consulted with structures maintenance representative on _____.

	Yes	No	Question
29.	☒	☐	Is there a minimum standard (2% or 1.5%) cross-slope? If not standard, provide date of design exception approval:_____
30.			Provide the pavement condition report. See Materials Memo dated 2/21/13.
31	☐	☒	Other factors? Explain:

State of California
DEPARTMENT OF TRANSPORTATION

Business, Transportation and Housing Agency

Memorandum

Flex your power!
Be energy efficient!

To: ABOLFAZL EMADZADEH
District Branch Chief
Office Design South-Peninsula

Attention: Hossein Khodabakhsh

Date: February 21, 2013

File: 04-SM-92/82
PM 11-11.5/10.3-10.7
04242-235520
Project ID 0412000496
Route 92/82 Interchange
Improvement Project

From: KAN WONG
Materials Design Engineer
Engineering Services I – Materials B

Concurred by: RICHARD CHAN, P.E.
District Materials Engineer
Branch Chief, Materials C

Subject: Materials Recommendation for Route 92/82 Interchange Ramps Widening

This memo is in response to your PA&ED request a materials recommendation on Route 92/82 Interchange Improvement Project. The project proposes three options to construct new and modified ramps and two new signalized intersections on El Camino Real. The project locates in the city and county of San Mateo with project limits on Route 92 from PM 11.0 to PM 11.5 and on Route 82 from PM 10.3 to PM 10.7.

EXISTING CONDITIONS

To date, Route 92, within these project limits, is a 2 lane (each direction) divided highway with vary median and shoulder width. Route 82 within the project limits is a 3-lane (each direction) divided highway and shoulder parking is not allowed. A site visit was conducted on February 5, 2013. Based on field observation, all ramps are AC pavement with PCC curb on both sides; ramp pavement observations are shown below in Table 1.

TABLE 1

TI (40 Year)	TI (20 Year)	Ramp Description	Existing Pavement Conditions
9.0	8.0	EB Route 92 Off Ramp to Route 82 NB.	Good condition with minor cracks.

TI (40 Year)	TI (20 Year)	Ramp Description	Existing Pavement Conditions
9.0	**8.0**	EB Route 92 Off Ramp to Route 82 SB.	Fair condition with transverse cracks and surface seal coat worn off.
9.0	**8.0**	EB Route 92 On Ramp from Route 82 NB.	Fair condition with transverse cracks.
9.0	**8.0**	EB Route 92 On Ramp from Route 82 SB.	Good condition with minor cracks.
9.5	**8.5**	WB Route 92 Off Ramp to Route 82 NB.	Good condition with minor cracks.
9.5	**8.5**	WB Route 92 Off Ramp to Route 82 SB.	Good condition with minor cracks.
9.0	**8.0**	WB Route 92 On Ramp from Route 82 NB.	Good condition with minor cracks.
9.0	**8.0**	WB Route 92 On Ramp from Route 82 SB.	Fair condition with transverse cracks occurred at both ends of the ramp.

Design Factors

A. Traffic Index

An email dated February 6, 2013 from your office provided Traffic Indexes from Advance Planning to Materials for pavement design. 20-year Traffic Indexes of 8.0 and 8.5 and 40-year Traffic Indexes of 9.0 and 9.5 will be used to design the widening pavement (Refer to Table 1 above for each ramp's traffic index). For ease of construction, TI_{20} of 8.5 and TL_{40} of 9.5 are used for ramp design.

B. R-value

A conservative R-value of 25 has been selected for the pavement design. The R-value of 30 was retrieved from our soil survey sheet.

Test Number: Lab No. 819-11P
Date Sampled: 4-1-1955
Sample No.: A-6b at depth of 1.0'-2.0' (Station 42+70 @ 36' Lt)

RECOMMENDATIONS

I. For Widening Ramp Pavement

A. Based on design factors: TI_{20} = 8.5 and R_v = 25, we recommend the following two alternative structural sections:

Alternative 1 – **Full Structural Sections (2 layers)**

0.15' RHMA-G
0.25' HMA (Type A)
1.15' AB (2)
Total thickness = 1.55'

Alternative 2 – **Full Depth HMA Section**

0.15' RHMA-G
0.80' HMA (Type A)
Total thickness = 0.95'

B. Based on design factors: TI_{40} = 9.5 and R_v = 25, we recommend the following two alternative structural sections:

Alternative 3 – **Full Structural Sections (2 layers)**

0.20' RHMA-G
0.65' HMA (Type A)
0.90' AB (2)
Total thickness = 1.75'

Alternative 4 – **Full Depth HMA Section**

0.20' RHMA-G
1.10' HMA (Type A)
Total thickness = 1.30'

II. Due to staging construction of widening of the existing AC pavement surface may be damaged or the scars from grinding out existing pavement strips, we recommend the following:

A. For 20 year ramp widening pavement: cold planning 0.15' existing AC surface and placing back 0.15' RHMA-G.

B. For 40 year ramp widening pavement: cold planning 0.20' existing AC surface and placing back 0.20' RHMA-G.

C. Seal Random Cracks

Clean and seal all cracks 1/4" or wider with Type 3 Crack Treatment Material within the project limits. Any excess sealant materials should be squeezed off.

D. Life Cycle Cost Analysis (LCCA)

A LCCA should be performed using the four (4) flexible pavement alternatives above for both 20-year and 40-year TI. The alternatives with the lowest life cycle cost should be selected for this project. The selected pavement section should be presented on the "Typical Cross Sections" and used in "Cost Estimates".

* * * * * *

If you have any questions, please contact Kan Wong at 622-8814.

Attachments:

cc: Route File, Daily File, RChan

K.Wong/SM-92/82, Interchange Improvement

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Flex your power!
Be energy efficient!

To: ABOLFAZL EMADZADEH
District Branch Chief
Office Design South-Peninsula

Attention: Hossein Khodabakhsh
Ravi Singh

Date: November 5, 2013

File: 04-SM-92/82
PM 10.3-10.7
EA 04-235520
Proj. ID 0412000496
Route 92/82
Interchange
Improvement Project

From: KAN WONG, P.E.
Materials Design Engineer
Engineering Services – Materials B

Concurred by: RICHARD CHAN, P.E.
District Materials Engineer
Branch Chief, Materials B

Subject: **LIFE CYCLE COST ANALYSIS (LCCA) 2nd REVIEW COMMENTS**

This memorandum is in response to your request on October 31, 2013 for our review of your LCCA dated October 31, 2013. The project proposes three options to construct new and modified ramps and two new signalized intersections on El Camino Real. The project locates in the City and County of San Mateo with project limits from PM 11.0 to PM 11.5 on Route 92 and from PM 10.3 to PM 10.7 on Route 82.

Note that, our review **does not** include review of the following input parameters, and the LCCA should also be reviewed by other Caltrans units responsible for the following items:

- Agency Construction Costs for Initial Construction, including unit costs, quantities, items, support costs, etc.
- Project Details and quantity calculations, including project limits, length of project, lane miles, and etc.
- Traffic Data
- Work Zone Data and stage construction
- Lane Closure data
- Lane miles selected for the proposed work

Having reviewed the LCCA, we have the following comments:

Deterministic Results

- Although Alternative #1 of LCCA #3 has the lowest User Cost & Agency Cost, but we recommend constructing with Alternative #2, Full Depth HMA Sections (0.15' RHMA-G/0.80' HMA (Type A)) for ease of construction with minimal handling of different materials types.

* * * * * *

If you have any questions, please contact Kan Wong at 622-8814.

c: Route File, Daily File, RChan

K. Wong/SM-92/82, Interchange Improvement

State of California
DEPARTMENT OF TRANSPORTATION

California State Transportation Agency

Memorandum

Flex your power!
Be energy efficient!

To: ABOLFAZL EMADZADEH
District Branch Chief
Office of Design South Peninsula

Attn: Hossein Khodabakhsh

Date: February 13, 2014
File: 04-SM 92/82, PM 11-11.5/10.3-10.7
EA: 04-235520
Proj. ID: 04-12000496
Route 92/82 Interchange Improvement

From: SAMIA ARA, P.E.
Materials Design Engineer
Engineering Services - Materials B

Concurred by: RICHARD M. CHAN, P.E.
District Materials Engineer
Engineering Services - Materials B

Subject: MATERIALS RECOMMENDATIONS FOR PA&ED

This memo is in response to your request (dated January 27, 2014) for roadway structural section recommendations to upgrade the interchange at Route 92/82 in San Mateo County. Previously, for this project, we have provided materials recommendations for widening and new construction of ramps at this interchange in our memo dated February 21, 2013 and for construction of new CHP enforcement areas and MVPs in our memo dated September 3, 2013. This memo provides structural section recommendations for widening of both Route 92 and Route 82 at the interchange location for use in preparation of Project Approval and Environmental Documents (PA&ED).

As stated, the proposed widening of Route 82/92 Interchange will involve,

- Modification and shifting of both outside shoulders along Route 82 to accommodate a new right turn only lane and a 4-feet bike pocket.
- Addition of outside shoulders between the loop and diagonal on-ramps on both sides of Route 92.

Existing Conditions

Existing condition of Route 82/92 Interchange stated below is based on review of as-built information available in Caltrans Document Retrieval System (DRS) web-site for projects performed at the interchange location and a review of Google Street View Maps (photo collection date May, 2011).

Route 82

Route 82, within the limits of proposed widening, is a divided asphalt paved highway with three travel lanes in each direction. The asphalt surface appears relatively new. A concrete gutter lines

along outer edge of travelled way in both directions. Older asphalt covers a relatively narrow strip between the concrete gutter and the existing concrete sidewalk. The proposed widening will convert this narrow strip as the new shoulder.

From a review of available as-built plans we understand that the existing structural section along Route 82 at the interchange location consists of 0.10' RHMA-G over 0.20' and variable AC, which is underlain by either 0.60' ACB or 0.50' CTB, which is then underlain by 0.33' Crusher Run Base or 0.50' Imported Subbase. The top 0.10' RHMA-G was placed in 2011 under Contract #04-1E7404 (as-built dated 3/30/2011).

Route 92

Within the limits of proposed widening Route 92 is an asphalt paved 2-lane travelled way with shoulders. The existing surface of both EB and WB Route 92 appears relatively new.

From a review of available as-built plans we find that the existing structural section along Route 92 at the interchange location consists of 0.10' RHMA-G/0.30' AC/0.66' CTB/0.83'AS. The shoulder structural section consists of approximately 0.10' RHMA-G/0.15' AC/0.80' AB/0.83'AS. The top 0.10' RHMA-G for both travelled way and shoulders was placed in 2010 under Contract #04-1E7204 (as-built dated 12/17/2010).

Recommendations

Traffic indices calculated using both 20 and 40 year design lives for this project were provided to us by your office. For widening purposes we have selected the 20-yr traffic index of 9.5 for Route 82 and 11.5 for Route 92. These traffic indices are calculated for travelled lanes. However, considering any possible future widening and also the limited extent of new widening for this project, we have decided to use the same structural section for the proposed widening for this project. A design R-value of 25, used previously by our office for reconfiguration of ramps and CHP/MVP locations for this project, is also used for widening of both Routes 82 and 92.

Route 82

TI_{20} =9.5
R Value = 25
Required Gravel Equivalent (GE) = 2.28 feet

Alternative	Thickness (feet)				Total GE (feet)
	RHMA-G	HMA - A	AB (2)	AS (2)	
I	0.15	0.35	0.60	0.75	2.31
II	0.15	0.90			2.36

The proposed new shoulder on Route 82 should be constructed following a neat saw cut along one foot inside of the existing edge of travelled way.

Route 92

TI_{20} =11.5
R Value = 25
Required Gravel Equivalent (GE) = 2.76 feet

Alternative	Thickness (feet)				Total GE (feet)
	RHMA-G	HMA - A	AB (2)	AS (2)	
I	0.15	0.45	0.75	0.90	2.75
II	0.15	1.15			2.87

RHMA – G: Rubberized Hot Mix Asphalt – Type G
HMA – A: Hot Mix Asphalt – Type A
AB (2) Aggregate Base (Class 2)
AS (2): Aggregate Subbase (Class 2)

The proposed widening on Route 92 should be constructed after removal of existing shoulder following a neat saw cut along the edge of travelled way. Safety edge, at the outer edge of new pavement, should be constructed in accordance with Caltrans Standard Plan RSP P76.

General Recommendations for both Routes 82 and 92

Considering the limited extent of widening for this project and for ease of construction, a full depth HMA section (Alternative II) may be preferable to widen both Routes 82 and 92.

Any soils to be placed underneath the new pavement section constructed for this project should have a minimum R-value of 25.

Due to the proposed shoulder widening along both Routes 82 and 92, we anticipate lane line reconfiguration within the proposed improvement area. Hence we recommend, as part of this project, the existing pavement for both Routes 82 and 92 should also be overlaid with 0.15' of RHMA-G. The RHMA-G should be placed in conjunction with the final RHMA-G layer for the proposed widening. If overhead clearance is of concern, the new overlay on Route 82 should be performed following cold planing of equal thickness of existing asphalt surface.

