

SUPPLEMENTAL PROJECT REPORT

For Project Approval



**On State Route 4 in Contra Costa County
From 0.07 miles east of Milano Way OC to 0.47 miles east of SR 242 Separation**

I have reviewed the right of way information contained in this Supplemental Project Report and the R/W Data Sheet attached hereto, and find the data to be complete, current, and accurate.

MARK L. WEAVER

Deputy District Director - Right of Way and Land Surveys

APPROVAL RECOMMENDED

LAURIE LAU

Regional Project Manager

APPROVED

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Deputy District Director - Design

March 27, 2018
Date

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Vicinity Map



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This Supplemental 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.

Timothy Lee



2/26/18

REGISTERED CIVIL ENGINEER
TIMOTHY J. LEE
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DATE

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Table of Contents

I.	INTRODUCTION	1
II.	RECOMMENDATION.....	2
III.	BACKGROUND	2
	A. Project History.....	2
	B. Community Interaction.....	5
	C. Existing Facility	6
IV.	NEED AND PURPOSE.....	6
	A. Problem, Deficiencies, Justification.....	6
	B. Regional and System Planning.....	6
	C. Traffic.....	6
V.	ALTERNATIVES.....	13
	A. Preferred Alternative	13
	B. Rejected Alternatives	24
VI.	CONSIDERATIONS REQUIRING DISCUSSION.....	24
	A. Hazardous Waste.....	24
	B. Value Analysis	25
	C. Resource Conservation.....	25
	D. Right of Way	25
	E. Environmental	27
	F. Air Quality Conformity.....	28
	G. Water Quality	29
	Federal Laws and Requirements	30
	Regional and Local Requirements	31
	H. Title VI Considerations	33
VII.	OTHER CONSIDERATIONS.....	33
	A. Public Meeting Process	33
	B. Route Matters	33
	C. Permits.....	34
	D. Cooperative Agreements	34

E. Other Agreements34

F. Involvement with a Navigable Waterway35

G. Transportation Management Plan for Use during Construction.....35

H. Maintenance Considerations35

I. Stage Construction35

J. Accommodation of Oversize Loads36

K. Graffiti Control.....36

L. Risk Assessment.....36

VIII. FUNDING/ PROGRAMMING36

DELIVERY SCHEDULE37

IX. EXTERNAL AGENCY COORDINATION37

X. PROJECT REVIEWS37

XI. PROJECT PERSONNEL37

XII. ATTACHMENTS.....38

1. INTRODUCTION

In February 2009, the California Department of Transportation (Caltrans) approved a Project Report to modify the Interstate 680/State Route 4 (I-680/SR 4) Interchange in Contra Costa County (Full Project). The Full Project area extends between Concord Avenue and East Martinez Underpass on I-680 and between Morello Avenue and 0.4 mile east of SR 242 on SR 4 (Attachment A). The proposed improvements were to be implemented over five phases. Each of the five phases could be independently constructed and provide incremental benefits in meeting the overall project goals to improve operational efficiencies and traffic flow, address the safety concerns associated with the existing interchange configuration, and accommodate existing and planned growth. The proposed improvements provide flexibility for planning and implementing the improvements as funding becomes available. The 2009 Project Report was prepared by the Contra Costa Transportation Authority (CCTA) in cooperation with Caltrans.

The key engineering features of each phase are as follows:

- Phase 1: Northbound I-680 to westbound SR 4 connector
- Phase 2: Eastbound SR 4 to southbound I-680 connector and improvements to the SR 4 interchange at Pacheco Boulevard
- Phase 3: SR 4 median widening between Morello Avenue in Martinez and SR 242 in Concord
- Phase 4: Southbound I-680 to eastbound SR 4 connector
- Phase 5: Westbound SR 4 to northbound I-680 connector

CCTA and Caltrans propose to construct Phase 3 of the I-680/SR 4 Interchange Project as the initial phase of construction. Several changes to the Phase 3 improvements documented in the 2009 Project Report are proposed in this Supplemental Project Report. The terms *Phase 3* and *the Project* are used interchangeably hereafter.

Phase 3 of the Full Project proposes widening the median of SR 4 in both directions from east of Milano Way/Glacier Drive (post mile [PM] R11.2) to east of I-680 (PM R12.7) and from east of Grayson Creek (PM R13.0) to east of SR 242 (PM R15.1) and to add outside widening along SR 4 in both directions at Pacheco Boulevard and I-680. In addition, the Project proposes replacing Grayson Creek Bridge and raising the profile of SR 4 from east of I-680 (PM R12.7) to east of Grayson Creek (PM 13.0). Project details are listed in the following table.

Project Limits	04-CC-4 – PM R11.2/R15.1
Number of Alternatives:	One
Current Capital Outlay Support Estimate	Phase 3: \$26.82 million
Current Capital Outlay Construction Estimate	Phase 3: \$89.58 million

Current Capital Outlay Right-of-Way Estimate	Phase 3: \$18.69 million
Funding Sources	STIP-RIP and local funds (proposed SHOPP and LPP)
Funding Year	FY 2017/18
Type of Facility (conventional, expressway, freeway):	Freeway: general purpose and HOV lane widening
Number of Structures:	Six structures
Environmental Determination or Document:	Initial Study with Negative Declaration/Environmental Assessment with Finding of No Significant Impact (approved November 26, 2008). Revalidation for Phase 3 approved on December 17, 2015
Legal Description	In Contra Costa County from 0.07 miles east of Milano Way OC to 0.47 miles east of SR 242 Separation
Project Development Category	Category 3

Notes:

FY = fiscal year

HOV = high occupancy vehicle

LPP = Local Partnership Program

OC = overcrossing

PM = post mile

SHOPP = State Highway Operation and Protection Program

STIP-RIP = State Transportation Improvement Program–Regional Improvement Program

The current estimated total Project cost for Phase 3 is \$135.09 million, which includes environmental documentation revalidation, Project development, engineering, right-of-way acquisition, utility relocation, construction capital, and construction support. The Project is proposed to be funded with Contra Costa County's Measure C funds, Measure J funds, and the State Transportation Improvement Program–Regional Improvement Program (STIP-RIP). This Project is also pursuing State Highway Operation and Protection Program (SHOPP) and Local Partnership Program (LPP) funding. Phase 3 has been assigned Project Development Category 3 due to the substantial increase in traffic volume and the consequent need for interchange reconstruction.

2. RECOMMENDATION

It is recommended that this Supplemental Project Report be approved and that authorization be granted for Phase 3 to be modified in accordance with the changes documented herein.

3. BACKGROUND

A. Project History

Approved Project Report

The approved Project Report (PR) documents previous route studies and planning efforts and will not be reiterated in this Supplemental Project Report. The Project Report was approved on February 9, 2009, and was consistent with the Negative Declaration / Initial Study and Final Environmental Assessment dated November 26, 2008. The proposed improvements consist of five independent phases that would be implemented as funding becomes available. The Project phases were designed to achieve independent utility within logical termini. Each phase can be individually completed and achieve traffic benefits within the limits of each phase, independent of whether the remaining phases are completed.

Due to funding constraints, the Transportation Partnership and Cooperation (TRANSPAC) asked CCTA to examine the benefits of improving operations and capacity on SR 4 east of the interchange, with specific emphasis on Phase 3 improvements because they would provide more extensive improvements compared to the other phases. CCTA presented its findings to TRANSPAC and received positive feedback. In July 2013, CCTA elected to proceed with Phase 3 as the initial phase of construction.

Phase 3 as defined in the approved Project Report would widen SR 4 in the median to provide a third general purpose lane and shoulder in each direction from Milano Way/Glacier Drive (PM R11.2) to east of SR 242 (PM R15.1)—a distance of up to 3.9 miles. The improvements would add capacity in both directions on SR 4, including within the I-680/SR 4 Interchange area where SR 4 through traffic could better accommodate on- and off-ramp weaving movements. The additional lanes would also provide a longer distance in which drivers can change lanes outside the immediate vicinity of the ramp intersections, thereby spreading out some of the existing points of overlapping traffic movements and congestion.

Since approval of the Project Report in February 2009, several significant changes have been proposed to Phase 3 of the I-680/SR 4 Interchange Project; this report documents these proposed changes.

Changes to the Approved Project

Changes to the scope of improvements for Phase 3 from the approved Project Report are described below.

Grayson Creek Bridge

Grayson Creek is owned by the United States Army Corps of Engineers (USACE) and operated by Contra Costa County Flood Control and Water Conservation District (CCCFC&WCD) within the Project area. The existing left and right structures of the Grayson Creek Bridge are approximately 1,100 feet east of the I-680/SR 4 junction. Each structure has six-span reinforced-concrete tee beams supported on Raymond-type piles and carries two lanes of traffic. Originally, it was proposed to widen Grayson Creek Bridge in the median under Phase 3 and on the outside under separate phases of construction. Also in a separate phase, a new southbound I-680/eastbound SR 4 direct connector ramp structure would be constructed to span the creek just upstream of the eastbound SR 4 bridge structure.

As a result of increased design flow rates provided by the USACE and the updated hydraulic model for the Lower Walnut Creek watershed provided by CCCFC&WCD, hydraulic studies performed for the environmental revalidation identified that the existing and widened bridge soffit would be submerged in the 100-year flood event. In addition, bridge maintenance reports identified scour at several pier locations.

A peer review performed for the bridge in 2010 concluded that the bridge is at its stability threshold and further degradation of the channel (i.e., further exposure of the Raymond cans) might not be tolerated. It was recommended to send a note to the Area Bridge Maintenance Engineer (ABME) to monitor the level of Raymond can exposure and channel vertical stability during routine inspections and to report the findings to the Structure Maintenance and Investigations (SM&I) Hydraulics Branch. The Hydraulics Office also performs a biannual inspection of the bridge (pile exposure and channel stability). According to the 2016 Bridge Inspection Report, the condition of exposed Raymond can at the bottom of the column bents was verified and has not significantly changed since the 2014 bridge inspection.

Several coordination meetings were held with CCTA, Caltrans District, Caltrans Division of Engineering Services/Office of Special Funded Projects (DES/OSFP), and CCCFC&WCD staff. The general consensus reached from these meetings was that due to the bridge's age and its stability and hydraulic concerns, replacement of the Grayson Creek Bridge is the preferred alternative.

At a meeting in October 2014, USACE operations staff were briefed on the project. USACE stated that widening the existing bridge would require a major Section 408 permit process. The existing bridge already constricts the USACE floodway, resulting in flooding upstream (i.e., overtopping of the levees) during a 100-year flood event. Bridge widening would further lower the upstream chord (soffit) elevation of the bridge deck, which in turn would further constrict the floodway and result in substantial adverse changes to the water surface profile. Consequently, USACE verbally stated it would not be able to approve a Section 408 permit for bridge widening because hydraulic operations of the floodway would be further degraded. CCCFC&WCD confirmed that it experienced a similar case for the Marsh Drive Bridge on Walnut Creek (just upstream of SR 4), which is being replaced primarily because the City of Concord's earlier bridge retrofit proposal had adverse hydraulic impacts, and USACE provided a verbal opinion in a meeting that a major Section 408 approval is unlikely. The magnitude of levee raising needed to mitigate the impacts would have been significant. That finding drove the decision to replace rather than retrofit that bridge. The new bridge is currently being designed and is expected to have a minor Section 408 permit issued by USACE.

The Phase 3 Project proposes to replace the existing Grayson Creek Bridge and conform to the ultimate build-out of the I-680/SR 4 Interchange Project. The new structure will have a span of approximately 257 feet and a width of 173.1 feet. The proposed new Grayson Creek Bridge will accommodate future phases of construction. The new bridge will be raised up to 8 feet higher than the existing structure to pass the 100-year flood event and provide a minimum of 3 feet of freeboard. This raise will require the mainline to be reconstructed 800 feet to the west and 1,000 feet to the east of the new bridge. In addition, the westbound SR 4 to northbound I-680 off-ramp and northbound I-680 to eastbound SR 4 on-ramp will also be realigned and reconstructed to conform to the raised elevations on mainline SR 4.

The CCCFC&WCD maintenance access road will be extended under the new bridge to provide continuous access on the west side of the creek.

Northbound I-680 to Eastbound SR 4 Connector Ramp

In the approved Project Report, the ramp realignment was planned to be constructed as part of Phase 5. A portion of the ramp connector improvements will be constructed in Phase 3 as part of the Grayson Creek Bridge replacement. This change is a result of replacing and raising the Grayson Creek Bridge.

SR 4/Pacheco Boulevard Undercrossing

Phase 3 proposes median and outside widening of the SR 4/Pacheco Boulevard Undercrossing in both directions. In the approved Project Report, outside widening of the eastbound SR 4 bridge was planned to be constructed as part of Phase 2. This change will result in providing standard outside shoulders on the structure as part of Phase 3.

I-680/SR 4 Separation

Phase 3 proposes median and outside widening of the I-680/SR 4 Separation structure in both directions. In the approved Project Report, outside widening of the westbound SR 4 bridge was planned to be constructed as part of Phase 1. This change will result in providing standard outside shoulders on the structure as part of Phase 3.

Eastbound SR 4 Lanes and Interim Modifications to I-680/SR 4 Interchange

Phase 3 proposes to extend the existing eastbound SR 4 High Occupancy Vehicle (HOV) lane from just east of Grayson Creek (PM R13.0) to east of SR 242 (PM R15.1). Phase 3 will also extend the existing auxiliary lane from east of Glacier Drive to east of the Solano Way off-ramp. In the approved Project Report, the addition of a single general purpose lane on eastbound SR 4 was proposed in the median from east of Glacier Drive to the east side of SR 242, resulting in connecting the proposed general purpose lane to the existing HOV lane. This change will allow an extension of the existing HOV lane on eastbound SR 4 for a distance of approximately 2 miles from its starting point on the east side of SR 242 to east of Grayson Creek and avoid connecting the mixed flow lane to the HOV lane.

Phase 3 proposes realignment of the eastbound SR 4 to southbound I-680 ramp and eastbound SR 4 to northbound I-680 loop ramp to accommodate the mainline and ramp widening for extension of the auxiliary lane and associated restriping of eastbound SR 4 through the Pacheco Boulevard and I-680 interchanges. These interim modifications are intended to reduce the high concentration of accidents on this segment of eastbound SR 4 and improve traffic operations until future phases of the I-680/SR 4 Interchange improvements are constructed.

SR 4/SR 242 Separation

In the approved Project Report, the SR 4/SR 242 Separation structure was proposed to be widened in the median in both directions by approximately 5 feet. The Project proposes to add a new 12-foot wide traveled lane in both directions of SR 4 and reduce the left shoulder width to 5 feet at the bridge crossings—a distance of approximately 500 feet. The Project will maintain 10-foot right shoulder widths in both directions on the bridge to accommodate emergency access for vehicles. A Supplemental Fact Sheet for exceptions to mandatory design standards for the proposed nonstandard shoulder was prepared and approved by Caltrans.

B. Community Interaction

Additional public meetings are not proposed in connection with the proposed changes to Phase 3. As discussed below, despite the modifications discussed in this Supplemental Project Report, the Project's goals and impacts remain consistent with the Negative Declaration / Initial Study and Final Environmental Assessment dated November 2008, and the Project modifications are documented in the Environmental Revalidation. Consistent with both the California Environmental Quality Act (CEQA) and the National

Environmental Policy Act (NEPA), no additional public circulation or comment periods are required. There was a 15-day comment period for air quality conformity.

C. Existing Facility

No changes to the approved Project Report are proposed regarding this topic.

4. PURPOSE AND NEED

No changes to the approved Project Report are proposed regarding this topic.

A. Problem, Deficiencies, Justification

No changes to the approved Project Report are proposed regarding this topic.

B. Regional and System Planning

No changes to the approved Project Report are proposed regarding this topic.

C. Traffic

Fehr & Peers Associates prepared a Traffic Operation Analysis Report to document existing and future travel conditions associated with the Project. Traffic operations were analyzed to determine the benefits and impacts of the No-Build and Build Alternatives on the SR 4 corridor. To address the potential regional effects of the Project, the traffic study limits were extended to Morello Avenue to the west and Bailey Road to the east.

Current and Forecasted Traffic

Freeway operations were analyzed using FREQ macroscopic modeling software to evaluate the SR 4 corridor as a system. Four FREQ models, Eastbound AM, Eastbound PM, Westbound AM, and Westbound PM, were developed for the analysis to evaluate freeway mainline traffic operations during the weekday AM (5:00 to 9:00) and weekday PM (3:00 to 7:00) peak periods.

Annual Average Daily Traffic

Annual Average Daily Traffic (AADT) on SR 4 is forecasted to grow over the next 30 years. Table 1 and Table 2 summarize, respectively, eastbound and westbound AADT on SR 4 within the Project limits. The existing (2013) AADT within the Project limits ranges from approximately 20,000 to 43,000 vehicles per day and is expected to increase by up to 28 percent under the No-Build Alternative and by up to 37 percent under the Build Alternative by 2040.

Table 1: Estimated Eastbound SR 4 Average Daily Traffic Volumes (vph)

Location	Existing 2013	2020		2040	
		No Build	Build	No Build	Build
Milano Way	20,869	31,180	31,720	34,590	36,170
Junction with I-680	23,654	22,070	22,730	26,410	28,950
Solano Way	21,724	23,290	23,950	27,620	30,160
Concord junction with SR 242	20,510	25,460	26,000	30,410	32,540
Concord Port Chicago Hwy West	29,982	22,580	22,930	27,330	28,690

Notes:

vph = vehicles per hour

Table 2: Estimated Westbound SR 4 Average Daily Traffic Volumes (vph)

Location	Existing 2013	2020		2040	
		No Build	Build	No Build	Build
Milano Way	24,208	27,270	27,390	35,740	36,160
Junction with I-680	26,166	29,380	29,590	38,220	39,120
Solano Way	22,793	26,070	26,580	35,210	37,260
Concord junction with SR 242	25,502	28,910	29,340	38,340	40,080
Concord Port Chicago Hwy West	42,925	46,570	46,650	56,890	57,250

Notes:

vph = vehicles per hour

Truck and Occupancy Counts at On-Ramp Locations

Table 3 summarizes existing truck and occupancy data percentages at the Solano Way and San Marco interchanges.

Table 3: 2013 Truck and Occupancy Data

Location	Truck (%)	Passenger Cars (%)		
		1 person	2 persons	3+ persons
Solano Way on-ramp (AM)	25	65	8	2
Solano Way on-ramp (PM)	4	81	12	2
San Marco Blvd on-ramps (AM)	7	68	21	4
San Marco Blvd on-ramps (PM)	4	59	26	10

Source: Fehr & Peers Associates, *Traffic Operations Analysis Report* (March 2015). Prepared for EA 04-229111.

Eastbound SR 4 Peak-Hour Traffic Conditions

During the existing PM peak period, the freeway is congested between the Port Chicago Highway on-ramp and the Willow Pass Road off-ramp. A bottleneck develops and reaches its maximum length at 5:00 PM, when the end of the queue occurs near the Morello Avenue on-ramp. The queue remains at its maximum length until approximately 6:00 PM, when it begins to dissipate rapidly. By 6:30 PM, the bottleneck and queue are no longer present. No bottlenecks were observed during the AM peak period.

Table 4 summarizes existing (2013) and forecasted (2020 and 2040) traffic volumes during the PM peak hour for the No-Build and Build Alternatives in the eastbound direction.

Table 4: Current and Forecasted EB SR 4 PM Peak-Hour Traffic Volumes (4:00–5:00 PM)

Location	Existing 2013	2020		2040	
		No Build	Build	No Build	Build
West of Morello	3,123	3,450	3,490	4,380	4,540
Morello Ave to Pacheco Blvd	3,508	3,810	3,910	4,700	5,060
Pacheco Blvd to I-680	3,992-	4,280	4,440	5,130	5,700
I-680 to Solano Way	3,650	3,940	4,140	4,810	5,510
Solano Way to SR 242	3,608	3,930	4,130	4,870	5,570
SR 242 to Port Chicago Hwy	5,997	6,260	6,440	7,050	7,640
Port Chicago Hwy to Willow Pass Rd	7,275	7,780	7,960	9,210	9,790
Willow Pass Rd to San Marco Blvd	7,421	7,690	7,850	8,440	8,960
San Marco Blvd to Bailey Rd	5,960	6,100	6,260	6,460	6,980
East of Bailey Rd	4,741	4,790	4,950	4,890	5,410

Source: Fehr & Peers Associates, *Traffic Operations Analysis Report* (March 2015). Prepared for EA 04-229111.

Westbound SR 4 AM Peak-Hour Traffic Conditions

During the AM peak period on westbound SR 4, the freeway is congested at two locations where the demand exceeds available capacity. Bottlenecks develop from the Willow Pass Road on-ramp to the end of the HOV lane and from SR 242 on-ramp to the Solano Way off-ramp. Congestion begins to develop around 6:00 AM, when a bottleneck forms between the Willow Pass Road on-ramp and the Port Chicago Highway off-ramp. The queue from this bottleneck gradually increases until it reaches its maximum length at approximately 7:00 AM. The end of the queue was observed to extend between the Bailey Road off-ramp and the Railroad Avenue on-ramp. The queue remains at this location until 8:00 AM, when it begins to rapidly dissipate. The queue is generally cleared by 8:30 AM.

A second bottleneck also develops at approximately 7:30 AM between the westbound SR 242 on-ramp and the Solano Way off-ramp. The queue reaches its peak length between the SR 242 off-ramp and the Port Chicago off-ramp at approximately 7:30 AM. The queue extends back to this location until approximately 8:30 AM, after which it begins to dissipate. By 9:00 AM, the bottleneck and queue are no longer present. No bottlenecks were observed at this location during the PM peak period.

Table 5 summarizes existing (2013) and forecasted (2020 and 2040) traffic volumes during the AM peak hour for the No-Build and Build Alternatives.

Table 5: Current and Forecasted WB SR 4 AM Peak Hour Traffic Volumes (7-8 AM)

Location	Existing 2013	2020		2040	
		No Build	Build	No Build	Build
West of Morello Ave	3,044	3,870	3,910	5,760	5,870
Morello Ave to Pacheco Blvd	3,354	4,160	4,200	6,000	6,120
Pacheco Blvd to I-680	3,704	4,510	4,580	6,320	6,600
I-680 to Solano Way	4,105	5,010	5,170	7,100	7,720
Solano Way to SR 242	4,130	5,050	5,190	7,210	7,750
SR 242 to Port Chicago Hwy	7,174	7,910	7,960	10,030	10,240
Port Chicago Hwy to Willow Pass Rd	8,496	9,460	9,450	12,240	12,210
Willow Pass Rd to San Marco Blvd	8,115	8,710	8,720	10,430	10,460
San Marco Blvd to Bailey Rd	5,843	6,070	6,080	6,740	6,770
East of Bailey Rd	5,435	5,690	5,700	6,410	6,440

Source: Fehr & Peers Associates, *Traffic Operations Analysis Report* (March 2015). Prepared for EA 04-229111.

The Project will provide additional capacity along both directions of SR 4 between Morello Avenue and SR 242. Both the single-occupancy vehicle (SOV) and HOV user experience will be improved due to the increase in capacity.

Traffic Operations

Eastbound Direction

The operational effects of the Project on the eastbound direction will be most pronounced in the near-term condition. The effects will be reduced in magnitude in the long term due to the increasing traffic demand and the effects of existing downstream bottlenecks between Port Chicago Highway and Willow Pass Road. In the eastbound direction, the Project will:

- Allow HOVs to bypass some of the queue in the mixed-flow lanes and take advantage of free flow conditions in an extended HOV lane
- Decrease overall HOV travel time by 25 percent in the near term and by 20 percent in the long term
- Improve average travel speeds for SOVs by 22 percent in the near term and by 12 percent in the long term
- Reduce the maximum queue length by 30 percent in the near term and by 15 percent in the long term
- Better serve the projected demand by accommodating 2 percent more person-miles of travel (in the near term) while operating at higher average speeds and reducing total person-delays by 25 percent

Westbound Direction

The operational effects of the Project on the westbound direction occur in both the near term and the long term. The magnitude of those effects will tend to increase over time because both existing and future bottlenecks are addressed in the Project. In the westbound direction, the Project will:

- Alleviate an existing bottleneck between SR 242 and Solano Way and alleviate a future bottleneck at the I-680 interchange that is likely to develop without the implementation of this Project
- Improve average travel speeds for SOVs by 14 percent in the near term and by 15 percent in the long term
- Reduce the maximum queue length by 8 percent in the near term and by 29 percent in the long term
- Better serve the projected demand by accommodating 20 percent more person-miles of travel (in the long term) while operating at higher average speeds and reducing total person-delays by 43 percent

Collision Analysis

Mainline and ramp accident rates were obtained from Traffic Accident Surveillance and Analysis System (TASAS) of the Caltrans Transportation System Network for the 3-year period from April 1, 2009, to March 31, 2012. TASAS can provide Table C information and data from monitoring programs such as the Roadway Departure Safety Implementation Plan. Table C is a quarterly report that uses segmental selection criteria combined with statistical analysis to identify the high-collision concentration locations on the State highway system.

Table 6 summarizes the collision data for SR 4 between the Morello Avenue and Bailey Road interchanges.

Table 6: SR 4 Mainline Collision Data

Direction	Description	No. of Accidents			Total MVM	Actual Accident Rate (Accs/MVM)			Statewide Average Accident Rate (Accs/MVM)		
		Total	F	I		F	F+I	Total	F	F+I	Total
Both directions	CC-4 – 11.2/15.1	229	1	61	299.32	0.003	0.77	0.77	0.005	0.22	0.65

Source: Caltrans TASAS data.

Notes:

Accs = accidents

F = fatality

I = injury

MVM = million vehicles mile

TASAS = Traffic Accident Surveillance and Analysis System

There were 229 reported accidents on this mainline segment for the 3-year period from April 1, 2009, to March 31, 2012. Of these, 17 accidents (7.4 percent) occurred in wet conditions and 60 accidents (26.2 percent) occurred in the dark. Most of the accidents on this mainline segment are associated with congested conditions. About 22.3 percent of the accidents occurred during the morning peak hours (from

5:00 AM to 9:00 AM) and 47.6 percent occurred during the afternoon peak hours (3:00 PM to 7:00 PM); 84.8 percent of the accidents occurred during weekdays (Monday through Friday).

The accident history by type of collision is presented in Table 7. The majority of collisions are attributed to rear-end accidents. These types of collisions are often associated with congested freeway conditions when traffic operates in a stop-and-go fashion. SR 4 also has a relatively high percentage of sideswipe and hit-object collisions.

Of the accidents reported, 54.1 percent were rear end and 17.9 percent were sideswipe, which are the two most-common types of accidents in congested conditions. There were 44 (19.2 percent) hit-object accidents, in which 11 involved hitting a median barrier, 9 a bridge rail, 9 a guardrail, 1 a wall (but not a sound wall), 3 a fence, 3 a traffic sign/sign post, 3 an unknown object, 1 a dike or curb, 2 over an embankment, 1 the end of a guardrail, and 1 a light or signal pole.

About two-thirds of the accidents were attributable to unsafe speed (53.3 percent) and improper turns (14.0 percent), which are the two most-common collision factors resulting in rear-end or sideswipe accidents in congested conditions. In addition, 18.8 percent of the accidents were due to other violations, 8.3 percent involved driving under the influence of alcohol, and 0.9 percent was attributable to following too close.