If you have any questions, please call Samia Ara at 622-8794.

c: RChan, SAra, Route File, Daily File
SA/ SM 82/92 – Interchange Improvements

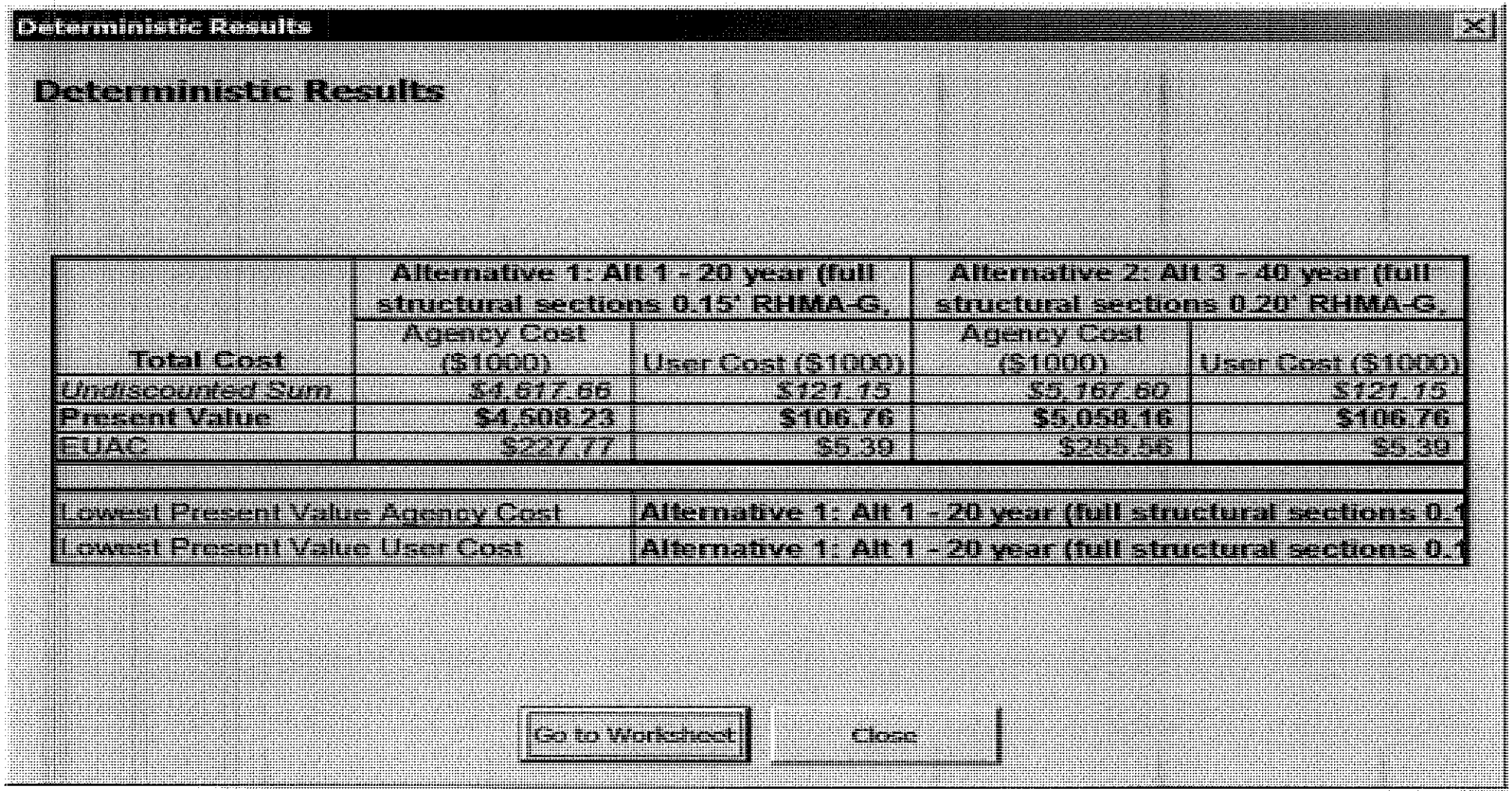
INPUT WORKSHEET			
1. Economic Variables			
Value of Time for Passenger Cars ($/hour)	$10.46		
Value of Time for Single Unit Trucks ($/hour)	$27.83		
Value of Time for Combination Trucks ($/hour)	$27.83		
2. Analysis Options			
Include User Costs in Analysis	Yes	Yes	
Include User Cost Remaining Service Life Value	Yes	Yes	
Use Differential User Costs	Yes	Yes	
User Cost Computation Method	Calculated	Calculated	
Include Agency Cost Remaining Service Life Value	Yes	Yes	
Traffic Direction	Both	Both	
Analysis Period (Years)	40		
Beginning of Analysis Period	2016		
Discount Rate (%)	4.0		
3. Project Details and Quantity Calculations			
State Route	92/82		
Project Name	Route 92/82 I/C Improvement		
Region	District 4		
County	SM		
Analyzed By	Maxim Hovhanessain/Ravi Singh		
Mileposts			
Begin	11.00		
End	11.50		
Length of Project (miles)	0.50		
Comments	To improve and reconstruct the route 92/82 interchange and analysis for Draft Project Report.		
4. Traffic Data			
AADT Construction Year (total for both directions)	122,847		
Cars as Percentage of AADT (%)	97.7		
Single Unit Trucks as Percentage of AADT (%)	1.4		
Combination Trucks as Percentage of AADT (%)	0.9		
Annual Growth Rate of Traffic (%)	0.7		
Speed Limit Under Normal Operating Conditions (mph)	65		
No of Lanes in Each Direction During Normal Conditions	3		
Free Flow Capacity (vphpl)	1950		
Rural or Urban Hourly Traffic Distribution	Urban	Urban	
Queue Dissipation Capacity (vphpl)	1530		
Maximum AADT (total for both directions)	193,220		
Maximum Queue Length (miles)	5.0		

Probabilistic Life Cycle Cost Analysis Worksheet

5. Construction			
I. Alternative 1	Alt 1 - 20 year (full structural sections 0.15' R		
Initial Construction	0		
Agency Construction Cost ($1000)	$4,222.82		
User Work Zone Costs ($1000)			
Work Zone Duration (days)	2.4		
No of Lanes Open in Each Direction During Work Zone	1		
Activity Service Life (years)	6.0		
Maintenance Frequency (years)	1		
Agency Maintenance Cost ($1000)	1.8		
Work Zone Length (miles)	1.00		
Work Zone Speed Limit (mph)	55		
Work Zone Capacity (vphpl)	1360		
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
Inbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Outbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Rehabilitation #1	5+ year RHMA mill & overlay		
Agency Construction Cost ($1000)	$280.84		
User Work Zone Costs ($1000)			
Work Zone Duration (days)	2.4		
No of Lanes Open in Each Direction During Work Zone	1		
Activity Service Life (years)	22.0		
Maintenance Frequency (years)	1		
Agency Maintenance Cost ($1000)	5		
Work Zone Length (miles)	1.00		
Work Zone Speed Limit (mph)	55		
Work Zone Capacity (vphpl)	1360		
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
Inbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Outbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			

Probabilistic Life Cycle Cost Analysis Worksheet

II. Alternative 2	Alt 3 - 40 year (full structural sections 0.20' R		
Initial Construction	0		
Agency Construction Cost ($1000)	$4,772.76		
User Work Zone Costs ($1000)			
Work Zone Duration (days)	2.4		
No of Lanes Open in Each Direction During Work Zone	1		
Activity Service Life (years)	6.0		
Maintenance Frequency (years)	1		
Agency Maintenance Cost ($1000)	1.8		
Work Zone Length (miles)	1.00		
Work Zone Speed Limit (mph)	55		
Work Zone Capacity (vphpl)	1360		
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
Inbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Outbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Rehabilitation #1	5+ year RHMA mill & overlay		
Agency Construction Cost ($1000)	$280.84		
User Work Zone Costs ($1000)			
Work Zone Duration (days)	2.4		
No of Lanes Open in Each Direction During Work Zone	1		
Activity Service Life (years)	22.0		
Maintenance Frequency (years)	1		
Agency Maintenance Cost ($1000)	5		
Work Zone Length (miles)	1.00		
Work Zone Speed Limit (mph)	55		
Work Zone Capacity (vphpl)	1360		
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
Inbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Outbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			



Choose **Alt 1** (20-year - full structural Sec - 0.15' RHMA-G, & 0.25' HMA & 1.15' AB).

Probabilistic Life Cycle Cost Analysis Worksheet

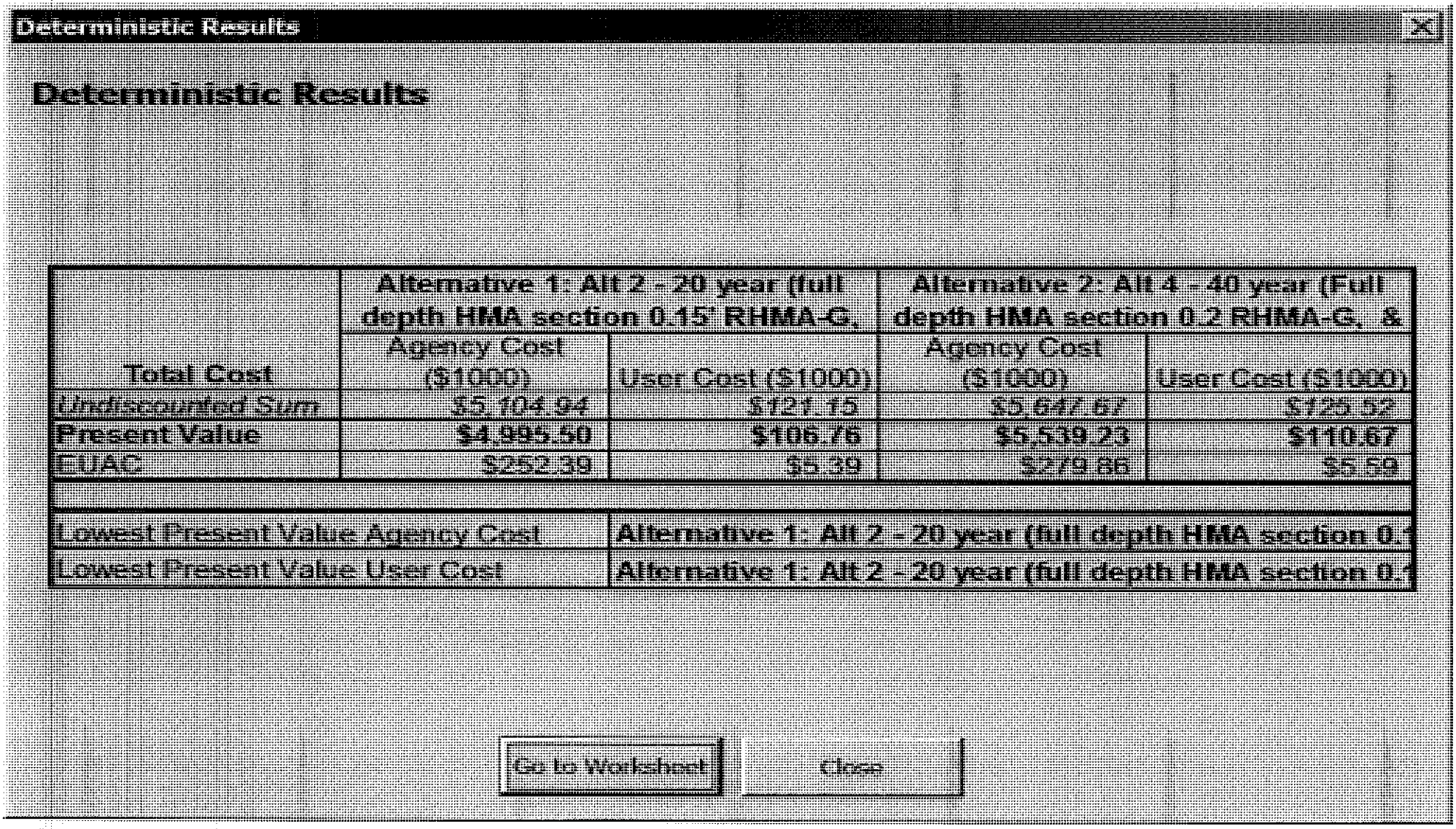
INPUT WORKSHEET			
1. Economic Variables			
Value of Time for Passenger Cars ($/hour)	$10.46		
Value of Time for Single Unit Trucks ($/hour)	$27.83		
Value of Time for Combination Trucks ($/hour)	$27.83		
2. Analysis Options			
Include User Costs in Analysis	Yes	Yes	
Include User Cost Remaining Service Life Value	Yes	Yes	
Use Differential User Costs	Yes	Yes	
User Cost Computation Method	Calculated	Calculated	
Include Agency Cost Remaining Service Life Value	Yes	Yes	
Traffic Direction	Both	Both	
Analysis Period (Years)	40		
Beginning of Analysis Period	2016		
Discount Rate (%)	4.0		
3. Project Details and Quantity Calculations			
State Route	92/82		
Project Name	Route 92/82 I/C Improvement		
Region	District 4		
County	SM		
Analyzed By	Maxim Hovhanessain/Ravi Singh		
Mileposts			
Begin	11.00		
End	11.50		
Length of Project (miles)	0.50		
Comments	To improve and reconstruct the route 92/82 interchange and analysis for Draft Project Report.		
4. Traffic Data			
AADT Construction Year (total for both directions)	122,847		
Cars as Percentage of AADT (%)	97.7		
Single Unit Trucks as Percentage of AADT (%)	1.4		
Combination Trucks as Percentage of AADT (%)	0.9		
Annual Growth Rate of Traffic (%)	0.7		
Speed Limit Under Normal Operating Conditions (mph)	65		
No of Lanes in Each Direction During Normal Conditions	3		
Free Flow Capacity (vphpl)	1950		
Rural or Urban Hourly Traffic Distribution	Urban	Urban	
Queue Dissipation Capacity (vphpl)	1530		
Maximum AADT (total for both directions)	193,220		
Maximum Queue Length (miles)	5.0		

Probabilistic Life Cycle Cost Analysis Worksheet

5. Construction			
I. Alternative 1	Alt 2 - 20 year (full depth HMA section 0.15'		
Initial Construction	0		
Agency Construction Cost ($1000)	$4,710.10		
User Work Zone Costs ($1000)			
Work Zone Duration (days)	2.4		
No of Lanes Open in Each Direction During Work Zone	1		
Activity Service Life (years)	6.0		
Maintenance Frequency (years)	1		
Agency Maintenance Cost ($1000)	1.8		
Work Zone Length (miles)	1.00		
Work Zone Speed Limit (mph)	55		
Work Zone Capacity (vphpl)	1360		
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
Inbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Outbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Rehabilitation #1	5+ year RHMA mill & overlay		
Agency Construction Cost ($1000)	$280.84		
User Work Zone Costs ($1000)			
Work Zone Duration (days)	2.4		
No of Lanes Open in Each Direction During Work Zone	1		
Activity Service Life (years)	22.0		
Maintenance Frequency (years)	1		
Agency Maintenance Cost ($1000)	5		
Work Zone Length (miles)	1.00		
Work Zone Speed Limit (mph)	55		
Work Zone Capacity (vphpl)	1360		
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
Inbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Outbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			

Probabilistic Life Cycle Cost Analysis Worksheet

II.	***Alternative 2***	Alt 4 - 40 year (Full depth HMA section 0.2 R		
	Initial Construction	0		
	Agency Construction Cost ($1000)	$5,257.59		
	User Work Zone Costs ($1000)			
	Work Zone Duration (days)	2.4		
	No of Lanes Open in Each Direction During Work Zone	1		
	Activity Service Life (years)	6.0		
	Maintenance Frequency (years)	1		
	Agency Maintenance Cost ($1000)	1.8		
	Work Zone Length (miles)	1.00		
	Work Zone Speed Limit (mph)	45		
	Work Zone Capacity (vphpl)	1360		
	Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
	Inbound	Start	End	
	First period of lane closure	0	6	
	Second period of lane closure	21	24	
	Third period of lane closure			
	Outbound	Start	End	
	First period of lane closure	0	6	
	Second period of lane closure	21	24	
	Third period of lane closure			
	Rehabilitation #1	5+ year RHMA mill & overlay		
	Agency Construction Cost ($1000)	$276.08		
	User Work Zone Costs ($1000)			
	Work Zone Duration (days)	2.4		
	No of Lanes Open in Each Direction During Work Zone	1		
	Activity Service Life (years)	22.0		
	Maintenance Frequency (years)	1		
	Agency Maintenance Cost ($1000)	5		
	Work Zone Length (miles)	1.00		
	Work Zone Speed Limit (mph)	45		
	Work Zone Capacity (vphpl)	1360		
	Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
	Inbound	Start	End	
	First period of lane closure	0	6	
	Second period of lane closure	21	24	
	Third period of lane closure			
	Outbound	Start	End	
	First period of lane closure	0	6	
	Second period of lane closure	21	24	
	Third period of lane closure			



Choose **Alt 2** (20-year - full depth HMA Sec - 0.15' RHMA-G, & 0.80' HMA).

Probabilistic Life Cycle Cost Analysis Worksheet

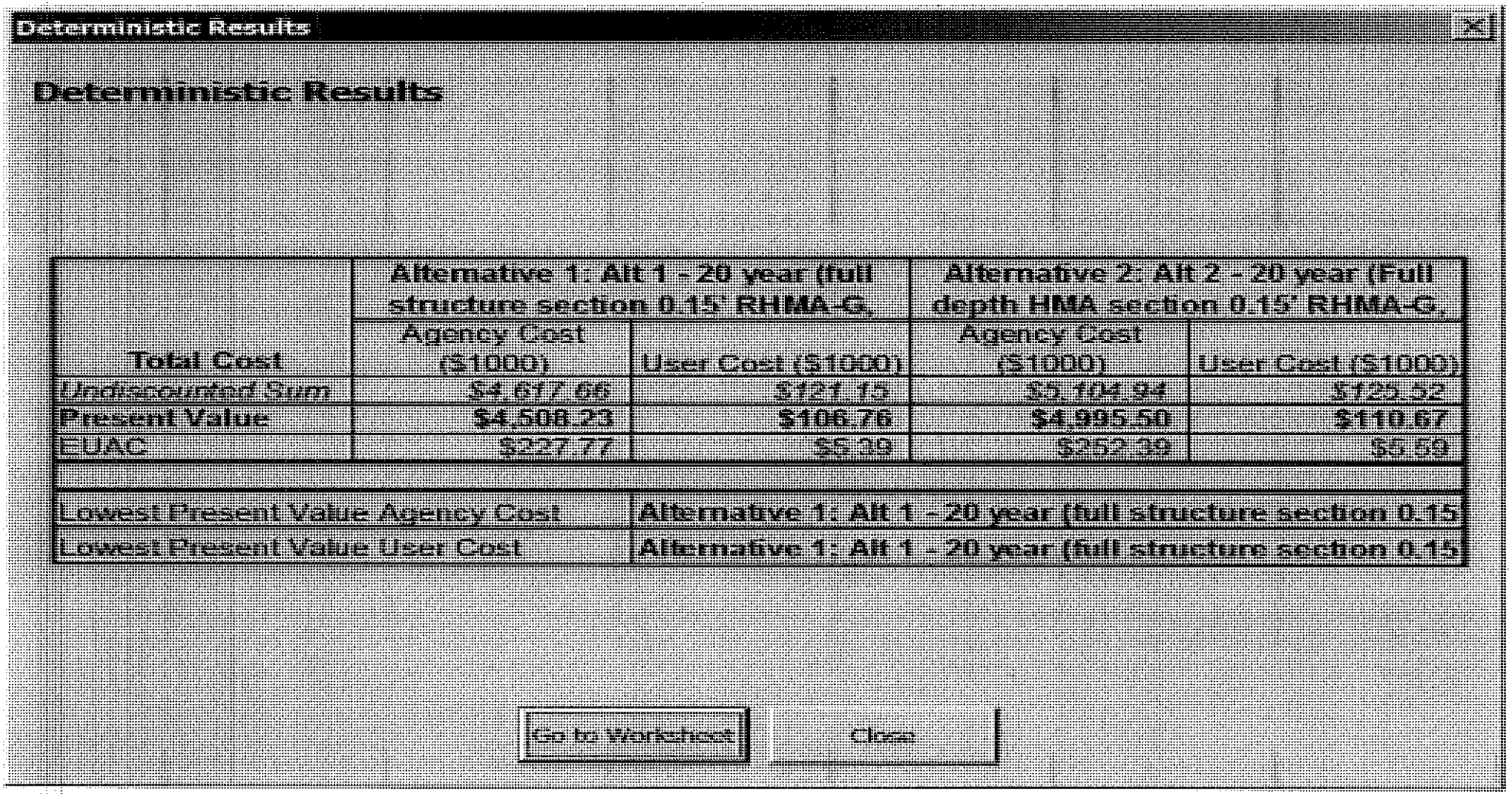
INPUT WORKSHEET			
1. Economic Variables			
Value of Time for Passenger Cars ($/hour)	$10.46		
Value of Time for Single Unit Trucks ($/hour)	$27.83		
Value of Time for Combination Trucks ($/hour)	$27.83		
2. Analysis Options			
Include User Costs in Analysis	Yes	Yes	
Include User Cost Remaining Service Life Value	Yes	Yes	
Use Differential User Costs	Yes	Yes	
User Cost Computation Method	Calculated	Calculated	
Include Agency Cost Remaining Service Life Value	Yes	Yes	
Traffic Direction	Both	Both	
Analysis Period (Years)	40		
Beginning of Analysis Period	2016		
Discount Rate (%)	4.0		
3. Project Details and Quantity Calculations			
State Route	92/82		
Project Name	Route 92/82 I/C Improvement		
Region	District 4		
County	SM		
Analyzed By	Maxim Hovhanessain/Ravi Singh		
Mileposts			
Begin	11.00		
End	11.50		
Length of Project (miles)	0.50		
Comments	To improve and reconstruct the route 92/82 interchange and analysis for Draft Project Report.		
4. Traffic Data			
AADT Construction Year (total for both directions)	122,847		
Cars as Percentage of AADT (%)	97.7		
Single Unit Trucks as Percentage of AADT (%)	1.4		
Combination Trucks as Percentage of AADT (%)	0.9		
Annual Growth Rate of Traffic (%)	0.7		
Speed Limit Under Normal Operating Conditions (mph)	65		
No of Lanes in Each Direction During Normal Conditions	3		
Free Flow Capacity (vphpl)	1950		
Rural or Urban Hourly Traffic Distribution	Urban	Urban	
Queue Dissipation Capacity (vphpl)	1530		
Maximum AADT (total for both directions)	193,220		
Maximum Queue Length (miles)	5.0		

Probabilistic Life Cycle Cost Analysis Worksheet

5. Construction			
I. Alternative 1	Alt 1 - 20 year (full structure section 0.15' RH		
Initial Construction	0		
Agency Construction Cost ($1000)	$4,222.82		
User Work Zone Costs ($1000)			
Work Zone Duration (days)	2.4		
No of Lanes Open in Each Direction During Work Zone	1		
Activity Service Life (years)	6.0		
Maintenance Frequency (years)	1		
Agency Maintenance Cost ($1000)	1.8		
Work Zone Length (miles)	1.00		
Work Zone Speed Limit (mph)	55		
Work Zone Capacity (vphpl)	1360		
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
Inbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Outbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Rehabilitation #1	5+ year RHMA mill & overlay		
Agency Construction Cost ($1000)	$280.84		
User Work Zone Costs ($1000)			
Work Zone Duration (days)	2.4		
No of Lanes Open in Each Direction During Work Zone	1		
Activity Service Life (years)	22.0		
Maintenance Frequency (years)	1		
Agency Maintenance Cost ($1000)	5		
Work Zone Length (miles)	1.00		
Work Zone Speed Limit (mph)	55		
Work Zone Capacity (vphpl)	1360		
Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
Inbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			
Outbound	Start	End	
First period of lane closure	0	6	
Second period of lane closure	21	24	
Third period of lane closure			

Probabilistic Life Cycle Cost Analysis Worksheet

II.	***Alternative 2***	Alt 2 - 20 year (Full depth HMA section 0.15'		
	Initial Construction	0		
	Agency Construction Cost ($1000)	$4,710.10		
	User Work Zone Costs ($1000)			
	Work Zone Duration (days)	2.4		
	No of Lanes Open in Each Direction During Work Zone	1		
	Activity Service Life (years)	6.0		
	Maintenance Frequency (years)	1		
	Agency Maintenance Cost ($1000)	1.8		
	Work Zone Length (miles)	1.00		
	Work Zone Speed Limit (mph)	45		
	Work Zone Capacity (vphpl)	1360		
	Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
	Inbound	Start	End	
	First period of lane closure	0	6	
	Second period of lane closure	21	24	
	Third period of lane closure			
	Outbound	Start	End	
	First period of lane closure	0	6	
	Second period of lane closure	21	24	
	Third period of lane closure			
	Rehabilitation #1	5+ year RHMA mill & overlay		
	Agency Construction Cost ($1000)	$280.84		
	User Work Zone Costs ($1000)			
	Work Zone Duration (days)	2.4		
	No of Lanes Open in Each Direction During Work Zone	1		
	Activity Service Life (years)	22.0		
	Maintenance Frequency (years)	1		
	Agency Maintenance Cost ($1000)	5		
	Work Zone Length (miles)	1.00		
	Work Zone Speed Limit (mph)	45		
	Work Zone Capacity (vphpl)	1360		
	Time of Day of Lane Closures (use whole numbers based on a 24-hour clock)			
	Inbound	Start	End	
	First period of lane closure	0	6	
	Second period of lane closure	21	24	
	Third period of lane closure			
	Outbound	Start	End	
	First period of lane closure	0	6	
	Second period of lane closure	21	24	
	Third period of lane closure			



Therefore by comparing all 4 alternatives mentioned in the materials recommendation report, the lowest User Cost & Agency Cost is Alt 1. Final result is to choose **Alt 1**.