The primary locations of collisions were as follows: 33.6 percent of the accidents occurred in the left lane, 42.1 percent in interior lanes, and 38.4 percent in the right lane. Also, 76.0 percent of the accidents involved proceeding straight, 28.8 percent involved stopped vehicles, 23.1 percent involved slowing or stopping vehicles, and 19.2 percent were associated with changing lanes.

Of the 229 total number of accidents, 159 (69.4 percent) occurred in the eastbound direction and 70 (30.6 percent) occurred in the westbound direction.

There was one fatal accident on the mainline segment within this 3-year period. This fatal accident occurred at about PM R14.4 on the northbound SR 242 to westbound SR 4 connector in December 2012. The accident was listed as a hit-object (bridge rail) type in which the driver was under the influence of alcohol and speeding.

Accident-Concentrated Locations

Table 7 shows the accident rate for each 0.25-mile SR 4 mainline segment.

Table 7: SR 4 Mainline Collision Data (by 0.25-Mile Segment)

Post Mile	Actual Number			Actual Rates			Average Rates		
	Total	F	I	Fatal	F+I	Total	Fatal	F+I	Total
Eastbound SR 4									
PM R11.20–11.45	4	0	1	0.0	0.09	0.35	0.004	0.22	0.70
PM R11.45–11.72	8	0	1	0.0	0.08	0.64	0.004	0.22	0.70
PM R12.30–12.55	52	0	11	0.0	0.95	4.48	0.008	0.26	0.71
PM R12.55–12.80	28	0	6	0.0	0.53	2.47	0.008	0.26	0.70
PM R12.80–13.05	10	0	2	0.0	0.17	0.84	0.008	0.26	0.69
PM R13.05–13.30	3	0	1	0.0	0.09	0.27	0.008	0.26	0.69
PM R13.30–13.55	5	0	1	0.0	0.09	0.45	0.007	0.22	0.62
PM R13.55–13.80	15	0	5	0.0	0.46	1.39	0.007	0.19	0.57
PM R13.80–14.05	9	0	3	0.0	0.28	0.85	0.007	0.19	0.56
PM R14.05–14.30	6	0	1	0.0	0.09	0.56	0.004	0.19	0.61
PM R14.30–14.55	6	0	2	0.0	0.19	0.56	0.003	0.19	0.63
PM R14.55–14.80	13	0	1	0.0	0.09	1.13	0.004	0.22	0.70
PM R14.80–15.10	8	0	1	0.0	0.07	0.54	0.003	0.22	0.70
Westbound SR 4									
PM R11.20–11.45	2	0	1	0.0	0.09	0.17	0.004	0.22	0.70
PM R11.45–11.72	0	0	0	0.0	0.00	0.00	0.004	0.16	0.50
PM R12.30–12.55	4	0	2	0.0	0.17	0.35	0.008	0.26	0.71
PM R12.55–12.80	11	0	1	0.0	0.09	0.97	0.008	0.26	0.70
PM R12.80–13.05	14	1	6	0.0	0.08	1.17	0.008	0.26	0.69
PM R13.05–13.30	2	0	1	0.0	0.09	0.18	0.008	0.26	0.69
PM R13.30–13.55	13	0	4	0.0	0.36	1.18	0.007	0.22	0.62
PM R13.55–13.80	7	0	2	0.0	0.19	0.65	0.007	0.19	0.57
PM R13.80–14.05	3	0	2	0.0	0.19	0.28	0.007	0.19	0.56
PM R14.05–14.30	3	0	1	0.0	0.09	0.28	0.004	0.19	0.61
PM R14.30–14.55	4	0	2	0.0	0.19	0.38	0.003	0.19	0.63
PM R14.55–14.80	9	0	3	0.0	0.26	0.78	0.004	0.22	0.70
PM R14.80–15.10	3	0	1	0.0	0.07	0.20	0.003	0.22	0.70

Note:

Areas with high concentrations of accidents are shown in **bold** and listed below:

Eastbound:

1. PM R12.30–13.05
2. PM R13.55–14.05
3. PM R14.55–14.80

Westbound:

1. PM R12.55–13.05
2. PM R13.30–13.55

I = injury

F = fatality

PM = post mile

SR = State Route

Caltrans completed the safety analysis for the Project in March 2015. The safety analysis found that improvements to roadway visibility at the impacted locations are recommended. Improved visibility would be provided by installing additional lighting and enhanced traffic striping and markings.

To improve traffic operations and safety on eastbound SR 4 through the Pacheco Boulevard and I-680 interchanges, the safety analysis recommended several striping modifications, including extending the existing auxiliary lane from the Pacheco Boulevard on-ramp beyond the southbound I-680 off-ramp gore area to provide an additional 740 feet of merging length for the on-ramp to merge with the mainline. The study also recommended a similar improvement on eastbound SR 4 at the I-680 interchange cloverleaf ramps that would extend and drop the existing auxiliary lane from the I-680 southbound loop on-ramp beyond the northbound I-680 loop off-ramp gore area to provide an additional 400 feet of merging length for the on-ramp to merge with the mainline.

5. ALTERNATIVES

A. Preferred Alternative

Overview

The Project will widen the median of SR 4 in both directions from east of Milano Way/Glacier Drive (PM R11.2) to east of I-680 (PM R12.7) and from east of Grayson Creek (PM R13.0) to east of SR 242 (PM R15.1). Outside widening of SR 4 will occur in both directions at Pacheco Boulevard and I-680. From east of I-680 (PM R12.7) to east of Grayson Creek (PM R13.0), the Project will raise the profile of SR 4, widening the median and the outside in both directions and replacing Grayson Creek Bridge.

In the eastbound direction, an existing auxiliary lane on eastbound SR 4 ends just east of the Milano Way/Glacier Drive Overcrossing. The Project will extend the auxiliary lane to Solano Way. An existing HOV lane in the eastbound direction begins east of the SR 4/SR 242 Separation. The Project will extend the HOV lane to start just east of Grayson Creek Bridge. The Project will add a general purpose lane along westbound SR 4 from east of SR 242 to east of Milano Way/Glacier Drive.

The SR 4 mainline from east of I-680 to east of Grayson Creek will be raised to clear the 100-year flood with a minimum of 3 feet of freeboard at Grayson Creek, requiring replacement of the existing Grayson Creek Bridge.

Proposed Engineering Features

The primary components of the Project are described below. The construction of these components cannot be fully accommodated within the existing Caltrans right-of-way. Therefore, additional right-of-way will be required. Refer to Section 6D for a description of the right-of-way requirements.

Widen SR 4 to Add Additional Lanes

The Project will consist of the following primary improvements, discussed in detail below:

- Addition of a new 12-foot wide lane and 10-foot shoulder in the westbound direction on SR 4 extending from east of SR 242 (PM R15.1) to conform to the three-lane facility east of Milano Way/Glacier Drive (PM R11.2) (The new lane will be for general purpose use.)

- Addition of a new 12-foot lane and 10-foot shoulder in the eastbound direction on SR 4 extending from east of Milano Way/Glacier Drive (PM R11.2) to Solano Way (PM R13.7) (The new lane will be for general purpose use.)
- Addition of a new 12-foot lane and 10-foot shoulder in the eastbound direction on SR 4 extending from east of Grayson Creek (PM R13.0) to east of SR 242 (PM R15.1) (The lane will be for HOV use and connect to the existing HOV lane east of SR 242.)
- Raising of the SR 4 mainline profile near the Grayson Creek Bridge (PM R12.7 to R13.0), including replacement of the Grayson Creek Bridge (The I-680/SR 4 Interchange ramps, including the westbound SR 4 to northbound I-680 off-ramp and the northbound I-680 to eastbound SR 4 on-ramp, will also be reconstructed to conform to the raised elevation of the SR 4 mainline.)
- Widening of existing paved surfaces in the median (A concrete median barrier is proposed from east of Milano Way/Glacier Drive to west of Grayson Creek; the use of a double thrie beam barrier in the median is also proposed for the remaining Project limits.)
- Realignment of eastbound SR 4 to the southbound I-680 ramp and eastbound SR 4 to the northbound I-680 loop ramp to accommodate restriping of SR 4 at the vicinity of the Pacheco Boulevard and I-680 interchanges (The restriping of SR 4 is intended to reduce the high concentration of accidents on SR 4 within the I-680/SR 4 interchange area and improve traffic operations.)
- Drainage system modifications to accommodate the freeway widening
- Water quality and hydromodification features to treat additional paved areas
- Modification of pavement delineation and signage
- Installation of a California Highway Patrol (CHP) enforcement area east of Peralta Road in the SR 4 median
- Widening of six bridge structures (including required structure rehabilitation)
- Provision of enhanced lighting and traffic striping to improve roadway visibility for drivers during nighttime hours
- Replacement of several cracked concrete pavement slabs on eastbound SR 4 in the vicinity of the Pacheco Boulevard and I-680 interchanges
- Installation of HOV lane signage
- Widening or modification of overcrossing and undercrossing structures to accommodate freeway widening

Attachments B and C provide layout sheets, roadway profiles, and typical sections for the Project.

Insid- median widening will be required, with a spot location for outside widening near Pacheco Boulevard and I-680. The widening will generally conform to the existing roadway alignment and involve an excavation of up to 3 feet, including removing of existing paved shoulder to prepare the subgrade and placement of pavement. The pavement for widening will consist of aggregate subbase, aggregate base, and use of asphalt concrete or concrete pavement.

The roadway cross section will consist of 12-foot traveled lanes and 10-foot outside shoulders. The median shoulder width will be 10 feet except at spot locations with a concrete median barrier or double thrie beam barrier.

The widening will generally occur within the median from Milano Way/Glacier Drive to I-680 and from east of Grayson Creek to east of SR 242. Surrounding the Grayson Creek Bridge area, the SR 4 mainline profile will be raised and the on- and off-ramps to northbound I-680 from SR 4 will be reconstructed.

Fencing will be erected at the edges of the freeway right-of-way to accommodate additional right-of-way or where temporary construction easements are required. Caltrans standard wire mesh or barbed wire fencing will be used.

Ramp Modifications

The Project will widen the eastbound SR 4 to southbound I-680 ramp and eastbound SR 4 to northbound I-680 loop ramp to accommodate restriping of the collector-distributor road on SR 4 in the vicinity of the Pacheco Boulevard and I-680 interchanges. The restriping of the collector-distributor road will extend the merging distance between the Pacheco Boulevard on-ramp and off-ramp to southbound I-680 and provide a longer distance for the southbound I-680 on-ramp to merge with the mainline traffic. The proposed improvements are intended to reduce the high concentration of accidents on SR 4 within the I-680/SR 4 Interchange area and improve traffic operations. The widening will generally conform to the existing ramp alignment and involve an excavation of up to 4 feet, including removal of the existing paved shoulder to prepare the subgrade and placement of pavement. The pavement for widening will consist of aggregate subbase, aggregate base, and asphalt concrete.

Storm-Water Treatment

The proposed permanent storm-water treatment facilities will include biofiltration strips and biofiltration swales. Biofiltration is a pollution control technique that uses living material (vegetation) to capture sediment and pollutants from storm-water runoff. Biofiltration strips are vegetated sections of land that capture sediment and pollutants as storm water passes over it in sheet flows. Biofiltration swales are vegetated ditches with a layer of imported biofiltration soil underneath and a layer of permeable material with an underdrain farther below where storm water is directed with a concentrated flow.

Signage

Four overhead guide signs along eastbound and westbound SR 4 will be replaced at the I-680/SR 4 Separation. In addition, one new overhead sign will be installed on SR 4 east of Grayson Creek Bridge. The overhead sign structures will have a maximum height of approximately 34 feet and will be supported on a cast-in-drilled-hole pile foundation with a typical diameter of 5 feet and typical length of 25 feet.

Safety Lighting

Enhanced lighting will be provided to improve roadway visibility for drivers during nighttime hours. This lighting will be installed at ramp merges and diverges per Caltrans design standards. The electroliers will be supported on a cast-in-drilled-hole pile with a typical diameter of 2.5 feet and typical length of 5 feet.

Other Improvement Features

Ramp Metering: Ramp metering facilities are present at the existing eastbound SR 4 on-ramps from Pacheco Boulevard. The affected ramp metering equipment at the on-ramp will be modified or replaced, as necessary, to meet the latest standards. See Section V (A) (6) for further details.

CHP Observation Area: A CHP observation area within the SR 4 median will be provided just east of the Peralta Road Undercrossing.

Nonstandard Mandatory and Advisory Design Features

A number of exceptions from mandatory and advisory design standards will be required for Phase 3.

Supplemental Fact Sheets for the exceptions to mandatory and advisory design standards for the I-680/SR 4 Interchange Project were approved on September 14, 2015, and September 8, 2015, respectively

Mandatory Design Exceptions

The following additional nonstandard design features have been identified for Phase 3:

- M1: Minimum stopping sight distance shall be 750 feet for a design speed of 70 miles per hour (mph) (Index 201.1). Existing nonstandard stopping sight distance (SSD) is maintained and modified at the following location:
 - Horizontal curve between C5M Station (Sta.) 197+75 and Sta. 201+75 with SSD of 597 feet
- M2: Minimum shoulder widths and horizontal clearances shall be 10 feet (Index 302.1 and 309.1(3)(a)). Nonstandard shoulder widths are maintained at the following locations:
 - Overhead sign structure in median between C5M Sta. 187+15 and Sta. 188+97 with minimum shoulder width of 5 feet
 - Overhead sign structure in median between C5M Sta. 214+25 and Sta. 215+75 with minimum shoulder width of 6 feet
 - Overhead sign structure in median between eastbound CCM Sta. 297+90 and Sta. 310+09 and westbound CCM Sta. 300+4 and Sta. 311+73 along westbound SR4 with minimum shoulder width of 5 feet
 - I-680 northbound and southbound under I-680/SR 4 Separation structure between H Sta. 161+00 and Sta. 162+60 with minimum shoulder width of ± 7 feet
 - Walnut Creek Bridge between CCM Sta. 238+50 and Sta. 243+50 with minimum outside shoulder width of 9.25 feet
- M3: Minimum vertical clearance shall be 16.5 feet over freeways and expressways, 15 feet over the traveled way, and 14.5 feet over the shoulder of conventional highways, parkways, and local facilities (Index 309.2(1)). Nonstandard vertical clearance is proposed at the following locations:
 - Pacheco Boulevard Undercrossing with vertical clearance of 14.9 feet
 - I-680/SR 4 Separation with vertical clearance of 15.5 feet

- M4: Minimum horizontal clearance to all objects on freeway and expressway facilities shall be 10 feet (Index 309.1(3)(a)). Nonstandard horizontal clearance is proposed at the following locations:
 - Overhead sign structure in median between C5M Sta. 187+15 and Sta. 188+97 with minimum horizontal clearance of 5 feet
 - Overhead sign structure in median between C5M Sta. 214+25 and Sta. 215+75 with minimum horizontal clearance of 6 feet
 - Overhead sign structure in median between eastbound CCM Sta. 297+90 and Sta. 310+09 and westbound CCM Sta. 300+4 and Sta. 311+73 along westbound SR 4 with minimum horizontal clearance of 5 feet
 - I-680 northbound and southbound under I-680/SR 4 Separation structure between H Sta. 161+00 and Sta. 162+60 with minimum horizontal clearance of ± 7 feet
 - Walnut Creek Bridge between CCM Sta. 238+50 and Sta. 243+50 with minimum horizontal clearance of 9.25 feet
- M5: Minimum interchange spacing shall be 1 mile in urban areas, 2 miles in rural areas, and 2 miles between freeway-to-freeway interchange and other interchanges (Index 501.3). Nonstandard interchange spacing is maintained at the following location:
 - Interchange spacing between Solano Way and SR 242 interchange is 0.987 mile.
- M6: Minimum weaving length shall be 2,000 feet in urban areas, 5,000 feet in rural areas, and 5,000 feet between freeway-to-freeway interchanges and other interchanges (Index 504.7). Nonstandard weaving lengths are maintained at the following locations:
 - Weaving length between Pacheco Boulevard and I-680 interchange is 559 feet along westbound SR 4 and 543 feet along eastbound SR 4.
 - Weaving length between Solano Way and SR 242 interchange is 1,766 feet along westbound SR 4 and 1,902 feet along eastbound SR 4.
- M7: Minimum lane width on two-lane and multilane highways, ramps, collector roads, and other appurtenant roadways shall be 12 feet. (Index 301.1). Nonstandard lane widths are maintained at the following locations:
 - Lane width of outside general purpose lane along eastbound SR 4 from Pacheco Boulevard to southbound I-680 off-ramp between C5M Sta. 184+77 and Sta. 191+01 is 11 feet.
 - Lane width of outside general purpose lane along eastbound SR 4 from I-680 Separation to Grayson Creek Bridge is 11 feet.
- M8: Minimum deceleration length shown on Figure 504.2B shall be provided before the first curve beyond the exit nose to ensure adequate distance for vehicles to decelerate before entering the curve (Index 504.2). Nonstandard deceleration lanes are proposed at the following locations:
 - Deceleration length along eastbound SR 4 off-ramp to southbound I-680 between R2M Sta. 88+31 and Sta. 91+21 is 290 feet. Standard deceleration length is 470 feet.
 - Deceleration length along eastbound SR 4 off-ramp to northbound I-680 between R3M Sta. 1+19 to Sta. 1+75 is 56 feet. Standard deceleration length is 570 feet.

- M9: Based on the e_{\max} selected by the designer for one of the conditions, superelevation rates from Table 202.2 shall be used within the given range of curve radii. Nonstandard superelevation rate is maintained at the following location:
 - Loop off-ramp from eastbound SR 4 to northbound I-680 has a superelevation rate of 0.10. The standard superelevation rate is 0.12.

Advisory Design Exceptions

The following additional nonstandard advisory design features have been identified for Phase 3:

- A1: The minimum length of vertical curve should be 700 feet for a design speed of 70 mph (Index 204.4). Nonstandard vertical curve length is maintained at the following location:
 - Vertical sag curve from C5M Sta.181+90 to Sta.184+60 is 270 feet.
- A2: The design speed at the exit nose should be 50 mph or greater for both ramps and branch connections (Index 504.2(4)(a)). Nonstandard design speed at exit nose is proposed at the following locations:
 - Eastbound SR 4 off-ramp to southbound I-680 has a design speed of 32 mph at exit nose.
 - Eastbound SR 4 off ramp to northbound I-680 has a design speed of 20 mph at exit nose.
- A3: When a lane is to be dropped, it should be done by tapering over a distance equal to WV (Index 206.3(1)). Nonstandard lane drop is proposed at the following locations:
 - Auxiliary lane along eastbound SR 4 at Pacheco Boulevard Overcrossing has a lane drop of 431 feet. The standard lane drop should be 840 feet.
 - Auxiliary lane along eastbound SR 4 at I-680 Separation has a lane drop of 330 feet. The standard lane drop should be 840 feet.
- A4: A superelevation transition should be designed in accordance with the diagram and tabular data shown on Figure 202.5A (Index 202.5(1)). Two-thirds of the superelevation runoff should be on the tangent and one-third within the curve (Index 202.5(2)). Nonstandard superelevation transitions are maintained or proposed at the following locations:
 - Eastbound SR 4 off-ramp to southbound I-680
 - Northbound I-680 to eastbound SR 4 on-ramp
 - Westbound SR 4 off-ramp to northbound I-680
 - GC Sta. 214+57 to Sta. 215+80
- A5: The design speed for single-lane directional and all branch connections should be a minimum of 50 mph (Index 504.4(3)). Nonstandard design speeds are maintained at the following locations:
 - Design speed at the northbound I-680 to eastbound SR 4 on-ramp is 43 mph.
 - Design speed at the westbound SR 4 to northbound I-680 connector ramp is 34 mph.
- A6: A branch connection should be provided when the design year volume exceeds 1,500-equivalent passenger cars per hour. Merging branch connections should be designed as shown on Figure 504.3L. Diverging branch connections should be designed as shown on Figure 504.4 (Index 504.4(6)). A nonstandard branch connection is proposed at the following location:

- Westbound SR 4 to northbound I-680 connector ramp

Interim Features

No changes to the approved Project Report are proposed regarding this topic.

High-Occupancy Vehicle (Bus and Carpool) Lanes

No changes to the approved Project Report are proposed regarding this topic.

Ramp Metering

Ramp metering facilities are present at the existing eastbound SR 4 on-ramps from Pacheco Boulevard. The affected ramp metering equipment at the on-ramp will be modified or replaced, as necessary, to meet the latest standards. Phase 3 will also involve installation of ramp metering facilities at the northbound I-680 to eastbound SR 4 and southbound I-680 to westbound SR 4 connector ramps.

Traffic Operation System

No changes to the approved Project Report are proposed regarding this topic.

California Highway Patrol Enforcement Areas

A CHP enforcement area will be installed in the median on eastbound SR 4 just east of the Peralta Road Undercrossing.

Park-and-Ride Facilities

No changes to the approved Project Report are proposed regarding this topic.

Flight Path Clearance

Buchanan Field Airport is in the southeastern quadrant of the I-680/SR 4 Interchange. The airport is one of two publicly owned airports in Contra Costa County. Buchanan Field Airport occupies approximately 495 acres of property and has 50 acres of control navigation easements. There are two runways of concern for the proposed project: Runways 14L-32R and 14R-32L. The runways are south of SR 4 between GC Line Sta. 220+00 and CCM Sta. 255+00. Runway 14L-32R, the larger of the two runways, is 4,600 feet by 151 feet. Runway 14R-32L is 2,800 feet by 76 feet. The distance from the end of the runway to the centerline of SR 4 is approximately 830 feet for Runway 14L-32R and 770 feet for Runway 14R-32L. Both runways are visual runways and require a 20:1 approach path. According to the Contra Costa County Airport Land Use Compatibility Plan (December 2000), there are no plans to upgrade either runway to instrument-approach runways. Another runway, Runway 1L-19R, runs northeast/southwest and is the most heavily used at Buchanan Field Airport. Runway 1L-19R will not be affected by the proposed project.

Part 77 of the Federal Aviation Administration (FAA) regulations establishes mandatory standards to determine impacts to navigable airspace by temporary and permanent obstructions and applies to aircraft approaching the runway. Obstructions include any object of natural growth, terrain, permanent or temporary construction, or alteration, including equipment or materials used therein and apparatus of a permanent or temporary character.

Use of construction equipment and installation of overhead sign structures and highway lighting luminaires at several locations along SR 4 would encroach into the glidepath of the Buchanan Field Airport runways and require coordination and approval from the FAA. Notice of Proposed Construction (FAA Form 7460) has been filed with the FAA during the final design phase for all permanent and temporary obstructions within the Project limits. The FAA requirements for the contractor are included in the contract documents.

Highway Planting

No changes to the approved Project Report are proposed regarding this topic.

Erosion Control

No changes to the approved Project Report are proposed regarding this topic.

Noise Barriers

A Noise Study Report was prepared for Phase 3 by Illingworth & Rodkin and approved by Caltrans in May 2015 to assess existing and future (2040) traffic noise levels at noise-sensitive receptors in the vicinity of the Project limits and identify whether preliminary noise abatement measures are necessary to comply with State of California (State) and Federal noise abatement/mitigation requirements. The primary objective of the noise study was to identify noise-sensitive receptors where noise levels would approach or exceed the noise abatement criteria (NAC) with the Project or receptors that would experience a substantial increase in noise levels as a result of the Project. Noise abatement, in the form of new or replacement noise barriers, was assessed for receptors where noise levels would approach or exceed the NAC. A total of five potential barriers were evaluated for feasibility where the NAC would be approached or exceeded. To be considered feasible, a noise barrier must achieve a minimum of a 5-decibel (Db) reduction at a given receptor. Three of the five barriers were found to be feasible; however, only one of the barriers was found to be feasible and also achieve the Caltrans noise reduction design goal (minimum 7 dB reduction for at least one receptor), which is a reasonableness consideration. The total reasonable allowance for this feasible barrier (Barrier 41) ranged from \$568,000 to \$1,420,000, depending on the number of benefited receptors.

A Noise Abatement Decision Report (NADR) was prepared for the Project. The NADR examined one noise barrier (Barrier 4) with the various heights that were identified in the Noise Study Report. Although the noise barrier met the feasibility criteria, the estimated cost would exceed the reasonable allowance. No new noise barriers are therefore proposed for the Project. The determination of reasonableness is documented in the Environmental Revalidation form (see Attachment H).

Nonmotorized and Pedestrian Features

No changes to the approved Project Report are proposed regarding this topic.

Needed Roadway Rehabilitation and Upgrading

The existing pavement on SR 4 within the Project limits is in good to fair condition, with minor localized slab cracking and unsealed cracks and would typically require preventive and corrective maintenance.

¹ Noise Barrier 4 is referenced as Sound Wall No. 10 in the approved Project Report.

The cracked concrete slabs were replaced in 2007 under Contract 04-OC7204. According to the Caltrans 2011 Pavement Condition Survey Inventory Report, the Internal Roughness Index within the Project limits is below 170, and ride quality is very good, except at several localized sections in lane nos. 1 and 2 on eastbound SR 4 near the Pacheco Boulevard and the I-680 structures, where third-stage cracking, raveling, and ride quality defects were observed. Replacement of failed concrete slabs in this area is included as part of the Phase 3 improvements.

Needed Structure Rehabilitation and Upgrading

Bridge type selection and preliminary engineering are complete for the six structures that require modification under the Phase 3 Project. The proposed improvements require widening five bridge structures, including required structure rehabilitation and retrofit and replacement of one bridge structure (see Table 9). General plans for each bridge are provided in Attachment D.

Table 9: Modified Structures

Structure (Bridge No.)	Description	Structure Type	Foundation Type
Pacheco Boulevard Undercrossing (28-0182 L/R)	Two-span structure, approx. 144' in length. Widen approx. 32.3' in the median and outside widening of approx. 10' in both directions.	Standard PC/PS concrete "I" girder	Spread footing supported on approx. 50' long driven 16" steel pipe piles
I-680/SR 4 Separation (28-0179 L/R)	Four-span structure, approx. 239' in length. Widen approx. 32.3' in the median and outside widening of approx. 10' in both directions.	Standard PC/PS concrete "I" girder	Spread footing supported on approx. 50' long driven 16" steel pipe piles
Grayson Creek Bridge (28-0066 L/R)	Replace existing structure with new three-span structure (Br. No. 28-0415), approx. 257' long and 175.1' wide.	CIP/PS concrete box girder	CIDH pile
Walnut Creek Bridge (28-0240 L/R)	Five-span structure, approx. 426' in length. Widen right bridge approx. 28.7' in the median and widen the left bridge approx. 16.7' in the median.	CIP reinforced concrete box girder	Spread footing supported on approx. 70' long driven 16" steel pipe piles
Solano Way Undercrossing (28-0241 L/R)	Four-span structure, approx. 284' in length. Widen right bridge approx. 28.7' in the median and widen the left bridge approx. 16.7' in the median.	CIP/PS concrete box girder	Spread footing supported on approx. 60' long CIDH piles and 16" steel pipe piles
Peralta Road Undercrossing (28-0242 L)	Single-span structure, approx. 186.2' in length. Widen right bridge approx. 11.7' in the median and widen the left bridge approx. 16.7' in the median.	CIP/PS concrete box girder	Spread footing supported on approx. 70' long driven 16" steel pipe piles

Notes:

CIDH = cast-in-drilled-hole

CIP/PS = cast-in-place/prestressed

PC/PS = precast/prestressed

Cost Estimate

An updated preliminary cost estimate (i.e., the estimate from the 100% Plans, Specifications, and Estimate [PS&E]) for Phase 3 is provided in Attachment E. The quantities used in the cost estimate were based on the 100% PS&E plans, and the unit costs were derived using current bid prices and Caltrans cost data. The following table provides a summary of the estimated project costs.