ATTACHMENT I

TMP DATA SHEET

TRANSPORTATION MANAGEMENT PLAN DATA SHEET
(Preliminary TMP Elements and Costs)

Co/Rte/PM: SM/92/11.0~11.5 / SM/82/10.3~10.7 EA 235520 Project Engineer: Hossein Khodabakhs

Project Limit: Rte 92 in San Mateo County in the City of San Mateo at Rte 92/82 Interchange

Project Description: Reconstruct the existing Rte 92/82 interchange to a partial cloverleaf. The new interchange will have HOA lanes, retaining walls, a soundwall, 2 new Signalized on and off ramps on El Camino Real

1) Public Information

☐	a. Brochures and Mailers	$
☒	b. Press Release	
☐	c. Paid Advertising	$
☐	d. Public Information Center/Kiosk	$
☐	e. Public Meeting/Speakers Bureau	
☐	f. Telephone Hotline	
☐	g. Internet, E-mail	
☐	h. Notification to impacted groups (i.e. bicycle users, pedestrians with disabilities, others…)	
☒	i. Others	$ 80,000.00

2) Traveler Information Strategies

☐	a. Changeable Message Signs (Fixed)	$
☒	b. Changeable Message Signs (Portable)	$ 120,000.00
☒	c. Ground Mounted Signs	$ 10,000.00
☐	d. Highway Advisory Radio	$
☐	e. Caltrans Highway Information Network (CHIN)	
☒	f. Detour maps (i.e. bicycle, vehicle, pedestrian...etc)	
☐	g. Revised Transit Schedules/maps	
☐	h. Bicycle community information	
☐	i. Others	
		$

3) Incident Management

☒	a. Construction Zone Enhanced Enforcement Program (COZEEP)	$ 200,000.00
☐	b. Freeway Service Patrol	$
☐	c. Traffic Management Team	
☐	d. Helicopter Surveillance	$
☐	e. Traffic Surveillance Stations (Loop Detector and CCTV)	$
☒	f. Others (Flagger)	$ 40,000.00

TMP Data Sheet (cont.)

4) Construction Strategies

- [x] a. Lane Closure Chart
- [ ] b. Reversible Lanes
- [x] c. Total Facility Closure
- [ ] d. Contra Flow
- [x] e. Truck Traffic Restrictions $ _____
- [x] f. Reduced Speed Zone $ _____
- [ ] g. Connector and Ramp Closures
- [ ] h. Incentive and Disincentive $ _____
- [ ] i. Moveable Barrier $ _____
- [ ] _____ _____
- [ ] j. Others _____ $ _____

5) Demand Management

- [ ] a. HOV Lanes/Ramps (New or Convert) $ _____
- [ ] b. Park and Ride Lots $ _____
- [ ] c. Rideshare Incentives $ _____
- [ ] d. Variable Work Hours
- [ ] e. Telecommute
- [ ] f. Ramp Metering (Temporary Installation) $ _____
- [ ] g. Ramp Metering (Modify Existing) $ _____
- [ ] h. Others _____ $ _____

6) Alternate Route Strategies

- [ ] a. Add Capacity to Freeway Connector $ _____
- [ ] b. Street Improvement (widening, traffic signal... etc) $ _____
- [ ] c. Traffic Control Officers $ _____
- [ ] d. Parking Restrictions
- [ ] e. Others _____ $ _____

7) Other Strategies

- [ ] a. Application of New Technology $ _____
- [ ] b. Others _____ $ _____

TOTAL ESTIMATED COST OF TMP ELEMENTS = $ 450,000.00

*Please note that any change in project scope, schedule, or cost will require re-submittal of TMP Data Sheet request.

PREPARED BY Louis Wong DATE 7/11/2013

APPROVAL RECOMMENDED BY Ron Ho DATE 7/11/2013

ATTACHMENT J

RISK MANAGEMENT PLAN

LEVEL 2 - RISK REGISTER	Project Name:	92-82 INTERCHANGE RECONSTRUCTION PROJECT	DIST- EA	04-235520	Project Manager	AL B LEE	Risk Manager	Raoul Maltez

Risk Identification						Probability		Cost Impact ($)				Time Impact (days)				Rationale	Risk Response				
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable		Strategy	Response Actions	Risk Owner	Updated	Risk Rating
Active	1	Organizational	Funding for Construction Capital	Construction cost may be increasing per recently bidded projects (cost data) and additional funds may be needed to fund the project	Cost may continue to increase.	10	30	$ 50,000	$ 1,000,000	$ 1,500,000	$ 170,000	0	0	0	0	Magnitude of structures estimate had major impact to DPR cost.	Accept	Continue monitoring cost and report to project sponsor	City of San Mateo	4/23/2014	Low
Active	2	Environmental	Underground Storage Tank	Project research indicated two underground storage tanks in vincity of the project and could lead to additional design effort and project cost to remediate and remove.	Allow extra time for potholing to locate, investigate, remediate, and provide appropriate specifications for removal.	25	60	$ 50,000	$ 75,000	$ 100,000	$ 32,000	10	25	50	12	Impact to Design Work.	Mitigate	Positively identify the underground storage tanks and address remediation in project specifications.	Design	4/23/2014	Med
Active	3	Construction	Hazardous Material	Hazardous Materials encountered during construction will require an on-site storage area and potential additional cost to dispose	Investigate during design phase.	10	30	$ 10,000	$ 10,000	$ 20,000	$ 3,000	10	10	20	3	Typical construction risk on State RW.	Mitigate	Identify Hazardous Materials and /or adequately add Supplemental Funds.	Environmental	4/23/2014	Low
Active	4	Construction	Buried objects	Unanticipated buried man-made objects uncovered during construction require removal and disposal resulting in unknown additional cost	City of San Mateo and ECR was built up throughout the 1900's and can expect buried objects.	10	30	$ 25,000	$ 35,000	$ 50,000	$ 7,000	5	10	15	2	Add funding to supplemental fund item.	Accept	Provide adequate funding to the Supplemental Funds.	Construction	4/23/2014	Low
Active	5	Design	Unforeseen Utility Impacts	Unforeseen Utility Impacts may cost additional capital cost and/or impact design schedule.	Preliminary PA&ED level research performed.	20	40	$ 100,000	$ 200,000	$ 300,000	$ 60,000	0	0	0	0	No time impact because typical design work includes research of available information.	Accept	Typical 5% contingency funds may address this risk.	Design	4/23/2014	Low
Active	6	Environmental	Nesting Birds	Nesting Birds, protected from harassment under the migratory Bird Treaty Act, may delay construction during the nesting season.	Standard practiceis to identify this. Existing landscape will be replaced with new landscape plan.	5	30	$ 2,000	$ 5,000	$ 15,000	$ 1,000	5	15	30	3	Typical construction risk on State RW.	Accept	Provide adequate specifications in the design phase.	Construction	4/23/2014	Low
					PA&ED, PSE and Construction Cost Risk Total =						$ 1,523,000										
Retired	7	Design	Bike Pocket/Bike Lane Improvements	Uncertainty if bike pocket concept can be incorporated in the design could lead to PA&ED delays.	Team met with safety, geometrician and D4 bike coordinator and decided on a bike pocket proposal for the DPR. Met with team over two month period to revise bike pavement striping	75	100	$ 1,000	$ 5,000	$ 10,000	$ 5,000	30	75	100	60	Resolving task had impact to time and cost. Public comments delayed PR two months.	Mitigate	Proposed bike pocket in DPR and will consider comments during the 30 day comment period,if any. There were 11 comments pertaining to bike issues. Project team revised and have satisfactory addressed	Design	4/23/2014	Med
Retired	8	Design	Drainage ponding	Design and reconstruction for existing minor drainage ponding at EB 92 structure on and off ramp may be outside of scope of work and affect cost and schedule.	Project sponsor informed that drainage work was not within scope of project. PM informed functional unit to investigate extent and find appropriate programming.	10	20	$ 5,000	$ 7,500	$ 10,000	$ 1,000	5	10	15	2	Additional time spent investigating existing drainage features.	Transfer	Request Hydraulics office to further investigate and seek programming if necessary.	Hydraulics	4/23/2014	Low
Retired	9	Organizational	Traffic Analysis Operations Report (TOAR)	Inability to complete TOAR may lead to PA&ED schedule delays	TOAR completed on Oct 30, 2013.	60	100	$ 80,000	$ 100,000	$ 120,000	$ 80,000	80	100	120	80	Original schedule set TOAR completion by March 2013.	Mitigate	Elevated commitment to TOAR completion through project sponsor and D4 management.	PM	11/26/2013	High
Retired	10	Organizational	Design Alternatives	Design Alternatives have increased to three which may lead to increased design support cost and increase schedule.	Diamond interchange and L-8 configuration were considered and dismissed early in the design due to operational flaws.	25	50	$ 20,000	$ 30,000	$ 40,000	$ 11,000	20	40	180	30	If additional alternatives are taken through environmental, cost and time would increase.	Mitigate	Evaluated Diamond and L-8 and established review committee consisting of geometrician and safety. Alternatives were dismissed prior to any environmental research or analysis.	PM	11/26/2013	High
Retired	11	R/W	Surveys (RW Engineering)	Design survey lead time could affect PA&ED schedule.	Topo information did not exist and design survey was requested. Lack of survey information delayed preliminary layout until survey was delivered in December 2012.	25	50	$ 5,000	$ 7,500	$ 10,000	$ 3,000	20	40	50	14	Lack of survey had time minor impact on alternative development. Impact related to inability to provide conceptual layout early in the process where other functional units needed this to perform their work.	Mitigate	Elevated to management to ensure delivery. Requested design to work around or temporarily assume information until accurate information is received.	Design	11/26/2013	Low
Retired	12	R/W	Right of Entry	Inability to access private property to perform noise readings may affect project PA&ED schedule.	Requisite access was provided in Dec 2012 and noise survey was completed in early 2013.	20	50	$ 5,000	$ 7,500	$ 20,000	$ 4,000	20	30	60	13	Right of Entry had impact to performing noise study	Accept	Additional backup requests were made incase of non-responsiveness or denial of entry.	Environmental	11/26/2013	Low
Retired	13	Organizational	Aesthetic considerations	92/82 interchange reconstruction project may increase visual appeal of area.	Anti graffiti treatment and new landscaping was developed early in the project.	40	60	$ 50,000	$ 75,000	$ 100,000	$ 38,000	20	30	40	15	Development of this task had impact to cost and schedule.	Enhance	Team met with City of SM throughout process to discuss needs	City of San Mate0	11/26/2013	Low
Retired	14	R/W	Additional RW Temporary Construction Easement	Optimum geometric design proposes retaining wall in close proxity of RW where it may be required to obtain temporary construction easement at NE and SW quadrant at new diagonal off ramps.	Design geometry maximizes RW.	10	40	$ 50,000	$ 60,000	$ 70,000	$ 15,000	20	40	60	10	Design reported that RW TCE is not needed.	Accept	Verify during PSE by requesting footing dimensions to ensure that TCE is not needed.	RW	12/16/2013	Med
Retired	15	Organizational	New Sound wall	New sound wall may trigger comments that were unanticipated and additional time and funds may be needed to address comments.	Sound wall is shown on Plans and discussed in DED/DPR.	5	25	$ 2,000	$ 5,000	$ 8,000	$ 1,000	1	5	10	1	Sound wall is not visible from main thoroughfare (El Camino Real).	Accept	Have resources available to respond to comments, if any.	Design	4/23/2014	Low
Retired	16	Environmental	Potential opposition to EIS/Neg. Declaration	Potential opposition through public comment to the Environmental Report may delay the start of design phase.	Ensure public is notified per Department guidelines and provide adequate time for public response.	5	25	$ 5,000	$ 15,000	$ 20,000	$ 2,000	1	10	20	2	Non-controversial project	Accept	Have resources available to respond to comments, if any. 41 comments were received.	PM	4/23/2014	Low
Retired	17	Design	Structures Cost Estimate	Future structures estimate for retaining wall and sound walls may affect Draft Project Report capital estimate.	DPR structures estimate was higher than expected and increased DPR capital estimate. Future cost increase needs to be monitored.	30	70	$ 1,000,000	$ 2,500,000	$ 4,000,000	$ 1,250,000	0	0	0	0	Construction cost is increasing and may affect future project cost estimates.	Accept	Informed project sponsor and explained the reasons why the estimate increased.	Design	4/23/2014	Med
					Retired Risk Cost to the Project including Design Support and Construction Capital Cost =						$ 1,410,000										

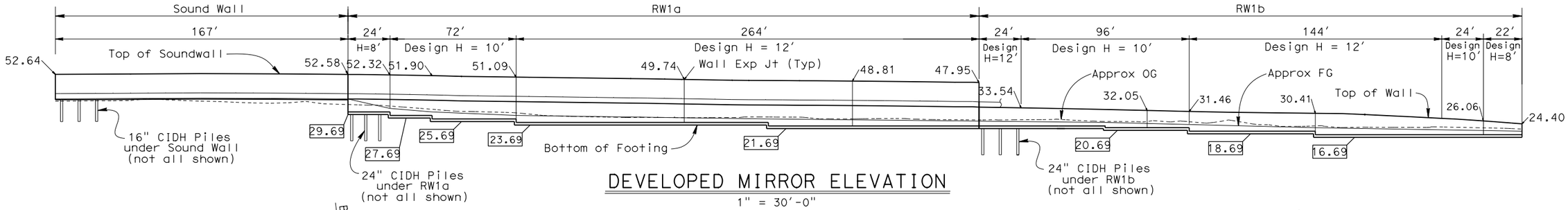
*Retired risks were developed before the advent of new Risk Management process and have been included here for information purpose only.