Cost Estimate Summary

Phase 3 Capital Outlay Construction Cost	
Roadway Items	\$49.30 million
Structure Items	\$29.63 million
Contingency and Escalation	\$10.65 million
Construction Cost	\$89.58 million
Phase 3 Capital Outlay Right-of-Way Cost	
Right-of-Way	\$0.46 million
Utility Relocation	\$15.43 million
Environmental Mitigation	\$2.80 million
Right-of-Way Cost	\$18.69 million
Phase 3 Capital Outlay Support Cost	
PA/ED and PS&E	\$14.81 million
R/W Services	\$1.00 million
Construction Administration	\$11.01 million
Project Support Costs	\$26.82 million
Project Total	\$135.09 million

Notes:

PA/ED = Project Approval and Environmental Document

PS&E = Plans, Specifications, and Estimate

R/W = right-of-way

Construction Bidding

CCTA proposes to bid the Project under three construction packages, pending proposed funding approval. The three packages are:

1. Utility Relocation Package: Relocate two oil pipelines under Grayson Creek. The construction work will be performed by the utility owner's contractor in advance of roadway construction.
2. Roadway Construction Package #1: Widen eastbound SR 4 in the median from just east of Grayson Creek to SR 242. Widen Walnut Creek Bridge, Solano Way Undercrossing, and Peralta Road Undercrossing in both directions.
3. Roadway Construction Package #2: Complete remainder of roadway improvements, including replacement of Grayson Creek Bridge.

CCTA will advertise, award, and administer construction of the Project roadway improvements.

Effect of Projects Funded by Others on State Highway

The Project is the initial phase of a five-phase project to improve the I-680/SR 4 interchange. Each of the five phases will be independently constructed and provide incremental benefits in meeting the overall

project goal to improve operational efficiencies and traffic flow, address the safety concerns associated with the existing interchange configuration, and accommodate existing and planned growth.

In the eastbound direction, the Project will allow the HOV lanes to bypass some of the queue in the mixed-flow lanes, take advantage of free-flow conditions in an extended HOV lane, decrease the overall HOV travel time, and improve average travel speeds for single-occupied vehicles. In the westbound direction, the Project will alleviate an existing bottleneck between SR 242 and Solano Way and alleviate a future bottleneck at the I-680 interchange that is likely to develop without the implementation of this Project.

Aesthetic Treatments

No changes to the approved Project Report are proposed regarding this topic.

B. Rejected Alternatives

No changes to the approved Project Report are proposed regarding this topic.

6. CONSIDERATIONS REQUIRING DISCUSSION

A. Hazardous Waste

An Initial Site Assessment (ISA) update was approved by Caltrans in July 2014 to support the environmental revalidation of the Project.

A Preliminary Site Investigation (PSI) was prepared for the Project and accepted by Caltrans in November 2014. The conclusions and recommendations of the PSI are summarized below.

A statistical analysis of total and soluble lead concentrations indicated that the soil excavated for the Project will be classified as a non-hazardous waste once excavated, and no restrictions will be placed on reuse of the soils except for the segment between Pacheco Boulevard and Grayson Creek, where soils excavated to a depth of 1 foot may be reused on-site (Type Y-1) in accordance with the Department of Toxic Substances Control (DTSC) variance by placing the excavated soil under clear fill or pavement.

Due to the presence of lead in soils, a Lead Compliance Plan should be implemented by the Project construction contractors to ensure compliance with the Division of Occupational Safety and Health's (Cal/OSHA) worker safety regulations. The Lead Compliance Plan should include safety training for construction workers and perimeter air monitoring in accordance with the requirements of Title 8 California Code of Regulations (CCR) Sections 1532.1 and 5192.

No evidence of agricultural chemical residues that would require special soil management or disposal procedures during Project development were identified within the Project limits. Total arsenic concentrations were consistent with naturally occurring concentrations in the Bay Area. The petroleum hydrocarbons (total petroleum hydrocarbons as diesel [TPH-d] and total petroleum hydrocarbons as motor oil [TPH-mo]) concentrations identified in the PSI indicate that reuse or disposal of excavated soil may be restricted based on TPH-d and TPH-mo content, depending on proposed use.

One groundwater sample collected at the Project site contained nickel at concentrations that exceeded the Environmental Screening Levels (ESLs) for those contaminants. If groundwater is encountered during

construction, it should be managed and disposed of in accordance with Regional Water Quality Control Board (RWQCB) National Pollutant Discharge Elimination System (NPDES) General Permit for discharge or reuse of extracted and treated groundwater resulting from the cleanup of groundwater polluted by volatile organic compounds, fuel leaks, and other related wastes. Additional analysis of the dewatered groundwater may be required before disposal.

Yellow traffic striping was found to contain lead at concentrations that will require special management and disposal procedures. Traffic striping should be managed and disposed of in accordance with the December 2011 Caltrans Guidelines for Selecting Materials and Standard Special Provisions for Traffic Striping and Pavement Marking.

Before project construction, a Construction Risk Management Plan (CRMP) will be prepared to address potential hazardous material issues during construction of the Project. The CRMP should include available data from sampling conducted at the Project alignment and include all health and safety and soil/groundwater management and disposal procedures that are determined to be necessary for the Project based on the findings of the soil and groundwater investigation. The CRMP will also address the possibility of encountering unknown contamination or buried hazards, such as previously unreported underground storage tanks (USTs). The CRMP will include emergency procedures for accidental releases of hazardous materials used or stored during construction activities.

B. Value Analysis

No changes to the approved Project Report are proposed regarding this topic.

C. Resource Conservation

Design of Phase 3 will take steps to promote sustainable practices and save water. With a Central Contra Costa Sanitary District (CCCSD) treatment facility adjacent to the Project limits and SR 4 crossing over the existing CCCSD's recycled water transmission line, the Project will consider using recycled water during construction and a future tie-in to the recycled water for future landscaping.

D. Right-of-Way Issues

Right-of-Way Required

The existing right-of-way along SR 4 will generally accommodate all proposed improvements (including utility relocations) with minor exceptions.

Widening the Solano Way Undercrossing will require acquisition of one permanent easement (± 0.04 acre) and one temporary construction easement (± 0.4 acre) from a public storage facility to accommodate construction of new bridge footings.

Replacement of the Grayson Creek Bridge will require acquisition of one partial fee take (± 0.9 acre), two utility easements (± 0.9 acre), and one temporary construction easement (± 0.9 acre) from Contra Costa County and/or the USACE. In addition, transfer of rights (Section 83) for a portion of Old Imhoff Road (± 0.1 acre) will be required.

Right of Way Data

Details of the right-of-way requirements and the Right of Way Data Sheet are provided in Attachment F. Consistent with the Right of Way Data Sheet guidelines, no land acquisition costs are included for areas involving transfer of ownership between State agencies.

Relocation Impact Studies

No changes to the approved Project Report are proposed regarding this topic.

Airspace Lease Areas

No changes to the approved Project Report are proposed regarding this topic.

Utility and Other Owner Involvement

Relocation of the following utilities will be required to replace the Grayson Creek Bridge, and these utility relocations will be done in advance of construction of the Grayson Creek Bridge.

- Two existing oil pipelines (one owned by Kinder Morgan and one by Phillips 66; pipelines are 8-inch and 16-inch diameter, respectively) are aligned parallel to and south of SR 4. The oil pipelines conflict with construction of the west bridge abutment. Approximately 1,800 feet of each oil pipeline will need to be relocated under the Grayson Creek channel to the south of the new bridge using tunneling methods.
- An 18-inch water line owned by Contra Costa Water District crosses SR 4 just west of Grayson Creek Bridge. This line would conflict with modifications to the northbound I-680 to eastbound SR 4 direct ramp connector. Approximately 150 feet of the water line would be relocated using trench construction methods.
- A Pacific Gas and Electric Company (PG&E) 21-kilovolt overhead electrical distribution line that passes along Imhoff Drive northwest of Grayson Creek Bridge conflicts with the Project modifications to the westbound SR 4 to northbound I-680 direct ramp connector. Four anchor poles will be relocated to accommodate the proposed improvements.

The existing utilities and utility relocations identified as being inconsistent with Caltrans Policy on Longitudinal Utility Encroachments are addressed in the Encroachment Policy Variance Request. Utilities that encroach within the State right-of-way were discussed with the Caltrans District 4 Utility Coordinator. Longitudinal encroachment of utilities within the Project limits does not impact highway operations or affect safe access for maintenance.

The environmental impacts associated with the various utility relocations are addressed in the Environmental Revalidation pursuant to California Public Utilities Commission (CPUC) General Order (GO)-131 D filing requirements.

Railroad Involvement

No changes to the approved Project Report are proposed regarding this topic.

E. Environmental

The changed conditions and supporting information for the Project mean that the approved Initial Study with Negative Declaration and the Environmental Assessment with Finding of No Significant Impact are in need of updating.

To evaluate the changes, an Environmental Revalidation Form was prepared in accordance with Caltrans' environmental procedures and State and Federal environmental regulations and was approved on December 17, 2015. A summary of the environmental impacts identified in the environmental revalidation is provided below. Refer to the approved Project Report for other information.

Aesthetics

No changes to the approved Project Report are proposed regarding this topic.

Geology and Soils

No changes to the approved Project Report are proposed regarding this topic.

Water Quality

A water quality revalidation was prepared for Phase 3 and approved by Caltrans in November 2014. The changes to the Project Report are summarized below in Section 6G, "Water Quality."

The Storm Water Data Report will be updated during final design for Phase 3.

Hydraulics and Hydrology

A new Location Hydraulic Study was prepared for Grayson Creek and Walnut Creek using current hydraulic data and the hydraulic model for the lower Walnut Creek watershed provided by CCCFC&WCD.

Grayson Creek

The main channel of Grayson Creek upstream of the SR 4 bridge is within Zone AE on the Federal Emergency Management Agency (FEMA) base floodplain and is classified as a regulatory floodway.

The impact of the Project highway improvement to the base flood elevation of Grayson Creek will be insignificant. Under the existing condition, the 100-year water surface elevation (WSE) is above the soffit of the SR 4 bridge. The new bridge will provide a minimum 3 feet of freeboard and decrease the 100-year WSE upstream of the bridge by approximately 0.3 foot.

The area east of Grayson Creek and south of SR 4 is also within Zone AE and contains a low-lying area with an open channel that drains to Grayson Creek through three culverts with automatic gates. This area is prone to flooding. To avoid adding fill to this low-lying area, the Project proposes to construct new retaining walls along the edge of eastbound SR 4 and to excavate sufficient material to ensure that the Project provides a "zero net fill" solution. Similar mitigation measures will be required when the southbound I-680 to eastbound SR 4 direct connector ramp structure is constructed under a future phase.

Walnut Creek

The area within the Walnut Creek channel is within FEMA Zone A. The bridge has adequate freeboard (over 10 feet) during the 100-year event, and the 100-year flow is contained in the channel immediately

upstream and downstream of the bridge. The bridge widening will lengthen the existing piers within the wetland and waters of the United States (waters of the U.S.) within the channel. The effect of this change will be insignificant, as the area of the piers is small.

Biology (Including Wetlands)

As a part of the environmental revalidation process, all original technical studies were reviewed and the following biological surveys and reports were prepared for the area within the Project study limits:

- Updated Wetlands Delineation Report (Grayson Creek and Walnut Creek)
- Fish passage assessment for steelhead (Grayson Creek and Walnut Creek)
- California Tiger Salamander Survey Report
- Botanical Survey
- Natural Environment Study

Noise

As a part of the environmental revalidation process, all original technical studies were reviewed and updated where necessary. An NADR was prepared for the Project. The NADR examined one noise barrier (Barrier 4) with varying heights that were identified in the Noise Study Report. Although the noise barrier met the feasibility criteria, the estimated cost would exceed the reasonable allowance. No new noise barriers are therefore proposed for the Project.

Population and Housing

As a part of the environmental revalidation process, all original technical studies were reviewed and updated where necessary. The “Population and Housing” findings remain valid as described in the approved Project Report.

Transportation and Traffic

A Traffic Operations Analysis Report for Phase 3 was prepared to document existing and future travel conditions. The results of the analysis are summarized in Section 4C, “Traffic.”

F. Air Quality Conformity

The Project is listed in the 2015 Transportation Improvement Program (TIP) for the San Francisco Bay Area and the accompanying Air Quality Conformity Analysis, both of which the Metropolitan Transportation Commission (MTC) adopted on September 24, 2014. The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) approved MTC’s TIP conformity determination on December 15, 2014. The Build Alternative (Project Reference No. 21205) and TIP ID CC-130046 were included in the regional emissions analysis conducted by MTC for the 2040 Plan Bay Area and the 2015 TIP.

FHWA and FTA determined that the MTC’s 2013 Regional Transportation Improvement Program (RTIP) conformed on August 12, 2013. The design concept and scope of the Project are consistent with the project description in the 2013 Regional Transportation Plan (RTP), the 2013 RTIP, and the traffic assumptions of the MTC’s regional emissions analysis.

The Project was submitted to FHWA for project-level conformity determination on October 12, 2015. The FHWA conformity determination was received on November 9, 2015.

Carbon monoxide (CO) hot-spot modeling found that local violations of the National Ambient Air Quality Standards (NAAQS) will not occur as a result of the Project. Procedures contained in the Transportation Project-Level Carbon Monoxide Protocol, developed by University of California, Davis, and approved by Caltrans, the California Air Resources Board (CARB), the United States Environmental Protection Agency (US EPA), and FHWA were used to predict project CO concentrations. The hot-spot modeling results satisfy the project-level conformity requirements identified in Title 40 Code of Federal Regulations (CFR) Section 93.116(a).

Mobile source air toxics (MSAT) and greenhouse gas (GHG) emissions were modeled using estimates of eastbound and westbound peak-period and off-peak-period traffic volumes and speeds derived from data provided by Fehr & Peers Associates traffic consultants. Emissions for all MSATs are projected to decrease over existing conditions. Due to increases in traffic and speed, MSAT emissions under the Build Alternative will be slightly higher than under the No-Build Alternative. GHG emissions were predicted both without and with the Pavley and Low Carbon Fuel Standard (LCFS) requirements. The net difference between the existing and Build scenario shows that, even with an increase in vehicular traffic with the Project, GHG emissions are predicted to remain the same mostly due to the Pavley and LCFS requirements. As with MSAT emissions, the slightly higher traffic volumes and speed under the Build Alternative will result in slightly higher GHG emissions when compared to those under the No-Build Alternative.

Construction emissions will not be significant with the implementation of feasible control measures as specified in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines. Implementing appropriate dust control measures, along with measures to reduce diesel exhaust, would satisfy BAAQMD CEQA requirements for transportation projects. Caltrans special provisions and standard specifications will include the requirement to minimize or eliminate dust through application of water or dust palliatives.

G. Water Quality

The original Water Quality Study (WQS) prepared in 2002 was reevaluated for any necessary updates to water quality impacts based on the current design and regulatory requirements.

Changes to the Project design that have the potential to affect the WQS include:

- Changes to the Project limits (Previously, the Project limits were from kilometer post [KP] 16.0 [PM R10.5] to KP 24.3 [PM R15.0]. The updated Project limits are from PM R11.2 to PM R15.1.)
- Raising the profile of SR 4 and freeway reconstruction and widening from east of I-680 (PM R12.7) to east of Grayson Creek (PM R13.0), along with replacing Grayson Creek Bridge (Widening of the Grayson Creek bridges was included in the original Phase 3 scope.)

The Project is expected to be required to comply with the following updated permits:

- Construction General Permit (CGP) (Order No. 2009-009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ), which became effective on February 14, 2011
- The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Municipal Regional Storm Water NPDES Permit (Order R2-2009-0074, NPDES Permit No. CAS612008) (The Project-specific requirements will be documented in the Section 401 certification.)
- Waste Discharge Requirements (WDR) Permit (Order No. R2-2012-0012) (This permit would be required if treated groundwater, formerly polluted by volatile organic compounds and/or fuel leaks, is discharged to surface waters. Otherwise, a permit with publicly owned treatment works [POTW] can be obtained if the effluent is taken to a POTW.)

Changes in the environmental settings include the following:

- The beneficial uses of Project receiving water bodies are updated per the latest Basin Plan for the SFBRWQCB, which is dated May 2017.
- The Contra Costa Water District (CCWD) website was updated, as was the Urban Water Management Plan, in June 2016. Surface water information from both sources is updated.
- Additional information from Section 303(d) List of Water Quality Limited Segments (2012) on the Project receiving surface water bodies is updated.

Changes to environmental impacts of the Project include the following:

- Updated the areas for the Disturbed Soil Area (DSA) and added impervious area (AIA) and reworked the impervious areas for Phase 3.
- The I-680 HOV Lane Project, which was discussed in the original Water Quality Report (2002) as part of the cumulative impacts to this Project, has already been constructed and completed as of 2014. Therefore, this environmental revalidation study will only focus on SR 4 widening.

Changes to avoidance, minimization, and/or mitigation measures include the following:

- In accordance with the CGP, the Project is required to perform a risk assessment to determine the Project risk level. The Project will likely be classified as risk level 2.
- The Project will incorporate treatment Best Management Practices (BMPs) for areas within the Caltrans right-of-way. Based on the site criteria, bioretention, biofiltration strips, and biofiltration swales are proposed as treatment BMPs for the Project.
- The Project will comply with local hydromodification management requirements as part of the Section 401 certification.

Changes to Regulatory Sections include:

Federal Laws and Requirements

Section 404 Clean Water Act

The Project will result in temporary and permanent impacts to nonwetland waters of the U.S., as defined by the Clean Water Act (CWA). Under Section 404 of the CWA, the type of impacts to wetlands and waters of the U.S. qualifies the Project for authorization under the USACE Nationwide Permit program

(USACE 2012). A permit application will be submitted to USACE, and USACE will determine the appropriate review process at that time.

Construction General Permit

The CGP (Order No. 2009-009-DWQ, as amended by 2010-0014-DWQ and 2012-0006-DWQ), adopted on November 16, 2010, became effective on February 14, 2011. The permit regulates storm-water discharges from construction sites that result in a DSA of 1 acre or greater and/or smaller sites that are part of a larger common plan of development. For all projects subject to the CGP, applicants are required to develop and implement an effective Storm Water Pollution Prevention Plan (SWPPP). In accordance with Caltrans' Standard Specifications, a Water Pollution Control Plan (WPCP) is necessary for projects with a DSA of less than 1 acre. Operators of regulated construction sites are required to develop SWPPPs; implement sediment, erosion, and pollution prevention control measures; and obtain coverage under the CGP.

The CGP separates projects into risk levels 1, 2, or 3. Risk levels are determined during the planning and design phases and are based on potential erosion and transport to receiving waters. Requirements apply according to the risk level determined.

Construction Dewatering

A WDR Permit (Order No. R2-2012-0012) will be required if the effluent is discharged to surface waters. Otherwise, a permit with a POTW can be obtained if the effluent is taken to a POTW. Dewatering and associated permitting activities will be confirmed further into the design phase, and a dewatering plan will be provided by the contractor.

Regional and Local Requirements

SFBRWQCB Basin Plan

Because the Project site is within the SFBRWQCB's jurisdiction, all discharges to surface water or groundwater are subject to the Basin Plan requirements (SFBRWQCB 2013).

Local Agency NPDES Permit

The Project is primarily within the Caltrans right-of-way, but storm-water runoff also discharges to the drainage systems in unincorporated Contra Costa County and the City of Martinez in the west and the City of Concord in the east. Contra Costa County, which is within the jurisdiction of the SFBRWQCB, is covered under the Phase I NPDES permits regulating the discharge in urban runoff from Municipal Separate Storm Sewer Systems (MS4s).

The segment of Contra Costa County that is within the Project site is a co-permittee under the California Regional Water Quality Control Board San Francisco Bay Region Municipal Regional Storm Water NPDES Permit (Order R2-2009-0074; NPDES Permit No. CAS612008). This Municipal Regional Permit (MRP) presents the provision for permanent post-construction storm-water requirements. Within the Project limits, the MRP is administered regionally by the Contra Costa Clean Water Program (CCCWP) and locally by the Cities of Martinez and Concord. The CCCWP has developed a Stormwater C.3 Guidebook (6th edition, February 2012) to assist developers and engineers in complying with treatment and hydromodification requirements.

The MRP provides provisions and requirements for permanent storm-water treatment. The thresholds applicable for this Project include requiring permanent storm-water treatment measures when 10,000 square feet or more of impervious roadway area is created or replaced. If a project creates and/or replaces impervious area equal to more than 50 percent of the existing impervious area not previously requiring treatment, then the Project must provide treatment for all existing and newly created impervious area.

In addition to permanent storm-water treatment requirements, the MRP provides provisions and requirements for hydromodification mitigation. Under the permit, projects that create or replace 1 acre or more of impervious area are required to evaluate hydromodification impacts to downstream water bodies and implement mitigation measures, where appropriate. Because the Project requires a Section 401 certification, conditions therein are anticipated to be similar to the local municipality.

The SFBRWQCB is within the Project limits. A Section 401 Water Quality Certification is required, and the location-specific requirements will be further determined during final design of the Project.

There are currently no negotiated understandings and/or agreements with the SFBRWQCB. Communication with the SFBRWQCB will be coordinated through the Caltrans District 4 Regional Storm Water Coordinator. Under Section 401 of the federal Clean Water Act, projects involving impacts to waters of the U.S., including wetlands, require certification. The Project proposes to widen and replace bridges at creek crossings; therefore, a Section 401 Certification from the SFBRWQCB is required for the Project.

Work within water bodies identified as waters of the U.S. also results in the need to obtain a Section 404 permit from USACE. A Section 1602 permit for streambed alteration will also be required from the California Department of Fish and Wildlife.

To address the temporary water quality impacts resulting from the construction activities for the Project, compliance with Water Pollution Control Standard Specifications is required, including the Standard Specifications for development and implementation of a SWPPP, which presents the water pollution control strategy throughout the construction phase. The Project will include four different types of BMPs: Construction Site BMPs, Design Pollution Prevention BMPs, Permanent Treatment BMPs, and Maintenance BMPs. A Storm Water Data Report will be prepared to summarize all of the proposed measures for the Project.

During the construction phase, the Project will involve excavation and grading activities that have the potential to degrade water quality in the form of sedimentation, erosion, and fuels/lubricants from equipment. Because of the Project's close proximity to Grayson and Walnut Creeks, and because the storm drain system discharges into these watercourses, the Project will implement BMPs to avoid/minimize impacts to water quality during and after construction. Grayson and Walnut Creeks are the only water bodies where in-water work is planned and where temporary creek diversions and/or dewatering is expected.

Following the Caltrans Storm Water Management Plan (SWMP), these new BMPs will be designed and implemented to reduce the discharge of pollutants from the Caltrans storm drainage systems (to the maximum extent practicable [MEP]). In addition, an extensive system of slope rounding and ditches,

berms, dikes, and swales is proposed to intercept and direct surface runoff to the storm-water drainage system. Flared-end sections will be used at inlets and outlets of culverts with rock slope protection (Facing, Method B) to prevent scour. Extensive planting of unpaved surfaces is proposed to prevent erosion and remove pollutants in storm water and non-storm-water runoff. Permanent paving will be used in areas where it is difficult to maintain planting.

The following construction site BMP measures are proposed:

- Soil stabilizing measures (e.g., hydraulic mulch)
- Sediment control measures (e.g., street sweeping and vacuuming)
- Tracking control
- Non-storm-water management measures
- Storm-water sampling and analysis
- Preservation of existing vegetation
- Outlet protection/velocity dissipation devices
- Wind erosion control
- Illicit connection/illegal discharge detection and reporting
- Vehicle and equipment cleaning, fueling, and maintenance
- Material delivery and storage
- Stockpile management
- Spill prevention and control
- Waste management (e.g., solid, hazardous, concrete, sanitary/septic)
- Contaminated soil management

The estimated costs and right-of-way needs for both permanent and temporary BMPs are included in the Project cost estimate.

H. Title VI Considerations

No changes to the approved Project Report are proposed regarding this topic.

7. OTHER CONSIDERATIONS

A. Public Meeting Process

No changes to the approved Project Report are proposed regarding this topic.

B. Route Matters

No changes to the approved Project Report are proposed regarding this topic.

C. Permits

The following table summarizes the permits and approvals required for construction of the Project.

Agency	Permit/Approval	Status
United States Army Corps of Engineers	Section 408 Permit (Minor)	Issued during the Final Design Phase
United States Army Corps of Engineers	Section 404 Permit – Nationwide	Issued during the Final Design Phase
California Department of Fish and Wildlife	Section 1602 – Notification of Lake or Streambed Alteration	Issued during the Final Design Phase
California State Water Resources Control Board	Section 402 National Pollutant Discharge Elimination System (NPDES) Permit	Statewide Permit (does not require application)
Regional Water Quality Control Board	Section 401 Certification	Issued during the Final Design Phase
Metropolitan Transportation Commission Air Quality Conformity Task Force/ Federal Highway Administration	Regional Air Quality Conformity	Complete
	Project Level Air Quality Conformity	MTC Determination Complete
Contra Costa Flood Control & Water Conservation District	Construction Permit (Grayson Creek and Walnut Creek)	Issued during the Final Design Phase

D. Cooperative Agreements

The I-680/SR 4 Interchange Project is one of the projects covered under the Measure J Master Cooperative Agreement No. 04-2221 for planning, design, and right-of-way activities. The agreement was executed between Caltrans and CCTA on February 18, 2011. Reimbursable Cooperative Agreement No. 4-2545 for right-of-way engineering and acquisition was executed between Caltrans and CCTA on September 25, 2014. The amendment (No. 4-2545-A1) that includes the right-of-way and utility relocation work required to replace the Grayson Creek Bridge was executed on July 3, 2015, and subsequent amendment No. 4-2545-A2 was executed on August 11, 2016, and No. 4-2545A.3 was executed on July 20, 2017. Amendment No. 4-2545-A4 to accommodate changes to the cost of relocating the Phillips 66 oil pipeline and included in the approved Right of Way Data Sheet will be executed in March 2018. CCTA will advertise, award, and administer construction of the Project. Cooperative Agreement No. 4-2693 between Caltrans and CCTA for the construction phase will be executed in March 2018.

E. Other Agreements

No changes to the approved Project Report are proposed regarding this topic.

F. Report on feasibility of Providing Access to Navigable Waterways

No changes to the approved Project Report are proposed regarding this topic.

G. Transportation Management Plan for Use during Construction

A Transportation Management Plan (TMP) for Phase 3 will be prepared in accordance with Caltrans requirements and guidelines. The TMP will address traffic impacts from staged construction, detours, and specific traffic-handling concerns during construction of the Project.

The duration of Phase 3 construction is estimated at 530 working days. The roadway contract is scheduled to begin in May 2018 and be completed by May 2020. Two stages of construction are proposed to construct the Project. Construction of the Project will require traffic control for a period of approximately 270 working days; potential long-term closures of freeway lanes, freeway shoulders, freeway off-ramps, freeway on-ramps, local streets, and nighttime full-freeway closures. Extensive delays are anticipated due to the high traffic volumes in the Project area. However, all efforts will be made to minimize these delays through mitigation measures defined in the TMP. Detours, traffic shifts, and lane restriping will be used wherever feasible to maintain access and improve worker safety. Public information, motorist information strategies, and incident management TMP elements will be considered and have been accounted for in the preliminary cost estimate.

H. Maintenance Considerations

No changes to the approved Project Report are proposed regarding this topic.

I. Stage Construction

A description of each stage of construction is provided below and shown in Attachment G.

Construction Stage Description

STAGE 1	
<i>SR 4</i>	
1.	Temporary shift of traffic on SR 4 EB and WB toward median between I-680 and east of Grayson Creek, utilizing 11' wide lane to reconstruct and widen the outside shoulders (stage 1A)
2.	Temporary shift of traffic on SR 4 EB and WB toward outside shoulders, utilizing 11' wide lane to make room for construction work in freeway median
3.	Construction of SR 4 median widening, including median widening of structures at Pacheco Boulevard, I-680, Solano Way, and Peralta Road. Temporary shift of traffic on Pacheco Boulevard, Solano Way, and Peralta Road and construction of inside portion of Grayson Creek bridge
4.	Construction of NB I-680 to EB SR 4 and WB SR 4 to NB I-680 connector ramps, including Grayson Creek bridge outside construction
<i>I-680</i>	
1.	Temporary shift of traffic on I-680 NB and SB toward outside shoulders, utilizing 11' wide lane to make room for construction of I-680/SR 4 structure widening

STAGE 2	
<i>SR 4</i>	
1.	Shift traffic on EB and WB SR 4 toward outside shoulders between Pacheco Boulevard and I-680 to construct outside bridge widening at Pacheco Boulevard and I-680.
2.	Reconstruct portion of SR4 EB and WB between I-680 and east of Grayson Creek to match the raised elevation of the Grayson Creek Bridge.
3.	Construct remaining ramp realignment at I-680 interchange
4.	Construct pavement repair

Note:

1. 'Base' bid work would be completed under Stage 1.

In implementing the Project, CCTA will produce and disseminate press releases and other documents, as necessary, to adequately inform the public concerning the Project and its associated traffic impacts. This responsibility includes advance notification to local newspapers, television and radio stations, and emergency response providers. CCTA construction staff will also submit weekly information regarding the daily traffic impacts on State facilities to the Caltrans District 4 Public Information Office. This information will be included in the Weekly Traffic Updates, which are dispersed to all news media outlets and other interested agencies.

J. Accommodation of Oversize Loads

No changes to the approved Project Report are proposed regarding this topic.

K. Graffiti Control

No changes to the approved Project Report are proposed regarding this topic.

L. Risk Assessment

A Risk Management Plan has been developed for the Project and is provided in Attachment I. The major risks associated with this project include schedule risks associated with (a) advance relocation of two oil pipelines before start of Grayson Creek Bridge construction; (b) right-of-way acquisition from a storage facility property on Solano Way; and (c) obtaining full funding for the Project.

8. FUNDING/ PROGRAMMING

The following section outlines the programmed funding for the Project.

A)	STIP – RIP	\$5.1M (FY 2017/2018)
	2018 STIP-RIP	\$18.8M
B)	Contra Costa County Measures C	\$17.3M
C)	Contra Costa County Measures J	\$35.0M
D)	2018 SHOPP	\$21.6M
E)	LPP Formulaic	\$4.8M (Proposed)
F)	LPP Comprehensive	\$33.6M (Proposed)

Funding for future phases of the I-680/SR 4 Interchange Project will be sought from future State, regional and local sources.

The anticipated project schedule for Phase 3 is as follows:

DELIVERY SCHEDULE	
Project Milestones	Scheduled Delivery Date
Complete Environmental Revalidation	December 2015
Begin PS&E	October 2013
Complete PS&E	March 2018
R/W Certification (3W)	March 2018
Advertise	June 2018
Begin Roadway Construction	September 2018
End Roadway Construction	December 2020

9. EXTERNAL AGENCY COORDINATION

No changes to the approved Project Report are proposed regarding this topic.

10. PROJECT REVIEWS

- The Highway Operations review was completed on May 5, 2015.
- The Traffic Safety review was completed on March 12, 2015.
- The Regional and Project Air Quality Conformity is complete.
- The environmental review and the revalidation of the environmental document was approved on December 17, 2015.

11. PROJECT PERSONNEL

Caltrans Regional Project Manager	Laurie Lau	(510) 286-5568
Caltrans Senior Design Oversight Engineer	Bonnita Chow	(510) 286-6156
Caltrans Oversight Project Engineer	Heidi Samadian	(510) 286-4913
Caltrans Senior Environmental Planner	Cristin Hallissy	(510) 622-8717
Caltrans Environmental Planner	Paul Herman	(510) 286-5701
Caltrans Senior Right of Way Agent	Sunnie Stanton	(510) 286-5476
Caltrans Traffic Operations Senior	Peter Lau	(510) 286-6157

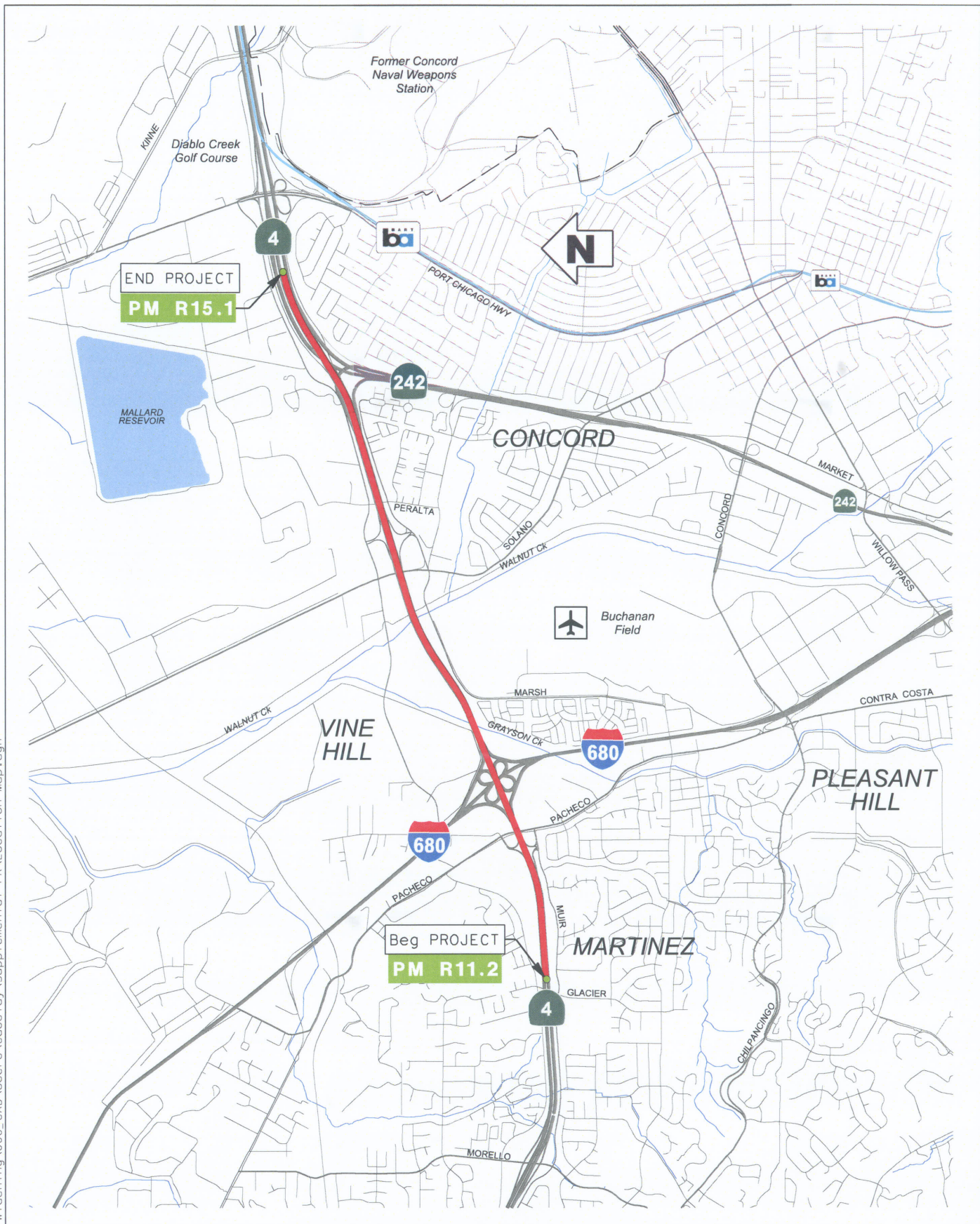
Caltrans Traffic Operations	Shohreh Jamarani	(510) 622-5750
CCTA Project Manager	Susan Miller	(925) 256-4736
Consultant Project Manager	Tim Lee	(415) 806-7500

12. ATTACHMENTS

- A. Location and Vicinity Map (2)
- B. Phase 3 Scope of Work (1)
- C. Typical Cross Sections (10)
- D. Bridge General Plans (10)
- E. Preliminary Cost Estimate Summary (9)
- F. R/W and Utility Requirements Data Sheet (6)
- G. Environmental Revalidation (5)
- H. Risk Management Plan (6)

Attachment A
Location and Vicinity Map

X:\680-SR4 Widening\000_CAD\Users\Cassidy\Supplemental_PRL\Location_Map.dgn



OCTOBER 2013
NO SCALE

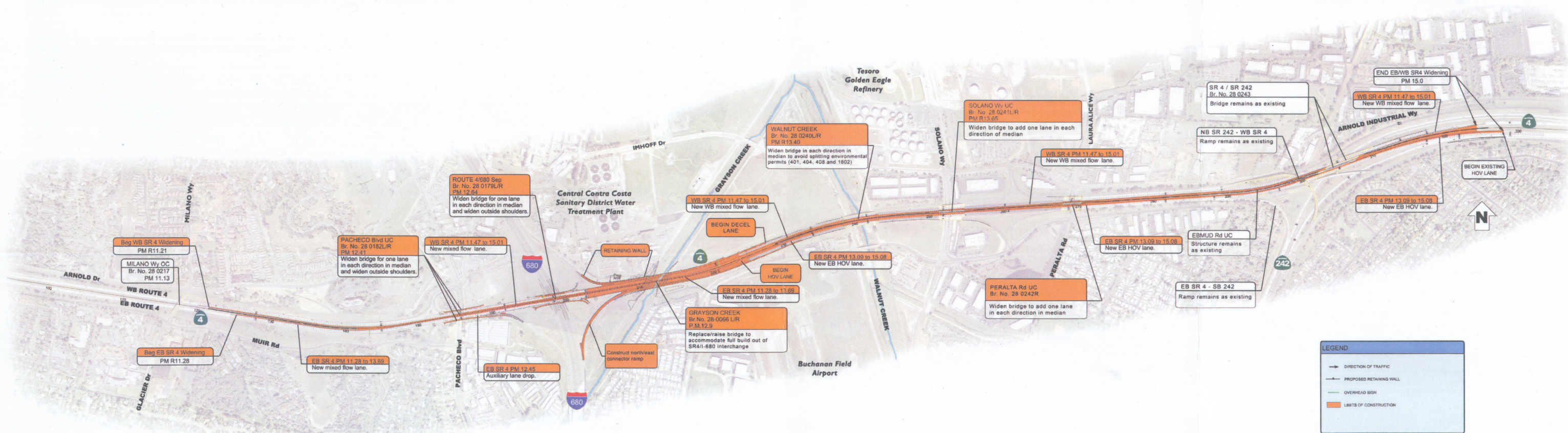
**I-680/SR4 WIDENING PROJECT
PROJECT LOCATION MAP**

Figure

Attachment B
Phase 3 Scope of Work

I-680 SR 4 Interchange Phase 3 (SR 4 Widening)

November 2017



LEGEND

- DIRECTION OF TRAFFIC
- PROPOSED RETAINING WALL
- OVERHEAD SIGN
- ▬ LIMITS OF CONSTRUCTION

Attachment C
Typical Cross Sections

PROJECT TOTAL SHEETS: 15
 SHEET NO.: 11
 PROJECT: R11.2/R15.1
 COUNTY: CC
 ROUTE: 04
 REGISTERED CIVIL ENGINEER: MONIKA RAMAN
 No. 81514
 Exp. 09/30/17
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENCIES SHALL NOT BE RESPONSIBLE FOR ANY ERRORS OR OMISSIONS ON THIS PLAN SHEET.
 WMR CORPORATION
 3010 S. 950th Avenida St
 San Jose, CA 95113
 CCA
 23790 Oak Rd
 Walnut Creek, CA 94597

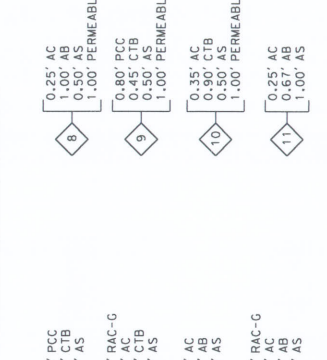
DESIGN DESIGNATION

ADT (2018)	94,000	D	50%
ADT (2038)	157,301	T	6.76%
DHV	15,730	V	70 mph
ESAL	6,351,776	T _{1.20}	11
ESAL	25,407,104	T _{1.20}	13
ESAL	15,485,559	T _{1.40}	12.5
ESAL	61,942,235	T _{1.40}	14.5

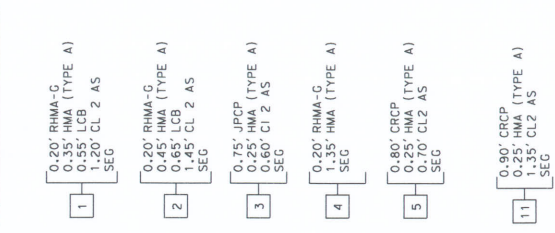
PAVEMENT CLIMATE REGION
 INLAND VALLEY (TYPE II SUBGRADE SOIL)

- NOTES:**
- DIMENSIONS OF THE PAVEMENT STRUCTURAL SECTIONS ARE SUBJECT TO TOLERANCES SPECIFIED IN THE STANDARD SPECIFICATIONS.
 - SUPERELEVATIONS ARE SHOWN ON THE SUPERELEVATION DIAGRAMS.
 - PAVEMENT ELEVATIONS ARE SHOWN ON SHEETS C-1 TO C-19.
 - FOR LOCATION OF SAWCUT/CONFORM LINES, SEE LAYOUT PLANS.
 - FOR LOCATION OF DITCHES, SEE DRAINAGE PLANS.
 - FOR LIMITS AND TYPES OF THREE BEAM BARRIER, CONCRETE BARRIER, DIKE, FENCE, AND MBOA, SEE LAYOUT AND QUANTITY SHEETS.
 - FOR LIMITS OF HMA DIKE, SEE LAYOUT PLANS
 - SEE LAYOUT AND CONSTRUCTION DETAILS FOR LOCATION OF EXISTING CONCRETE SLAB REPLACEMENT.
 - FOR SAFETY EDGE SEE STANDARD PLAN P75.

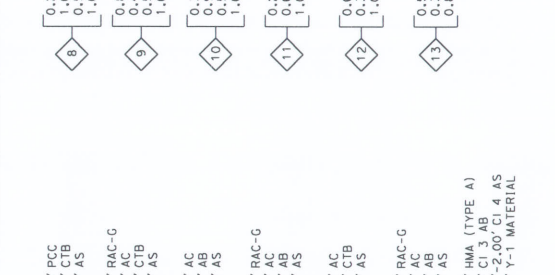
LEGEND:



NEW STRUCTURAL SECTION



EXISTING STRUCTURAL SECTION



TYPICAL CROSS SECTION
 NO SCALE
X-1

DIST	COUNTY	ROUTE	SHEET NO.	TOTAL SHEETS
04	CC	04	R11.2/R15.1	

REGISTERED CIVIL ENGINEER DATE
 MONIKA RAMAN
 No. 81512
 Exp. 03/30/21

PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS
 HAVE REVIEWED THESE PLANS AND
 THE ACCURACY OF THE INFORMATION
 CONTAINED HEREON HAS BEEN
 CONFIRMED BY THIS PLAN SHEET.

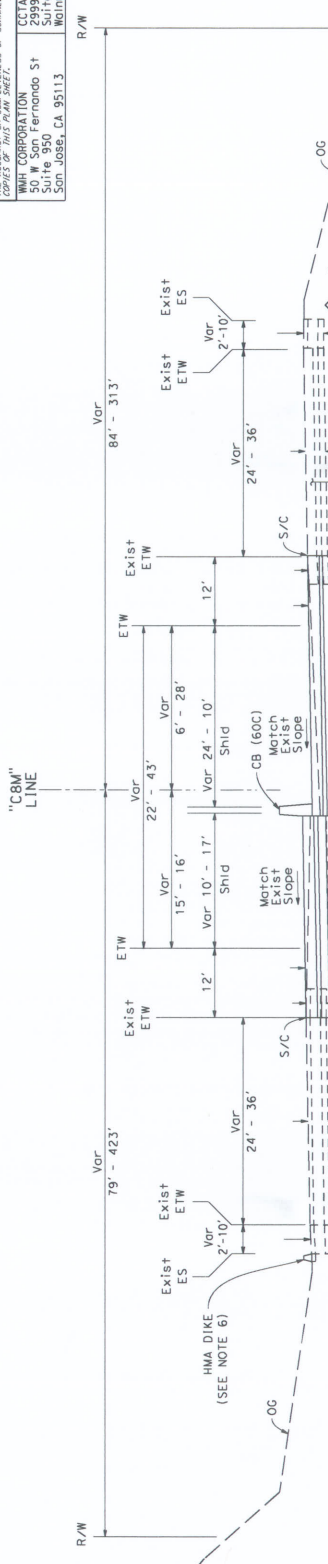
WHH CORPORATION
 10000 Serrano St
 Suite 100
 San Jose, CA 95113

CCIA
 10000 Serrano St
 Suite 100
 Walnut Creek, CA 94597

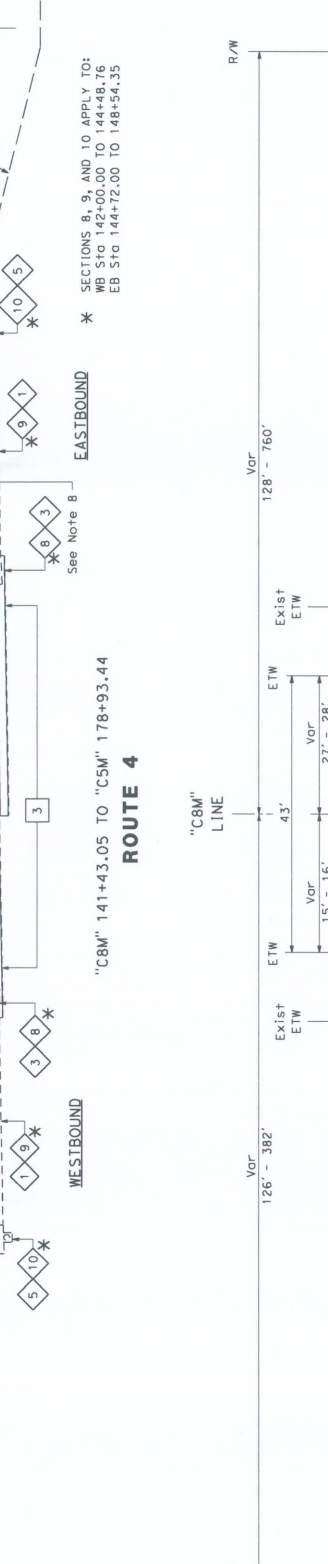
REVISIONS

NO.	DATE	BY	REASON
1	07/20/16	MH	
2	03/25/15	LHM	
3	07/14/14	EIA	
4	07/14/14	J. NGUYEN	

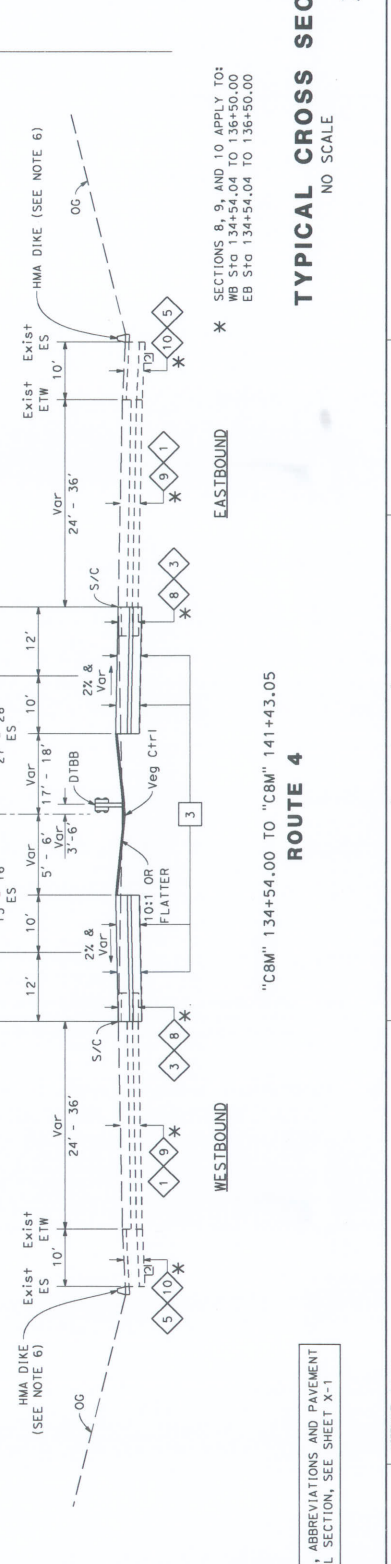
DESIGNED BY: M. RAMAN
 CHECKED BY: J. NGUYEN
 CALCULATED BY: TIMOTHY J. LEE
 CONSULTANT FUNCTIONAL SUPERVISOR: TIMOTHY J. LEE



SECTION 8, 9, AND 10 APPLY TO:
 WB STG 142+00.00 TO 144+48.76
 EB STG 144+72.00 TO 148+54.35



SECTION 8, 9, AND 10 APPLY TO:
 WB STG 134+54.04 TO 136+50.00
 EB STG 134+54.04 TO 136+50.00



SECTION 8, 9, AND 10 APPLY TO:
 WB STG 134+54.04 TO 136+50.00
 EB STG 134+54.04 TO 136+50.00

TYPICAL CROSS SECTION X-3

NO SCALE

PROJECT NUMBER & PHASE: 04140001.301

UNIT: 0736

RELATIVE BORDER SCALE: 1/8" = 1'

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTION, SEE SHEET X-1

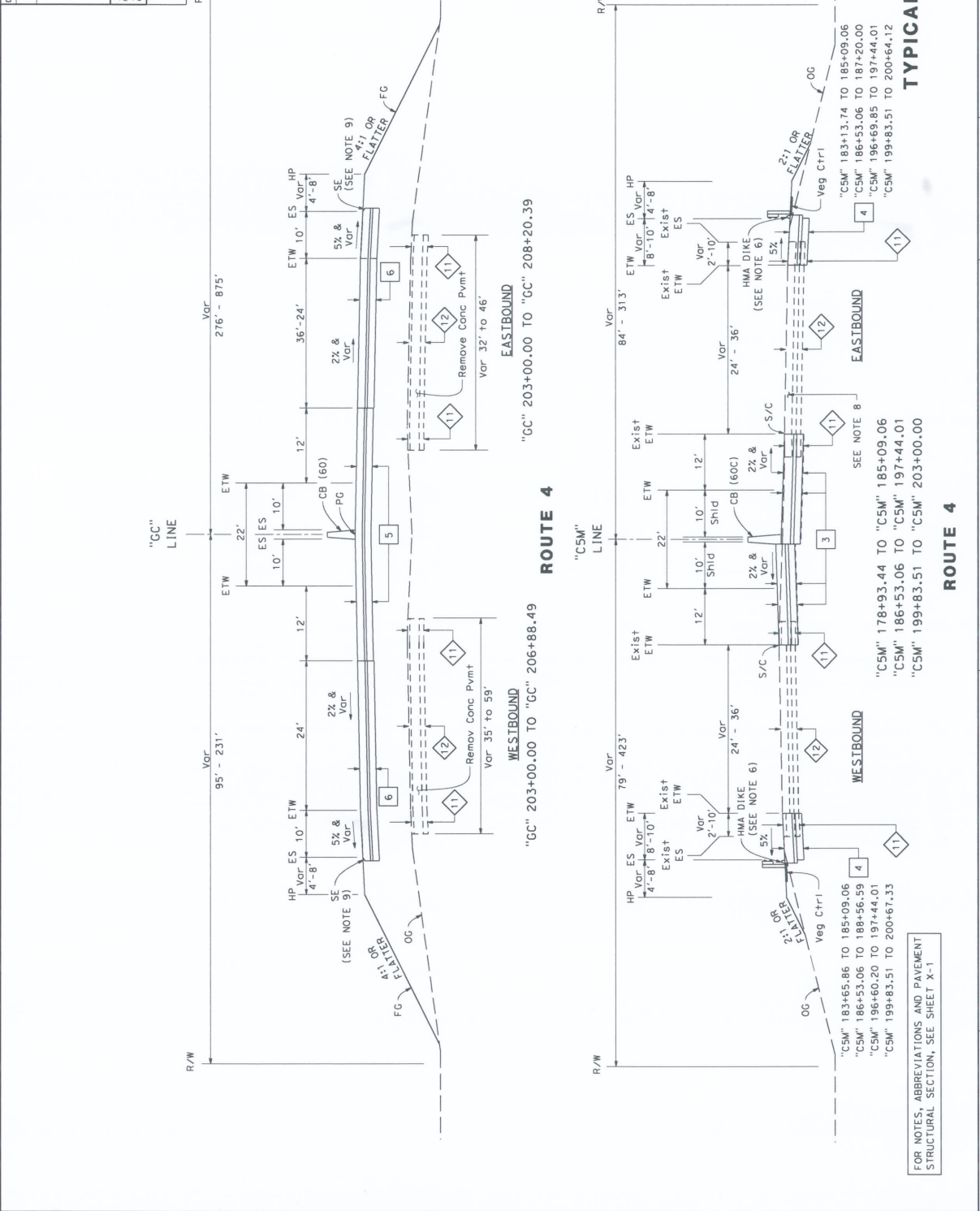
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BORDER LAST REVISED: 7/2/2010

Dist#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS
04	CC	04	R11.2/R15.1		

REGISTERED CIVIL ENGINEER	DATE	PLANS APPROVAL DATE
MONIKA RAMAN	No. 81514	No. 09/20/17

THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR COPIES OF THIS PLAN SHEET.	
WMA CORPORATION	CCTA
501 N. San Fernando St	5399 Oak Rd
San Jose, CA 95113	San Jose, CA 95128
	Walnut Creek, CA 94597



TYPICAL CROSS SECTION
NO SCALE
X-4

PROJECT NUMBER & PHASE
UNIT 0736

RELATIVE BORDER SCALE IS IN INCHES

0 1 2 3

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BORDER LAST REVISED: 7/2/2010