ATTACHMENT K

STRUCTURE ADVANCE PLANNING STUDIES

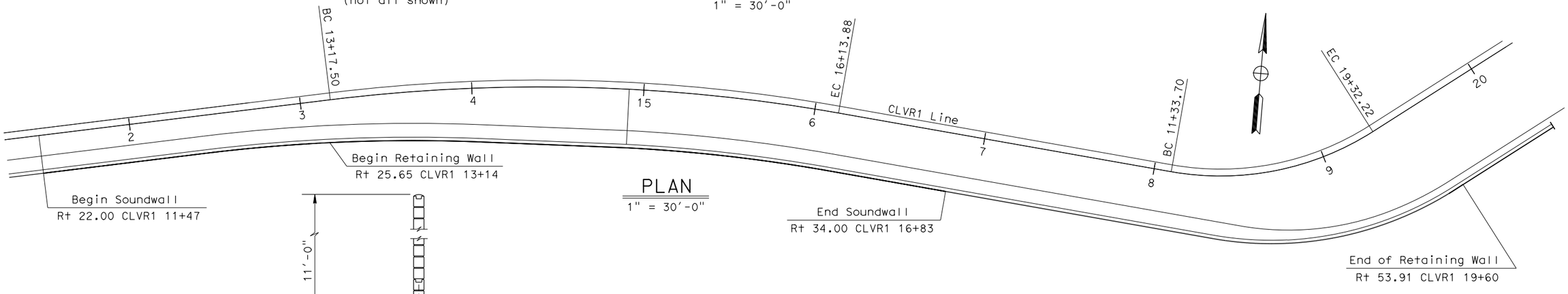
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES

DIST	COUNTY	ROUTE	POST MILE
04	SM	92/82	11



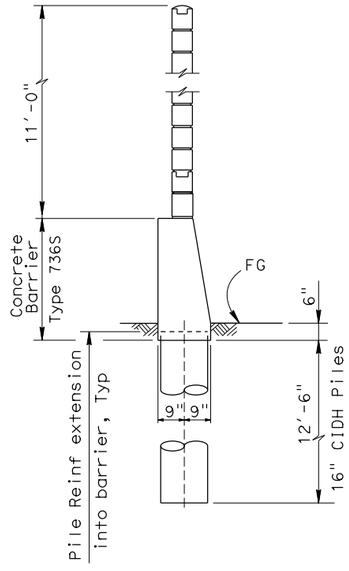
DEVELOPED MIRROR ELEVATION

1" = 30′-0"



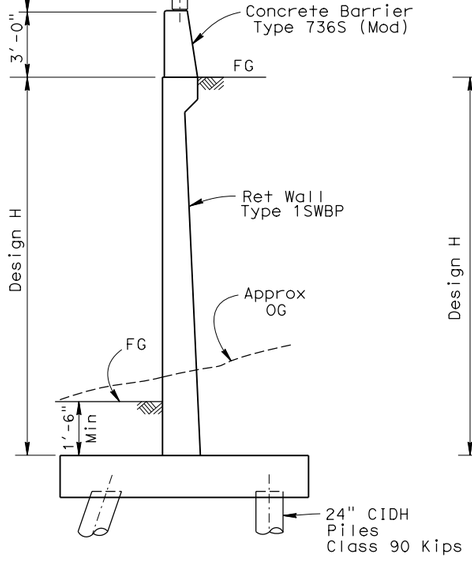
PLAN

1" = 30′-0"



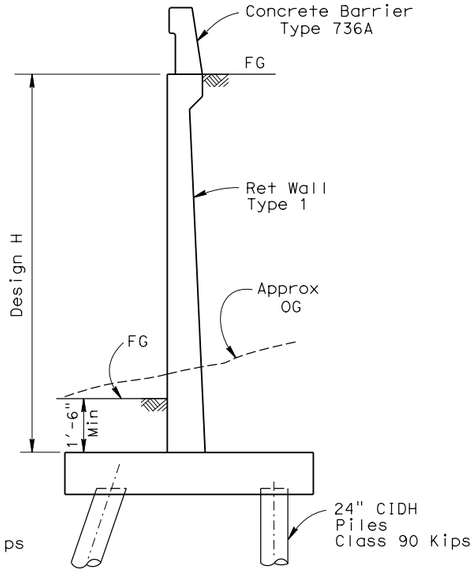
Soundwall

CLVR1 11+47 to 13+14



RW1a

CLVR1 13+14 to 16+83



RW1b

CLVR1 16+83 to 19+60

TYPICAL SECTIONS

No Scale

DATE OF ESTIMATE	=	10/03/13
BRIDGE REMOVAL	=	
STRUCTURE DEPTH	=	
LENGTH	=	837.00
WIDTH	=	
AREA	=	
COST/□FT INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
TOTAL COST	=	$2,204,000.00

DESIGNED BY	Alireza Yazdani	DATE	9-6-13
DRAWN BY	Steve Daplas	DATE	9-6-13
CHECKED BY	Ghiath Taleb-Agha	DATE	9-6-13
APPROVED	Muthanna Omran	DATE	9-6-13

STRUCTURE DESIGN BRANCH 16

SHEET	OF
1	3

PLANNING STUDY

HWY 92 / CAMINO REAL

UNIT: 3617	BRIDGE No. X
SCALE: AS NOTED	PROJECT No. & PHASE: X

CONTRACT No.:

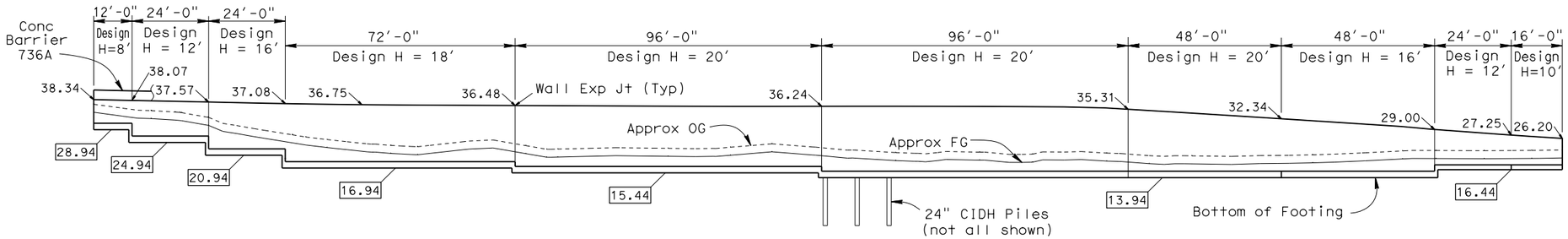
USERNAME => s128883 DATE PLOTTED => 14-OCT-2013 TIME PLOTTED => 14:18

STRUCTURES DESIGN ADVANCE PLANNING STUDY SHEET (ENGLISH) (REV. 08-09-10)

FILE => apsCLVR1.dgn

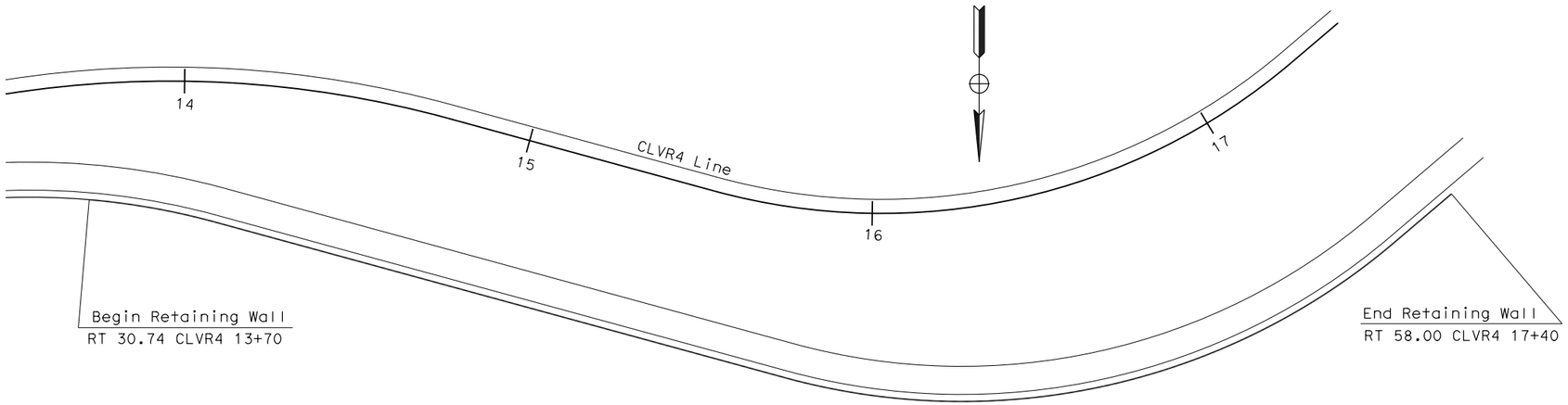
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES

DIST	COUNTY	ROUTE	POST MILE
04	SM	92/82	11



DEVELOPED MIRROR ELEVATION

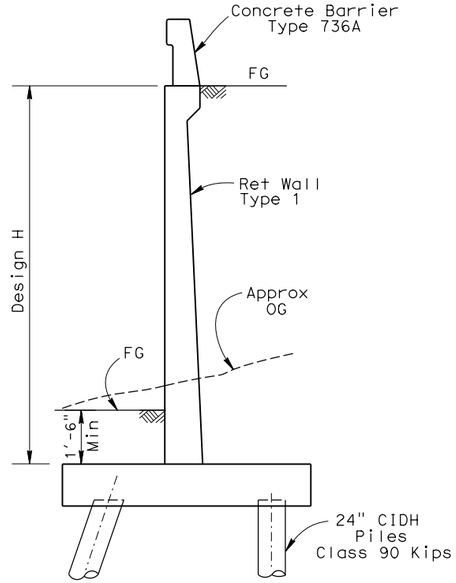
1" = 20′-0"



PLAN

1" = 20′-0"

DATE OF ESTIMATE		10/03/13
BRIDGE REMOVAL	=	
STRUCTURE DEPTH	=	
LENGTH	=	460.00
WIDTH	=	
AREA	=	
COST/□FT INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
TOTAL COST	=	$1,608,000.00



TYPICAL SECTION

No Scale

SHEET	OF
2	3

DESIGNED BY Alireza Yazdani	DATE 9-6-13	STRUCTURE DESIGN BRANCH 16	PLANNING STUDY
DRAWN BY Steve Daplas	DATE 9-6-13		HWY 92 / CAMINO REAL
CHECKED BY Ghiath Taleb-Agha	DATE 9-6-13		UNIT: 3617 / BRIDGE No. X
APPROVED Muthanna Omran	DATE 9-6-13		SCALE: AS NOTED / PROJECT No. & PHASE: X

CONTRACT No.:

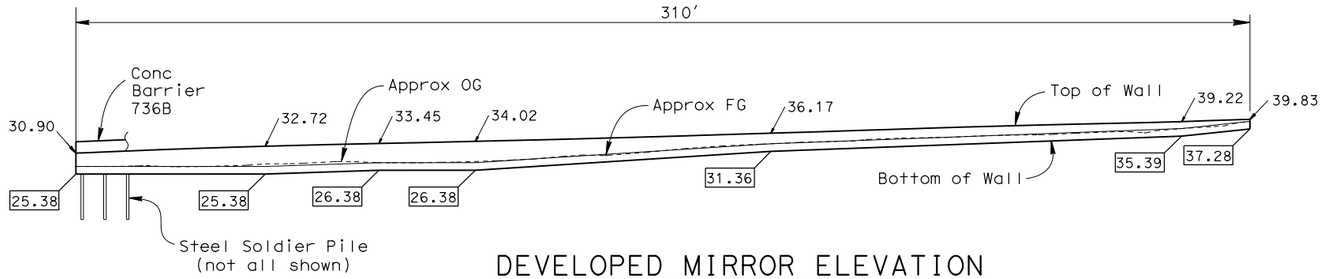
USERNAME => s128883 DATE PLOTTED => 04-OCT-2013 TIME PLOTTED => 15:38