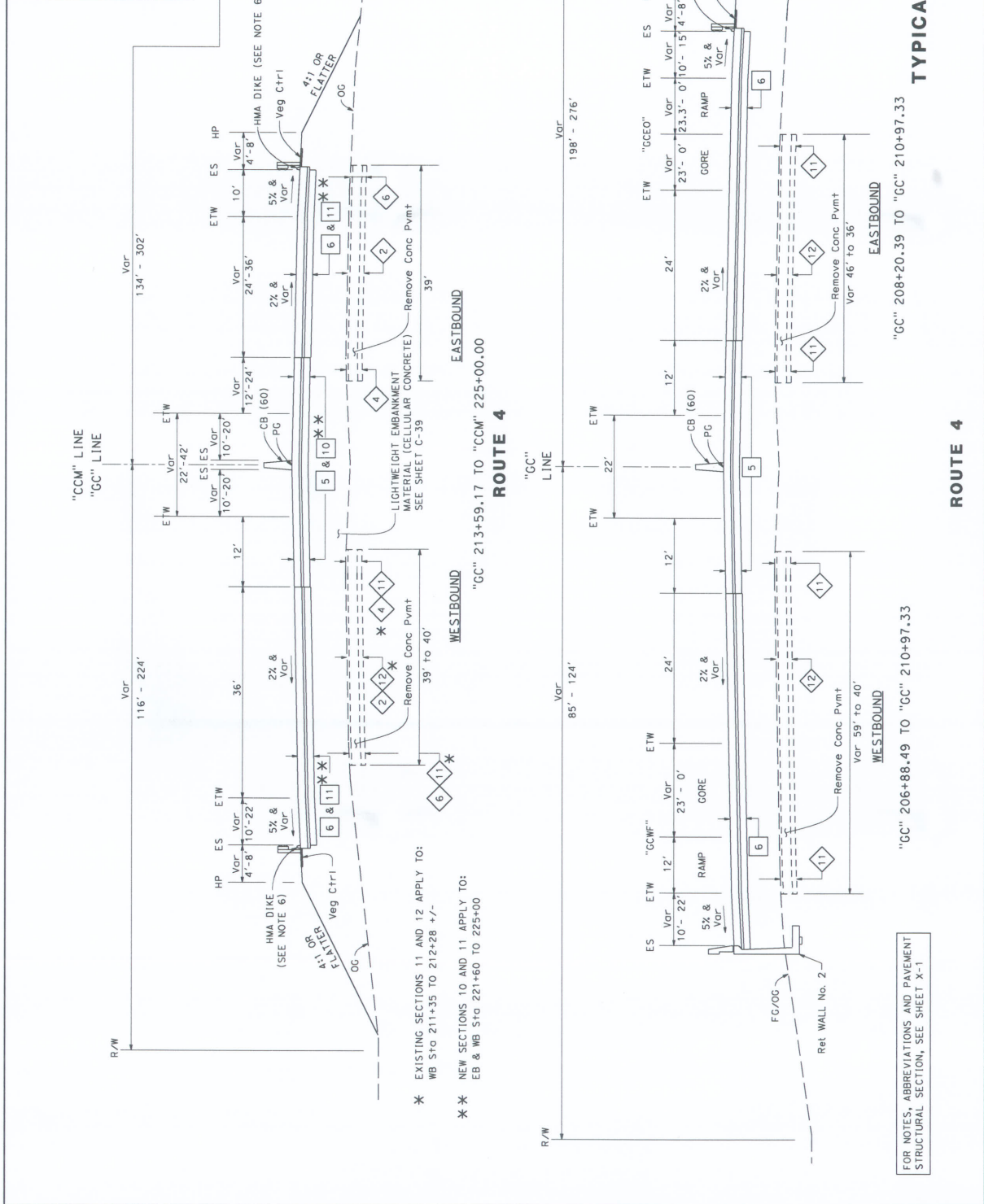
FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTION, SEE SHEET X-1

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION	CONSULTANT FUNCTIONAL SUPERVISOR	TIMOTHY J. LEE
DESIGNED BY	CHECKED BY	J. NUYEN
REVISOR	DATE REVISOR	07/14/14
REVISION	DATE REVISOR	03/25/15
MR	DATE REVISOR	07/20/16

Dist#	04	County	CC	Route	04	Proj Miles	R11-2/R15-1	SHEET TOTAL	10
DATE REVISION	07/14/14	REVISOR	J. NGUYEN	DATE	03/25/15	REVISOR	M. RAMAN	DATE	07/20/16

REGISTERED CIVIL ENGINEER
 M. RAMAN
 No. 81514
 Exp. 09/30/21
 REGISTERED PROFESSIONAL ENGINEER
 MONIKA RAMAN
 No. 81514
 Exp. 09/30/21
 REGISTERED PROFESSIONAL ENGINEER

W.M.H. CORPORATION
 10000 Camino Del Rio South
 Suite 100
 San Jose, CA 95113
 CCA
 10000 Camino Del Rio South
 Suite 100
 San Jose, CA 95113



- * EXISTING SECTIONS 11 AND 12 APPLY TO:
WB St0 211+35 TO 212+28 +/-
- ** NEW SECTIONS 10 AND 11 APPLY TO:
EB & WB St0 221+60 TO 225+00

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTION, SEE SHEET X-1

TYPICAL CROSS SECTION
 NO SCALE
X-5

"GC" 208+20.39 TO "GC" 210+97.33

ROUTE 4

"GC" 206+88.49 TO "GC" 210+97.33

Dist#	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET TOTAL SHEETS
04	CC	04	R11.2/R15.1	NO. SHEETS

REGISTERED CIVIL ENGINEER DATE
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR COPIES OF THIS PLAN SHEET.

WMM CORPORATION
 501 W. Fernando St
 San Jose, CA 95113
 CCA
 5399 Oak Rd
 Walnut Creek, CA 94597

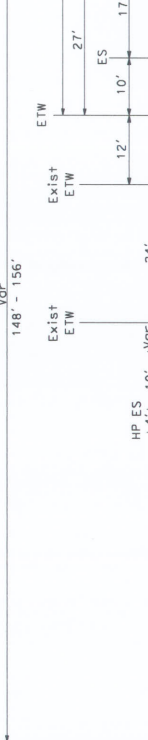


REVISION	DATE	BY	REASON
1	07/14/14	M. RAMAN	EIA
2	03/25/15	J. NGUYEN	REVISION
3	07/20/16	TIMOTHY J. LEE	REVISION

SECTION 2 APPLIES TO:
 EB Sta 229+00.00 TO 230+39.00
 "CCM" 229+00.00 TO "CCM" 238+75.73
 "CCM" 242+96.98 TO "CCM" 251+61.98
 "CCM" 254+45.94 TO "CCM" 267+18.17

SECTION 7 APPLIES TO:
 EB & WB Sta 225+00.00 TO 227+00.00

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTION, SEE SHEET X-1



REVISION	DATE	BY	REASON
1	07/14/14	M. RAMAN	EIA
2	03/25/15	J. NGUYEN	REVISION
3	07/20/16	TIMOTHY J. LEE	REVISION

PROJECT NUMBER & PHASE
 UNIT 0736
 PROJECT NUMBER & PHASE
 04140001301

RELATIVE BORDER SCALE IS IN INCHES
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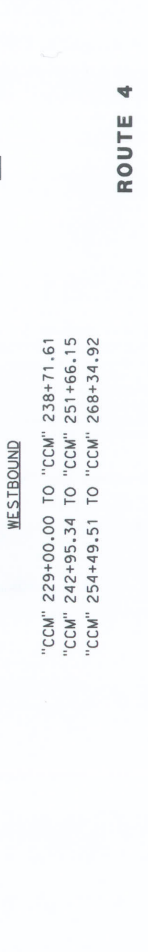
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 TIMOTHY J. LEE

BORDER LAST REVISED: 7/2/2010

REGISTERED CIVIL ENGINEER DATE
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR COPIES OF THIS PLAN SHEET.

WMM CORPORATION
 501 W. Fernando St
 San Jose, CA 95113
 CCA
 5399 Oak Rd
 Walnut Creek, CA 94597

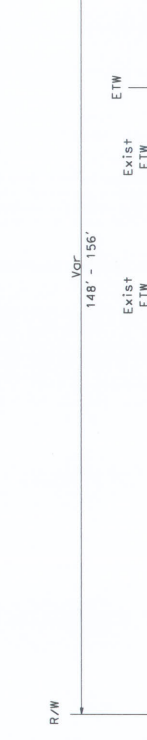


REVISION	DATE	BY	REASON
1	07/14/14	M. RAMAN	EIA
2	03/25/15	J. NGUYEN	REVISION
3	07/20/16	TIMOTHY J. LEE	REVISION

SECTION 2 APPLIES TO:
 EB Sta 229+00.00 TO 230+39.00
 "CCM" 229+00.00 TO "CCM" 238+75.73
 "CCM" 242+96.98 TO "CCM" 251+61.98
 "CCM" 254+45.94 TO "CCM" 267+18.17

SECTION 7 APPLIES TO:
 EB & WB Sta 225+00.00 TO 227+00.00

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTION, SEE SHEET X-1



REVISION	DATE	BY	REASON
1	07/14/14	M. RAMAN	EIA
2	03/25/15	J. NGUYEN	REVISION
3	07/20/16	TIMOTHY J. LEE	REVISION

PROJECT NUMBER & PHASE
 UNIT 0736
 PROJECT NUMBER & PHASE
 04140001301

RELATIVE BORDER SCALE IS IN INCHES
 0 1 2 3

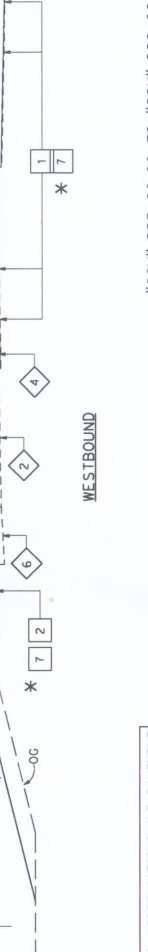
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STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 TIMOTHY J. LEE

BORDER LAST REVISED: 7/2/2010

REGISTERED CIVIL ENGINEER DATE
 PLANS APPROVAL DATE
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR COPIES OF THIS PLAN SHEET.

WMM CORPORATION
 501 W. Fernando St
 San Jose, CA 95113
 CCA
 5399 Oak Rd
 Walnut Creek, CA 94597



REVISION	DATE	BY	REASON
1	07/14/14	M. RAMAN	EIA
2	03/25/15	J. NGUYEN	REVISION
3	07/20/16	TIMOTHY J. LEE	REVISION

PROJECT NUMBER & PHASE
 UNIT 0736
 PROJECT NUMBER & PHASE
 04140001301

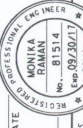
RELATIVE BORDER SCALE IS IN INCHES
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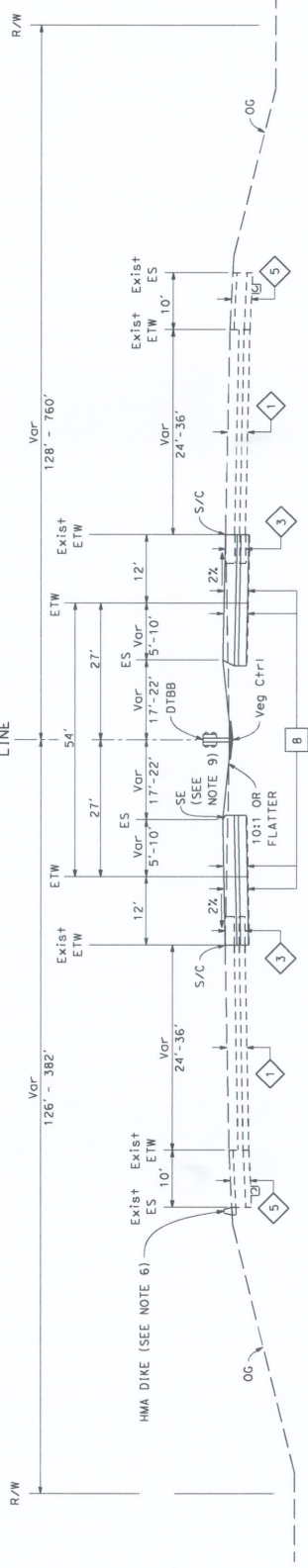
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION
 CONSULTANT FUNCTIONAL SUPERVISOR
 TIMOTHY J. LEE

BORDER LAST REVISED: 7/2/2010

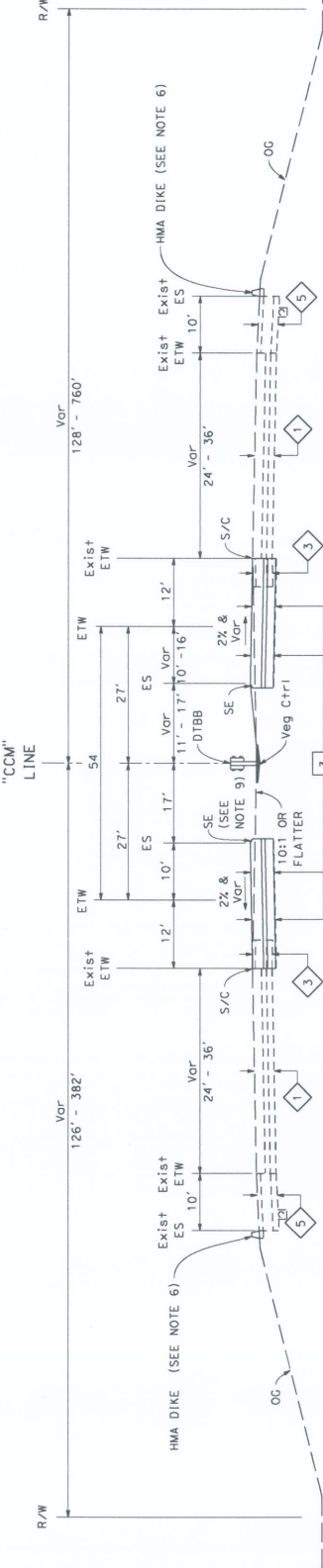
Dist#	COUNTY	ROUTE	POST MILES	SHEET TOTAL
04	CC	04	R11.2/R15.1	NO. SHEETS



REGISTERED CIVIL ENGINEER DATE: 08/20/17
 PLANS APPROVAL DATE: 08/20/17
 THE STATE OF CALIFORNIA OR ITS OFFICERS OR AGENTS SHALL NOT BE RESPONSIBLE FOR COPIES OF THIS PLAN SHEET.
 WMR CORPORATION
 5110 S. Del Mar Blvd
 Suite 100
 San Jose, CA 95113
 CCA 5399 Oak Rd
 Suite 100
 Walnut Creek, CA 94597



ROUTE 4
 "CCM" 294+70.00 TO "CCM" 302+50.00



ROUTE 4
 "CCM" 270+13.21 TO "CCM" 294+70.00

TYPICAL CROSS SECTION
 NO SCALE
X-7

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTION, SEE SHEET X-1

Dist	County	Route	Project Miles	SHEET TOTAL
04	CC	04	R11.2/R15.1	No. SHEETS
REGISTERED CIVIL ENGINEER			DATE	
PLANS APPROVAL DATE				
THE STATE OF CALIFORNIA OR ITS OFFICES OR ANY COUNTY OR LOCAL AGENCY DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE INFORMATION CONTAINED HEREON.				
WMT CORPORATION 3500 West Fernando St Suite 950 San Jose, CA 95133			CCTA 1000 Suite 100 Walnut Creek, CA 94597	No. 8151.4 No. 08230217 No. 08230217 No. 08230217



TYPICAL CROSS SECTION
 NO SCALE
X - 8

ROUTE 4

WESTBOUND
 "CCM" 308+16.32 TO "CCM" 324+50.00

EASTBOUND
 "CCM" 306+73.91 TO "CCM" 328+05.00

FOR NOTES, ABBREVIATIONS AND PAVEMENT STRUCTURAL SECTION, SEE SHEET X-1

DATE PLOTTED => 7/21/2016
 TIME PLOTTED => 2:35:33 PM
 LAST MODIFIED => 7/21/2016

Attachment D
Bridge General Plans

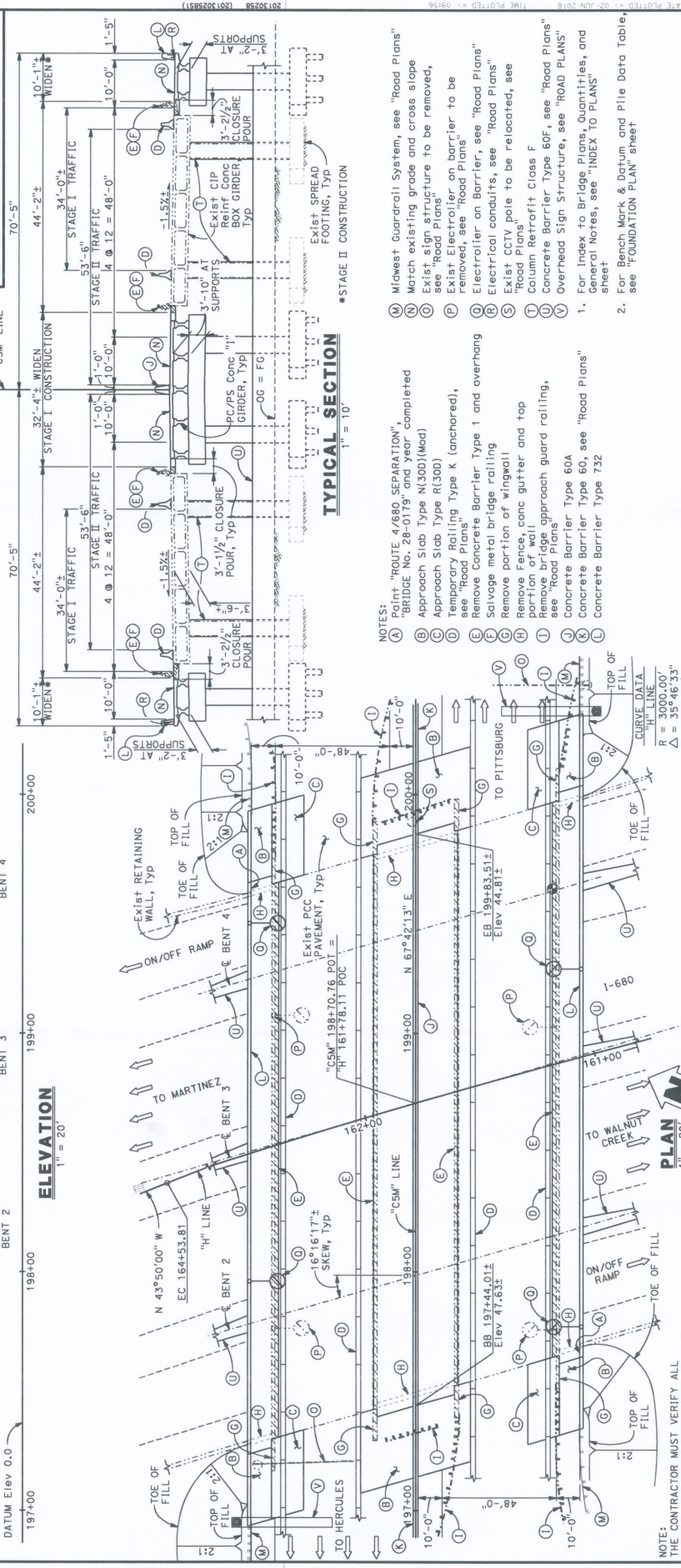
INDICATES POINT OF MINIMUM VERTICAL CLEARANCE
 INDICATES BRIDGE REMOVAL (PORTION)
 INDICATES EXISTING STRUCTURE
 INDICATES TRAFFIC DIRECTION

REGISTERED STRUCTURAL ENGINEER DATE
 PLANS APPROVAL DATE
 CONTRACTOR'S NAME AND ADDRESS
 CONTRACT NO. AND DATE

CONTRA COSTA TRANSPORTATION AUTHORITY
 2999 OAK ROAD, SUITE 100
 SAN JOSE, CALIFORNIA 95128

REGISTERED STRUCTURAL ENGINEER DATE
 PLANS APPROVAL DATE
 CONTRACTOR'S NAME AND ADDRESS
 CONTRACT NO. AND DATE

CONTRA COSTA TRANSPORTATION AUTHORITY
 2999 OAK ROAD, SUITE 100
 SAN JOSE, CALIFORNIA 95128



PLAN CHECK SET/NOT FOR CONSTRUCTION (6/1/16)

ROUTE 4/680 SEPARATION (WIDEN)
GENERAL PLAN

BRIDGE NO. 28-0179
 PROJECT ENGINEER C. KENNING
 POST MILES 12.64

UNITS: PROJECT NUMBER & PHASE: 04140001301 0000
 EARLIER REVISION DATES: CONTRACT NO.: 04-229114
 SHEET OF 29

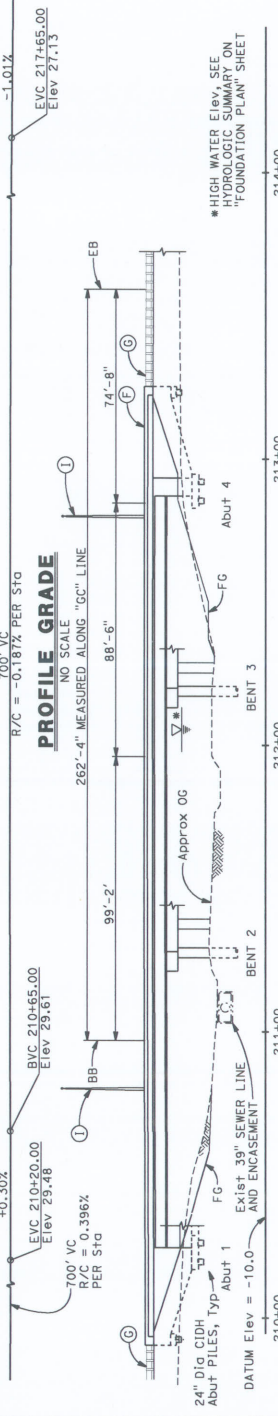
PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION
 DIVISION OF HIGHWAYS

DESIGNER: J. VISAYA, R. YAMANE, C. KENNING, J. GERLACH
 CHECKER: J. VISAYA, R. YAMANE, C. KENNING, J. GERLACH
 QUANTITIES: S. RECHENMACHER, P. PARK
 SPECIAL SCALE IN INCHES FOR REVISIONS

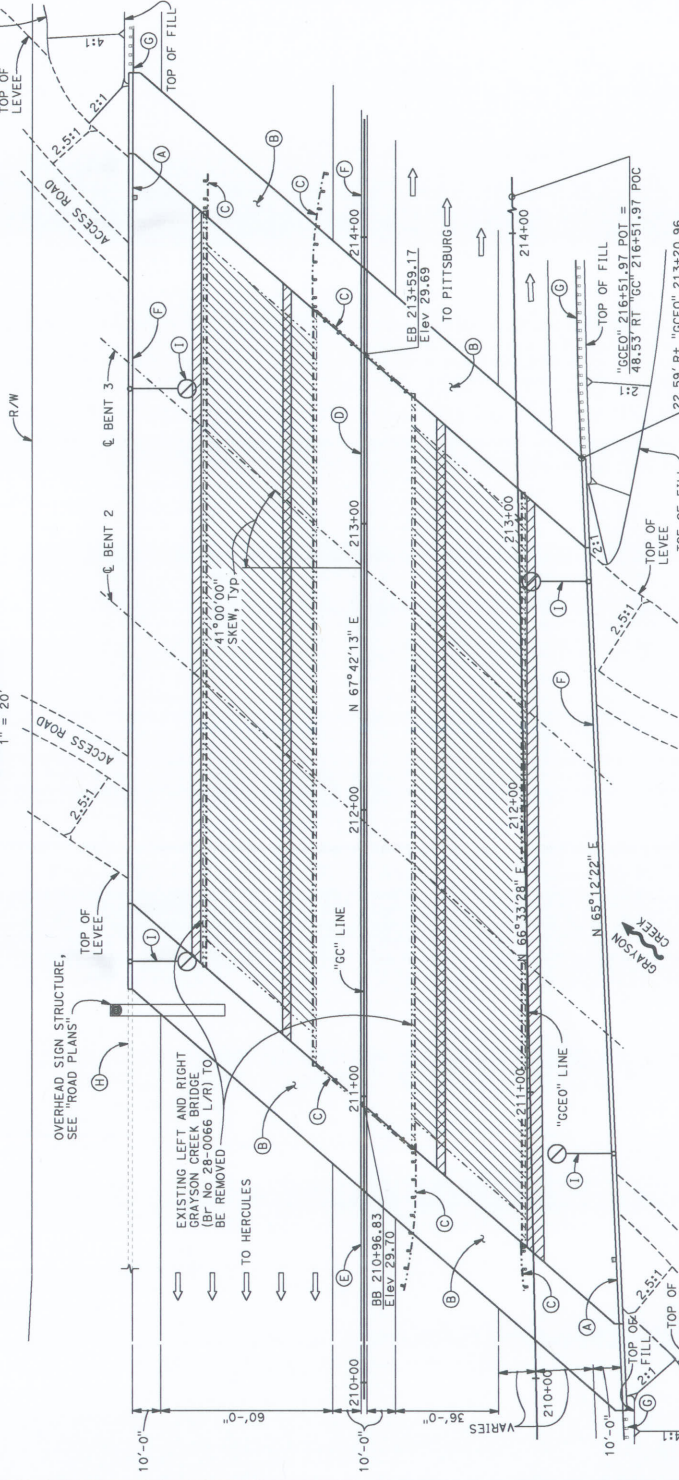
DATE PLOTTED = 02-JUN-2016 TIME PLOTTED = 09:56

NOTE: THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

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



ELEVATION
1" = 20'



PLAN
1" = 20'

NOTE: THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

DIST COUNTY ROUTE POST MILES SHEET NO. OF SHEETS
04 CC 4 4

REGISTERED STRUCTURAL ENGINEER DATE

PLANS APPROVAL DATE
No. 2839
APPROVED FOR THE STATE OF CALIFORNIA
DATE 07/12/2018

CONTRA COSTA TRANSPORTATION AUTHORITY
2899 OLD ROAD SUITE 100
SAN JOSE, CALIFORNIA 95128
BIGGS CARDOSA ASSOCIATES INC.
SAN JOSE, CALIFORNIA 95128

- LEGEND:
- Indicates Bridge Removal
 - Indicates Closure Pour
 - Indicates Existing Structure
 - Indicates Traffic Direction
 - Indicates Deck Drain Inlet

- NOTES:
- A Paint "GRAYSON CREEK BRIDGE", "BRIDGE No. 28-0415" and year completed
 - B Approach Slab Type N(305)
 - C Remove bridge approach guard railing, see "Road Plans"
 - D Concrete Barrier Type 60A (Mod) Road Plans
 - E Concrete Barrier Type 60, see "Road Plans"
 - F Concrete Barrier Type 732 (Mod) "Road Plans"
 - G Midwest Guardrail System, see "Road Plans"
 - H Retaining wall, see "Road Plans"
 - I Electroliner on barrier, see "Road Plans"
 - J For Index to Bridge Plans and General Notes, see "INDEX TO PLANS" sheet.
 - K For Hydrologic Summary, Bench Mark & Datum, and File Date Table see "FOUNDATION PLAN" sheet.
 - L For Quantities, see "GENERAL PLAN No. 2" sheet.
- Temporary Railing Type K not shown for PLAN 1, see "GENERAL SECTION" on "GENERAL PLAN No. 2" sheet.

PLAN CHECK SET/NOT FOR CONSTRUCTION (6/1/16)

DESIGN OVERSIGHT	DESIGN BY	DESIGN CHECKED	DESIGN APPROVED	LIVE ORDERING	FIELD OF WORK	PROJECT ENGINEER	BRIDGE NO.
	K. CRUZ	M. LIPA	M. LIPA	J. GERLACH	GRAYSON CREEK BRIDGE (REPLACE)	G. KENNING	28-0415
DATE	QUANTITIES	SPECIFICATIONS	LAYOUT	BY	STATE OF CALIFORNIA	PROJECT ENGINEER	POST MILES
7/16/10	S. HILL	P. PARK	J. GERLACH	J. GERLACH	DEPARTMENT OF TRANSPORTATION	G. KENNING	12.90
DESIGN GENERAL PLAN SHEET (ENGLISH) (REV. 7/16/10)							CONTRACT NO. 04-228114
							0000
							PROJECT NUMBER & PHASE: 0410001301
							UNIT: 0000
							FILE # 28-0415-0-gb01.dgn
							REVISION DATE
							1 31
							GENERAL PLAN No. 1

DIST	COUNTY	ROUTE	POST MILES TOTAL	SHEET NO.	TOTAL SHEETS
04	CC	4			

REGISTERED STRUCTURAL ENGINEER DATE

PLANS APPROVAL DATE

PROFESSIONAL ENGINEER No. 2639

REGISTRATION EXPIRES 12/31/2016

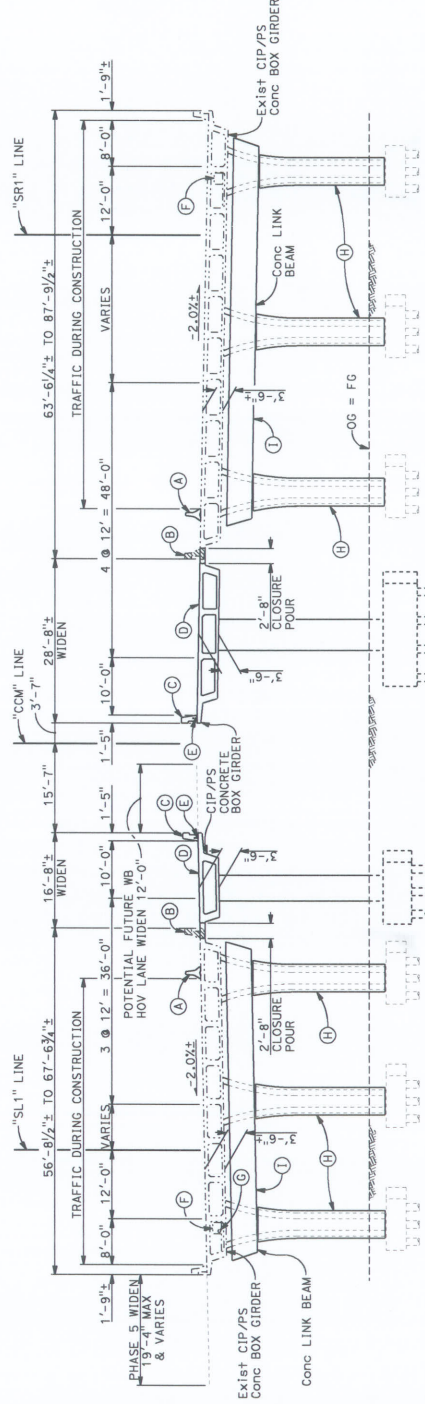
The State of California or its officers or agents shall not be responsible for the accuracy or completeness of some copies of this plan sheet.

CONTRA COSTA TRANSPORTATION AUTHORITY

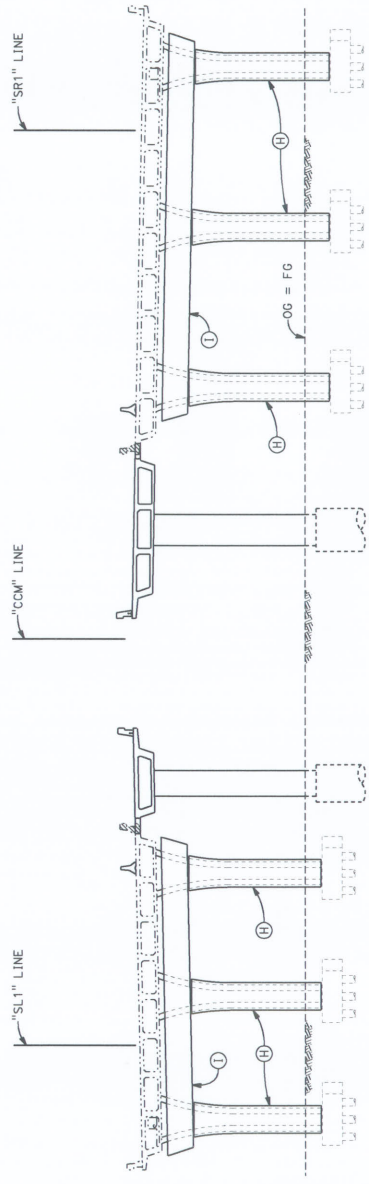
2899 ONE ROAD, SUITE 100

INDUSTRIAL PARK, SAN JOSE, CALIFORNIA 95126

- LEGEND:
- Indicates Bridge Removal (Portion)
 - Indicates Existing Structure
- NOTES:
- (A) Temporary Railing, Type K (anchored), see "Road Plans"
 - (B) Remove Concrete Barrier Type 25 and overhang
 - (C) Concrete Barrier Type 732
 - (D) Match existing grade and cross slope
 - (E) Electrical conduits, see "Road Plans"
 - (F) Exist utility opening
 - (G) Exist 6" Water Supply line
 - (H) Column Retrofit Class F
 - (T) Link Beam Retrofit



TYPICAL SECTION AT BENT 2 (BENT 4 SIM)



TYPICAL SECTION AT BENT 3

SEE "TYPICAL SECTION AT BENT 2" FOR DETAILS NOT NOTED

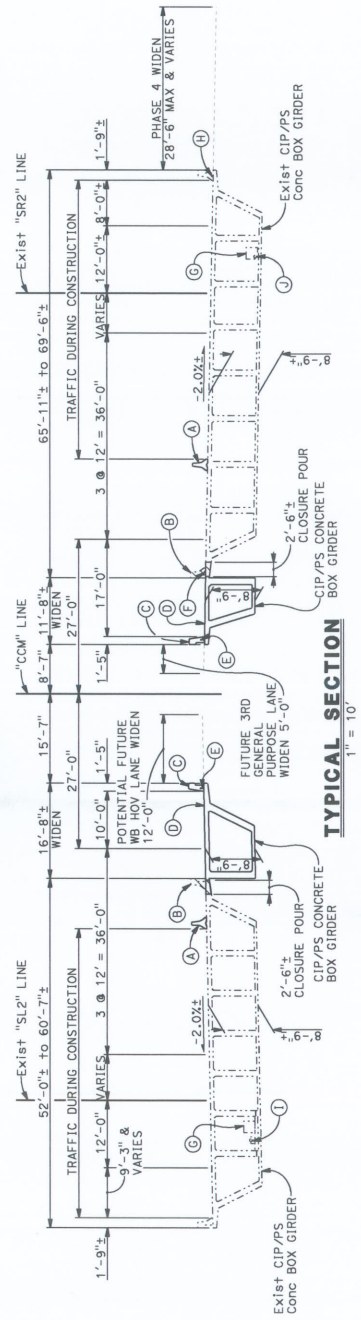
NOTE: THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

DESIGN OVERSIGHT	DESIGN	DESIGNER	DATE	QUANTITIES
		BY G. TOLAN		
DESIGN GENERAL PLAN SHEET (ENCLOSURE) (REV. 7/14/10)	DETAILS	LAYOUT BY J. GERLACH	DATE 28-02-11	
		BY S. MOYLES		
		BY S. HILL		
		BY P. PARK		
		BY P. YAMANE		
		BY G. KENNING		
		BY S. MOYLES		
		BY S. HILL		
		BY P. PARK		
		BY P. YAMANE		
		BY G. KENNING		
		BY S. MOYLES		
		BY S. HILL		
		BY P. PARK		
		BY P. YAMANE		
		BY G. KENNING		
		BY S. MOYLES		
		BY S. HILL		
		BY P. PARK		
		BY P. YAMANE		
		BY G. KENNING		
		BY S. MOYLES		
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DIST	COUNTY	ROUTE	SHEET NUMBER	TOTAL SHEETS
04	CC	4		

REGISTERED STRUCTURAL ENGINEER	DATE
PLANS APPROVAL DATE	EXP. 12/31/16
IAN M. HARRIS No. 2839 PROFESSIONAL ENGINEER STATE OF CALIFORNIA CONTRACTORS OF GENERAL CONTRACTORS	
CONTRA COSTA TRANSPORTATION AUTHORITY 1000 WILSON BLVD WAKULI, CALIFORNIA 94599	
BIGGS CARDOSA ASSOCIATES INC. SAN JOSE, CALIFORNIA 95126	

- LEGEND:
- Indicates Bridge Removal (Portion)
 - Indicates Existing Structure
- NOTES:
- (A) Temporary Railing Type K (anchored), see "Road Plans"
 - (B) Remove Concrete Barrier Type 25 and overhang
 - (C) Concrete Barrier Type T32
 - (D) Match exist grade and cross slope
 - (E) Electrical conduits, see "Road Plans"
 - (F) Exist electrical conduit
 - (G) Exist utility opening
 - (H) Exist sprinkler control conduit
 - (I) Exist 6" Water supply line
 - (J) Exist 3" Irrigation pipe



NOTE:
THE CONTRACTOR MUST VERIFY ALL CONTROLLING FIELD DIMENSIONS BEFORE ORDERING OR FABRICATING ANY MATERIAL

DESIGN OVERSIGHT	DESIGN	DESIGNED BY	CHECKED BY	DATE	SCALE	UNIT	PROJECT NUMBER & PHASE	CONTRACT NO.	DATE	SHEET	OF
		R. SPAULDING	S. SUMPTER	11/16/16	AS SHOWN	0000	04-229114	04-229114	5/31/16	2	22
SLIP OFF DATE	DETAILS	S. MOTLES	J. GERLACH								
	QUANTITIES	R. SPAULDING	P. PARK								
DESIGN GENERAL PLAN SHEET (ENGLISH) REV. 7/16/10 PREPARED FOR THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION BRIDGE NO. 28-0242/L/R POST MILES RT 3-96 PROJECT ENGINEER G. KENNING CONTRACT NO. 04-229114 FILE # 28-024217-0-g02.sgn											

SPACE RESERVED FOR QUANTITIES

Attachment E
Cost Estimate Summary

**PRELIMINARY SCHEDULE OF PRICES AND QUANTITIES FOR
I-680/SR 4 Interchange - Phase 3 (SR 4 Widening) - EA 229114 - 04-CC-4-PM R11.2/R15.1**

100% PS&E Estimate - Segregated Estimate

02-Nov-17

Item No.	Item Code	Final Pay	Item Description	ENTIRE PROJECT			
				Units	Estimated Quantity	Unit Price	Total Cost
1	070030		LEAD COMPLIANCE PLAN	LS	1	\$ 8,000.00	\$ 8,000.00
2	080050		PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	1	\$ 27,000.00	\$ 27,000.00
3	100101A		CONSTRUCTION SURVEYS	LS	1	\$ 600,000.00	\$ 600,000.00
4	100102A		FURINSH FIELD OFFICE	LS	1	\$ 500,000.00	\$ 500,000.00
5	120090		CONSTRUCTION AREA SIGNS	LS	1	\$ 60,000.00	\$ 60,000.00
6	120100		TRAFFIC CONTROL SYSTEM	LS	1	\$ 900,000.00	\$ 900,000.00
7	129170A		TEMPORARY CREEK DIVERSION SYSTEM	EA	4	\$ 60,000.00	\$ 240,000.00
8	120116		TYPE II BARRICADE	EA	33	\$ 50.00	\$ 1,650.00
9	120159		TEMPORARY TRAFFIC STRIPE (PAINT)	LF	154,800	\$ 0.50	\$ 77,400.00
10	120160A		TEMPORARY CONTRAST TRAFFIC STRIPE (PAINT)	LF	30,840	\$ 0.50	\$ 15,420.00
11	120165		CHANNELIZER (SURFACE MOUNTED)	EA	355	\$ 45.00	\$ 15,975.00
12	128652		PORTABLE CHANGEABLE MESSAGE SIGN (LS)	LS	1	\$ 50,000.00	\$ 100,000.00
13	129000		TEMPORARY RAILING (TYPE K)	LF	88,700	\$ 12.00	\$ 1,064,400.00
14	129100		TEMPORARY CRASH CUSHION MODULE	EA	358	\$ 200.00	\$ 71,600.00
15	129101A		TEMPORARY ALTERNATIVE CRASH CUSHION	EA	18	\$ 5,000.00	\$ 90,000.00
16	130100		JOB SITE MANAGEMENT	LS	1	\$ 250,000.00	\$ 250,000.00
17	130300		PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	1	\$ 17,000.00	\$ 17,000.00
18	130310		RAIN EVENT ACTION PLAN	EA	105	\$ 500.00	\$ 52,500.00
19	130320		STORM WATER SAMPLING AND ANALYSIS DAY	EA	70	\$ 300.00	\$ 21,000.00
20	130330		STORM WATER ANNUAL REPORT	EA	5	\$ 2,000.00	\$ 10,000.00
21	130505		MOVE-IN/MOVE-OUT (TEMPORARY EROSION CONTROL)	EA	10	\$ 1,500.00	\$ 15,000.00
22	130530		TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	SQYD	52,610	\$ 1.00	\$ 52,610.00
23	130570		TEMPORARY COVER	SQYD	8,980	\$ 5.00	\$ 44,900.00
24	130610		TEMPORARY CHECK DAM	LF	780	\$ 6.00	\$ 4,680.00
25	130620		TEMPORARY DRAINAGE INLET PROTECTION	EA	374	\$ 200.00	\$ 74,800.00
26	130640		TEMPORARY FIBER ROLL	LF	52,600	\$ 3.50	\$ 184,100.00
27	130680		TEMPORARY SILT FENCE	LF	19,590	\$ 3.20	\$ 62,688.00
28	130710		TEMPORARY CONSTRUCTION ENTRANCE	EA	19	\$ 4,000.00	\$ 76,000.00
29	130720		TEMPORARY CONSTRUCTION ROADWAY	SQYD	2,540	\$ 12.00	\$ 30,480.00
30	130730		STREET SWEEPING	LS	1	\$ 60,000.00	\$ 60,000.00
31	130801A		TEMPORARY DEWATERING AND NON-STORM WATER DISCHARGE CONTROL SYSTEM	LS	1	\$ 90,000.00	\$ 90,000.00
32	130900		TEMPORARY CONCRETE WASHOUT	LS	1	\$ 60,000.00	\$ 60,000.00
33	140003		ASBESTOS COMPLIANCE PLAN	LS	1	\$ 10,000.00	\$ 10,000.00
34	141103		REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE (HAZARDOUS WASTE)	LF	39,000	\$ 2.00	\$ 78,000.00
35	141109		ADL BURIAL LOCATION REPORT	LS	1	\$ 6,000.00	\$ 6,000.00
36	141120		TREATED WOOD WASTE	LB	318,000	\$ 0.50	\$ 159,000.00
37	148005		NOISE MONITORING	LS	1	\$ 16,000.00	\$ 16,000.00
38	148006A		VIBRATION MONITORING	LS	1	\$ 30,000.00	\$ 30,000.00
39	148007A		SURVEY MONITORING OF EXISTING NON-HIGHWAY FACILITIES	LS	1	\$ 130,000.00	\$ 13,000.00
40	153121		REMOVE CONCRETE (CY)	CY	128	\$ 150.00	\$ 19,200.00
41	160110		TEMPORARY HIGH-VISIBILITY FENCE	LF	5,880	\$ 5.00	\$ 29,400.00

**PRELIMINARY SCHEDULE OF PRICES AND QUANTITIES FOR
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100% PS&E Estimate - Segregated Estimate

02-Nov-17

Item No.	Item Code	Final Pay	Item Description	ENTIRE PROJECT			
				Units	Estimated Quantity	Unit Price	Total Cost
42	170103		CLEARING AND GRUBBING (LS)	LS	1	\$ 150,000.00	\$ 150,000.00
43	180106		DUST PALLIATIVE	LS	1	\$ 140,000.00	\$ 14,000.00
44	190101		ROADWAY EXCAVATION	CY	65,800	\$ 13.00	\$ 855,400.00
45	190107		ROADWAY EXCAVATION (TYPE Y-1) (AERIALY DEPOSITED LEAD)	CY	2,290	\$ 23.00	\$ 52,670.00
46	192003	F	STRUCTURE EXCAVATION (BRIDGE)	CY	4,611	\$ 100.00	\$ 461,100.00
47	192008	F	STRUCTURE EXCAVATION (TYPE A)	CY	1,240	\$ 285.00	\$ 353,400.00
48	192037	F	STRUCTURE EXCAVATION (RETAINING WALL)	CY	950	\$ 50.00	\$ 47,500.00
49	192057		STRUCTURE EXCAVATION (TYPE Y-1)(AERIALY DEPOSITED LEAD)	CY	760	\$ 100.00	\$ 76,000.00
50	193003	F	STRUCTURE BACKFILL (BRIDGE)	CY	2,798	\$ 95.00	\$ 265,810.00
51	193013	F	STRUCTURE BACKFILL (RETAINING WALL)	CY	594	\$ 52.00	\$ 30,888.00
52	193118A		LIGHTWEIGHT EMBANKMENT MATERIAL (CELLULAR CONCRETE)	CY	72,100	\$ 40.00	\$ 2,884,000.00
53	194001		DITCH EXCAVATION	CY	990	\$ 40.00	\$ 39,600.00
54	198209		SUBGRADE ENHANCEMENT GEOTEXTILE, CLASS B2	SQYD	133,100	\$ 1.85	\$ 246,235.00
55	200101A		IMPORTED BIOFILTRATION SOIL	CY	2,370	\$ 40.00	\$ 94,800.00
56	208607	P-F	3" PLASTIC PIPE (CLASS 315) (SUPPLY LINE)	LF	137	\$ 20.00	\$ 2,740.00
57	208738	P	8" CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONDUIT	LF	110	\$ 80.00	\$ 8,800.00
58	210010		MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	9	\$ 1,500.00	\$ 13,500.00
59	210270		ROLLED EROSION CONTROL PRODUCT (NETTING)	SQFT	439,600	\$ 0.60	\$ 263,760.00
60	210300		HYDROMULCH	SQFT	582,000	\$ 0.10	\$ 58,200.00
61	210350		FIBER ROLLS	LF	75,000	\$ 2.50	\$ 187,500.00
62	210430		HYDROSEED	SQFT	582,000	\$ 0.10	\$ 58,200.00
63	210610		COMPOST (CY)	CY	3,530	\$ 30.00	\$ 105,900.00
64	210630		INCORPORATE MATERIALS	SQFT	115,000	\$ 0.10	\$ 11,500.00
65	250201		CLASS 2 AGGREGATE SUBBASE	CY	52,400	\$ 31.00	\$ 1,624,400.00
66	260203		CLASS 2 AGGREGATE BASE (CY)	CY	5,083	\$ 45.00	\$ 228,735.00
67	280000		LEAN CONCRETE BASE	CY	8,660	\$ 175.00	\$ 1,515,500.00
68	280015		LEAN CONCRETE BASE RAPID SETTING	CY	200	\$ 350.00	\$ 70,000.00
69	280200		REPLACE BASE	CY	13	\$ 600.00	\$ 7,800.00
70	360200		BASE BOND BREAKER	SQYD	540	\$ 1.50	\$ 810.00
71	390100		PRIME COAT	TON	5	\$ 1,500.00	\$ 7,500.00
72	390132		HOT MIX ASPHALT (TYPE A)	TON	33,200	\$ 80.00	\$ 2,656,000.00
73	390137		RUBBERIZED HOT MIX ASPHALT (GAP GRADED)	TON	7,760	\$ 100.00	\$ 776,000.00
74	394060		DATA CORE	LS	1	\$ 30,000.00	\$ 30,000.00
75	394074		PLACE HOT MIX ASPHALT DIKE (TYPE C)	LF	453	\$ 8.00	\$ 3,624.00
76	394076		PLACE HOT MIX ASPHALT DIKE (TYPE E)	LF	5,850	\$ 8.00	\$ 46,800.00
77	394077		PLACE HOT MIX ASPHALT DIKE (TYPE F)	LF	6,190	\$ 8.00	\$ 49,520.00
78	394090		PLACE HOT MIX ASPHALT (MISCELLANEOUS AREA)	SQYD	4,040	\$ 12.00	\$ 48,480.00
79	397005		TACK COAT	TON	57	\$ 1,500.00	\$ 85,500.00
80	398100		REMOVE ASPHALT CONCRETE DIKE	LF	8,300	\$ 1.50	\$ 12,450.00
81	398200		COLD PLANE ASPHALT CONCRETE PAVEMENT	SQYD	21,660	\$ 2.50	\$ 54,150.00

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02-Nov-17

Item No.	Item Code	Final Pay	Item Description	ENTIRE PROJECT			
				Units	Estimated Quantity	Unit Price	Total Cost
82	398300		REMOVE BASE AND SURFACING	CY	1,100	\$ 30.00	\$ 33,000.00
83	400050		CONTINUOUSLY REINFORCED CONCRETE PAVEMENT	CY	9,510	\$ 290.00	\$ 2,757,900.00
84	401050		JOINTED PLAIN CONCRETE PAVEMENT	CY	15,210	\$ 190.00	\$ 2,889,900.00
85	401055		JOINTED PLAIN CONCRETE PAVEMENT (RSC)	CY	480	\$ 900.00	\$ 432,000.00
86	410096		DRILL AND BOND (DOWEL BARS)	EA	290	\$ 40.00	\$ 11,600.00
87	411105		INDIVIDUAL SLAB REPLACEMENT (RSC)	CY	140	\$ 850.00	\$ 119,000.00
88	414242		ISOLATION JOINT SEAL (PREFORMED COMPRESSION)	LF	20,950	\$ 17.00	\$ 356,150.00
89	418006		REMOVE CONCRETE PAVEMENT (CY)	CY	3,450	\$ 40.00	\$ 138,000.00
90	420201		GRIND EXISTING CONCRETE PAVEMENT	SQYD	21,730	\$ 6.00	\$ 130,380.00
91	480601A		TEMPORARY RETAINING WALL	SQFT	25,600	\$ 20.00	\$ 512,000.00
92	490410A		FURNISH STEEL PILING (PP 18 X 0.625)	LF	480	\$ 170.00	\$ 81,600.00
93	490413A		DRIVE STEEL PILE (PP 18 X 0.625)	EA	10	\$ 3,780.00	\$ 37,800.00
94	490603		24" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	3,760	\$ 175.00	\$ 658,000.00
95	490606		42" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	1,240	\$ 600.00	\$ 744,000.00
96	490614		78" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	73	\$ 1,600.00	\$ 116,800.00
97	490617		90" CAST-IN-DRILLED-HOLE CONCRETE PILING	LF	85	\$ 1,940.00	\$ 164,900.00
98	490746	P	FURNISH PILING (CLASS 140) (ALTERNATIVE W)	LF	5,260	\$ 60.00	\$ 315,600.00
99	490747		DRIVE PILE (CLASS 140) (ALTERNATIVE W)	EA	82	\$ 2,000.00	\$ 164,000.00
100	490782	P	FURNISH PILING (CLASS 200) (ALTERNATIVE W)	LF	13,050	\$ 65.00	\$ 848,250.00
101	490783		DRIVE PILE (CLASS 200) (ALTERNATIVE W)	EA	234	\$ 2,500.00	\$ 585,000.00
102	495133	P	FURNISH 36" CAST-IN-STEEL SHELL CONCRETE PILING	LF	220	\$ 260.00	\$ 57,200.00
103	495134		DRIVE 36" CAST-IN-STEEL SHELL CONCRETE PILE	EA	4	\$ 30,000.00	\$ 120,000.00
104	498050		54" CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	LF	23	\$ 1,300.00	\$ 29,900.00
105	498052		60" CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	LF	150	\$ 1,500.00	\$ 225,000.00
106	500001	P	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	1	\$ 209,000.00	\$ 209,000.00
107	510000		SEAL COURSE CONCRETE	CY	300	\$ 300.00	\$ 90,000.00
108	510051	F	STRUCTURAL CONCRETE, BRIDGE FOOTING	CY	1,270	\$ 530.00	\$ 673,100.00
109	510053	F	STRUCTURAL CONCRETE, BRIDGE	CY	4,623	\$ 1,120.00	\$ 5,177,760.00
110	510054	F	STRUCTURAL CONCRETE, BRIDGE (POLYMER FIBER)	CY	3,354	\$ 900.00	\$ 3,018,600.00
111	510060	F	STRUCTURAL CONCRETE, RETAINING WALL	CY	453	\$ 600.00	\$ 271,800.00
112	510086	F	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	CY	1,272	\$ 876.00	\$ 1,114,272.00
113	510087	F	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE R)	CY	82	\$ 1,200.00	\$ 98,400.00
114	510094	F	STRUCTURAL CONCRETE DRAINAGE INLET	CY	675	\$ 1,000.00	\$ 675,000.00
115	510526	F	MINOR CONCRETE (BACKFILL)	CY	1,089	\$ 250.00	\$ 272,250.00
116	511106		DRILL AND BOND DOWEL	LF	6,490	\$ 45.00	\$ 292,050.00
117	512202	P	FURNISH PC PS CONCRETE GIRDER (30FT-40FT)	EA	9	\$ 8,600.00	\$ 77,400.00
118	512204	P	FURNISH PC PS CONCRETE GIRDER (50FT-60FT)	EA	9	\$ 14,200.00	\$ 127,800.00
119	512205	P	FURNISH PC PS CONCRETE GIRDER (60FT-70FT)	EA	18	\$ 14,500.00	\$ 261,000.00
120	512206	P	FURNISH PC PS CONCRETE GIRDER (70FT-80FT)	EA	18	\$ 15,700.00	\$ 282,600.00
121	512206A		FURNISH PC PS CONCRETE WIDE FLANGE GIRDER (70FT-80FT)	EA	20	\$ 20,000.00	\$ 400,000.00
122	512207A		FURNISH PC PS CONCRETE WIDE FLANGE GIRDER (80FT-90FT)	EA	20	\$ 23,000.00	\$ 460,000.00