FILE => apsCLVR4.dgn

STRUCTURES DESIGN ADVANCE PLANNING STUDY SHEET (ENGLISH) (REV. 08-09-10)

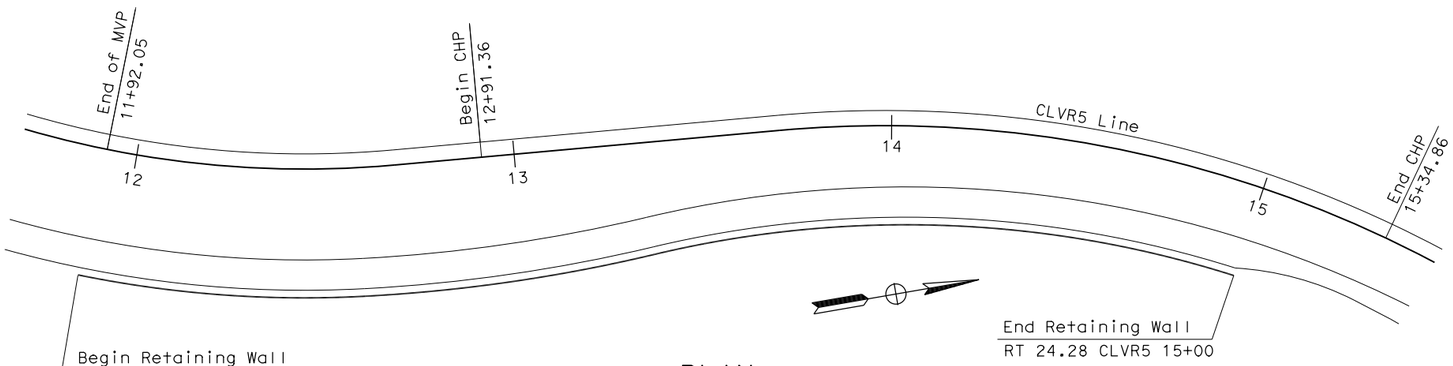
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION - DIVISION OF STRUCTURES

DIST	COUNTY	ROUTE	POST MILE
04	SM	92/82	11



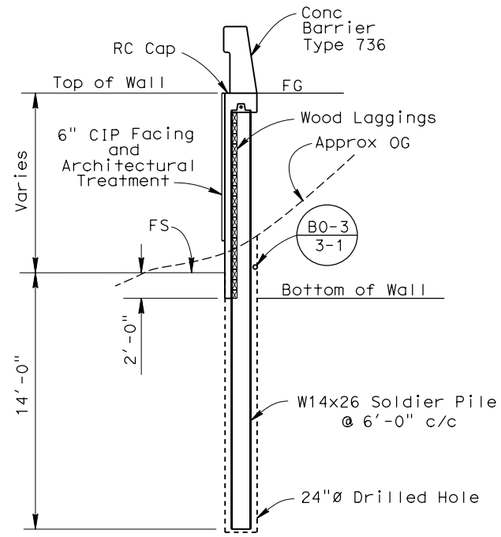
DEVELOPED MIRROR ELEVATION

1" = 20'-0"



PLAN

1" = 20'-0"



TYPICAL SECTION

No Scale

Note: Drainage behind the wall is not included.

DATE OF ESTIMATE		10/03/13
BRIDGE REMOVAL	=	
STRUCTURE DEPTH	=	
LENGTH	=	310.00
WIDTH	=	
AREA	=	
COST/□FT INCLUDING 10% MOBILIZATION & 25% CONTINGENCY	=	
TOTAL COST	=	$522,000.00

SHEET	OF
3	3

DESIGNED BY Alireza Yazdani	DATE 9-6-13	STRUCTURE DESIGN BRANCH 16	PLANNING STUDY
DRAWN BY Steve Daplas	DATE 9-6-13		HWY 92 / CAMINO REAL
CHECKED BY Ghiath Taleb-Agha	DATE 9-6-13		UNIT: 3617 / BRIDGE No. X
APPROVED Muthanna Omran	DATE 9-6-13		SCALE: AS NOTED / PROJECT No. & PHASE: X

USERNAME => s128883 DATE PLOTTED => 14-OCT-2013 TIME PLOTTED => 14:28

FILE => apsCLVR5.dgn

CONTRACT No.:

ATTACHMENT L

DRAFT COOPERATIVE AGREEMENT

COOPERATIVE AGREEMENT COVER SHEET

Work Description

improvements to the State Route (SR) 92/El Camino Real (SR82) interchange in the City of San Mateo

Contact Information

CALTRANS

Al B. Lee, Project Manager

111 Grand Avenue

Oakland, CA 94612

Office Phone: (510) 296-7211

Mobile Phone: (510) 715-8663

Email: al.b.lee@dot.ca.gov

CITY OF SAN MATEO

Susanna Chan, City Engineer

383 W. 20th Avenue

San Mateo, CA 94403

Office Phone: (650) 522-7300

Email: schan@cityofsanmateo.org

COOPERATIVE AGREEMENT

This AGREEMENT, effective on _____, is between the State of California, acting through its Department of Transportation, referred to as CALTRANS, and:

City of San Mateo, a body politic and municipal corporation of the State of California, referred to hereinafter as CITY.

RECITALS

1. PARTNERS are authorized to enter into a cooperative agreement for improvements to the state highway system (SHS) per the California Streets and Highways Code sections 114 and 130.

2. For the purpose of this AGREEMENT, improvements to the State Route (SR) 92/El Camino Real (SR82) interchange in the City of San Mateo will be referred to hereinafter as PROJECT. This description only serves to identify the PROJECT. The project scope of work is defined in the appropriate authorizing documents for the PROJECT per the Project Development Procedures Manual.

3. All responsibilities assigned in this AGREEMENT to complete the following PROJECT COMPONENTS will be referred to hereinafter as OBLIGATIONS:

    - Plans, Specifications, and Estimate (PS&E)
    - Right of Way Support (R/W SUPPORT)
    - Right of Way Capital (R/W CAPITAL)

4. This AGREEMENT is separate from and does not modify or replace any other cooperative agreement or memorandum of understanding between PARTNERS regarding the PROJECT.

5. The following work associated with this PROJECT has been completed or is in progress:

    - CALTRANS developed the PA&ED (Cooperative agreement No. 04-2448, 04-2448-A1 and 04-2448-A2).

6. In this AGREEMENT capitalized words represent either defined terms or acronyms.

7. PARTNERS hereby set forth the terms, covenants, and conditions of this AGREEMENT, under which they will accomplish OBLIGATIONS.

RESPONSIBILITIES

Sponsorship

8. CITY is the SPONSOR for 100% of the PROJECT COMPONENTS included in this AGREEMENT.

Funding

9. FUNDING PARTNERS, funding limits, spending limits, billing, and payment details are documented in the FUNDING SUMMARY. The FUNDING SUMMARY is incorporated and made an express part of this AGREEMENT.

   PARTNERS will execute a new FUNDING SUMMARY each time the funding, billing and payment details of the PROJECT change. The FUNDING SUMMARY will be executed by a legally authorized representative of the respective PARTNERS. The most current fully executed FUNDING SUMMARY supersedes any previous FUNDING SUMMARY created for this AGREEMENT.

   Replacement of the FUNDING SUMMARY will not require an amendment to the body of this AGREEMENT unless the funding changes require it.

10. All costs incurred for WORK except those that are specifically excluded in this AGREEMENT are OBLIGATIONS COSTS. OBLIGATIONS COSTS are to be paid from the funds shown in the FUNDING SUMMARY. Costs that are not OBLIGATIONS COSTS are to be paid by the PARTNER incurring the costs from funds that are outside the scope of this AGREEMENT.

Implementing Agency

11. CALTRANS is IMPLEMENTING AGENCY for PS&E.

12. CALTRANS is IMPLEMENTING AGENCY for RIGHT OF WAY.

13. The IMPLEMENTING AGENCY for a PROJECT COMPONENT will provide a Quality Management Plan (QMP) for that component as part of the PROJECT MANAGEMENT PLAN.

14. Any PARTNER responsible for completing WORK shall make its personnel and consultants that prepare WORK available to help resolve WORK related problems and changes for the entire duration of the PROJECT including PROJECT COMPONENT work that may occur under separate agreements.

CEQA/NEPA Lead Agency

15. CALTRANS is the CEQA lead agency for the PROJECT.

16. CALTRANS is the NEPA lead agency for the PROJECT.

Environmental Permits, Approvals and Agreements

17. PARTNERS will comply with the commitments and conditions set forth in the environmental documentation, environmental permits, approvals, and applicable agreements as those commitments and conditions apply to each PARTNER's responsibilities in this AGREEMENT.

18. Unless otherwise assigned in this AGREEMENT, the IMPLEMENTING AGENCY for a PROJECT COMPONENT is responsible for all PROJECT COMPONENT WORK associated with coordinating, obtaining, implementing, renewing, and amending the PROJECT permits.

19. The PROJECT requires the following environmental requirements/approvals:

ENVIRONMENTAL PERMITS/REQUIREMENTS
National Pollutant Discharge Elimination System (NPDES), State Water Resources Control Board

Plans, Specifications, and Estimate (PS&E)

20. As IMPLEMENTING AGENCY for PS&E, CALTRANS is responsible for all PS&E WORK except those PS&E activities and responsibilities that are assigned to another PARTNER in this AGREEMENT and those activities that may be specifically excluded.

21. CALTRANS will prepare Utility Conflict Maps identifying the accommodation, protection, relocation, or removal of any existing utility facilities that conflict with construction of the PROJECT or that violate CALTRANS' encroachment policy.

Right of Way (R/W)

22. As IMPLEMENTING AGENCY for R/W, CALTRANS is responsible for all R/W SUPPORT WORK except those R/W SUPPORT activities and responsibilities that are assigned to another PARTNER in this AGREEMENT and those activities that may be specifically excluded.

23. The cost to perform R/W SUPPORT activities, whether inside or outside SHS right of way, will be determined in accordance with federal and California laws and regulations, and CALTRANS' policies, procedures, standards, practices, and applicable agreements.

24. CALTRANS will make all necessary arrangements with utility owners for the timely accommodation, protection, relocation, or removal of any existing utility facilities that conflict with construction of the PROJECT or that violate CALTRANS' encroachment policy.

25. CALTRANS will determine the cost to positively identify and locate, protect, relocate, or remove any utility facilities whether inside or outside SHS right of way in accordance with federal and California laws and regulations, and CALTRANS' policies, procedures, standards, practices, and applicable agreements, including but not limited to Freeway Master Contracts.

26. CALTRANS will provide a land surveyor licensed in the State of California to be responsible for surveying and right of way engineering. All survey and right of way engineering documents will bear the professional seal, certificate number, registration classification, expiration date of certificate, and signature of the responsible surveyor.

27. CALTRANS will provide a Right of Way Certificate prior to PROJECT advertisement.

28. Physical and legal possession of right of way must be completed prior to construction advertisement, unless PARTNERS mutually agree to other arrangements in writing. Right of way conveyances must be completed prior to OBLIGATION COMPLETION, unless PARTNERS mutually agree to other arrangements in writing.

29. The California Transportation Commission will hear and may adopt Resolutions of Necessity. However, the authorization to hear and adopt Resolutions of Necessity may be assigned to CITY if such assignment is approved in writing by CALTRANS.

Schedule

30. PARTNERS will manage the schedule for OBLIGATIONS through the work plan included in the PROJECT MANAGEMENT PLAN.

Additional Provisions

31. PARTNERS will perform all OBLIGATIONS in accordance with federal and California laws, regulations, and standards; FHWA STANDARDS; and CALTRANS STANDARDS.

32. Any PARTNER may, at its own expense, have representatives observe any OBLIGATIONS performed by another PARTNER. Observation does not constitute authority over those OBLIGATIONS.

33. Each PARTNER will ensure that personnel participating in OBLIGATIONS are appropriately qualified or licensed to perform the tasks assigned to them.

34. PARTNERS will invite each other to participate in the selection of any consultants who participate in OBLIGATIONS.

35. CITY will issue any encroachment permits that might be necessary for WORK within its jurisdiction and outside the SHS Right of Way. CITY will provide encroachment permits to CALTRANS, its contractors, consultants and agents, at no cost.

36. If any PARTNER discovers unanticipated cultural, archaeological, paleontological, or other protected resources during WORK, all WORK in that area will stop and that PARTNER will notify all PARTNERS within 24 hours of discovery. WORK may only resume after a qualified professional has evaluated the nature and significance of the discovery and a plan is approved for its removal or protection.