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Item No.	Item Code	Final Pay	Item Description	ENTIRE PROJECT			
				Units	Estimated Quantity	Unit Price	Total Cost
123	512208A		FURNISH PC PS CONCRETE WIDE FLANGE GIRDER (90FT-100FT)	EA	20	\$ 26,000.00	\$ 520,000.00
124	512500		ERECT PC PS CONCRETE GIRDER	EA	120	\$ 6,300.00	\$ 756,000.00
125	519081		JOINT SEAL (MR = 1/2")	LF	57	\$ 40.00	\$ 2,280.00
126	519088	P	JOINT SEAL (MR = 1")	LF	320	\$ 45.00	\$ 14,400.00
127	519091	P	JOINT SEAL (MR = 1 1/2")	LF	523	\$ 75.00	\$ 39,225.00
128	519100	P	JOINT SEAL (MR = 2")	LF	210	\$ 115.00	\$ 24,150.00
129	519102		JOINT SEAL (TYPE AL)	LF	27	\$ 40.00	\$ 1,080.00
130	520102	P-F	BAR REINFORCING STEEL (BRIDGE)	LB	2,933,660	\$ 1.25	\$ 3,667,075.00
131	520103	P-F	BAR REINFORCING STEEL (RETAINING WALL)	LB	48,343	\$ 1.15	\$ 55,594.45
132	520110	P-F	BAR REINFORCING STEEL (EPOXY COATED) (BRIDGE)	LB	344,600	\$ 1.80	\$ 620,280.00
133	520115	P-F	BAR REINFORCING STEEL (GALVANIZED)	LB	15,033	\$ 2.70	\$ 40,589.10
134	520120	P-F	HEADED BAR REINFORCEMENT	EA	1,494	\$ 20.00	\$ 29,880.00
135	540101	F	ASPHALT MEMBRANE WATERPROOFING	SQFT	1,995	\$ 16.00	\$ 31,920.00
136	560218	F	FURNISH SIGN STRUCTURE (TRUSS)	LB	138,490	\$ 5.00	\$ 692,450.00
137	560219	F	INSTALL SIGN STRUCTURE (TRUSS)	LB	138,490	\$ 0.40	\$ 55,396.00
138	568046		REMOVE SIGN STRUCTURE (EA)	EA	4	\$ 8,000.00	\$ 32,000.00
139	600039		REFINISH BRIDGE DECK	SQFT	550	\$ 25.00	\$ 13,750.00
140	600069		CORE CONCRETE (7")	LF	5	\$ 300.00	\$ 1,500.00
141	600097		BRIDGE REMOVAL	LS	1	\$ 174,000.00	\$ 174,000.00
142	600105		BRIDGE REMOVAL (PORTION) (LOCATION A)	LS	1	\$ 48,000.00	\$ 48,000.00
143	600106		BRIDGE REMOVAL (PORTION) (LOCATION B)	LS	1	\$ 81,000.00	\$ 81,000.00
144	600107		BRIDGE REMOVAL (PORTION) (LOCATION C)	LS	1	\$ 34,000.00	\$ 34,000.00
145	600108		BRIDGE REMOVAL (PORTION) (LOCATION D)	LS	1	\$ 73,000.00	\$ 73,000.00
146	600109		BRIDGE REMOVAL (PORTION) (LOCATION E)	LS	1	\$ 37,000.00	\$ 37,000.00
147	600110		BRIDGE REMOVAL (PORTION) (LOCATION F)	LS	1	\$ 44,000.00	\$ 44,000.00
148	600152	P-F	COLUMN CASING	LB	134,700	\$ 7.80	\$ 1,050,660.00
149	606000A		SURVEY MONITORING	LS	1	\$ 30,000.00	\$ 30,000.00
150	610108	P	18" ALTERNATIVE PIPE CULVERT	LF	7,350	\$ 90.00	\$ 661,500.00
151	610112	P	24" ALTERNATIVE PIPE CULVERT	LF	1,570	\$ 120.00	\$ 188,400.00
152	650014	P	18" REINFORCED CONCRETE PIPE	LF	52	\$ 110.00	\$ 5,720.00
153	650018	P	24" REINFORCED CONCRETE PIPE	LF	73	\$ 150.00	\$ 10,950.00
154	650034	P	48" REINFORCED CONCRETE PIPE	LF	4,620	\$ 350.00	\$ 1,617,000.00
155	650038	P	54" REINFORCED CONCRETE PIPE	LF	2,180	\$ 480.00	\$ 1,046,400.00
156	650042	P	60" REINFORCED CONCRETE PIPE	LF	1,300	\$ 600.00	\$ 780,000.00
157	655011	P	12" CORRUGATED STEEL PIPE (0.064" THICK)	LF	140	\$ 150.00	\$ 21,000.00
158	652206A		JACKED 24" REINFORCED CONCRETE PIPE (CLASS II)	LF	110	\$ 2,000.00	\$ 220,000.00
159	665010	P	12" CORRUGATED STEEL PIPE	LF	10	\$ 200.00	\$ 2,000.00
160	665016	P	18" CORRUGATED STEEL PIPE (0.064" THICK)	LF	420	\$ 200.00	\$ 50,000.00
161	680902	P	6" PERFORATED PLASTIC PIPE UNDERDRAIN	LF	1,740	\$ 25.00	\$ 43,500.00
162	680905	P	8" PERFORATED PLASTIC PIPE UNDERDRAIN	LF	3,110	\$ 25.00	\$ 77,750.00
163	680906A		8" PLASTIC PIPE UNDERDRAIN	LF	45	\$ 25.00	\$ 1,125.00

**PRELIMINARY SCHEDULE OF PRICES AND QUANTITIES FOR
I-680/SR 4 Interchange - Phase 3 (SR 4 Widening) - EA 229114 - 04-CC-4-PM R11.2/R15.1**

100% PS&E Estimate - Segregated Estimate

02-Nov-17

Item No.	Item Code	Final Pay	Item Description	ENTIRE PROJECT			
				Units	Estimated Quantity	Unit Price	Total Cost
164	682049	F	CLASS 3 PERMEABLE MATERIAL (BLANKET)	CY	4,785	\$ 80.00	\$ 382,800.00
165	700639		36" CORRUGATED STEEL PIPE INLET (.109" THICK)	LF	54	\$ 1,000.00	\$ 54,000.00
166	703516	P	8" WELDED STEEL PIPE (.188" THICK)	LF	78	\$ 139.00	\$ 10,842.00
167	703525	P	10" WELDED STEEL PIPE (.250" THICK)	LF	38	\$ 150.00	\$ 5,700.00
168	705311		18" ALTERNATIVE FLARED END SECTION	EA	23	\$ 600.00	\$ 13,800.00
169	705315		24" ALTERNATIVE FLARED END SECTION	EA	5	\$ 800.00	\$ 4,000.00
170	705470A		WATER QUALITY WEIR	EA	16	\$ 3,500.00	\$ 56,000.00
171	707217		36" PRECAST CONCRETE PIPE MANHOLE	LF	95	\$ 1,500.00	\$ 142,500.00
172	710102		ABANDON CULVERT (LF)	LF	731	\$ 30.00	\$ 21,930.00
173	710132		REMOVE CULVERT (LF)	LF	890	\$ 55.00	\$ 48,950.00
174	710150		REMOVE INLET	EA	32	\$ 850.00	\$ 27,200.00
175	710167		REMOVE FLARED END SECTION (EA)	EA	1	\$ 500.00	\$ 500.00
176	710196		ADJUST INLET	EA	28	\$ 1,600.00	\$ 44,800.00
177	710240		MODIFY INLET	EA	4	\$ 3,000.00	\$ 12,000.00
178	710262		CAP INLET	EA	3	\$ 1,600.00	\$ 4,800.00
179	710368		CULVERT SLURRY-CEMENT BACKFILL	CY	3,110	\$ 150.00	\$ 466,500.00
180	710370		SAND BACKFILL	CY	30	\$ 270.00	\$ 8,100.00
181	720121	F	ROCK SLOPE PROTECTION (1/2 T, METHOD A) (CY)	CY	2,208	\$ 200.00	\$ 441,600.00
182	721012A		ROCK SLOPE PROTECTION (LIGHT, METHOD A)	CY	260	\$ 200.00	\$ 52,000.00
183	721028	F	ROCK SLOPE PROTECTION (NO. 2, METHOD B)	CY	162	\$ 250.00	\$ 40,500.00
184	721810		SLOPE PAVING (CONCRETE)	CY	254	\$ 830.00	\$ 210,820.00
185	723030		ROCK SLOPE PROTECTION (1/2 T, Class VII, METHOD A) (CY)	CY	2,340	\$ 250.00	\$ 585,000.00
186	723080		ROCK SLOPE PROTECTION (60 LB, CLASS II, METHOD B) (CY)	CY	166	\$ 300.00	\$ 49,800.00
187	729011	P	ROCK SLOPE PROTECTION FABRIC (CLASS 8)	SQYD	2,744	\$ 16.00	\$ 43,904.00
188	731502		MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	CY	721	\$ 580.00	\$ 418,180.00
189	731518		MINOR CONCRETE (BRUSHED CONCRETE)	SQFT	8,940	\$ 16.00	\$ 143,040.00
190	750001	P-F	MISCELLANEOUS IRON AND STEEL	LB	68,045	\$ 3.50	\$ 238,157.50
191	750041	P-F	ISOLATION CASING	LB	24,200	\$ 8.30	\$ 200,860.00
192	750501	P-F	MISCELLANEOUS METAL (BRIDGE)	LB	1,581	\$ 13.00	\$ 20,553.00
193	750505	P-F	BRIDGE DECK DRAINAGE SYSTEM	LB	12,930	\$ 10.00	\$ 129,300.00
194	750523A		BOLLARD POST	EA	4	\$ 500.00	\$ 2,000.00
195	770020A		RELOCATE WATERLINE	LS	1	\$ 500,000.00	\$ 500,000.00
196	780435		PREPARE AND PAINT CONCRETE	SQFT	72	\$ 30.00	\$ 2,160.00
197	800360	P	CHAIN LINK FENCE (TYPE CL-6)	LF	4,250	\$ 30.00	\$ 127,500.00
198	800361	P	CHAIN LINK FENCE (TYPE CL-6, VINYL-CLAD)	LF	930	\$ 40.00	\$ 37,200.00
199	802540	P	8' CHAIN LINK GATE (TYPE CL-6)	EA	13	\$ 2,000.00	\$ 26,000.00
200	803050		REMOVE CHAIN LINK FENCE	LF	5,420	\$ 7.00	\$ 37,940.00
201	810120		REMOVE PAVEMENT MARKER	EA	2,690	\$ 1.80	\$ 4,842.00
202	810190		GUARD RAILING DELINEATOR	EA	289	\$ 18.00	\$ 5,202.00
203	810170		DELINEATOR (CLASS 1)	EA	98	\$ 60.00	\$ 5,880.00

**PRELIMINARY SCHEDULE OF PRICES AND QUANTITIES FOR
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100% PS&E Estimate - Segregated Estimate

02-Nov-17

Item No.	Item Code	Final Pay	Item Description	ENTIRE PROJECT			
				Units	Estimated Quantity	Unit Price	Total Cost
204	820132		OBJECT MARKER (TYPE L)	EA	11	\$ 70.00	\$ 770.00
205	820134		OBJECT MARKER (TYPE P)	EA	67	\$ 85.00	\$ 5,695.00
206	820135		OBJECT MARKER (TYPE R)	EA	6	\$ 100.00	\$ 600.00
207	820190		SPECIAL MARKER	EA	42	\$ 30.00	\$ 1,260.00
208	820250		REMOVE ROADSIDE SIGN	EA	25	\$ 125.00	\$ 3,125.00
209	820710		FURNISH LAMINATED PANEL SIGN (1"-TYPE A)	SQFT	2,140	\$ 30.00	\$ 64,200.00
210	820750		FURNISH SINGLE SHEET ALUMINUM SIGN (0.063"-UNFRAMED)	SQFT	340	\$ 8.00	\$ 2,720.00
211	820760		FURNISH SINGLE SHEET ALUMINUM SIGN (0.080"-UNFRAMED)	SQFT	68	\$ 12.00	\$ 816.00
212	820780		FURNISH SINGLE SHEET ALUMINUM SIGN (0.063" FRAMED)	SQFT	190	\$ 14.00	\$ 2,660.00
213	820790		FURNISH SINGLE SHEET ALUMINUM SIGN (0.080" FRAMED)	SQFT	310	\$ 18.00	\$ 5,580.00
214	820791A		RETROREFLECTIVE SHEETING (TYPE XI)	SQFT	3,030	\$ 6.00	\$ 18,180.00
215	820840		ROADSIDE SIGN - ONE POST	EA	24	\$ 350.00	\$ 8,400.00
216	820850		ROADSIDE SIGN - TWO POST	EA	8	\$ 850.00	\$ 6,800.00
217	820820		METAL (BARRIER MOUNTED SIGN)	LB	590	\$ 6.00	\$ 3,540.00
218	820860		INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	10	\$ 150.00	\$ 1,500.00
219	832007	P	MIDWEST GUARDRAIL SYSTEM (WOOD POST)	LF	8,670	\$ 40.00	\$ 346,800.00
220	832015	P	MIDWEST GUARDRAIL SYSTEM (7' WOOD POST)	LF	1,730	\$ 50.00	\$ 86,500.00
221	832070		VEGETATION CONTROL (MINOR CONCRETE)	SQYD	14,850	\$ 52.00	\$ 772,200.00
222	839221	P	DOUBLE MIDWEST GUARDRAIL SYSTEM (WOOD POST)	LF	25	\$ 80.00	\$ 2,000.00
223	839721		CONCRETE BARRIER (TYPE 732A)	LF	450	\$ 85.00	\$ 38,250.00
224	839302	P	SINGLE THRIE BEAM BARRIER (WOOD POST)	LF	3,120	\$ 50.00	\$ 156,000.00
225	839311	P	DOUBLE THRIE BEAM BARRIER (WOOD POST)	LF	8,700	\$ 95.00	\$ 826,500.00
226	839540	P	TRANSITION RAILING (TYPE STB)	EA	10	\$ 4,500.00	\$ 45,000.00
227	839542	P	TRANSITION RAILING (TYPE DTB)	EA	2	\$ 5,000.00	\$ 10,000.00
228	839543	P	TRANSITION RAILING (TYPE WB-31)	EA	11	\$ 5,500.00	\$ 60,500.00
229	839581		END ANCHOR ASSEMBLY (TYPE SFT)	EA	9	\$ 1,200.00	\$ 10,800.00
230	839582		END ANCHOR ASSEMBLY (TYPE CA)	EA	1	\$ 1,500.00	\$ 1,500.00
231	839584		ALTERNATIVE IN-LINE TERMINAL SYSTEM	EA	1	\$ 6,000.00	\$ 6,000.00
232	839585		ALTERNATIVE FLARED TERMINAL SYSTEM	EA	10	\$ 6,000.00	\$ 60,000.00
233	839600A		TYPE SMART CRASH CUSHION	EA	3	\$ 30,000.00	\$ 90,000.00
234	839601	P	CRASH CUSHION (TYPE CAT)	EA	3	\$ 25,000.00	\$ 75,000.00
235	839602	P	CRASH CUSHION (TYPE CAT) BACKUP	EA	3	\$ 2,500.00	\$ 7,500.00
236	839699		CONCRETE BARRIER (TYPE 60P)	LF	48	\$ 210.00	\$ 10,080.00
237	839700		CONCRETE BARRIER (TYPE 60F)	LF	710	\$ 210.00	\$ 149,100.00
238	839701		CONCRETE BARRIER (TYPE 60)	LF	1,890	\$ 80.00	\$ 151,200.00
239	839702	F	CONCRETE BARRIER (TYPE 60A)	LF	509	\$ 90.00	\$ 45,810.00
240	839703		CONCRETE BARRIER (TYPE 60C)	LF	4,550	\$ 150.00	\$ 682,500.00
241	839705A		CONCRETE BARRIER (TYPE 60R)	LF	120	\$ 400.00	\$ 48,000.00
242	839713A		CONCRETE BARRIER (TYPE 60R) (MOD)	LF	85	\$ 500.00	\$ 42,500.00
243	839722A		CONCRETE BARRIER (TYPE 60A) (MOD)	LF	330	\$ 100.00	\$ 33,000.00

PRELIMINARY SCHEDULE OF PRICES AND QUANTITIES FOR
I-680/SR 4 Interchange - Phase 3 (SR 4 Widening) - EA 229114 - 04-CC-4-PM R11.2/R15.1

100% PS&E Estimate - Segregated Estimate

02-Nov-17

Item No.	Item Code	Final Pay	Item Description	ENTIRE PROJECT			
				Units	Estimated Quantity	Unit Price	Total Cost
244	839724A		CONCRETE BARRIER (TYPE 60D) (MOD)	LF	310	\$ 60.00	\$ 18,600.00
245	839709		CONCRETE BARRIER (TYPE 60GE)	LF	130	\$ 550.00	\$ 71,500.00
246	839717	F	CONCRETE BARRIER (TYPE 732 MODIFIED)	LF	1,684	\$ 145.00	\$ 244,180.00
247	839720	F	CONCRETE BARRIER (TYPE 732)	LF	2,257	\$ 135.00	\$ 304,695.00
248	839732A		CONCRETE BARRIER (ANCHOR BLOCK) (TYPE 25)	LF	15	\$ 600.00	\$ 9,000.00
249	839752		REMOVE GUARDRAIL	LF	2,280	\$ 10.00	\$ 22,800.00
250	839753		REMOVE SINGLE METAL BEAM BARRIER	LF	2,760	\$ 7.00	\$ 19,320.00
251	839754		REMOVE DOUBLE METAL BEAM BARRIER	LF	15,400	\$ 12.00	\$ 184,800.00
252	839758		SALVAGE METAL BRIDGE RAILING	LF	2,760	\$ 15.00	\$ 41,400.00
253	839774		REMOVE CONCRETE BARRIER	LF	1,320	\$ 40.00	\$ 52,800.00
254	840516		THERMOPLASTIC PAVEMENT MARKING (ENHANCED WET NIGHT VISIBILITY)	SQFT	990	\$ 10.00	\$ 9,900.00
255	840615		6" THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT VISIBILITY) (BROKEN 18-12)	LF	81,400	\$ 1.00	\$ 81,400.00
256	840657A		2" CONTRAST PAVEMENT STRIPE BLACK PAINT (2-COAT)	LF	9,740	\$ 0.40	\$ 3,896.00
257	840658A		6" CONTRAST PAVEMENT STRIPE BLACK PAINT (2-COAT)	LF	56,200	\$ 0.60	\$ 33,720.00
258	840659A		8" CONTRAST PAVEMENT STRIPE BLACK PAINT (2-COAT)	LF	5,550	\$ 0.80	\$ 4,440.00
259	840666		PAINT PAVEMENT MARKING (2-COAT)	SQFT	1,910	\$ 3.00	\$ 5,730.00
260	846007		6" THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT VISIBILITY)	LF	77,100	\$ 0.80	\$ 61,680.00
261	846009		8" THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT VISIBILITY)	LF	8,970	\$ 0.90	\$ 8,073.00
262	846010		8" THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT VISIBILITY) (BROKEN 12-3)	LF	6,790	\$ 1.00	\$ 6,790.00
263	840621		6" THERMOPLASTIC TRAFFIC STRIPE (ENHANCED WET NIGHT VISIBILITY) (BROKEN 17-7)	LF	3,290	\$ 1.20	\$ 3,948.00
264	846030		REMOVE THERMOPLASTIC TRAFFIC STRIPE	LF	77,300	\$ 0.40	\$ 30,920.00

**PRELIMINARY SCHEDULE OF PRICES AND QUANTITIES FOR
I-680/SR 4 Interchange - Phase 3 (SR 4 Widening) - EA 229114 - 04-CC-4-PM R11.2/R15.1**

100% PS&E Estimate - Segregated Estimate

02-Nov-17

Item No.	Item Code	Final Pay	Item Description	ENTIRE PROJECT			
				Units	Estimated Quantity	Unit Price	Total Cost
265	810230	P	PAVEMENT MARKER (RETROREFLECTIVE)	EA	7,560	\$ 6.00	\$ 45,360.00
267	870009		MAINTAINING EXISTING TRAFFIC MANAGEMENT SYSTEM ELEMENTS DURING CONSTRUCTION	LS	1	\$ 30,000.00	\$ 30,000.00
268	870600		TRAFFIC MONITORING STATION SYSTEM	LS	1	\$ 231,000.00	\$ 231,000.00
269	872000		TEMPORARY LIGHTING SYSTEM	LS	1	\$ 204,000.00	\$ 204,000.00
270	872001A		TEMPORARY RAMP METERING SYSTEM	LS	1	\$ 41,000.00	\$ 41,000.00
271	872002A		TEMPORARY TRAFFIC MONITORING STATION SYSTEM	LS	1	\$ 70,000.00	\$ 70,000.00
272	872130		MODIFYING EXISTING ELECTRICAL SYSTEM	LS	1	\$ 1,793,000.00	\$ 1,793,000.00
273	999990		MOBILIZATION (10%)	LS	1	\$ 7,645,000.00	\$ 7,645,000.00
TOTAL CONSTRUCTION BID ESTIMATE							\$ 76,449,000.00

SUPPLEMENTAL WORK ITEMS

1	066010		PARTNERING	LS	1	\$ 60,000.00	\$ 60,000.00
2	066016		JUST-IN-TIME TRAINING	LS	1	\$ 10,000.00	\$ 10,000.00
3	066041		BIRD PROTECTION	LS	1	\$ 60,000.00	\$ 60,000.00
4	066062		COZEEP CONTRACT	LS	1	\$ 650,000.00	\$ 650,000.00
5	066063		TRANSPORTATION MANAGEMENT PLAN PUBLIC INFORMATION	LS	1	\$ 70,000.00	\$ 70,000.00
6	066065		FREEWAY SERVICE PATROL	LS	1	\$ 500,000.00	\$ 500,000.00
7	066070		MAINTAIN TRAFFIC	LS	1	\$ 550,000.00	\$ 550,000.00
8	066094		VALUE ANALYSIS	LS	1	\$ 10,000.00	\$ 10,000.00
9	066208		REPAIR EXISTING IRRIGATION SYSTEM	LS	1	\$ 10,000.00	\$ 10,000.00
10	066595		WATER POLLUTION CONTROL MAINTENANCE SHARING	LS	1	\$ 40,000.00	\$ 40,000.00
11	066596		ADDITIONAL WATER POLLUTION CONTROL	LS	1	\$ 80,000.00	\$ 80,000.00
12	066670		PAYMENT ADJUSTMENTS FOR PRICE INDEX FUCTUATIONS	LS	1	\$ 400,000.00	\$ 400,000.00
13	066919		DISPUTE RESOLUTION BOARD	LS	1	\$ 40,000.00	\$ 40,000.00
TOTAL SUPPLEMENTAL WORK ITEMS							\$ 2,480,000.00
PROJECT SUBTOTAL							\$ 78,929,000.00
CONTINGENCIES (10%)							\$ 7,892,900.00
ESCALATION							\$ 2,758,100.00
TOTAL							\$ 89,580,000.00

Attachment F

R/W and Utility Requirements Data Sheet

TO: Office of Design – Contra Costa

Date 1/25/18
Dist 4 Co CC Rte 4
PM 11.2/15.1Attention: Bonnita Chow
Senior Transportation Engineer

EA 229112 (04-1400-0130)

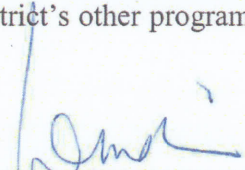
From: ENID LAU
Right of Way Resource ManagerI-680/SR-4 Interchange Phase 3
D.S. # 6960

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 on January 10, 2018 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 Contra Costa

Date 1/23/2018 D.S. # 6960
 Dist. 04 Co. CC Rte 4 PM 11.2/15.1
 EA 229112(0414000130)

ATTN: Bonita Chiu

Project Description: I 680/SR-4 Interchange Phase 3

SUBJECT: Right of Way Data - Alternate No. _____

1. The Right of Way Cost Estimate:

	Current Value (Future Use)	Escalation Rate	Escalated Value
A. Acquisition, including Excess Lands, Damages, and Goodwill	<u>\$421,000.00</u>	%	<u>\$421,000.00</u>
Environmental Mitigation			<u>\$0.00</u>
Grantor's Appraisal Cost			<u>\$35,000.00</u>
B. Utility Relocation (State Share)	<u>\$12,753,000.00</u>	%	<u>\$12,753,000.00</u>
C. Railroad (from page 6)			<u>\$0.00</u>
D. Relocation Assistance	<u>\$0.00</u>	%	<u>\$0.00</u>
E. Clearance Demolition	<u>\$0.00</u>	%	<u>\$0.00</u>
F. Title and Escrow Fees	<u>\$5,000.00</u>	%	<u>\$5,000.00</u>
G. <u>TOTAL ESCALATED VALUE</u>			<u>\$13,214,000.00</u>
H. Construction Contract Work	<u>\$0.00</u>		
I. Railroad Phase 4 Costs	<u>\$0.00</u>		

2. Anticipated Date of Right of Way Certification 3/16/2018

3. Parcel Data:

Type	Dual/Appr	Utilities	RR Involvements	
X		U4-1	None	X
A	6	-2	C&M Agrmt	
B	1	-3	Svc Cont.	
C		-4	Design	
D		U5-7	Const.	
E	XXXX	-8	Lic/RE/Clauses	
F	XXXX	-9	Misc R/W Work	
Total	7		RAP Displ	0
			Clear Demo	0
			Const. Permits	0
			Condemnation	1

Areas: Right of Way _____
 Enter PMCS Screens _____

No. Excess Parcels _____ Excess _____
 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.
There are seven parcels required for this project. Two CCCFCD properties requires TCE's, easements and fee acquisition, storage facility requires TCE's and Permanent Footing Easements and three Contra Costa County parcels for a Utility Easements, a CCCSD parcel and a section 83.

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 personal property relocations _____

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 available without Last Resort Housing.

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

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

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

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

No costs were provided but it is anticipated that mitigation cost will be incurred.

15. Indicate the anticipated Right of Way schedule and lead time requirements. (Discuss if District proposes less than 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 the current design and Appraisal maps dated 1/10/2018

Evaluation Prepared By: Lynn White

Right of Way: Name Lynn White Date 1-23-18

Railroad: Name [Signature] Date 1-23-18

Utilities: Name [Signature] Date 1-23-18

Recommended for Approval:

[Signature]
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.

[Signature]
Chief, R/W Appraisal Services
1/25/18
Date

cc: Program Manager
Project Manger

UTILITY INFORMATION SHEET

1. Utility owners located within project limits:
 Phillips 66, Kinder Morgan, CCWD, PG&E(gas & Electric), AT&T, CCSD, EBMUD

2. Facilities potentially impacted by project (if known, include Owners(s) & facility type(s)):
 Phillips 66 = \$8,181,548, Kinder Morgan = \$3,400,000, CCWD= \$276,466, PG&E electric = \$165,167, gas = \$8,200 and contingency = \$100,000.

3. Anticipated Workload:

X	Utility Verification required	Reverifications
X	Positive Identification	Potholing
X	Utility Relocation	Yes
_____	Other (Specify)	

4. Additional information concerning anticipated utility involvements (include limiting conditions and a narative addressing likelihood that conflicts will occur);
 PG&E may have easements in these locations but with out easements the relocation costs will be 100% PG&E.
 _____ Involves possible relocation of electric transmission facilities
 (If X'd, Data sheet should be forwarded to environmental)

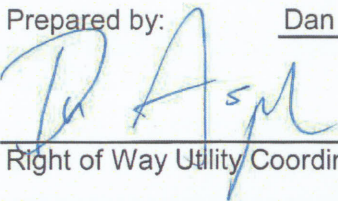
5. PMCS input information

- | | | |
|------|-------|--|
| U4-1 | _____ | Owner Expense Involvements |
| U4-2 | _____ | State Expense Involvements
(Conventional, No Fed Aid) |
| U4-3 | 2 | State Expense Involvements
(Freeway, No Fed Aid) |
| U4-4 | 3 | State Expense Involvements
(Conventional or Freeway, Fed Aid) |
| U5-7 | 3 | Verifications - without involvements |
| U5-8 | 3 | Verifications - 50% involvements |
| U5-9 | 6 | Verifications resulting in involvements |

NOTE: The sum of U-4's must equal the sum of 1/2 of the U5-8's and all of the U5-9's.

ESTIMATED STATE SHARE OF COSTS \$ 12,753,000.00

Prepared by: Dan Asprogerakas


 Right of Way Utility Coordinator

1-23-18
 Date

Attachment G
Environmental Revalidation

NEPA/CEQA RE-VALIDATION FORM

DIST./CO./RTE.	District 4-CC-4
PM/PM	PM R11.2/R15.1
E.A. or Fed-Aid Project No.	04-229111
Other Project No. (specify)	0414000130 (Project ID)
PROJECT TITLE	Interstate 680 (I-680)/State Route (SR) 4 Interchange Project – Phase 3
ENVIRONMENTAL APPROVAL TYPE	IS/EA
DATE APPROVED	11/26/2008
REASON FOR CONSULTATION (23 CFR 771.129)	<i>Check reason for consultation:</i> <input type="checkbox"/> Project proceeding to next major federal approval <input checked="" type="checkbox"/> Change in scope, setting, effects, mitigation measures, requirements <input type="checkbox"/> 3-year timeline (EIS only) <input type="checkbox"/> N/A (Re-Validation for CEQA only)
DESCRIPTION OF CHANGED CONDITIONS	I-680/SR 4 Interchange Project – Phase 3 (Project) is amended to include additional improvements identified during the final design phase. See attached continuation sheets for further details.

NEPA CONCLUSION - VALIDITY


Based on an examination of the changed conditions and supporting information:

- The original environmental document or CE remains valid. No further documentation will be prepared.
- The original environmental document or CE is in need of updating; further documentation has been prepared and is included on the continuation sheet(s) or is attached. With this additional documentation, the original ED or CE remains valid.
 Additional public review is warranted (23 CFR 771.111(h)(3)) Yes No
- The original document or CE is no longer valid.
 Additional public review is warranted (23 CFR 771.111(h)(3)) Yes No
 Supplemental environmental document is needed. Yes No
 New environmental document is needed. Yes No (If "Yes," specify type: _____)

CONCURRENCE WITH NEPA CONCLUSION

I concur with the NEPA conclusion above.


 Signature: Environmental Branch Chief

 12/17/15
 Date Signature: Project Manager/DLAE Date

CEQA CONCLUSION: (Only mandated for projects on the State Highway System.)


Based on an examination of the changed conditions and supporting information, the following conclusion has been reached regarding appropriate CEQA documentation:

- Original document remains valid. No further documentation is necessary.
- Only minor technical changes or additions to the previous document are necessary. An addendum has been or will be prepared and is included on the continuation sheets or will be attached. It need not be circulated for public review. (CEQA Guidelines, §15164)
- Changes are substantial, but only minor additions or changes are necessary to make the previous document adequate. A Supplemental environmental document will be prepared, and it will be circulated for public review. (CEQA Guidelines, §15163)
- Changes are substantial, and major revisions to the current document are necessary. A Subsequent environmental document will be prepared, and it will be circulated for public review. (CEQA Guidelines, §15162) (Specify type of subsequent document, e.g., Subsequent FEIR:)
- The CE is no longer valid. New CE is needed. Yes No

CONCURRENCE WITH CEQA CONCLUSION

I concur with the CEQA conclusion above.


 Signature: Environmental Branch Chief

 12/17/15
 Date Signature: Project Manager/DLAE Date

**NEPA/CEQA RE-VALIDATION FORM
CONTINUATION SHEET(S)**

Address only substantial changes or substantial new information since approval of the original document and only those areas that are applicable. Use the list below as section headings as they apply to the project change(s). Use as much or as little space as needed to adequately address the project change(s) and the associated impacts, minimization, avoidance and/or mitigation measures, if any.

Changes in project design, e.g., substantial scope change; a new alternative; change in project alignment

In 2008, Caltrans adopted an Initial Study/Environmental Assessment for the I-680/SR4 Interchange Project. The improvements were proposed to be implemented over five phases. Each phase could be independently constructed and provide incremental benefits in meeting the overall project goal to improve operational efficiencies and traffic flow, address safety concerns associated with the existing interchange configuration, and accommodate existing and planned growth. Contra Costa Transportation Authority and Caltrans propose to construct Phase 3 of the I-680/SR4 Interchange Project as the initial phase of construction. Phase 3 originally proposed to add travel lanes in the median of SR 4 in both directions from east of Milano Way/Glacier Drive (PM 11.2) to east of SR 242 (PM 15.1). Phase 3 of the project has been modified as follows (see **Attachments 1 and 2**):

- Near the Grayson Creek Bridge (PM 12.7 to 13.0), the freeway mainline would be raised and reconstructed including replacement and widening of the Grayson Creek Bridge. Replacement of the bridge in lieu of bridge widening is required to accommodate the 100-year flood event. The I-680/SR 4 interchange ramps, including the westbound SR 4 to northbound I-680 off-ramp and northbound I-680 to eastbound SR 4 on-ramp, would be reconstructed to conform to the raised elevation of the SR 4 mainline. The raised bridge profile would provide the opportunity to connect Contra Costa County Flood Control District (CCCFCD) maintenance access roads on the north and south sides of the bridge.
- The proposed additional lane in the eastbound direction on SR 4 would extend the existing auxiliary lane from its current termini located on the east side of Milano Way/Glacier Drive Overcrossing to Solano Way. In addition, the existing High Occupancy Vehicle (HOV) lane, east of SR 242, would be extended westerly to just east of Grayson Creek – a distance of approximately two miles.
- In addition to the proposed general purpose lane in the westbound direction on SR 4, a new auxiliary lane is proposed from west of Walnut Creek to the northbound I-680 on-ramp.
- Realignment of eastbound SR4 to southbound I-680 ramp and eastbound SR4 to northbound I-680 loop ramp to accommodate restriping of SR4 at the vicinity of Pacheco Blvd and I-680 interchanges.
- Outside widening on both sides of the Pacheco Boulevard Undercrossing and I-680/SR 4 Separation structures
- Enhanced lighting and traffic striping to improve roadway visibility for drivers during nighttime hours.
- Replacement of several cracked concrete pavement slabs on eastbound SR 4 in the vicinity of Pacheco Blvd and I-680 interchange.
- The proposed design modifications necessitate the replacement of the following utilities:
 - Removal of approximately 1,800 feet of two existing oil pipelines (8- and 16- inches in diameter) that run parallel and south of eastbound SR 4 by using jack-and-bore construction methods to install pipelines to cross under Grayson Creek channel;
 - Relocation of approximately 500 feet of an 18-inch water line just west of Grayson Creek bridge using jack-and-bore construction methods;
 - Relocation of approximately 800 feet of an overhead PG&E electrical line (12 kV) to slightly north of its current location on Old Imhoff Drive; and
 - Relocation of approximately 800 feet of a PG&E gas line (3-inch diameter) to slightly north of its current location on Old Imhoff Drive.
- Widening the Solano Way Undercrossing would require acquisition of four permanent easements (± 0.01 acre) and two temporary construction easements (± 0.2 acre) from a public storage facility to accommodate construction of new bridge footings. Replacement of the Grayson Creek Bridge would require acquisition of one partial fee take (± 0.9 acre), two utility easements (± 0.3 acre) and four temporary construction easements (± 0.9 acre) from Contra Costa County Flood Control District. Two utility easements are required from Contra Costa County (± 0.1). In addition, transfer of rights

NEPA/CEQA RE-VALIDATION FORM

(Section 83) for a portion of Old Imhoff Road (± 0.1 acre) would be required.

Changes in environmental setting, e.g., new development affecting traffic or air quality;

There has been no major change in environmental setting since the 2008 IS/EA, as much of the Phase 3 Project area was fully developed in 2008. The land uses and development remain similar to those examined in the previous analysis.

Changes in environmental circumstances, e.g., a new law or regulation; change in the status of a listed species.

There are no new cultural resources identified in the project area, and no new hazardous sites that pose an environmental risk to the project. Since the original IS/EA, previously unstudied biological resources were evaluated, including the Western Pond Turtle (candidate for listing) and the previously unlisted California Tiger Salamander. Following adoption of the IS/EA, Caltrans updated the requirements for assessing and remediating barriers to fish passage at stream crossings, requiring fish passage issues to be assessed for any roadway stream crossing that would be repaired or replaced. To this end, a Fish Passage Incidental Report was prepared for the project in September 2014. This Fish Passage Incidental Report found that both Walnut Creek and Grayson Creek each have barriers to limit fish passage to the project area during low-flow periods, but that during higher flow periods, water depths would be sufficient for adult salmonids to travel upstream of these barriers. Since the IS/EA, the EPA revised the primary annual PM 2.5 standard from 15 $\mu\text{g}/\text{m}^3$ to 12 $\mu\text{g}/\text{m}^3$. However, the IS/EA was a joint CEQA/NEPA document which already analyzed the 12 $\mu\text{g}/\text{m}^3$ standard to meet State Air Quality requirements. In 2011, Caltrans adopted a new Traffic Noise Analysis Protocol (TNAP), replacing the protocol under which the noise study in the previous IS/EA was conducted. To this end, a new Noise Study Report and Noise Abatement Decision Report consistent with the 2011 TNAP were prepared as part of this revalidation. Additionally, in 2014, the Federal Highway Administration (FHWA), the Advisory Council on Historic Preservation (ACHP), the California State Historic Preservation Officer (SHPO), and the California Department of Transportation (Caltrans) signed a new Programmatic Agreement (PA) regarding compliance with Section 106 of the National Historic Preservation Act. Caltrans, in accordance with this PA and its NEPA delegation responsibilities, made a Finding of No Historic Properties Affected for the project.

Changes to environmental impacts of the project, e.g., a new type of impact, or a change in the magnitude of an existing impact.

The Phase 3 Project design modification will not result in new environmental impacts. The Phase 3 Project design modification will result in minor changes to the magnitude of particular existing impacts, however the conclusions presented in the IS/EA remain unchanged.

An updated Air Quality Report was prepared in 2015 that concluded implementation of the Phase 3 Project would not result in any new impacts; and as such the conclusions made in the IS/EA related to air quality remain unchanged (see **Attachment 3**).

An update of the previous Natural Environment Study (NES) and NES Addenda (covering botanical surveys and California Tiger Salamander site assessment) were prepared to evaluate any new potential effects to biological resources including waters of the US and wetlands in the project vicinity (see **Attachment 4**). The NES Update was informed by a separate Jurisdictional Report for the Phase 3 Project. The NES Update and associated reports found that as a result of the Phase 3 Project design modifications, the disturbed acreage of wetlands increased slightly. However, the significance conclusions in the IS/EA relating to wetlands and waters of the US, and all other biological resources, remain unchanged.

The original IS/EA proposed to widen the existing Grayson Creek Bridge. The new Phase 3 Project design modifications would entirely reconstruct, as opposed to widen, the Grayson Creek Bridge. The reconstructed bridge would be 8 feet higher than the existing bridge so as to provide adequate roadway clearance. However, as discussed in the Historic Property Survey Report, the newly proposed increase in elevation of Grayson Creek Bridge would not result in any new impacts related to cultural or aesthetic resources and the conclusions in the IS/EA remain unchanged (see **Attachment 5**).

An updated Initial Site Assessment was approved in 2014, and an Addendum to the Initial Site

NEPA/CEQA RE-VALIDATION FORM

Assessment Update was approved in 2015 that concluded the modified Phase 3 Project would not result in changes to the previously evaluated environmental impacts related to hazards (see **Attachment 6**). As such, the conclusions made in the IS/EA related to hazards remain unchanged.

An updated Location Hydraulic Study was prepared in 2015 that concluded that there would be sufficient freeboard under the Walnut Creek and Grayson Creek bridges (the former being raised and replaced as part of the modified Phase 3 Project) such that there would be no new or adverse floodplain effects or need for additional mitigation measures beyond those identified in the previous IS/EA (see **Attachment 7**).

An Addendum to the Water Quality Re-validation was prepared for the project in 2014 and found that the conclusions of the IS/EA relating to water quality remain unchanged (see **Attachment 8**).

An updated Noise Study Report and Noise Abatement Decision Report were prepared that concluded no new soundwalls would need to be constructed as part of the Phase 3 Project (see **Attachment 9**). As such, the conclusions in the IS/EA related to noise remain unchanged.

Given the time that has elapsed since the 2008 IS/EA, an updated Traffic Operations Analysis Report was completed in 2015 and confirmed the modified Phase 3 Project would meet the purpose and need of the full project and would meet the LOS thresholds. As such the conclusions made in the IS/EA related to traffic would remain unchanged (see **Attachment 10**).

No new parks, recreational areas, or wildlife refuges have been identified since the IS/EA. As such, the conclusions related to Section 4(f) remain unchanged.

No new Prime Farmland, Farmland of Statewide Importance, or Unique Farmland has been identified in the project area since the 2008 IS/EA, therefore the conclusions in the IS/EA relating to farmlands remain unchanged.

The proposed Phase 3 Project design modifications necessitate the replacement and relocation of some utilities. These utility relocations would occur within the previously evaluated project footprint, therefore the conclusions in the IS/EA relating to utilities and emergency services remain unchanged.

Changes to avoidance, minimization, and/or mitigation measures since the environmental document was approved.

The modified Phase 3 Project is not expected to result in any new environmental impacts beyond those previously analyzed in the IS/EA. However, as a result of increased design detail and analysis, more tailored avoidance and minimization measures have been proposed to more specifically address the Phase 3 Project. These new, more tailored measures are listed in the attached ECR (see **Attachment 11**).

NEPA/CEQA RE-VALIDATION FORM

Changes to environmental commitments since the environmental document was approved, e.g., the addition of new conditions in permits or approvals. When this applies, append a revised Environmental Commitments Record (ECR) as one of the Continuation Sheets.

The modified Phase 3 Project is not expected to result in any new environmental impacts beyond those previously analyzed in the IS/EA. Since the IS/EA, Caltrans has adopted a new database to store environmental commitments for all projects. An updated ECR is attached with all previous and newly proposed environmental commitments.

ATTACHMENTS

1. Location Map
2. Project Plans (Project Description, Layouts, Roadway Profile and Superelevation Diagram, Typical Cross Section, and Bridge General Plan)
- Technical Studies Prepared for the Revalidation**
3. Air Quality Report and related documentation
 - a. AQ Conformity Task Force Action Record
 - b. Public Notice for Air Quality Conformity and FHWA Determination
4. Biological Resources Reports
 - a. Wetland Delineation Report (and Addendum)
 - b. California Tiger Salamander Site Assessment (and Addendum)
 - c. Natural Environment Study (including Botanical Survey (and Addendum) and Fish Passage Assessment)
5. Section 106 Close-Out Memo
6. Initial Site Assessment Update (and Addendum)
7. Location Hydraulic Study (Grayson Creek and Walnut Creek)
8. Water Quality Re-Validation
9. Noise Study Report (and Noise Abatement Decision Report)
10. Traffic Operations Analysis Report
11. Environmental Commitments Record

Attachment H
Risk Management Plan

Risk Management Plan

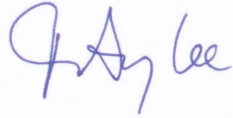
Purpose

This document describes how Risk Management will be structured and performed on this project. The risk management plan includes methodology, roles and responsibilities, budgeting, timing, risk categories, definitions of risk probability and impact, probability and impact matrix, stakeholder tolerances, reporting formats, and tracking. The Caltrans' Project Risk Management Handbook: A Scalable Approach Handbook will be utilized as primary reference and guideline.

Project Name:	I-680 /SR4 Interchange - Phase 3 (SR4 Widening) Median widening of SR 4 in both directions from east of Milano Way/Glacier Drive (PM R11.2) to east of SR 242 (PM R15.1). Outside widening of SR 4 will occur in both directions at Pacheco Boulevard and I-680. Near Grayson Creek Bridge (PM R12.7 to R13.0), the SR 4 profile would be raised and include replacement of the Grayson Creek Bridge. The I-680/SR 4 interchange ramps, including the westbound SR 4 to northbound I-680 off-ramp and northbound I-680 to eastbound SR 4 on-ramp will also be reconstructed to conform to the raised elevation of the SR 4 mainline.
Agency:	Contra Costa Transportation Authority
Project ID/EA:	0414000130/04-229111
District:	04
County/Route/Post Mile:	CC - 4 - PM R11.2/PM R15.1
Project Sponsor:	Contra Costa Transportation Authority
Project Manager:	Susan Miller, CCTA
Date:	June 20, 2017
Version:	3.0

Risk Management Plan Approval

The undersigned acknowledge they have reviewed the Risk Management Plan for the above-mentioned project. Changes to this Risk Management Plan will be coordinated with and approved by the undersigned or their designated representatives.



Signature: _____ Date: 6/20/17
Print Name: Tim Lee
Title: Project Manager (Consultant)
Role: Develop and Update RM plan

Version History

[Provide information on how the development and distribution of the Risk Management Plan up to the final point of approval was controlled and tracked. Use the table below to provide the version number, the author implementing the version, the date of the version, the name of the person approving the version, the date that particular version was approved, and a brief description of the reason for creating the revised version.]

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason for Revision
1.0	Ben Razeghi	04-23-15			Initial Risk Management Plan draft
2.0	Ben Razeghi	06-11-16			Project Update
3.0	Tim Lee	06-20-17			Project Update

Methodology

This section defines how risk management will be performed for this particular project. This Risk Management Plan does not contain any identified risks or their related risk response strategies. It simply describes how to approach, plan, and execute all activities related to managing risks for a particular project. Per section 1-4 of the new **Caltrans Project Risk Management Handbook: A Scalable Approach**, referred to as the Risk Management Handbook henceforth, the planned scalable level can be referenced here.

Roles and Responsibilities

This section describes the roles and responsibilities of the project team regarding risk management planning, risk identification, analysis, response planning, and monitoring and control. Refer to section 1-7, Roles and Responsibilities, of the Risk Management Handbook for details. Any additions or deviations from that section can be documented here.

Budget

This section outlines the budget allocated to performing risk management by the entire project team. The following table outlines what roles should be considered for this budget determination.

PM	@	<u>10</u>	Hrs
PMSU	@	<u>10</u>	Hrs
District Risk Mgmt Coordinator	@	<u>10</u>	Hrs
Project Risk Manager	@	<u>10</u>	Hrs
Environmental	@	<u>10</u>	Hrs
Design	@	<u>15</u>	Hrs
R/W	@	<u>15</u>	Hrs
DES/Structure	@	<u>5</u>	Hrs
Construction	@	<u>15</u>	Hrs
Traffic Operations	@	<u>15</u>	Hrs
Maintenance	@	<u>0</u>	Hrs
_____	@	<u> </u>	Hrs
_____	@	<u> </u>	Hrs
Total:		<u>115</u>	Hrs

115 Hrs. × \$ 150/Hr = \$17,250

A total of \$ \$17,250 is allocated for Risk Management on this project.

Risk Management Schedule

Meetings for the purpose of discussing and making decisions on Project risk will be held:

Weekly _____ Bi-Weekly _____ Monthly _____ Other bi-monthly X

The risk management identification, analysis and response planning process shall occur throughout the entire lifecycle of a project; from PID through Construction, including closeout.

Definitions of Probability and Impact

Probability and impact ratings for the project will be in accordance with the Section 1-5 of the Caltrans Risk Management Handbook.

Stakeholder tolerances for Risk

Recognizing the importance of State Route 4 as a corridor for the movement of people and goods within Contra Costa County, and between the San Francisco Bay Area and the Central Valley, the CCTA and Caltrans have made a commitment to complete final design and right of way engineering for the project to enable construction to begin in Spring 2018.

Risk Reporting and Formats

The project risk manager will prepare and issue periodic risk management reports as required by the project manager. The project risk manager will ensure that the risk management process is documented.

Risk Tracking

The project risk manager will be responsible for tracking the identified risks, monitoring residual risks, identifying new risks, executing risk response plans, and evaluating their effectiveness throughout the project life cycle.

Appendix A: References

The following table summarizes the documents referenced in this document.

Document Name and Version	Description	Location
<i>Risk Management Handbook. Scalable Approach Version 1</i>	<i>[Caltrans guidelines and policy of Scalable Approach to Risk Managing Projects]</i>	<i><http://onramp.dot.ca.gov/hq/projmgmt/index.jsp?pg=65 or http://onramp/hq/pm/dpmwp/content/PMR/RiskManagement/PRM_Handbook.pdf></i>

LEVEL 3 - RISK REGISTER		Project Name:		I-680 / SR 4 Interchange (Phase 3)		DIST- EA	04-229111	Project Manager	Laurie Lau, Caltrans Susan Miller, CCTA		D4 Risk Manager				Raoul Maltez						
Risk Identification						Risk Assessment										Risk Response					
Status	ID #	Category	Title	Risk Statement	Current status/assumptions	Probability		Cost Impact (\$)			Time Impact (days)				Rationale	Strategy	Response Actions	Risk Owner	Updated	Risk Rating	
						Low	High	Low	Most likely	High	Probable	Low	Most likely	High	Probable						
Retired	1	Environmental	Environmental Reevaluation Documents Approval	As a result of delay in completion of environmental reevaluation technical studies, deliverables and reviews may not meet schedule, which would lead to delay in project schedule.	Environmental reevaluation was approved on 12/19/15.	20	39	\$ 100,000		\$ 300,000	\$ 110,000	20		90	50		Accept	Project Team Acceptance of Schedule of Deliverable and Review Times	Caltrans/CCTA Team	6/20/2017	Low
Active	2	PM	Construction Funding	Adequate funding may not be available, which would lead to rescoping the project (i.e., split the project into smaller projects, with each project funded separately).	CCTA proposes to bid fundable portion of project and award alternate bid for remainder when funding confirmed in late 2018.	40	70	\$ 400,000		\$ 1,000,000	\$ 500,000	180		365	200		Accept	Develop base and alternate bid packages	CCTA Team	6/20/2017	High
Retired	3	Right of Way	R/W Delay (Resources)	R/W Appraisal and Acquisition.	Caltrans is currently preparing ROW appraisal maps.	30	50	\$ 200,000		\$ 500,000	\$ 300,000	60		180	100		Accept	Track schedule and ensure timely progress	Caltrans/CCTA Team	6/20/2017	Low
Active	4	PM	Project Estimate	Changes in the economy will affect the cost of the project.	Project cost is updated at each PS&E milestone.	20	39	\$ 2,000,000		\$ 5,000,000	\$ 3,000,000	20		50	30		Accept	Track Cost Trends and ensure timely progress	CCTA Team	6/20/2017	Medium
Retired	5	Environmental	Hazardous Materials	Hazardous materials encountered during construction will require an on-site storage area and potential additional costs to dispose.	Based on Preliminary Site Investigation findings, no issues were identified in study area.	40	59	\$ 300,000		\$ 800,000	\$ 400,000	20		40	30		Accept	Per Phase II study, no issues identified in study area	CCTA Team	6/20/2017	Low
Active	6	Design	Permits	Delay in obtaining permits from ACOE, CDFW and RWQCB.	Draft permit applications submitted to resource agencies in 2016 and draft comments received.	20	40	\$ 500,000		\$ 1,000,000	\$ 300,000	365		365	365		Accept	Track schedule and ensure timely progress	CCTA Team	6/20/2017	High
Active	7	Construction	Impacts to local street traffic during construction	Freeway and ramp closures detoured on local streets for extended periods.	Prepared TMP and Lane Closure Report. No significant delays identified.	20	40	\$ 50,000		\$ 100,000	\$ 60,000	365		20	40		Accept	Work closely with local agencies	CCTA Team	6/20/2017	Low
Active	8	Construction	Utility Relocation	Grayson Creek Bridge Replacement will require advance utility relocation.	Kinder Morgan and Phillips 66 oil pipeline relocation scheduled for Spring 2018.	40	60	\$ 1,000,000		\$ 2,000,000	\$ 7,000,000	100		180	120		Accept	Track schedule and ensure timely progress	CCTA Team	6/20/2017	High
Active	9	Construction	Buried Objects	Unanticipated buried man-made objects uncovered during construction require removal and disposal resulting in additional costs and time.	Include Supplemental Work item.	20	40	\$ 200,000		\$ 400,000	\$ 90,000	30		60	30		Accept	Include a Supplemental Work item to cover this risk.	CCTA Team	6/20/2017	Medium
Retired	10	Design	Geotechnical / Pavement Materials	Use of 40-year design life pavement may result in cost greater than anticipated at 65% design.	Per input received from Caltrans geotech at 65% PS&E, 20-year design life pavement will be utilized for widening areas and 40-year design life (concrete pavement) will only be used in the areas of pavement reconstruction at the vicinity of Grayson Creek.	20	40	\$ 1,000,000		\$ 3,000,000	\$ 2,000,000	50		60	40		Accept	Coordinate with Caltrans Materials	CCTA Team	4/28/2015	Low
Active	11	Design	Quality of submittals to Caltrans for concurrence and approval	Incomplete or non conforming submittals that increase review times.	Perform internal quality control review prior to each submittal to Caltrans.	10	20	\$ 100,000		\$ 200,000	\$ 150,000	50		60	40		Accept	Follow Caltrans and WMH QA/QC process	CCTA Team	6/20/2017	Low
Active	12	Construction	Limited construction window for work at Grayson Creek and Walnut Creek	Delay in completing bridge construction work within creek beds may result in extending construction schedule and significant additional cost.	Precast superstructure proposed at Grayson Creek to minimize falsework requirements.	20	50	\$ 500,000		\$ 1,000,000	\$ 300,000	120		365	200		Accept	Track schedule and ensure timely progress	CCTA Team	6/20/2017	Medium
Active	13	Design	Drainage	Additional runoff from pavement widening may impact local drainage system.	Hydraulic / floodplain analysis was reviewed by ACOE and CC Flood Control, and their comments incorporated in PS&E.	10	20	\$ 500,000		\$ 1,000,000	\$ 300,000	365		365	365		Accept	Work closely with USACOE and CC Flood Control	CCTA Team	6/20/2017	Low
Active	14	Design	FAA Notification	FAA does not approve encroachments into glidepath.	Draft notification submitted to FAA and all comments addressed.	10	20	\$ 100,000		\$ 200,000	\$ 150,000	10		60	30		Mitigate	Work closely with FAA during PS&E process, Coordinate requirements with RE	CCTA Team	6/20/2017	Low
Active	15	Right of Way	Eminent Domain Process	Eminent domain process is required for Solano Way public storage facility acquisitions.	Negotiating with owner through their attorney to reach an agreement.	40	60	\$ 200,000		\$ 500,000	\$ 350,000	80		240	120		Mitigate	Work closely with owners attorney to reach settlement. Initiate RON process	Ddistrict R/W	6/20/2017	High
Retired	16	Construction	Freeway Closures	PC bridge girder installation require freeway closures that could result in traffic delays greater than 15 minutes.	TMP and Lane Closure Report has been reviewed by District. Traffic delays for detours are less than 15 minutes.	10	20	\$ 100,000		\$ 200,000	\$ 150,000	50		60	40		Accept	Track schedule and ensure timely progress	CCTA Team	6/20/2017	Low