37. PARTNERS will hold all administrative drafts and administrative final reports, studies, materials, and documentation relied upon, produced, created, or utilized for the PROJECT in confidence to the extent permitted by law and where applicable, the provisions of California Government Code section 6254.5(e) shall protect the confidentiality of such documents in the event that said documents are shared between PARTNERS.

    PARTNERS will not distribute, release, or share said documents with anyone other than employees, agents, and consultants who require access to complete the PROJECT without the written consent of the PARTNER authorized to release them, unless required or authorized to do so by law.

38. If a PARTNER receives a public records request pertaining to OBLIGATIONS, that PARTNER will notify PARTNERS within five (5) working days of receipt and make PARTNERS aware of any disclosed public documents. PARTNERS will consult with each other prior to the release of any public documents related to the PROJECT.

39. If HM-1 or HM-2 is found during a PROJECT COMPONENT, IMPLEMENTING AGENCY for that PROJECT COMPONENT will immediately notify PARTNERS.

40. CALTRANS, independent of the PROJECT, is responsible for any HM-1 found within the existing SHS right of way. CALTRANS will undertake, or cause to be undertaken, HM MANAGEMENT ACTIVITIES related to HM-1 with minimum impact to the PROJECT schedule. The cost for HM MANAGEMENT ACTIVITIES related to HM-1 found within the existing SHS right of way is not an OBLIGATIONS COST and CALTRANS will pay, or cause to be paid, all costs for HM-1 ACTIVITIES.

41. CITY, independent of the PROJECT, is responsible for any HM-1 found within the PROJECT limits and outside the existing SHS right of way. CITY will undertake, or cause to be undertaken, HM MANAGEMENT ACTIVITIES related to HM-1 with minimum impact to the PROJECT schedule. The cost of HM MANAGEMENT ACTIVITIES related to HM-1 found within the PROJECT limits and outside of the existing SHS right of way is not an OBLIGATIONS COST and CITY will pay, or cause to be paid, all costs for such ACTIVITIES.

42. If HM-2 is found within the PROJECT limits, the public agency responsible for the advertisement, award, and administration (AAA) of the PROJECT construction contract will be responsible for HM MANAGEMENT ACTIVITIES related to HM-2.

43. CALTRANS' acquisition or acceptance of title to any property on which any HM-1 or HM-2 is found will proceed in accordance with CALTRANS' policy on such acquisition.

44. IMPLEMENTING AGENCY for each PROJECT COMPONENT will furnish PARTNERS with written monthly progress reports during the implementation of OBLIGATIONS in that component.

45. Any PARTNER that is responsible for completing OBLIGATIONS will accept, reject, compromise, settle, or litigate claims arising from those OBLIGATIONS.

46. PARTNERS will confer on any claim that may affect OBLIGATIONS or PARTNERS' liability or responsibility under this AGREEMENT in order to retain resolution possibilities for potential future claims. No PARTNER will prejudice the rights of another PARTNER until after PARTNERS confer on claim.

47. PARTNERS will maintain, and will ensure that any party hired by PARTNERS to participate in OBLIGATIONS will maintain, a financial management system that conforms to Generally Accepted Accounting Principles (GAAP), and that can properly accumulate and segregate incurred PROJECT costs and billings.

48. If FUNDING PARTNERS fund any part of OBLIGATIONS with state or federal funds, each PARTNER will comply, and will ensure that any party hired to participate in OBLIGATIONS will comply with the federal cost principles of 2 CFR, Part 225, and administrative requirements outlined in 49 CFR, Part 18. These principles and requirements apply to all funding types included in this AGREEMENT.

49. PARTNERS will maintain and make available to each other all OBLIGATIONS-related documents, including financial data, during the term of this AGREEMENT.

    PARTNERS will retain all OBLIGATIONS-related records for three (3) years after the final voucher.

50. PARTNERS have the right to audit each other in accordance with generally accepted governmental audit standards.

    CALTRANS, the state auditor, FHWA (if the PROJECT utilizes federal funds), and CITY will have access to all OBLIGATIONS-related records of each PARTNER, and any party hired by a PARTNER to participate in OBLIGATIONS, for audit, examination, excerpt, or transcription.

The examination of any records will take place in the offices and locations where said records are generated and/or stored and will be accomplished during reasonable hours of operation. The auditing PARTNER will be permitted to make copies of any OBLIGATIONS-related records needed for the audit.

The audited PARTNER will review the draft audit, findings, and recommendations, and provide written comments within thirty (30) calendar days of receipt.

Upon completion of the final audit, PARTNERS have thirty (30) calendar days to refund or invoice as necessary in order to satisfy the obligation of the audit.

Any audit dispute not resolved by PARTNERS is subject to mediation. Mediation will follow the process described in the General Conditions section of this AGREEMENT.

51. If FUNDING PARTNERS fund any part of the PROJECT with state or federal funds, each FUNDING PARTNER will undergo an annual audit in accordance with the Single Audit Act and the federal Office of Management and Budget (OMB) Circular A-133.

52. If the PROJECT expends federal funds, any PARTNER that hires an A&E consultant to perform WORK on any part of the PROJECT will ensure that the procurement of the consultant and the consultant overhead costs are in accordance with Chapter 10 of the *Local Assistance Procedures Manual*.

53. PARTNERS will not incur costs beyond the funding commitments in this AGREEMENT. If IMPLEMENTING AGENCY anticipates that funding for WORK will be insufficient to complete WORK, IMPLEMENTING AGENCY will promptly notify SPONSOR.

54. If WORK stops for any reason, each PARTNER will continue to implement all of its applicable commitments and conditions included in the PROJECT environmental documentation, permits, agreements, or approvals that are in effect at the time that WORK stops, as they apply to each PARTNER's responsibilities in this AGREEMENT, in order to keep the PROJECT in environmental compliance until WORK resumes.

55. Unless otherwise documented in the FUNDING SUMMARY, all fund types contributed to a PROJECT COMPONENT will be spent proportionately within that PROJECT COMPONENT.

56. Unless otherwise documented in the FUNDING SUMMARY, any savings recognized within a PROJECT COMPONENT will be credited or reimbursed, when allowed by policy or law, in proportion to the amount contributed to that PROJECT COMPONENT by each fund type.

57. If FUNDING PARTNERS fund OBLIGATIONS with American Recovery and Reinvestment Act (ARRA) funds, PARTNERS will adopt the terms, conditions, requirements, and constraints of the American Recovery and Reinvestment Act of 2009.

58. If FUNDING PARTNERS fund OBLIGATIONS with Proposition 1B Bond funds, PARTNERS will meet the requirements of California Government Code Section 8879.20 et al. (Proposition 1 legislation), the governor's Executive Order 2007-S-02-07, and the California Transportation Commission (CTC) program guidelines for the applicable account.

    Right of way purchased using Proposition 1B Bond funds will become the property of CALTRANS, and any revenue from the sale of excess lands originally purchased with bond funds will revert to CALTRANS.

59. CALTRANS will administer any federal subvention funds shown in the FUNDING SUMMARY table.

60. The cost of awards, judgments, or settlements generated by OBLIGATIONS is an OBLIGATIONS cost.

61. The cost of legal challenges to the environmental process or documentation is an OBLIGATIONS costs.

62. The cost of coordinating, obtaining, complying with, implementing, renewing, and amending resource agency permits, agreements, and approvals is an OBLIGATIONS cost.

63. Fines, interest, or penalties levied against a PARTNER are not an OBLIGATIONS cost and will be paid, independent of OBLIGATIONS cost, by the PARTNER whose actions or lack of action caused the levy.

64. The cost of any engineering support performed by CALTRANS includes all direct and applicable indirect costs. CALTRANS calculates indirect costs based solely on the type of funds used to pay support costs. State and federal funds administered by CALTRANS are subject to the current Program Functional Rate. All other funds are subject to the current Program Functional Rate and the current Administration Rate. The Program Functional Rate and Administration Rate are adjusted periodically.

65. Travel, per diem, and third-party contract reimbursements are an OBLIGATIONS cost only after those hired by PARTNERS to participate in OBLIGATIONS incur and pay those costs.

    Payments for travel and per diem will not exceed the rates paid rank and file state employees under current California Department of Personnel Administration (DPA) rules current at the effective date of this AGREEMENT.

    If CITY invoices for rates in excess of DPA rates, CITY will fund the cost difference and reimburse CALTRANS for any overpayment.

66. If CALTRANS reimburses CITY for any costs later determined to be unallowable, CITY will reimburse those funds.

67. If there are insufficient funds available in this AGREEMENT to place PROJECT right of way in a safe and operable condition, the appropriate IMPLEMENTING AGENCY will fund these activities until such time as PARTNERS amend this AGREEMENT.

That IMPLEMENTING AGENCY may request reimbursement for these costs during the amendment process.

68. If there are insufficient funds in this AGREEMENT to implement applicable commitments and conditions included in the PROJECT environmental documentation, permits, agreements, and/or approvals that are in effect at a time that WORK stops, each PARTNER accepts responsibility to fund their respective OBLIGATIONS until such time as PARTNERS amend this AGREEMENT.

Each PARTNER may request reimbursement for these costs during the amendment process.

69. After PARTNERS agree that all WORK is complete for a PROJECT COMPONENT, PARTNER(S) will submit a final accounting for all OBLIGATIONS costs. Based on the final accounting, PARTNERS will refund or invoice as necessary in order to satisfy the financial commitments of this AGREEMENT.

GENERAL CONDITIONS

70. PARTNERS understand that this AGREEMENT is in accordance with and governed by the Constitution and laws of the State of California. This AGREEMENT will be enforceable in the State of California. Any PARTNER initiating legal action arising from this AGREEMENT will file and maintain that legal action in the Superior Court of the county in which the CALTRANS district office that is signatory to this AGREEMENT resides, or in the Superior Court of the county in which the PROJECT is physically located.

71. All OBLIGATIONS of CALTRANS under the terms of this AGREEMENT are subject to the appropriation of resources by the Legislature, the State Budget Act authority, and the allocation of funds by the California Transportation Commission.

72. Neither CITY nor any officer or employee thereof is responsible for any injury, damage or liability occurring by reason of anything done or omitted to be done by CALTRANS and/or its agents under or in connection with any work, authority, or jurisdiction conferred upon CALTRANS under this AGREEMENT. It is understood and agreed that CALTRANS, to the extent permitted by law, will defend, indemnify, and save harmless CITY and all of its officers and employees from all claims, suits, or actions of every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories and assertions of liability occurring by reason of anything done or omitted to be done by CALTRANS and/or its agents under this AGREEMENT.

73. Neither CALTRANS nor any officer or employee thereof is responsible for any injury, damage, or liability occurring by reason of anything done or omitted to be done by CITY, its contractors, sub-contractors, and/or its agents under or in connection with any work, authority, or jurisdiction conferred upon CITY under this AGREEMENT. It is understood and agreed that CITY, to the extent permitted by law, will defend, indemnify, and save harmless CALTRANS and all of its officers and employees from all claims, suits, or actions of every name, kind, and description brought forth under, but not limited to, tortious, contractual, inverse condemnation, or other theories and assertions of liability occurring by reason of anything done or omitted to be done by CITY, its contractors, sub-contractors, and/or its agents under this AGREEMENT.

74. PARTNERS do not intend this AGREEMENT to create a third party beneficiary or define duties, obligations, or rights in parties not signatory to this AGREEMENT. PARTNERS do not intend this AGREEMENT to affect their legal liability by imposing any standard of care for fulfilling OBLIGATIONS different from the standards imposed by law.

75. PARTNERS will not assign or attempt to assign OBLIGATIONS to parties not signatory to this AGREEMENT without an amendment to this AGREEMENT.

76. CITY will not interpret any ambiguity contained in this AGREEMENT against CALTRANS. CITY waives the provisions of California Civil Code section 1654.

    A waiver of a PARTNER's performance under this AGREEMENT will not constitute a continuous waiver of any other provision.

77. A delay or omission to exercise a right or power due to a default does not negate the use of that right or power in the future when deemed necessary.

78. If any PARTNER defaults in its OBLIGATIONS, a non-defaulting PARTNER will request in writing that the default be remedied within thirty (30) calendar days. If the defaulting PARTNER fails to do so, the non-defaulting PARTNER may initiate dispute resolution.

79. PARTNERS will first attempt to resolve agreement disputes at the PROJECT team level. If they cannot resolve the dispute themselves, the CALTRANS district director and the executive officer of CITY will attempt to negotiate a resolution. If PARTNERS do not reach a resolution, PARTNERS' legal counsel will initiate mediation. PARTNERS agree to participate in mediation in good faith and will share equally in its costs.

    Neither the dispute nor the mediation process relieves PARTNERS from full and timely performance of OBLIGATIONS in accordance with the terms of this AGREEMENT. However, if any PARTNER stops fulfilling OBLIGATIONS, any other PARTNER may seek equitable relief to ensure that OBLIGATIONS continue.

    Except for equitable relief, no PARTNER may file a civil complaint until after mediation, or forty-five (45) calendar days after filing the written mediation request, whichever occurs first.

PARTNERS will file any civil complaints in the Superior Court of the county in which the CALTRANS district office signatory to this AGREEMENT resides or in the Superior Court of the county in which the PROJECT is physically located. The prevailing PARTNER will be entitled to an award of all costs, fees, and expenses, including reasonable attorney fees as a result of litigating a dispute under this AGREEMENT or to enforce the provisions of this article including equitable relief.

80. PARTNERS maintain the ability to pursue alternative or additional dispute remedies if a previously selected remedy does not achieve resolution.

81. If any provisions in this AGREEMENT are found by a court of competent jurisdiction to be, or are in fact, illegal, inoperative, or unenforceable, those provisions do not render any or all other agreement provisions invalid, inoperative, or unenforceable, and those provisions will be automatically severed from this AGREEMENT.

82. PARTNERS intend this AGREEMENT to be their final expression that supersedes any oral understanding or writings pertaining to the OBLIGATIONS.

83. If during performance of WORK additional activities or environmental documentation is necessary to keep the PROJECT in environmental compliance, PARTNERS will amend this AGREEMENT to include completion of those additional tasks.

84. Except as otherwise provided in the AGREEMENT, PARTNERS will execute a formal written amendment if there are any changes to OBLIGATIONS.

85. If the work performed on this Project is done under contract and falls within the Labor Code section 1720(a)(1) definition of "public works" in that it is construction, alteration, demolition, installation, or repair; or maintenance work under Labor Code section 1771 CITY must conform to the provisions of Labor Code sections 1720 through 1815, and all applicable provisions of California Code of Regulations found in Title 8, Division 1, Chapter 8, Subchapter 3, Articles 1-7. CITY agrees to include prevailing wage requirements in its contracts for public work. Work performed by CITY's own forces is exempt from the Labor Code's Prevailing Wage requirements.

    CITY shall require its contractors to include prevailing wage requirements in all subcontracts funded by this AGREEMENT when the work to be performed by the subcontractor is "public works" as defined in Labor Code Section 1720(a)(1) and Labor Code Section 1771. Subcontracts shall include all prevailing wage requirements set forth in CITY contracts.

86. If WORK is paid for, in whole or part, with federal funds and is of the type of work subject to federal prevailing wage requirements, PARTNERS shall conform to the provisions of the Davis-Bacon and Related Acts, 40 U.S.C. § 276(a).

When applicable, PARTNERS shall include federal prevailing wage requirements in contracts for public work. WORK performed by a PARTNER's employees is exempt from federal prevailing wage requirements.

87. Partners agree to sign a COOPERATIVE AGREEMENT CLOSURE STATEMENT to terminate this AGREEMENT. However, all indemnification, document retention, audit, claims, environmental commitment, legal challenge, maintenance and ownership articles will remain in effect until terminated or modified in writing by mutual agreement or expire by the statute of limitations.

DEFINITIONS

AGREEMENT – This agreement including any attachments, exhibits, and amendments.

ARRA – The American Recovery and Reinvestment Act of 2009.

CALTRANS STANDARDS – CALTRANS policies and procedures, including, but not limited to, the guidance provided in the Project Development Procedures Manual (PDPM) and the *Guide to Capital Project Delivery Workplan Standards* (previously known as WBS Guide) available at http://www.dot.ca.gov/hq/projmgmt/guidance.htm.

CEQA (California Environmental Quality Act) – The act (California Public Resources Code, sections 21000 et seq.) that requires state and local agencies to identify the significant environmental impacts of their actions and to avoid or mitigate those significant impacts, if feasible.

CFR (Code of Federal Regulations) – The general and permanent rules published in the Federal Register by the executive departments and agencies of the federal government.

COOPERATIVE AGREEMENT CLOSURE STATEMENT – A document signed by PARTNERS that verifies the completion of all OBLIGATIONS included in this AGREEMENT and in all amendments to this AGREEMENT.

FHWA – Federal Highway Administration.

FHWA STANDARDS – FHWA regulations, policies and procedures, including, but not limited to, the guidance provided at www.fhwa.dot.gov/topics.htm.

FUNDING PARTNER – A PARTNER, designated in the FUNDING SUMMARY, that commits a defined dollar amount to fulfill OBLIGATIONS. Each FUNDING PARTNER accepts responsibility to provide the funds it commits in this AGREEMENT.

FUNDING SUMMARY – An executed document that names FUNDING PARTNER(S), includes a FUNDING TABLE, SPENDING SUMMARY, deposit amounts, and invoicing and payment methods..

FUNDING TABLE – The table that designates funding sources, types of funds, and the PROJECT COMPONENT in which the funds are to be spent. Funds listed on the FUNDING TABLE are "not-to-exceed" amounts for each FUNDING PARTNER.

GAAP (Generally Accepted Accounting Principles) – Uniform minimum standards and guidelines for financial accounting and reporting issued by the Federal Accounting Standards Advisory Board that serve to achieve some level of standardization. See http://www.fasab.gov/accepted.html.

HM-1 – Hazardous material (including, but not limited to, hazardous waste) that may require removal and disposal pursuant to federal or state law whether it is disturbed by the PROJECT or not.

HM-2 – Hazardous material (including, but not limited to, hazardous waste) that may require removal and disposal pursuant to federal or state law only if disturbed by the PROJECT.

HM MANAGEMENT ACTIVITIES – Management activities related to either HM-1 or HM-2 including, without limitation, any necessary manifest requirements and disposal facility designations.

IMPLEMENTING AGENCY – The PARTNER is responsible for managing the scope, cost, and schedule of a PROJECT COMPONENT to ensure the completion of that component.

NEPA (National Environmental Policy Act of 1969) – This federal act establishes a national policy for the environment and a process to disclose the adverse impacts of projects with a federal nexus.

OBLIGATIONS – All WORK responsibilities and their associated costs.

OBLIGATION COMPLETION – PARTNERS have fulfilled all OBLIGATIONS included in this AGREEMENT, and all amendments to this AGREEMENT, and have signed a COOPERATIVE AGREEMENT CLOSURE STATEMENT.

OBLIGATIONS COST(S) – The cost(s) to complete the responsibilities assigned in this AGREEMENT. Costs that are specifically excluded in this AGREEMENT or that are not incurred in the performance of the responsibilities in this AGREEMENT are not OBLIGATIONS COSTS. OBLIGATIONS COSTS are to be paid from the funds shown in the FUNDING SUMMARY. Costs that are not OBLIGATIONS COSTS are to be paid by the party that incurs the cost from funds that are outside the scope of this AGREEMENT.

PARTNER – Any individual signatory party to this AGREEMENT.

PARTNERS – The term that collectively references all of the signatory agencies to this AGREEMENT. This term only describes the relationship between these agencies to work together to achieve a mutually beneficial goal. It is not used in the traditional legal sense in which one PARTNER's individual actions legally bind the other PARTNER.

PROJECT COMPONENT – A distinct portion of the planning and project development process of a capital project as outlined in California Government Code, section 14529(b).

- **PID (Project Initiation Document)** – The work required to deliver the project initiation document for the PROJECT in accordance with CALTRANS STANDARDS.

- **PA&ED (Project Approval and Environmental Document)** – The work required to deliver the project approval and environmental documentation for the PROJECT in accordance with CALTRANS STANDARDS.

- **PS&E (Plans, Specifications, and Estimate)** – The work required to deliver the plans, specifications, and estimate for the PROJECT in accordance with CALTRANS STANDARDS.

- **R/W (Right of Way)** –The project components for the purpose of acquiring real property interests for the PROJECT in accordance with CALTRANS STANDARDS.

    - **R/W (Right of Way) SUPPORT** –The work required to obtain all property interests for the PROJECT.

    - **R/W (Right of Way) CAPITAL** – The funds for acquisition of property rights for the PROJECT.

- **CONSTRUCTION** – The project components for the purpose of completing the construction of the PROJECT in accordance with CALTRANS STANDARDS.

    - **CONSTRUCTION SUPPORT** – The work required for the administration, acceptance, and final documentation of the construction contract for the PROJECT.

    - **CONSTRUCTION CAPITAL** – The funds for the construction contract.

PROJECT MANAGEMENT PLAN – A group of documents used to guide the PROJECT's execution and control throughout that project's lifecycle.

PS&E (Plans, Specifications, and Estimate) – See PROJECT COMPONENT.

QMP (Quality Management Plan) – An integral part of the PROJECT MANAGEMENT PLAN that describes IMPLEMENTING AGENCY's quality policy and how it will be used.

R/W (Right of Way) CAPITAL – See PROJECT COMPONENT.

R/W (Right of Way) SUPPORT – See PROJECT COMPONENT.

SHS (State Highway System) – All highways, right of way, and related facilities acquired, laid out, constructed, improved, or maintained as a state highway pursuant to constitutional or legislative authorization.

SPENDING SUMMARY – A table that identifies the funds available for expenditure by each PARTNER. The table shows the maximum reimbursable expenditure for each PARTNER in each PROJECT COMPONENT.

SPONSOR – Any PARTNER that accepts the responsibility to establish scope of the PROJECT and the obligation to secure financial resources to fund the PROJECT COMPONENTS in this AGREEMENT. SPONSOR is responsible for adjusting the PROJECT scope to match committed funds or securing additional funds to fully fund the PROJECT COMPONENTS in this AGREEMENT. If this AGREEMENT has more than one SPONSOR, funding adjustments will be made by percentage (as outlined in Responsibilities). Scope adjustments must be developed through the project development process and must be approved by CALTRANS as the owner/operator of the SHS.

WORK – All efforts to complete the OBLIGATIONS included in this AGREEMENT as described by the activities in the Caltrans Workplan Standards Guide for the Delivery of Capital Projects (WSG).

SIGNATURES

PARTNERS are empowered by California Streets and Highways Code Section 114 & 130 to enter into this AGREEMENT and have delegated to the undersigned the authority to execute this AGREEMENT on behalf of the respective agencies and covenants to have followed all the necessary legal requirements to validly execute this AGREEMENT.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

By: _____
Helena (Lenka) Culik-Caro
Deputy District Director - Design

CERTIFIED AS TO FUNDS:

By: _____
Kevin M. Strough
District Budget Manager

CITY OF SAN MATEO

By: _____
Brandt Grotte
Mayor

ATTEST:

By: _____
Patrice Olds
City Clerk

APPROVED AS TO FORM AND PROCEDURE:

By: _____
Gabrielle Whelan
Assistant City Attorney

FUNDING SUMMARY

FUNDING TABLE

IMPLEMENTING AGENCY →			N/A	CALTRANS	CALTRANS		N/A		
Funding Source	Funding Partner	Fund Type	PA&ED Support	PS&E Support	R/W Support	R/W Capital	Con Support	Con Capital	Totals
Local	CITY	Local	--	$2,700,000	$25,000	$25,000	--	--	$2,750,000
Totals			--	$2,700,000	$25,000	$25,000	--	--	$2,750,000

SPENDING SUMMARY

IMPLEMENTING AGENCY →	N/A		CALTRANS		CALTRANS			N/A			
	PA&ED Support		PS&E Support		R/W Support		R/W Cap.	Const. Support		Const. Cap.	
Fund Type			CALTRANS	CITY	CALTRANS	CITY	CALTRANS				Totals
Local Funds											
Local	--	--	$2,700,000	$0	$25,000	$0	$25,000	--	--	--	$2,750,000
Totals	--	--	$2,700,000	$0	$25,000	$0	$25,000	--	--	--	$2,750,000

Invoicing and Payment

1. PARTNERS will invoice for funds where the SPENDING SUMMARY shows that one PARTNER provides funds for use by another PARTNER. PARTNERS will pay invoices within thirty (30) calendar days of receipt of invoice.

2. If CITY has received Electronic Funds Transfer (EFT) certification from CALTRANS then CITY will use the EFT mechanism and follow all EFT procedures to pay all invoices issued from CALTRANS. CITY will pay all invoices via EFT within 5 days of receipt of invoice.

3. When CALTRANS is to be reimbursed from state or federal funds that are provided by CITY and CALTRANS administers those funds then CALTRANS will draw from those funds without invoicing CITY.

4. When a PARTNER is reimbursed for actual costs from funds administered by another PARTNER, invoices will be submitted each month for the prior month's expenditures.

Plans, Specifications, and Estimate (PS&E)

5. CALTRANS will invoice and CITY will reimburse for actual costs.

Right of Way Support (R/W SUPPORT)

6. CALTRANS will invoice and CITY will reimburse for actual costs.

Right of Way Capital (R/W CAPITAL)

7. CALTRANS will invoice and CITY will reimburse for the actual costs.

Signatures

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

APPROVED

By _____
Al B. Lee
Project Manger

Date _____

_____
District Budget Manager

_____
HQ Accounting

CITY OF SAN MATEO

APPROVED

By _____
Name TBD
Title TBD

Date _____